Comparing and Contrasting

‘Protocol’ with ‘Control and Freedom’

Annewil Neervens

5816181

annewilneervens@gmail.com

Final Paper Comparing and Contrasting ‘Protocol’ with ‘Control and Freedom’

New Media Research Seminar

Dr. Richard Rogers

January 16, 2009

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Abstract

This paper attempts to compare and contrast the main points of the books 'Protocol: How Control Exists After Decentralization' by Alexander R. Galloway and 'Control and Freedom: Power and Paranoia in the Age of Fiber Optics' by Wendy Hui Kyong Chun.

By briefly discussing both 'Protocol' and 'Control and Freedom', I will map the discourse in both books, thereby revealing the larger arguments of the authors. I will then be able to compare and contrast them and finally come to a concluding statement. The reviews of both books are not merely summaries: I will also address unclear paragraphs and theories I came across and add to them with thoughts and questions that came up while reading both texts.

Key words: Protocol, Control, Freedom, Power, Paranoia, Cyberspace, Democracy.

1. Introduction

Both books deal with the notions of control and freedom, and how they relate to the Internet. However, the authors' studies vary in that they use different methods, objects of study and use of literature all together. The latter becomes clear, for instance, when we see that both Galloway and Chun use Michel Foucault's theories on contemporary media, yet Galloway puts the focus on control through protocol by primarily using 'Discipline and Punish: The Birth of the Prison', whereas Chun emphasizes the notion of sexuality using 'The History of Sexuality, Volume 1.'

Even though their main object of study is the Internet, Galloway and Chun research this in different ways. Galloway focuses more on the internal workings of the Internet (by exploring protocols such as HTML and Request for Comments documents, among others) and employs a more technical way of writing. While Chun puts great emphasis on the representation of sexuality, race and gender on the Web and looks closely at the notion of cyberpunk, she's more interested in social context and subjectivity. These, and other examples of comparisons and contrast between the two books will be discussed more elaborately later on in the paper.

2. A Discussion of 'Protocol'

In the book 'Protocol: How Control Exists After Decentralization', Alexander R. Galloway aims to answer the question his book title suggests, namely: How does control exists after decentralization? Essentially, protocol is the answer.

It becomes clear that Galloway's main object of study (the Internet) is divided into other, smaller objects of study, being distributed computer networks and the protocological system of control that exists within them. According to Galloway the best example of a distributed network is Deleuze's rhizome; a root-like structure model that exemplifies total connectivity between autonomous nodes in a non-hierarchical manner. He also periodizes Deleuze, asserting that we are currently still living in a society of control, but with protocol as a primary tool of regulation.

The notion of control is of great importance for Galloway. He attempts to illustrate that the Internet is based (and always has been based) on control. Galloway initially grounds this theory for a large part on Michel Foucault's and Gilles Deleuze's work, with the texts 'Discipline and Punish: The Birth of the Prison' (Foucault) and 'Postscript on Control Societies' (Deleuze) in particular. By looking at these writings Galloway identifies a shift from Foucault's disciplinary society to Deleuze's society of control. Going further into this, he introduces protocol as a regulator, a "new apparatus of control"[1]; with a distributed network as a diagram, the computer as a technology and protocol as a management style. To illustrate what protocol is and how it works, Galloway gives a brief overview of the history of the Internet. He thereby examines the nature of protocol and shows that control is guided through it, there is no way around it, or as he puts it: "It is through protocol that one must guide one's efforts, not against it."[2] It seems as though one should follow protocol to participate. If this is so - if protocol is the dominant management style - than we can also turn around the matter and ask if it runs centralized and decentralized diagrams as well?

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[1] Galloway, Alexander R. *Protocol: How Control Exists After Decentralization*. MIT Press: Cambridge, 2004, p. 3.
[2] Ibid., p. 17.

Computer protocols have some characteristic features; they are based on contradiction (for example TCP/IP versus DNS) and that's also how they gain their strength. Galloway asserts that "protocol is against interpretation"[3], but one could ask if this is true. What about Internet censorship or IP addresses that provide a place for the user on the Internet? This protocol makes sure the user is 'locked in', thereby almost certain to be interpreted. Especially an IP address - that makes a user numerical - bears great similarities with Foucault's notion of biopolitics, where people are reduced to statistical data to govern. And biopolitics is by no means neutral.

The Internet is about the delivery of information; it is content free. Galloway treats the Internet as infrastructure, and it is exactly this that over determines what happens on the Net. The idea that the infrastructure itself would have effects is nonsense. Also, Galloway sees Internet protocols as more or less neutral, thereby disregarding that the Internet is more than just protocols.

With the discovery of DNA and the advent of biometric science it is obvious for Galloway that "life has become matter" and perhaps more importantly, that "matter has become life."[4] With DNA, life also became aesthetisized. But his argument does not end with the point that life has become material. Ultimately protocol is so very significant that it becomes life itself. So with life being codified, and thereby aesthetisized, a new layer is introduced: 'second nature' (which Galloway explains based on Karl Marx's Capital). However, this does leave us with the question of how much room there is for intervention. In other words: does protocol have full control over life itself, or is there a way to undermine it? With regards to second nature it is also possible to draw a parallel between Internet protocols and capitalism. Capitalism being a social construct that seems natural and the interface of the World Wide Web also being a construct that seems natural because of continuity (itself seen as a Net form by Galloway). For both counts that "hiding an apparatus to hide the apparatus"[5] is one of the defining features in these intelligent networks.

When considering the notion of continuity Galloway seems to contradict himself in where he states that the Internet is not time-based and doesn't have a narrative. One

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[3] Galloway 2004: p. 52.
[4] Ibid., p. 82.
[5] Ibid., p. 75.

could argue that the protocological Internet is very much like TV and film, precisely because of continuity. There are several theories that theorize the Internet on the basis of narrative, like Hypertext theory or more specifically the article 'As We May Think' by Vannevar Bush, in which he writes about making associative trails (which bears great resemblance to the computer's browser history). And although Galloway even mentions Bush's text, he still seems to dismiss the idea of the Internet working in a similar narrative and time-based way. If we cast a glance forward and compare Galloway's stance on narrative and time on the Web to that of Chun's, we see that she feels time is a very important marker for cyberspace (and television for that matter). For instance: time becomes visible to the user when it takes a long time to load Web pages. The user literally has to wait and see the time pass as he's waiting for the page to fully develop in front of him. The strands of time also become visible when the user encounters 'old' Web pages, pages that haven't been updated in a long time.

While it may not have been too obvious in the introduction and first chapters of his book, Galloway eventually argues that protocol does know failures, both inside and outside of protocol. An example of a failure outside of protocol is proprietary software, which is the exact opposite of protocol; it is commercial and closed, whereas protocol is open and accessible for all. Therefore, he states that it is the "enemy of protocol."[6] With a brief overview of how Internet protocols initially start out as Request For Comments documents (RFC's), go through a series of standards and are eventually adopted as Internet Standard, Galloway illustrates the openness and fairness of the process. With this is becomes clear to him that the origin of Internet communications was one of control, and not freedom as so many (Lawrence Lessig being one of them) believe it to be. Hackers – who according to Galloway are often wrongly portrayed as criminals and terrorists – seek out the weaknesses in proprietary software in order to create new possibilities. Hacking in proprietary software leads to patchwork, where corporate companies continuously try to repair the holes that hackers create. The way Galloway puts it makes it seem as though there's a very fine line between failure and possibility. In any case, according to him the ability for hacker's to seek flaws is an example of failure within protocol. It makes

[6] Galloway 2004: p. 121.

protocol unable to rule. He argues that hackers are seen as a threat to the system; yet they are actually created by it. There is an entire discourse detached to the hacking issue and there seem to be two poles: on the one hand there's the hacker's ethic which says access to computers should be total and free, and promote distribution. They follow in some sense a code, a standard. On the other hand, hacking doesn't seem to be (or at least no longer) about how clever programmers are using the system, but rather how they cause damage to it. Therefore, one could ask if Galloway's defensiveness towards hackers is justified? Do hackers really only want to strengthen the system, or do they intentionally cause harm to computers and users? Galloway's overall argument seems to be that hackers make protocol more and more effective, but he tends to shift this issue completely away from ethics. Of course, when it comes to strengthening, one could also consider if the hacking of proprietary software actually does strengthen the proprietary protocol. For it doesn't seem to do so, it doesn't necessarily add anything to it.

Linked to the hackers' ethic is tactical media, which Galloway describes as: "The bottom-up struggle of the networks against power centers."[7] Participants in tactical media – which can also be described as a form of online activism and virtual protesting – also try to attack the dominant, proprietary or in this case the power centers. With the example of the spread of computer viruses – which can be seen as an example of tactical media - Galloway sees a similar development in negative connotation as he did with hackers. The reason why viruses are called viruses is because of the host that allows them to reproduce and spread. Subsequently, he wonders why we don't consider computer bugs and viruses as 'just' a form of artificial life. Yet, by denying the criminal act of creating and spreading these viruses Galloway seems to make a similar error as he did with his chapter on hackers; again, one can ask if a shift in negative connotation isn't justified. While viewing computer viruses as 'weapons of mass destruction' might be a bit strong, some viruses are designed to intentionally destroy computer systems, or rob oblivious users, businesses and banks from their money. Isn't Galloway thinking too lightly on the subject? His "if you can do it, it can't be bad"[8] attitude just doesn't seem to cut it here.

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[7] Galloway 2004: p. 175.
[8] Ibid., p. 168.

Another form of tactical media that Galloway describes is cyberfeminism, which can also be seen as a type of virus, for within it protocol becomes disturbed, and it's about randomness and corruption. A lot of cyberfeminism was a resistance of the body. Since protocol is anti-patriarchy, one would no longer need to resist the body. Instead, it is substituted by protocol.

In the final chapter of his book Galloway periodizes Internet art, dividing it in two phases: the first one is an early conceptual phase (that lasted from 1995 'til 1999) called net.art, and was primarily concerned with the network. The second one (for which he has no name) is a corporate phase, primarily concerned with software. Internet art can be seen as a form of tactical media, because it touches upon political issues, proving its autonomy as an artistic practice. And like tactical media, Internet art is also a usage type of protocol. It shows how resistance can be aesthetisized. The work of Internet artists Jodi – which has roots in hacker mentality - is a clear example of this.

3. A Discussion of 'Control and Freedom'

As the title suggests, the notions control and freedom are of great importance in Wendy Chun's 'Control and Freedom: Power and Paranoia in the Age of Fiber Optics'. The book aims to show how control and freedom are linked to each other and how they relate to fiber-optic networks, and in particular: to the Internet. With this, Chun's object of study becomes clear. However, she does break it down by examining specific extra-medial representations on the Net such as gender, race and sexuality. First off, it is important for Chun to make a distinction between liberty and freedom. She writes: "Freedom differs from liberty as control differs from discipline. […] To have liberty is to be liberated from something; to be free is to be self-determining, autonomous."[9]

Chun starts off by looking at cyberspace, classifying it as a heterotopia. A notion she derives from Foucault and that can best be described as a place of alterity. It exists outside of all places and, it is not real but does reconceptualize the real. Cyberspace

[9] Chun, Wendy Hui Kyong. *Control and Freedom: Power and Paranoia in the Age of Fiber-Optics*. MIT Press: Cambridge, 2006, p. 10.

– which is a virtual, interactive environment that combines both science and fiction – is both the place and space of Chun's object of study. Then again, there are more places (like civilization) and spaces (such as freedom and power) of study to be discovered in her work. Therefore, this is also a point of criticism. Chun makes it difficult for the reader sometimes to 'zoom out' and see the bigger picture because she addresses so many different topics.

However, it is clear that Chun main argument throughout the book is to try to explain how power operates through the twinning of control and freedom. According to her the Internet is freedom and she points out that it can enable "something like democracy."[10] This latter part seems somewhat vague and one can ask what she actually means by it. Her definition of democracy is not that everyone has equal power, but that no one has absolute power.[11] She links democracy (and the achieving of it) to openness and freedom. So freedom is a utopic vision that holds the potential for democracy. Open source software to name an example, is one way of enabling democracy. Of course, censorship and banishment (on Netporn for instance) mean the death of democracy, or as Chun would say: with a ban on Netporn we would have no democracy.
Also, because we leave our physical bodies behind when we enter cyberspace, a sense of egalitarianism is achieved. This way a user is freed from gender and race and Chun illustrates this point by elaborately discussing the 'Anthem' ad campaign that was designed to give the viewer a sense of sharedness and equality. This equality, or 'race-free utopia', as portrayed by major corporate companies is something Chun tries to invalidate by stating that there is a digital divide, and that these companies have no intention of bridging the gap. Indeed, they even benefit from it by depicting themselves as the 'solution' to it. According to Chun, we should not only talk about the digital divide in terms of Internet access, but also focus on "the tools and skills needed to transform it and similarly erase class difference."[12]

Another important point in Chun's book is the recognition of the shift from public/private to open/closed. The Internet going public through privatization after it became privately owned instead of state owned, explains this. Subsequently,

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[10] Chun 2006: p. 170.
[11] Chun, Wendy. Personal Interview via Skype. New Media Research Seminar, December 15, 2008.
[12] Chun 2006: p. 153.

paranoia was created. A lot of protocols are hidden from the user, they are simply not aware of it. Chun illustrates that many users think they are in full control of their computer, but do not know that it is sending and receiving information even without their command. This invisibility ensures the increase of paranoia. Chun asserts that the same goes for the use of face recognition and Webcams; camera's claim to make visible, but instead do exactly the opposite by concealing.
To further explain paranoia and paranoid knowledge she refers to a theory by Jacques Lacan's, which accordingly claims that paranoid knowledge begins at childhood and is largely based on jealousy. She applies this analogy to the Cisco Systems ad (which is similar to the Anthem ad; they both put forth the message that one needs to be connected to the Internet or is otherwise left behind, or in Chun's words: one needs to be 'jacked in'). She periodizes paranoia by describing the impact the terrorist attacks of September 11, 2001 had on the virtual world as a happy place to a place of threat, where freedom is now fused with security. As a result, paranoia regained (new) strength.

The shift from public/private to open/closed also bears close resemblance to the way Foucault and Deleuze have been periodized from the disciplinary society to the society of control; seeing as that the notion of public/private is closely linked to Foucault's work and open/closed to Deleuze. Indeed, access has everything to do with it. Privatization undermines democracy in the sense that it brings inequality to access.

Another way of classifying gender and race is through Internet pornography. In the chapter Screening Pornography Chun asserts that race is turned into a pornographic category, like 'Asian'. The same goes for gender, like 'girl on girl'. So in a sense, by looking at these examples, one could argue that there is no race-free utopia. Even when not confined to a physical body, there are still certain limits or requirements (like gender and race) in the virtual. Chun connects the representation of sexuality on the Web to Foucault's text 'The History of Sexuality', because the relation between control and freedom is often seen as sexual.

The idea of being bodiless reoccurs a few chapters later when Chun introduces the terms 'cyberpunk' and 'high-tech Orientalism.' While a clear description of cyberpunk is not given (it seems as Chun thinks all readers of her book are familiar with the

notion), high-tech Orientalism means as much as the reducing of the other to (eroticized) data. She takes a closer look at them by analyzing William Gibson's science fiction novel Neuromancer and Mamoru Oshii's anime Ghost in the Shell. She writes that the Orient is "first and foremost a virtual place"[13] and she attempts to answer the question what cyberspace means in relation to these Orientalist texts. With this, it becomes clear why she chose Neuromancer and Ghost in the Shell as case studies; they are both set in world that is neither clearly real nor digital, but that alternates the two. They take place in cyberspace; one could even argue that they are heterotopias, places of alterity and otherness. The protagonists are humans and cyborgs in a Japanified future. Both texts also deal with race, ethnicity, sexuality and the body or rather the lack there of – bodilessness or disembodiment – they are important markers. To illustrate: Chun introduces the notion of 'ghost', which she explains as being somewhat like a soul, but not quite. The female, cyborgian protagonist of Ghost in the Shell, called Major Motoko, especially deals with questions of her body and ghost. Chun then links this to Donna Haraway's analysis of cyborgs; who states that cyborgs replicate rather than reproduce. Chun contests this by claiming that both Neuromancer and Ghost in the Shell "are driven by an urge to merge that privileges sexual reproduction."[14] Furthermore, this merging – in Ghost in the Shell Major Motoko eventually merges with the Puppet Master, who is female as well - can be seen as gay. Thereby, once again establishing the categorization of gender and sexuality. Chun's interpretation of cyberpunk through Neuromancer and Ghost in the Shell shows that "the Internet can only be portrayed as a space of mind of there is an accompanying display of Orientalized bodies."[15] It is especially this chapter – chapter 4 Orienting the Future – that seems to be taking us away from the overall argument of the book. Although Chun uses these cyberpunk texts to exemplify her ideas on racial and sexual representation within cyberspace, one could argue that she discusses these examples too extensively and that a more concise description would have been enough.

In the last part of her book Chun discusses control and freedom through fiber-optic networks in a more detailed fashion. According to her they are coupled and go hand

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[13] Chun 2006: p. 192.
[14] Ibid., p. 227.
[15] Ibid., p. 244.

in hand; the Internet serves as an example for control-freedom. Control can enable freedom, but freedom can also go beyond control. It exceeds control. However, freedom is often a delusion. For: "Freedom as something one cannot want is the key to control as freedom."[16] She ends by claiming that essentially freedom is at the beginning of it all. No one can be completely separated from it. We should look more critically at how freedom is constructed in order for it to best employ the possibilities of democracy. Because cyberspace is never really safe – as mentioned before, the computer sends and receives information without the users command, a lot of users are not aware of this - we should replace it with something else, something that enables freedom.

4. Comparing and Contrasting 'Protocol' with 'Control and Freedom'

4.1 Objects of Study

When comparing Galloway's 'Protocol' to Chun's 'Control and Freedom', one can clearly see that both books have a lot in common. In the first place there's their main object of study. Chun herself stated that a similarity between her work and Galloway's is that they both want to explore those areas of a system that never do what they say. Hardware for instance, is never infallible. And the best way to take on a system is to take it on absolutely literally.[17] This is exactly what Chun does when she tries to 'demythificate' myths such as cyberporn and terrorism. Her use of language – especially on the subject pornography - is 'in your face.' She writes about it as she sees it. When she describes the several porn sites she's visited, she *literally* describes them, summing up all the sex categories she could find. Similarly, it might also explain why Galloway writes in a relatively technical way. After all, he is describing a technical system's workings.

Even though both authors focus on different objects of study as well (for instance, Galloway theorizes the idea of protocol governing the system, and even life itself; for Chun it's the representation of gender, sexuality, race and democracy in cyberspace), they both thoroughly explore the system that makes it all possible: the Internet. They're aim is to make visible the invisible, and as Foucault would argue:

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[16] Chun 2006: p. 274.
[17] Chun, Wendy. Personal Interview via Skype. New Media Research Seminar, December 15, 2008.

control needs to be visible and verifiable. Galloway does this mainly by looking at the history of the Net and explaining how it is built up from several layers and protocols that all work together in order for a (stable) connection to be constituted. He attempts to corroborate his main argument - that the diagram has changed from centralized, to decentralized to distributed, and that this is the only way for protocol to be fully employed – by exploring the internal structure of the Internet. A point of criticism here is that Galloway tries very hard to specify protocol, yet ultimately protocol ends up being everything. This proves to be a confusing point for the reader.

4.2 Control and Freedom

Chun puts her focus more on the external representations and consequences of cyberspace, although she does mention code and the architecture of the Internet. She even makes a reference to Galloway in the first chapter of 'Control and Freedom', making a connection between his ideas of control and freedom and her own. With this, a second comparison crystallizes: control is at the foundation of freedom. Both authors believe that control and freedom go hand in hand. One cannot exist without the other. According to Galloway the Internet is highly controlled, but through this a certain freedom, a degree of openness and fairness, is achieved. He writes: "Protocol gives us the ability to build a 'warm, friendly' technological space. But it becomes warm and friendly through technical standardization, agreement, organized implementation, broad (sometimes universal) adoption and directed participation."[18] Chun in turn, writes: "[…] control and freedom are not opposites but different sides of the same coin: just as discipline served as a grid on which liberty was established, control is the matrix that enables freedom as openness."[19] Ultimately, it seems as though Galloway and Chun believe that control can bring forth some sort of greater good; whether that be inclusiveness, openness, freedom or maybe even democracy. What is left is still the questions how all of this can be achieved? Or perhaps more important, *can* something like democracy actually be achieved? Even when we look at real life, the offline world, it is hard to come up with good examples of a proper democracy or democratic system; one where no one has absolute power. Why would fiber-optic networks be any different?

[18] Galloway 2004: p. 142.
[19] Chun 2006: p. 71.

4.3 The Use of Foucault and Deleuze

Going back to the beginning of both books, by exploring what literature Chun and Galloway rely their work on, we see that theorists Michel Foucault and Gilles Deleuze are important in both their works. Galloway primarily uses Foucault's 'Discipline and Punish' as well as Deleuze's 'Postscript of Control Societies', explaining how the Foucauldian term 'discipline' gradually changed into the Deleuzian 'control'. The latter is now also understood in terms of access. Galloway takes this even further by suggesting that protocol is now the tool of a controlling society. Chun starts off by mentioning both theorists as well, but her view on their theories is somewhat different. She doesn't go as deeply into the material and especially Deleuze is discussed rather briefly. She is quite critical of his ideas claiming: "Deleuze's reading of control societies is persuasive, although arguably paranoid, because it accepts propaganda as technological reality, and conflates possibility with probability."[20] Regardless, she does use his work to further develop her notion of control; and she acknowledges that it is not as powerful as it may seem.

According to Galloway, the notions of biopolitics and biopower are protocological. They also both deal with the body. In order for Galloway to conclude that protocol is inherent to life itself, he attempts to prove the existence of protocol in the physical media of bodies. Asserting that protocol is not merely confined to the digital and technical world; protocol also regulates life and the body. Chun similarly, also uses the 'flesh' to illustrate that there is a bigger force at play that is universalizing. Her references to Foucault are more in-depth than of Deleuze, but although she does mention 'Discipline and Punish', she channels her attention more towards his 'The History of Sexuality', which she uses to substantiate the ideas she has on sexual representation and pornography on the Web. The notion of vulnerability is key in Chun's way of explaining control and freedom. She argues: "The forms of control the Internet enables are not complete, and the freedom we experience stems from these controls; the forms of freedom the Internet enables stem from our vulnerabilities, from the fact that we do not entirely control our own actions."[21] So, when regarding sexuality (which is arguably the ultimate form of vulnerability where one literally

[20] Chun 2006: p. 9.
[21] Ibid., p. 3.

exposing himself to another) as a form of freedom, we can assert that in a sense cyberporn is the connection between control-freedom. As Chun writes: "[…] Foucault sees pornographic resistance or blasphemous knowledge as supporting, rather than destroying power."[22] This power enables freedom, which in turn is enabled by control. However, this does bring up the questions: What is vulnerability exactly? What is its definition? And who will define it? Indeed, a compromising, vulnerable position for one might not at all be as shocking to the next. It seems as though this matter is too subjective to define in a universal way.

4.4 Resistance

In terms of resistance there are more resemblances to be seen in both Chun's and Galloway's works. Galloway sees opportunities for resistance within the system. As mentioned earlier on in this paper, hacking or forms of tactical media such as cyberfeminism, can be seen as a resistance; it's about finding flaws and exploiting them. Internet art even aestheticizes resistance. Chun also sees forms of resistance within the system. She names the digital collective Mongrel as an example of this, describing how their projects attack the idea of equality and egalitarianism on the Web. Their project HeritageGold – which was basically a hacked version of Photoshop – even addresses race and the relation it has to software. In addition, cyberspace can also be used as a tool to fight inequality. Indeed, these forms of resistance show that the user is not completely helpless, but instead can be in control of how he or she works within the system. That doesn't mean that they always are in control, however. As Chun has pointed out before, many users are not aware of a lot of the computer's processes. Also, control within fiber-optic networks is often not the type of control that's visible to the human eye; it cannot be seen or heard. The same goes for protocol. Protocol is power, but it hides the fact that it embodies power to create this warm and friendly environment for the user. Therefore, the actual control that lies within protocol isn't perceptible. Only when one actively tries to undermine protocol (by resisting it or not going along with it) one 'feels' its power: there simply won't be a connection.

[22] Chun 2006: p. 116.

Arguably, the biggest bottleneck one comes across when comparing both authors' theorizations, is the question whether standardization and regulation, or openness should be at the heart of the system. Galloway seems to think that the Internet works as well as it does because of protocological control. Chun argues that in order to achieve democracy, everything needs to be open. With this, one can distinctly see that even though they have a lot in common, their approach and aims are quite different.

5. Conclusion

As I have stated in the abstract and introduction, the aim of this paper is to reveal the larger arguments in the books 'Protocol: How Control Exists After Decentralization' and 'Control and Freedom: Power and Paranoia in the Age of Fiber Optics'. I have done so by summarizing both texts, as well as providing additional claims and/or criticism and addressing questions and unclear paragraphs. With this as a foundation, I was able to compare and contrast some of the key notions in their theories.

I find that the most important argument Alexander Galloway makes is that it's control that lies at the foundation of the Internet, not freedom. Substantively, the diagram has changed from a centralized and decentralized network, ultimately to a distributed network. This allows for computer protocols to work in the most effective way. When looking at it this way, we see that the Internet consists of a distributed network, with a control at the basis that enables freedom. What makes protocol so powerful is that it has to be followed in order for the user to properly use the system. In return, the controlling power of protocol provides for a system that's based on openness and fairness, for protocol does not give meaning to the content it carries. Galloway illustrates this openness and fairness by describing RFC's and the process that they undergo before being established as Internet Standards.
Wendy Chun also speaks of control and freedom. She's especially interested in the conflation between the two in relation to fiber-optic networks. She examines the Internet by disassembling myths of cyberporn, race and empowerment, high-tech Orientalism and terrorism.

Both agree that control and freedom are two sides of the same coin and they try to make visible its invisible underlying structure. However, particularly Chun never really draws a sharp line when it comes to her case studies; nothing is ever really absolute. A critical side note is that this makes her analysis somewhat vague and hard to grasp every now and again. Galloway's text is also unclear at times, especially in his attempts to make protocol a larger than life (quite literally) concept. The main point of critique here is that he starts out small by defining computer protocols, but eventually doesn't oversee where it begins and ends; thus protocol end up being everything.

Essentially, both Galloway and Chun attempt to demystify the Internet, by explaining to the reader how it works technically and what its consequences are in terms of extra-medial representation. Ultimately, openness, freedom and democracy (or something like it) could be achieved. And we see now that resistance within the system (through several forms of tactical media) could be used to fight inequality and racism on the Net.

Galloway relies heavily (particularly in the first part of his book) on the theories of Foucault and Deleuze, combining a technical way of writing and researching with a hint of philosophy. Chun uses both theorists as well, but doesn't go as deeply into the material. Her standpoint in writing seems to be more focused on the social implications a technical system as the Internet may bring with it.

Galloway and Chun both have the initial idea to convince the reader of their claims (in Galloway's case it's that control is the founding principle of the Internet and protocols are the tools that make it work, in Chun's case it is that democracy or 'something like it' can be achieved through the Net) and both of them do so in a rather persuasive way. Still – as I've tried to illustrate throughout this paper - some questions linger and remain unanswered. However, a lot of their arguments are plausible and especially the use of interesting and contemporary case studies makes both texts a compelling read.

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