Dear readers,

In this revision, I altered my thesis and applied the theory lens in a different manner than my previous draft. Viewing *The Social Network* with a technological lens, I could view Mark and Facebook as two separate entities that exert an influence on each other, one that might change over time. This then translated into my thesis – I argued that the creator of a technology will have a weaker control over his technology if it is one of a virtual nature, like Facebook.

Analyzing three major scenes in *The Social Network* helped establish various stages in this reduction of control. First, I demonstrated that at Facebook's conception, Mark had a spirit of invincibility, and that his control over Facebook was complete and dominating. I used a good amount of subtext within the scene to demonstrate this all-encompassing control. The second scene showed a reduced control over Facebook – I brought in Sean Parker and the two ways in which he weakens Mark's control over Facebook. Sean comes in at a more mature stage of Facebook, and we can draw the conclusion that at this later stage of control, Facebook is more free from Mark's control. Finally, the confrontation scene between Mark and Eduardo shows a greatly reduced sense of control, all through subtext analysis in the scene. This third scene finalizes our pattern that over time, Facebook weakens Mark's control over it more and more.

My motivating and Gaipa move was to stand on Hughes' shoulders, and argue that his theory failed to take into account the nature of a growing technology – whether it was virtual and software-based, or physical and tangible in nature. I discussed how the inherent consequences of having a physical technology made it impossible to adapt and progress at the same pace that a virtual technology could. After modifying Hughes' theory to include the nature of a technology, my delta thesis then described how virtual and technologies differ in partially escaping the control of their creators.

I used a lot of evidence from my previous draft, as the previous thesis was partially related to my new thesis. I think my new revision is much stronger, due in part to the deeper analysis of the scenes, and the more logical reasoning. I believe I maintained the strong level of orienting present in the first draft, while reducing some of the convoluted structure. I think I presented the thesis and motive very clearly, while having an analytical question of sufficient specificity.

I would welcome thoughts on the believability of the supporting evidence and arguments. I also found some weakness in the flow near the end of the essay, and my structure and coherence when incorporating the Gaipa move might have benefited from some reorganization. Furthermore, I was unsure of how to start the essay, as the direction of it was slightly different from the previous.

Sincerely,

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Facebook's Force: Technological Momentum and Virtual Technologies

Today, we are immersed in technology. Your laptop hums, your phone buzzes – the nature and origin of the technologies that these products embody are deeply and thoroughly intertwined with the history of societal development. The exact nature of this relationship, however, is in contention. Thomas Hughes' theory of technological momentum offers an explanation for the long-term effects on and due to an evolving and maturing technology. In part of his explanation, Hughes proposes that society and technology are mutually dependent – he claims that "a technological system can be both a cause and an effect; it can shape or be shaped by society" (Hughes 112). As the technological systems grow, however, his theory dictates that "systems tend to be more shaping of society and less shaped by it" (Hughes 112), and that they gather technological momentum over time. In our day and age, the social network Facebook is an example of such a technologically momentous system, and a close examination of a film detailing its rise, *The Social Network*,can help us better understand the larger phenomenon of technological momentum, and why modeling modern virtual technologies as technologically momentous systems might require a modification to Hughes' theory. This examination, however, raises the following question: how might the exponentially growing nature of a software-based, virtual technology like Facebook cause a difference in its technological force, or the rate of change in technological momentum, from that of a more tangible, physical technology? Both the rapid evolution of Facebook from its creator's initial hacking project to the vast network society it develops into, and Mark's change from an intensely energetic and unstoppable programmer to an admiring and submissive follower demonstrate that Facebook, as a virtual technology, weakens its creator's control of it over time, and may even come to partially control the creator.

Hughes' technological momentum theory can help us understand this weakening control through viewing the relationship between Facebook and its creator as two entities existing in mutual dependence. His theory helps prepare us to examine the influence each entity – in this case, the creator and Facebook – exerts on each other, and how that influence can change over time.

We first examine the initial stage of Facebook, and the degree to which Mark Zuckerberg, Facebook's creator, holds control over it. At its core, Facebook evolved from Facemash, a website objectifying women in a hot-or-not game – therefore, the scene in which Mark programs the code for Facemash is of utmost importance to our examination of his varying control over Facebook.

In this scene, Mark has returned to his room after Erica Albright has broken up with him. After getting slightly intoxicated, he begins to program a website that allows users to compare girls to each other, selecting which one appears more attractive. Everything about the scene highlights Mark, Mark's control, Mark's dominance. The scene is voiced over by Mark, with all other sounds – aside from the spliced-in party scenes – muted or quieted. Its music is an intense, throbbing beat underlying the coding process, and its upwards-spiraling synthesizer melodies directly reflect the feel of Mark's quick, tight voice. The camera follows his typing, further enhancing this feeling, and giving the viewer a sense of strained, intensive, energy. The near-frenetic cutting between shots of Mark's face and close-ups of the screen, keyboard, and various computing hardware also add to this quick-paced, intense feel. As we see Mark explaining his thought process on the screen in front of us, it seems he is unstoppable – any obstacles that arise are quickly dealt with; his claims that Kirkland's facebook can be accessed with "a little WGET magic...Kids' stuff" (Fincher0:09:50) seem almost overconfident, until we see him deal with nearly all the security with ease. As the coding progresses, the energy builds and Mark's voiceovers begin overlapping, cascading into an overwhelming mesh of words that further demonstrate his dominance over this entire process, and over Facebook itself.

Now that we have established Mark's utter control over Facebook in its initial stages, we move to analyze a scene later in the movie, examining his reduced control over this virtual technology. The character of Sean Parker is integral in the expansion of Facebook – not only do his contributions to Facebook directly reduce Mark's control over his technology's direction, but Mark's interaction with him also demonstrates a more indirect loss of control. Closely examining the scene in which Sean first meets Mark is very useful in demonstrating this reduced control.

From the very beginning of the scene, Mark is practically looking to play into Sean's hands. As Christy and Eduardo bicker, he ignores them and focused on the task at hand – meeting his idol, Sean Parker. Eduardo's dismissal that "[Sean Parker]'s not a god" (1:05:39) results in a challenge from Mark – "What is he?" (1:05:40) – suggests that Mark's idealization of Parker is almost god-like. He anxiously glances from side to side, searching for Parker. When Sean arrives, he dominates the table. Even his greeting with the three illuminates his potential impact on Mark, and on the company: As he shakes their hands, and says "Great to meet you" (1:06:24), Mark is the only to reply in kind. As the shot frames him in isolation, the Chinese characters for peace and unifying hang behind him, giving an ironic spin to his presence – he brings neither peace nor unity to Mark, Eduardo, and Christy. His stories of Napster and of private investigators elicit eye-rolling from Eduardo, confusion from Christy, and continued head-nodding and admiration from Mark. Mark's detailing of his strategy to infiltrate Baylor with theFacebook stems from a clear desire to impress Sean, and Sean affirms this, telling Mark that the strategy is "called the Little Big Horn, that's smart, Mark" (1:09:19). When Eduardo asks Sean to settle a dispute between him and Mark about revenue generation, Sean's response mirrors Mark's "cool" theory about Facebook, and evokes multiple comments from Mark: "That's exactly right", "I said exactly that" (1:09:40). We can almost see into Mark's head at this point; he views Sean Parker as an older, cooler version of him – someone that he can follow, someone to guide him.

Now that we have established Mark's worship of Sean, it remains to connect this to his reduction of control. This exchange with Sean, as mentioned above, plays a large role in shaping Mark's thoughts about himself, and about the company. He is pushed to move the company to the Silicon Valley, and is willing to drive Facebook in whatever direction Sean recommends. In this interaction, however, we also see that Sean has changed Mark's overall sense of control. In the Facemash hacking scene, he dominated everything. His energy seemed to seep into the whole scene, giving us the impression that whatever was happening at the moment was because Mark made it happen. With Sean Parker, however, Mark's energy seems contained and almost bursting at the seams. He is no longer the dominant presence at the table, and he is less willing to make decisions about the technology when someone like Sean – an older, cooler version of him – is there to make them. When Sean takes Mark to Manningham, and uses him to exact petty revenge on a previous investor, Mark's excited affirmation, "Okay!" (Fincher 01:40:46) is indicative of this passivity. The weakening of control, therefore, results both from Sean's direct, tangible contributions to Facebook's direction, and through Sean's indirect altering of Mark's energy, confidence, and control. In other words, Sean reduces Mark's control over Facebook both by making more decisions, and by indirectly influencing Mark to make fewer decisions. Since Mark's meeting with Sean was induced by Mark's desire to grow and expand Facebook, and only occurred after a certain amount of growth, we can conclude that in this later stage of Facebook's progress, Mark has lost a finite amount of control since his complete dominance in the initial hacking process.

Our final scene can cement our understanding of Mark's weakening control over the virtual technology Facebook. In the climax of the movie, Mark's former best friend, Eduardo, confronts him after he discovers Mark's decision to dilute Eduardo's Facebook shares and leverage him out of the company. The subtext of this scene provides multiple examples of how Mark has a weaker control over Facebook, and how Facebook might even have begun to control him.

When Eduardo begins to understand how thoroughly Mark has leveraged him out, he strides out of the conference room to confront him. The camera pans up from the Facebook logo on the floor to Eduardo shoving the doors open. This thematic move shows how Facebook has come between Eduardo and Mark, and how their new, completely changed friendship dynamic stems from Facebook's growth. We see Mark with headphones on, "wired in" (Fincher 1:40:52) to the system. Employees surround him, with the Facebook logo spread everywhere – he seems small, almost insignificant within the overwhelming sprawl of monitors, keyboards, and other programmers. When Eduardo rips Mark's computer out and violent slams it against the floor, the viewer sees Mark as completely submissive, a small man battered by the magnitude of the events around him. Mark, while still the creator of the technology and in charge, has a significantly reduced control over the company and the technology – we can no longer see him as the dominant, brilliant hacker who coded Facemash in one drunken night.

As Eduardo yells at him, Mark only offers half-hearted excuses, clearly bothered by his own actions. Though Sean continues to drive the confrontation with Eduardo – "It won't be *like* you're not a part of Facebook, you're not a part of Facebook" (Fincher 1:43:32) – Mark knows that he has done something wrong. This betrayal of a friend, something the pre-Facebook Mark never would have done, is a second example of how Facebook has begun to alter and influence him. At this near-mature stage of Facebook, the virtual technology has weakened Mark's control over it, and has begun to change him.

While Hughes' theory of technological momentum has been useful in analyzing *The Social Network*, and although Facebook mostly fits into the theory, the phenomenon that the film describes leads us to realize that the theory is incomplete. The shift from societal dependence on technology to technological molding of society occurs at some point in the technology's timeline of development, and *The Social Network* shows us that this dependence reversal depends on something left unaddressed by Hughes.

In the case example of EBASCO given by Hughes in his essay, the electric utilities technology was started in 1905, and in its early years, was dominantly shaped by societal and economic forces. According to Hughes, however, by the 1920s, EBASCO "rivaled a large railroad company in...its influence upon local, state, and federal governments" (Hughes 108). EBASCO is an effective example for demonstrating this dependence reversal, but we can conclude that it took more than a decade for the technological system to overcome society in the mutual dependence relationship.

After our examination of *The Social Network*, however, we realize that the shift in this new, twenty-first century technology occurred much more quickly. Though, as shown earlier, societal forces played a large role in shaping Facebook's early beginnings, within a matter of weeks, Facebook was changing the way people interacted. Initially, Facebook was molded to fit a niche. People wanted to see each other online, they wanted to establish an online presence for their relationships, they wanted exclusive access. Mark expanded Facebook to the other colleges because the technology needed a wider audience to grow – it was dependent on society. Soon, however, this equilibrium shifted. Facebook started changing the way people interacted – it began dominating and shaping the very fabric of society. In one of the several deposition scenes, Divya explains that "[e]veryone on campus was using it. 'Facebook me' was a common expression after two weeks" (Fincher 0:43:50).

Why did the dependence reversal for Facebook come several order of magnitude earlier than that of EBASCO? In his proposal of the increasing momentum of a technology, Hughes fails to address the nature – virtual or physical – of that technology.

A physical technology, by virtue of nature, requires much time, effort, and physical alteration to change. A piezoelectric-based highway, for example, would require construction and infrastructure alteration – traffic would have to be redirected, people would have to be inconvenienced. A project of this nature would last several months, if not years. Physical technologies therefore consume much time evolving into a system capable of heavily influencing society. Virtual technologies, on the other hand, can adapt and evolve much more quickly. The changes in the user interface of a mobile application or website can be implemented in weeks, days, and even minutes, simply with the alteration of a few lines of code. These less tangible technologies, therefore, are more capable of rapid growth, and can consequently gain technological momentum at a much quicker pace. We can conclude, then, that the technological force of a system, or the rate at which a technology gains momentum, differs based on the nature of the technology at hand. Facebook, as a virtual technology, can gain technological momentum much more quickly than a physical technology like EBASCO, and therefore exerts a greater technological force upon society than EBASCO.

Furthermore, the weakening of control over Facebook also occurred in a very small span of time, and it is not difficult to see that a physical technology will be easier to control. Applying the same reasoning of dependence reversal, we can conclude that the rate at which a creator of a virtual technology loses control and dominance over his technology is much quicker than the rate at which a creator of a physical technology might lose control over that physical, tangible technology.

A technological momentum lens has helped us view a creator with weakening control over his technology as the mutual influence of two entities upon each other. Through analyzing *The Social Network,* we have discovered that the characteristic nature of a technology – virtual or physical – will influence its technological force, and in turn, both the speed of dependence reversal, and the rate at which the creator loses control over it. In this day and age, therefore, where many technologies are of a virtual nature, we would do well to treat these technologically forceful systems, and their creators, with caution.

This paper represents my own work in accordance with University regulations.

Works Cited

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