

“I masturbate watching these stats”:
The Pornhub Insights Blog and the Collision Between Data, Visualization, and Pornography

Rebecca Holt

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By: Rebecca Holt

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Signed by the final Examining Committee:

_____ Chair

Catherine Russell, PhD

_____ Examiner

Marc Steinberg, PhD

_____ Examiner

Orit Halpern, PhD

_____ Supervisor

Joshua Neves, PhD

Approved by _____

Chair of Department or Graduate Program Director

Dean of Faculty

Date: _____

Abstract

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Rebecca Holt

Pornographic tube websites such as Pornhub have drastically altered the style, technology, and business of mainstream porn on a global scale. Strangely, few scholars have sought to assess how pornographic tube sites function within the media genealogy of online pornography. This thesis begins that work through an explication of Pornhub's statistical and viral press vehicle: the *Insights* blog. Through an interdisciplinary methodological approach I analyze the material and semiotic architecture of the blog including: the blog's use data visualizations, its production of images, the techniques by which it collects and processes big data, and its perpetuation of disembodiment through its relationship to information. Free online pornography is remarkable for the conglomerate of technical, linguistic, material and visual structures that comprise any encounter one might have with it. I analyze the *essentially pornographic* paratext of the *Insights* blog to begin teasing out these structures. In addition, I show how online pornography is one of our most useful tools for accessing the posthuman experience, or the process by which the structures of the world move further into the Internet.

Dedicated to:

The Book Club Coven

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Introduction

This thesis is about Internet pornography.¹ However, rather than examine pornography through the analysis of content, I approach the topic through an analysis of the Pornhub *Insights* blog.² The *Insights* blog is a statistical and viral press vehicle that utilizes big data collected from the viewing habits of millions of Pornhub users in order to create entertaining data visualizations. The blog posts include infographics, charts, and graphs about sex, porn, gender, nationality, holidays, and current events, accompanied by short written posts that analyze user interactions with Pornhub's video content.³ *Insights* is one amongst a series of strategies Pornhub is using to shed its hardcore image and join the ranks of YouTube, Facebook and Twitter by producing what the website calls, "entertaining data pulls" that are safe-for-work (SFW).⁴ Through this reconfiguration of its image Pornhub is attempting to attract the attention (and usership) of those who would normally shy away from the website and encourage existing users to feel comfortable in openly admitting their use of and love for Pornhub.com. However, I argue that the complicated relationship the *Insights* blog has to pornography is what makes it the perfect tool for analyzing online porn. The dissonance between the rhetoric the blog employs to frame its relationship to porn and the reality by which the blog is pornographic is what makes it a useful object for producing discourse. In the following project I penetrate what I argue to be the medium specific structures of free online porn through an analysis of the *Insights* blog. I am specifically interested in the complex visual and technical structures of online pornography. In this thesis, I intend to approach an understanding of the complex visceral experience of engaging with Pornhub, not with its videos, but through its implementation of data and visualization.

I classify the *Insights* blog as a paratextual research object—it is deeply intertwined with the Pornhub empire, or what could be conceived of as the text, while simultaneously autonomous

¹ "Pornhub's 2015 Year in Review," *Pornhub Insight* (blog), January 6, 2016,

² Henceforth, I will refer the blog as: "the *Insights* blog" or "*Insights*," interchangeably.

³ I go into more detail about what the posts consist of in chapter 2, but for the time being, the following are some examples of posts: "Women Searching for Women," "France's Favorite Searches," "Who's Your Daddy: Fathers Day Insights," and "Clowning Around."

⁴ "Pornhub Insights," Pornhub, pornhub.com/insights/.

from it. The blog is accessed through a separate uniform resource locator (URL) and does not contain any explicit imagery. Yet while it is at once “separated” from the main Pornhub website, it is entirely dependent on it as the blog could not exist without Pornhub.com’s content and users. In his essay on the paratextual, George Stanitzek remarks, “[the paratextual] stems from and is part of the actual text, occurring in a position that is both liminal and prominent, and at the same time it detaches itself from the text to refer to it as a whole, to give it its title.”⁵ Internet pornography is difficult to study because it is so vast. It puts a researcher in the position of either choosing a small sample of content they believe is representative of larger patterns, or developing a system by which to quickly archive and catalogue content. The difficulty in finding an entry point to this topic is what has limited the study of online pornography, and tube sites in particular.⁶ For the purposes of my study, the *Insights* blog serves as the opportunity to approach online pornography without having to rely on one of the above methodologies. A focused study of the *Insights* blog still produces new knowledge about Pornhub precisely because of its unique paratextual relationship. *Insights* promotes its content as a “making visible” of the information that Pornhub collects from its users—a process that is largely invisible when browsing the main website. By which I mean, it is not readily apparent to the user how Pornhub is collecting their data and for what purpose. How transparent that “making visible” actually is will be discussed later, for the time being it should be clear that the blog “detaches from” and “refers to” Pornhub through a complex play on visibility and invisibility; concepts that are essential to understanding how free online pornography functions.⁷

The *Insights* blog allows for the investigation of the economies of pornography that are, at times, brushed aside in scholarship that deals more strictly with pornographic images and moving content. *Insights* taps into data visualization, the *essentially pornographic* nature of data, and the visceral and embodied experience of consuming online pornography. I am interested in

⁵ George Stanitzek, “Texts and Paratexts in Media,” trans. Ellen Klein, *Critical Inquiry* 32, No. 1 (Autumn 2005), pp. 27-42, accessed May 1, 2017, <http://www.jstor.org/stable/10.1086/498002>

⁶ A tube site refers to a website that hosts user-uploaded and user-created content. YouTube is the most well known example of this type of platform.

⁷ While I acknowledge it as a prominent topic, this work will not be engaging with the issues of privacy and surveillance in relation to data collection.

the means by which vision, and the production of images have been appropriated by objectivist discourses to make empirically charged observations about the physical world. In concert with that, the methodologies utilized to produce images from data has resulted in objects that are decontextualized, in that the images do not betray the material strata that serve as the source of the data. Last, subsequent to the decontextualization of the data and image is the disembodiment of information that is occurring in online spaces. Or, in other words, the lack of connection between the material engagements that propel online activity and the information and products that are produced from that engagement. As individual topics these trajectories are not always in dialogue, but on the *Insights* blog they coalesce to create a digital space that bends bodies into data, bends data into pornography, and bends pornography into capital.

Part I. Mansef, Manwin, and Mindgeek: the History of Pornhub

In 2015 adult film stars Kayden Kross and Stoya opened an independent pornography company called *Trenchcoatx*. The two actors-turned-pornographers and business owners started the production company to produce the content they believed to be threatened by pornographic tube sites. Kross and Stoya have been particularly open about their feelings towards the company MindGeek (formally Manwin) that owns eight out of the ten top grossing tube sites in the world, including Pornhub. In a 2015 interview with *HuffPost Live*, when asked if adult entertainment was at a crossroads due to MindGeek, Stoya said, “It is almost literally at a crossroads because of MindGeek. They’re just this dominant, evil force.”⁸ Discovering *Trenchcoatx* first alerted me to the controversies that surround pornographic tube sites. For the “millennial generation”, the history of pornography begins and ends at the vast online archives of free content. However, even a cursory investigation reveals how much the tube site model has altered the landscape of online pornography. The popular video sharing website YouTube was launched in 2005, and less than a year later its pornographic equivalent, Pornhub.com, begun. The model was similar: attract users to the website with access to the production and consumption of user-generated

⁸ Ryan Buxton, “Porn Star Stoya Says Adult Film is Pretty ‘Feminist’ Compared to Hollywood Movies,” *Huffpost Live*, last modified March 15, 2015, http://www.huffingtonpost.com/2015/03/19/stoya-feminist-porn_n_6903124.html.

content and produce revenue through advertisements.⁹ However, and this is perhaps more prevalent with pornography, these tube sites often end up hosting (and profiting from) pirated content. Pornhub came online in 2007. The company was originally operated by the founders of Brazzers, another porn site that gained traction during an earlier period of online pornography that consisted of mainly TGPs (thumbnail gallery posts) and MGPs (moving gallery posts).¹⁰ While Brazzers had enjoyed a relatively strong reputation within the community of online porn, there was an immediate outcry once websites like Pornhub were launched. When an insider blog broke the story that Brazzers and Pornhub were one in the same, a fact that Brazzers had kept quiet, pornography producers and performers became so outraged that owners of Brazzers/Pornhub hired personal security guards. In 2009, the United States Secret Service Fraud Taskforce seized roughly 4.15 million dollars that had been wired from Mansef to international bank accounts on a fraud watch list. After this run-in with the government, the originators of Pornhub decided to sell their assets to Fabian Thylmann, a German programmer who wrote a software package called NATS that would dominate the adult industry and give him the economic means to buy companies.¹¹ Under Thylmann's ownership Mansef became Manwin, the company put in place several corporate responsibility programs, and spent upwards of one million dollars buying content. In 2013 Manwin merged with another popular website, RedTube, and Thylmann was bought out by the now current CEO Ferras Antoon and COO David Tassilo. Following this merger, the company moved its headquarters back to Montréal and became MindGeek.¹²

⁹ Pornhub also offers a small amount of content that remains behind a paywall.

¹⁰ The founders of Brazzers, which later became Mansef, were a small group of tech-geek friends from Montréal who had met playing competitive foosball.

¹¹ NATS or Next-generation Affiliate Tracking Software is a back-end program that allows website owners to track clicks on advertisements and links in order to receive their commission.

¹² Benjamin Wallace, "The Explosion of Free Online Pornography: The Geek Kings of Smut," *The New Yorker Magazine*, January 30th, 2011. I was never able to find, over the course of my research, any academic source that detailed the history of MindGeek as thoroughly as journalistic sources.

The MindGeek website bears no trace of the vast pornographic network that has made the company so profitable. On their “about us” page they claim to offer the services of "search engine optimization" and "web advertising services." They write that, "our hosted sites combine to rank in the top ten globally for traffic levels, letting MindGeek stand alongside a select few who dominate the cyber landscape."¹³ This “domination” is the direct result of their ownership of pornographic tube sites. Their other claim to success is the ad platform software called Traffic Junky, which is the software that the company uses to flood every page of Pornhub with disturbing, and occasionally malware infected advertisements. MindGeek and the tube sites they support are called a multi-sided platform, which means that the company itself does not directly create any of the content and it merely exists as a space for others to provide content that they mediate and offer to a consumer. This is also the way in which, much like YouTube, it can avoid the legal repercussions for the possible uploading of pirated content.¹⁴ In a disclaimer located adjacent to their homepage they claim, “Pornhub.com is not a producer (primary or secondary) of any and all of the content found on the website (pornhub.com)." And it continues, “Pornhub.com is a video sharing site in which allows for the uploading, sharing, and general viewing of various types of adult content and while Pornhub.com does the best it can with verifying compliance, it may not be 100% accurate.”¹⁵ This short “fine print” text is what allows MindGeek and Pornhub to defer responsibility for the alleged pirated content that makes its way to their website. Pornhub has the means of hosting and profiting from pirated content that they are technically not responsible for. To reiterate, MindGeek owns and operate the software programs that produce and track their advertising, and when that same software results in a security breach that causes members to complain, they implemented a membership program that

¹³ “About,” Mindgeek, accessed December 13, 2016, <https://www.mindgeek.com/about/>

¹⁴ Mike South, The Institute for the Advanced Study of Insensitivity and Pornography, mikesouth.com. Mike South’s insider blog was where I first began to grasp the history and business practices of MindGeek. He frequently wrote posts detailing the alleged strategies by which Pornhub hosted pirated content for as long as possible. However, in April, 2017, when I returned to his blog, almost every post about MindGeek and Pornhub had been removed.

¹⁵ “2257,” Pornhub, accessed April 2, 2017, <https://www.pornhub.com/information#btn-2257>

encourages those same consumers to pay a monthly or yearly subscription fee. This should make it all the more clear why analyzing their marketing strategies for becoming mainstream is important. Whereas MindGeek does not attach itself to pornography, the Pornhub corporate responsibility programs and the *Insights* blog attempt to associate Pornhub with the image of college scholarships, planting trees, and thorough data analysis. Granted, strategies such as these are not unusual in our neoliberal time, however, we need to consider what the consequences of implementing these strategies are within a pornographic environment.

Part II. Discovering pornhub.com and the *Insights* blog

Pornhub is MindGeek's most trafficked tube site and if MindGeek ever engages with the media, it is through Pornhub.¹⁶ The homepage is a wash with images including clickable advertisements for products that treat erectile dysfunction, region-specific trending videos, and recommended videos, genres, and actors relevant to your viewing history. Hovering over a video's teaser image brings up other stills from the videos. From the homepage, users can navigate a network of different pages. The seven main pages are: Videos, Categories, Live Sex, Pornstars, Pornhub Casino, Community, Photos & GIFs. From the Videos page there are seven different pages to view including: Channels, Playlists, Recommended, Hottest, Top Rated, Most Viewed, and Pornhub Select. The Community page includes four different pages: Newest Videos, Members, Community Feed, and Member Search. The Photos and GIFs pages include five different pages: GIF Generator, Animated GIFs, Top Rated, Most Viewed, and Most Recent. Links along the top of the webpage connect to other MindGeek tube sites including: RedTube, YouPorn, Tube8, PornMD, Thumbzilla, and Xtube. Towards the bottom of the homepage is information about the site, opportunities to "Work With Us," the Support and Help Section, and the "Discover" portion of the website which hosts both of the websites' blogs, their merchandise store, information about the "Amateur Program," and *Pornhub Cares*. While it is difficult to convey within a written description it should be apparent that pornhub.com is a chaotic and

¹⁶ MindGeek is notoriously evasive in responding to media requests or answering questions regarding their business practices.

difficult interface to navigate (See fig 1).¹⁷ The website includes a vast number of pages and content to explore, and its design and structure constantly barrages the user with images of what I would classify as "mainstream pornography". By mainstream I refer to the obvious, uninteresting, and the commercial. In terms of content, this often refers to normative Western bodies engaged in what is perceived as typical heterosexual sexual/erotic behavior.¹⁸ On Pornhub this is manifested as a multitude of images and GIFS of primarily white bodies engaging in aggressive "straight" (or heterosexual) sex wherein the erotic focus of the content is a thin, big-breasted woman. If this weren't your personal kink, an onslaught of such images would make the website that much more complicated to understand. As both a user and researcher, I can attest to the complexity of Pornhub's web interface. Unlike other websites where the design is such that one can intuitively navigate its features, Pornhub demands that we constantly think consciously and critically about how to best engage with the website.¹⁹

The description of the *Insights* blog, located on the blog itself, is as follows: "Pornhub *Insights* is research and analysis directly from the Pornhub team. We've compiled data from billions of hits, all to explore the intricacies of online porn viewership..."²⁰ In a recent interview with online marketing journal *DMN* Corey Price, the current Vice President of MindGeek claims that "Being mainstream was Pornhub's goal from day one—it just took a while to get there... Through creative and entertaining data pulls, partnerships and stunts, the general public

¹⁷ Warning that this image contains explicit content.

¹⁸ Susanna Paasonen, *Carnal Resonance: Affect and Online Pornography*, (Cambridge and London: The MIT Press, 2010) 7. I find Susanna Paasonen's description of mainstream to be particularly relevant, "by defining certain example as 'alternative,' 'amorphous,' and 'interesting,' netporn criticism marks others as 'mainstream'—which, by implication, are distinctly categorizable, structured, and 'uninteresting.' The category of 'mainstream commercial heteroporn' is similarly evoked as a point of comparison that connotes the obvious, the uninteresting, the immobile, and things that are known without further study."

¹⁹ I could not, within the space of this project, investigate questions of the Pornhub interface more thoroughly, although I hope to do so in the future. Patrick Kielty is an excellent example of a scholar researching the browsing of online pornography and porn website interfaces through a phenomenological lens.

²⁰ "Pornhub Insights," Pornhub, pornhub.com/insights/

and media have become more receptive to us.”²¹ Price’s comments make clear that *Insights* is meant to exist separately from Pornhub in order to detract users from making an explicit connection between the blog and the pornography that powers its data pulls. The blog combines big data visualization and its association with technological and statistical prowess with the possibilities for humor and the shock value of sex. Despite being entrenched in online pornography, *Insights* was apparently conceived of as the means by which Pornhub could become a part of the daily online activity of those that would not normally use its service. The question remains—what are the implications of a marketing strategy such as this, and what can it teach us about how free online mainstream pornography functions?

Part III. Privileging Pornography: A Literature Review

As stated above, to say that this thesis is explicitly about pornography would be inaccurate. Pornography is the lens through which I examine a series of trajectories that intersect at the *Insights* blog. Therefore, this thesis is a discussion of data visualization, embodiment, visuality, information, as well as pornography. However, the decision to execute the project in this way is motivated by what I have observed as a gap in the academic discourse surrounding online pornography. As such, I turn now to a brief literature review on the history of pornography studies.

In North America during the 1970s and 1980s scholarly work on pornography was primarily focused on its political and moral consequences. One of the most recognizable works from this period is Andrea Dworkin’s 1981 text, *Pornography: Men Possessing Women*. Dworkin, and other scholars within her field, viewed pornography as both a representation of and tool for the oppression of women.²² As Linda Williams would remark in *Hardcore*, “Anti-pornography feminists see violent hardcore as the most representative instance of the essential

²¹ Perry Simpson, “Why Pornhub is an Unlikely Data Driven Marketing Power (100% SFW),” *DMN*, last modified August 16, 2016, www.dmnews.com/digital-marketing/why-pornhub-is-an-unlikely-data-driven-marketing-power-100-sfw/article/516311/

²² See Laura Lederer, *Take Back the Night: Women on Pornography* (1980), Susanne Kappeler, *The Pornography of Representation* (1986),

sadism embodied in patriarchy's dominant power."²³ However, it was not just hardcore pornography that was worrisome to this group of scholars, but all pornography. Their primary contention or concern was a causal relationship between pornography and real world projects of power that oppress women. Of course, today pornography is still considered by many as a scourge upon society, but what marks this earlier period of pornography studies is that it was prior to the consideration of pornography as a form of media or genre of film. By the 1990s research on pornography began to expand into histories and questions about the cultural significance of pornography. During this time film and media studies scholars were instrumental in using pornography as a framework for understanding broader structures in art, identity, and economics. Their work would clear the way for other scholars interested in asking the question: "how does porn work?" This era of scholarship was instrumental in arguing for the consideration of pornography as a genre, and one that merited close examination and critical analysis.²⁴ In addition, during the 1990s the rise of cyberporn became central in establishing the boundaries between public and private that continues to characterize our interactions with the Internet and our computers. Or, as Wendy Chun argues:

The Internet's privatization paved the way for cyberporn to the extent that it made digital pornography a hyper visible threat/phenomenon, and cyberporn paved the

²³ Linda Williams, *Hardcore: Power, Pleasure, and the "Frenzy of the Visible,"* (Berkeley: University of California Press, 1989), 201. It is worth noting that this group of feminist scholars was also involved in dialogues concerning the overall detriments of ever engaging in relationships with men. In addition, many of them were apart of activists groups that condemned pornography including: Women Against Pornography and Women Against Violence in Pornography and Media to name a few. Last, it is important to note that the Attorney General quoted Dworkin during a 1986 commission on pornography in the United States.

²⁴ I would like to briefly point out that the work of Linda Williams and her fellow scholars were invested in questions of gender and pornography. Williams in particular was iconic for the ways in which she approached gender and porn. Furthermore, much of my own work is indebted to feminist and queer scholarship. However, the fields of feminism, queer studies, cultural studies, affect, digital media, and critical media theory all have different rhetorical tools for approaching questions of gender and sexuality. I use a variety of these rhetorical stances, and as such, the topics of gender and sexuality move between the forefront and the foreground within my own work. However, this shouldn't indicate that I do not take these questions very seriously.

way for the “Information Superhighway” to the extent that it initiated the Internet gold rush and caused media, government, and commercial companies to debate seriously and publically the status of the Internet as a mass medium.²⁵

Chun is referring to the passing of the 1995 Communication Decency Acts’ (CDA) by the U.S. senate and an ensuing deluge of media content exposing the “dangers of cyberporn,” especially to children.²⁶ However, despite media-generated backlash, the 1990s were a decade of great profitability for cyberporn. During the Dotcom bubble, pornography led the way, growing its audience and convincing consumers to go online and pay for its products.²⁷ What resulted from this era in cyberporn was the establishment of the conceit that watching porn online was a private experience between you and your computer—a private act during which you could evade public norms, remain unseen, but also connect to other users that shared this “deviancy”. This boundary between public and private, and the ways desire is manifested in relation to online pornography has proved a particular hurdle for pornography studies scholarship, and is a topic I explore in more detail below.

Scholarship directly related to online pornography rose in prominence by the mid 2000s, at which point the focus had shifted from mainstream commercial pornography. Instead pornography scholars (especially those coming from media and film studies backgrounds) were increasingly interested in online porn for its potential to create space for sexual “others,” and a space where kink, gender, and sexuality could be expressed in novel ways.²⁸ Susanna Paasonen has pointed out that even those scholars invested in the neutral analysis of what was initially termed “netporn” have been overly invested in the possibilities of online pornographic space as

²⁵ Wendy Chun, *Control and Freedom: power and paranoia in the age of fiber optics*, (Cambridge and London: The MIT Press, 2006) 79.

²⁶ *Ibid.*, The Communications Decency Act of 1995-96 was the first significant attempt on the part of the U.S. government to control online pornography. The Act was particularly geared towards protecting children. The anti-indecency portions of the Act would be reversed only a year later by the Supreme Court.

²⁷ , 77-79.

²⁸ See Feona Atwood’s *Porn.com: Making Sense of Online Pornography* (2010), Linda Williams’ *Porn Studies* (2004), and Katrien Jacobs’ *C’lickme: A Netporn Studies Reader* (2007).

an expression of the “alternative”. Relegating mainstream pornography to the realm of the uninteresting, Paasonen writes, “studies of commercial porn are perhaps seen to pose few analytical and intellectual challenges... The tendency to focus on the novel, the futuristic, and the potentially avant-garde while attending less to that deemed familiar, commercial, or predictable is a recognizable trait in studies of new media more generally.”²⁹ What this has meant for the analysis of tube pornography is that those scholars interested in the “futuristic” have tended towards analyzing a limited amount of content coming from free porn websites, and only that content that fits within pre-defined parameters of “alternative” expressions of sex, gender, and sexuality. Outside of film and media studies, scholars analyze online and free pornography with the intent of fleshing out the role that online pornography plays in pedophilia, rape revenge, and economics.³⁰ Not unlike the earlier feminist traditions, this community of scholars is interested in the social aspects of pornography and situate it as both descriptive of and affecting cultural structures. They are interested in the political and legal consequences of both the pornography industry and pornographic content. This discourse community engages with Pornhub more directly than film and media studies scholars because these scholars are more prone to studying the business of pornography as representative of how pornography functions.³¹

There is a limited amount of work within the field of media studies that examines Pornhub (or other free pornography websites) as textual entities or media structures that engage with pornographic texts. There has been a tendency within film and media scholarship to analyze online pornography by choosing a small selection of video or images and considering them representative of the larger functions of online pornography. This synecdochal approach is familiar, effective, and essential within film and media studies. However, when it comes to

²⁹ Paasonen, *Carnal Resonance*, 7.

³⁰ Shira Tarrant’s *The Pornography Industry: What Everyone Needs to Know* (2016) and Melinda Tankard Reist and Abigail Bray’s *Big Porn Inc.: Exposing the Harms of the Global Porn Industry* (2011).

³¹ Shira Tarrant, *The Pornography Industry: What Everyone Needs to Know*, (New York: Oxford University Press, 2016) 5. “Pornography can be understood as a sociological phenomenon that provides glimpses into historical and contemporary morés, fashion, politics, and trends... this genre has the potential to impact matters that are central to social citizenship and everyday life.”

pornography, this methodology has had the unfortunate consequence of resulting in work that focuses on issues of representation and ignores the visceral and technological aspects of online pornography. In the case of Pornhub it has resulted in a lack of scholarship that analyzes pornography within the framework of the structures of the website.

When traced broadly, the intellectual history of online pornography comprises a diverse group of scholars whose opinions and analyses differ based on their tendency to view online pornography as either a context for identity performance or a mechanism of control perpetuating the most atrocious of sexual crimes and economic systems. I have no intention of becoming an apologist for tube pornography, but I also do not intend to disregard that content which has been placed in opposition to the niche—that is, the mainstream. As stated above, my goal is to examine certain genealogies, technical structures, and considerations of the sensual that intersect with the Insights blog. However, within that work is the underlying premise that mainstream online pornography serves as a fruitful framing device for analyzing such complex topics. Hopefully, this invites more attention to the form and function of tube pornography websites.

Part IV. Methodology

It should now be eminently obvious that critical film and media scholars have not flocked to the task of analyzing the embodied experience of pornography. It is because of this under-explored relationship between critical media theory and pornography and embodiment that I have chosen to implement a variety of methodologies and bring together a collection of scholars who do not explicitly write about pornography as a scaffolding for my work. I take Susanna Paasonen's definition of pornography as the starting point. *In Carnal Resonance: Affect and Online Pornography* she writes:

Porn is both material and semiotic: it involves fleshy intensities, conventions of representation, media technologies, and the circuits of money, labor, and affect. Pornography—whether visual, textual, or audiovisual—routinely involves elaborate and detailed depictions of body parts, bodily motions, and bodily fluids. Through minute anatomical realism, it tries to mediate the sensory and to attach

the viewing body to its affective loop: in porn, bodies move and move the bodies of those watching.³²

This complex combination of the material and the semiotic is precisely what makes online pornography difficult to interrogate. One must necessarily acknowledge the representational tropes of pornography while at the same time dealing with its intense and fluid soaked fleshiness. The *Insights* blog is a porthole of sorts onto this complexity that allows the examination of pornographic content while simultaneously analyzing the medium specificity of online pornography. The data visualization offered on the *Insights* blog utilizes a similar semiotics to that of pornography in order to produce a certain narrative about sex and pornography, a topic I expand upon in the first chapter. Its infographics tell a story of how people experience sex and pornography as it relates to their gender, nationality, race, or proximity to a certain event. The data that propels these visualizations directly engages the material aspects of pornography because it based upon user interaction with a genre whose end goal is one of physicality.

However, the data visualizations are also plugged into those aspects of online pornography that are medium specific. Framing the methodology for her “Control and Freedom,” Wendy Chun cites N. Katherine Hayles’ concept of medium specificity, which refers to “Engaging visual *and* nonvisual aspects of networked machines—human and machine readings—as well as their economic and politic impact.”³³ In other words, while tube pornography must necessarily be placed within the media genealogy of pornography, it is also essential to analyze how the medium (i.e. online tube sites) makes a difference. Chun continues by arguing that online porn is not defined so much by narrative and visuality as it is by “numbers” and “database.”³⁴ Online porn is defined by what seems to be an ever-expanding database that allows its users to “see” and to fulfill their curiosity. However, while tube websites offer a certain level of agency to their users, they also turn those users into numerical value. As Chun writes, “Cyberporn sites spin database complex differently, and their redundancy exposes

³² Paasonen, *Carnal Resonance*, 2.

³³ Chun, *Control and Freedom*, 17.

³⁴ Chun, *Control and Freedom*, 105-107.

the fact that the possibility, rather than the actuality, of overwhelming data provokes desire and panic.”³⁵ *Insights* neatly exposes the medium specificity of Pornhub— by demonstrating its reliance on a database, its landslide of information, and its conception of site users as numbers.

In order to approach these semiotic, technological, and material levels of the *Insights* blog, I have fashioned an interdisciplinary approach closely aligned with those scholars whose texts I rely upon most frequently. N. Katherine Hayles, for example, executes a medium specific analysis by applying the methodological tools of scientific study, literary theory, and critical media theory. In a similar fashion, Orit Halpern creates what she terms “histories of the present,” which refers to the pressing need to comprehend the “transformation of the treatment of the senses as commodities, technologies, and infrastructures” through a historical lens in order to fully comprehend the contemporary attitude towards information.³⁶ As such, I analyze the discourse, metaphors, and methodologies of the technology that is foundational to the blog while at the same time implementing an affective and historical close reading of the blog as a pornographic media. This holistic methodological approach aims to puncture the many strata by which the *Insights* blog functions.

I should say that part of my reason for taking this kind of interdisciplinary approach is in order to confront the shortcomings of using textual analysis to analyze online pornography and/or a heavy focus on questions of meaning. In reference to the history of the “textual turn” Susanna Paasonen writes, “By providing a conceptual framework for addressing cultural phenomena, objects spaces, and images as texts as representations, the textual turn brought forth a certain tyranny of the semantic at the cost of the sensory and the material.”³⁷ Within pornography, textual analysis has had the consequence of ignoring the material and trapping pornography in an endless feedback loop of arguments concerning whether pornography is an effect of the world or a perpetrator of things in the world. I agree with Paasonen that questions of meaning do not need to be set aside altogether, but my intention is to analyze *Insights* with the goal of accounting for the technological and sensory in addition to the representational. With

³⁵ Ibid., 107.

³⁶ Halpern, *Beautiful Data*, 20-21.

³⁷ Paasonen, *Carnal Resonance*, 9.

that, at times I adopt the accepted rhetorical position of a critical media theorist, while at others times I embody a more subjective and exploratory tone. The later of which is in order to toy with the idea of what it would mean to acknowledge my own personal embodied response to the Insights visualizations. As Paasonen also notes, textual analysis not only has the tendency to forget the sensual, but it also often produces a “negative critique.”³⁸ My play with tone and voice are a way in which to confront these limitations.

Part V. Chapter Structure

The body of this thesis inspects the Pornhub *Insights* blog by analyzing the functions and dysfunctions of its data visualizations. I analyze both the aesthetic portion, and the technical aspects of visualization. The separation between the two is not meant to imply that these two components are not closely related. Instead, it is a means to answer one of the primary questions of data visualization: what is the relationship between the data and the image? Each chapter of this thesis begins with a study of the practices of data visualization. This is necessary because in order to do such a study justice one must understand the type of objectivism that data visualization propagates in order to fully grasp the consequences of *Insights* use of data visualization to appear more mainstream. Orit Halpern argues that studying measurement alongside visualization and the history of producing images is important because “discourses concerning truth, facts and representation demonstrate continuities and fissures in history. More important, problems of measurement allow one to focus on epistemic uncertainty and desire; on sites where cultural and social interest is invested before and outside of technical realization.”³⁹ In other words, through examining the overall mechanical procedures of data visualization, I have the opportunity to problematize its relationship to measurement and objectivity and get at the cultural, social, and embodied mechanisms that I argue are the true propellant of the blog.

The thesis is comprised of two chapters that are split between the themes of the visible and the invisible, which is a reference to the relationship between images and information within data visualization. Orit Halpern defines the visual as a having multiple iterations, “as a physical

³⁸ Ibid.

sense, a set of practices and discourses, and a metaphor that translates between different mediums and different communication systems. Vision is thus a discourse that multiplies and divides from within.”⁴⁰ And moreover, “vision can refer to the sensorial act of experiencing sight, or to the process by which someone “sees” and comes into knowledge. Finally, vision can be the translation mechanism for analyzing certain media forms, which I take to mean that it is one of the means by which an observer experiences shape, color, size, depth, and form.”⁴¹ In the first chapter I flesh out the multiplicities of visibility at play within the *Insights* blog. I accomplish this through three sections: first, I investigate the metaphors and language by which data visualists discuss their relationship to the visual portion of their practice; second, I explore how this language is at play on the *Insights* blog through a subjective and affective exploration of a selection of *Insights* posts; last, I analyze the functions and failures of *Insights*’ visuality as it relates to pornography.

Chapter two focuses on the invisible, the technical and informational portion of the blog. By the informational, I am referring to those aspects of medium specificity referenced above. The structure of the second chapter is very similar to the first in that I begin by reviewing the processes and rhetoric by which data visualization deals with information. In concert with this I also discuss and describe “big data”, particularly those metaphors utilized to discuss knowledge and information. Second, I discuss the ways in which *Insights* sources its data, and the complications embedded within those processes. Finally, I discuss how these varied relationships to data constitute the blog as a disembodied object. Whereas *Insights* has the potential to engage with a complex and erotic mass of embodied experiences, through its rhetoric it succeeds in evacuating the innate affective sensuality of pornography.

Given the vast complexities of Pornhub, this thesis can only gesture toward certain salient aspects of the *Insights* blog and serve as the first volley in scholarly thinking about tube sites. As such, each section of both chapters is meant to function as a meditation on one of the many structures that compose *Insights*, as opposed to a successive stream of information building towards one climactic argument. I think it important to implement a rhetorical structure that mirrors the arguments that one is attempting to make. Part of what I am suggesting about the

⁴⁰ Halpern, *Beautiful Data*, 21.

Insights blog is that it engages in a type of linear, and perhaps even phallic logic that severs the potentiality of engaging with pornography and instantiates a boundary-laden body. As such, I have attempted to refuse engaging with any structure that would mirror this logic in order to suggest that the *Insights* blog, Pornhub, and the critical analysis of these online texts, should be nothing less than turbid and open-ended.

Chapter 1

“...Data does not have an inherent visual form”: The Visual of the Insights Blog⁴²

I first became aware of the *Insights* blog during the 2016 election year. A post dated, February 26th, 2016 shared a series of thematic maps about the most popular pornographic search terms in the United States. It was a post that quickly started trending on Facebook. In its own words, Pornhub *Insights* "dig[s] deep into the data," a play on words that aptly communicates the blog's agenda to be seen as a legitimate data analysis entity producing entertaining content that maintains its connection to pornography. Although I had been researching and exploring the Pornhub website for a considerable amount of time prior, both as a user and researcher, I had never come across this blog. The reason as to why is easily answered when one lands on Pornhub.com, whose homepage is like walking into a darkened room full of television sets flashing images of white bodies engaged in aggressive sex. The page is replete with clickable ads, recommended actors, videos, and categories (or porno sub-genres), featured videos, and trending videos generated through geographical algorithms, all of which compete insistently for the visitor's attention. The link to *Insights* is tucked away between legal disclaimers, offers to advertisers, and frequently-asked-questions. The *Insight* page's clean aesthetic directly contrasts with the main Pornhub webpage. The blog page is formatted in a standard way: the most recent posts show first in reverse chronological order, the page's background is white, the font a legible Helvetica, and it carefully separates SFW (safe-for-work) from NSFW (not-safe-for-work) content by organizing the latter in a sidebar that links to other more explicit pornographic sites.

I want to suggest that *Insights* is not prominently advertised because, for Pornhub, the blog serves a purpose distinct from the visual cacophony of porno imagery that the main page offers. Instead, *Insights* serves as an engine for viral content to serve mainstream media outlets and social media. *Insights*' careful segregation of SFW content from NSFW content means that while you may not be able to look at porn while you are at your job, you *can* look at data visualizations about porn. And, even though these maps and graphs might yet stir desirous feelings, if your boss catches you, infographics are much more easily explained than a video of a

⁴² Johanna Drucker, *Graphesis: Visual Forms of Knowledge Production* (Cambridge: Harvard University Press, 2014) V.

threesome. It is just a blog, after all. This careful distance between *Insights* and Pornhub is the first indicator that the blog has a complex and problematic relationship to sex and sexuality as it relates to pornography. How can a site claim safe-for-work status while still its content maintains such fundamental ties to pornography? I argue that the data visualizations found on the *Insights* blog are deeply pornographic, despite the blogs' attempts to present them as tame and disposable content. It is this paradoxical response to this blog, and particularly the images, that I choose to explore in the following chapter.

This chapter is about the image, or the way in which the charts, bar graphs, informatics, and maps displayed on the blog are reflective of what Orit Halpern has called, “modes of visibility and sensation” or, the means by which data visualizations are affective through aesthetic and sense-based means. Halpern’s text, *Beautiful Data: A History of Vision and Reason Since 1945*, studies the development of postwar architecture, design, and cybernetics in order to track a reformation of vision and cognition that resulted in new tactics for the, “management and orchestration of life.”⁴³ In short, she argues that the act of making data visible, and beautiful, produced a mode of reason that imagines vision as networked and autonomous. This means that, with the advent of cybernetics, data became transformed into images with the intention being that they be observed as “perfect” representations of that data.⁴⁴ This would result in not only changes to our perception of what constitutes information but would also erase the subjective and contextual contingencies that had formerly been association with the analysis of images. Halpern cites a series of moments in the history of technology and design as the source for our current epistemological and aesthetic relationship to data. I employ Halpern’s work here in order to frame my analysis of the *Insights* blog. The set of terms that Halpern establishes to describe visibility are key to my own examination of these data visualizations about pornography. Halpern is attempting to bridge the gap between the history of image production within the sciences and new media studies, which is precisely where I situate my analysis of the *Insights* blog. I aim to show how *Insights*’ data visualizations perpetuate the

⁴³ Orit Halpern, *Beautiful Data: A History of Vision and Reason Since 1945* (Durham and London: Duke University Press, 2014), 17.

⁴⁴ Halpern, *Beautiful Data*, 15-17.

relationship between vision and reason that Halpern has theorized. My intervention asserts that in a space that addresses pornography, sex, and sexuality, one can also witness and interrogate a convergence between data, desire, embodiment, and visibility. By focusing my efforts on the erotic and simultaneously banal object that is the *Insights* blog, I have the opportunity to observe how the same issues that Halpern wrestles with are replicated within a register of online cultural production that is deeply intertwined with the sensual and the affective. To get at these questions of the affective, I refer primarily to the work of Susanna Paasonen's *Carnal Resonance: Affect and Online Pornography*. While Halpern does conceive of vision as, "a physical sense, a set of practices and discourses, and a metaphor that translates between different mediums and different communication systems"⁴⁵ analyzing these multiplicities of visibility within the context of pornography requires a theoretical foundation capable of accounting for what Paasonen refers to as the "fleshy" and "sensuous" appeal of pornography.⁴⁶

Part I. Data Visualization: "They harvest data from counters which have been working overnight."⁴⁷

Numerous fields use data visualization. Examples range from a data map showing the types and rates of cancer across the United States, to advanced surgery techniques that minimize invasiveness by using pinhole cameras to guide physicians, to illustrations showing the undulations of a starfish. In the preface to his 1980 text *Visualization: The Second Computer Revolution*, author Richard Mark Friedhoff praises the power of visualization to unite disciplines stating that "algorithms developed in one field could be borrowed for use in others...it

⁴⁵ Halpern, *Beautiful Data* 21.

⁴⁶Susanna Paasonen, *Carnal Resonance: Affect and Online Pornography* (London and Cambridge: The MIT Press, 2011), 13.

⁴⁷ Bruno Latour, *Laboratory Life: The Construction of Scientific Facts*, (New Jersey: Princeton University Press, 1986) 16. This quote is in reference to the introduction to Latour's text wherein he includes the ethnographic notes that accompanied his anthropological investigation of laboratory sciences. One of the goals of *Laboratory Life* is to encourage the sciences to "know themselves" or interrogate the practices by which they produce knowledge. I reference this quote because this section of the thesis is meant to point out the ways in which data visualization refuses to know itself.

sometimes felt a bit odd traveling from hospitals to the motion picture special effects studios of Hollywood, to NASA, to architectural firms and pharmaceutical companies to talk about ‘visualization.’”⁴⁸ Friedhoff’s comments are evidence of the attitude that because computational visualization spans so many practices it is “revolutionary,” and is thus promoted based upon its ability to be highly interdisciplinary. Data analysts frequently invoke the rhetoric of the interdisciplinary while simultaneously failing to examine the production of images as a significant aspect of their work. They appropriate the tools and aesthetics of image production while executing a mode of objectivity associated with the sciences. This mode of scientific objectivity I am referring to can be defined as, “Objectivity preserves the artifact or variation that would have been erased in the name of truth; it scruples to filter out the noise that undermines certainty. To be objective is to aspire to knowledge that bears no trace of the knower—knowledge unmarked by prejudice or skill, fantasy or judgment, wishing or striving.”⁴⁹ Thus, it is a mode of knowledge production that evacuates the “prejudice or skill, fantasy or judgment, wishing or striving” that endows images with their significance.⁵⁰ While various fields have different reasons for utilizing data visualization, they are united by their inability to clearly reflect upon the ways these visualizations are aesthetic images in their own right and not just the objective reflection of data. The following examination analyzes that tension in more depth and approaches the concept of objectivity that both defines and limits data visualization.

Jarke J. van Wijk's article, "The Value of Visualization" offers a good starting place from which to begin to understand the tension between empiricism and image production within data visualization.⁵¹ Van Wijk discusses computational visualization as a “maturing” field and offers,

⁴⁸ Richard Mark Friedhoff and William Benzon, *Visualization: the Second Computer Revolution* (New York: Harry N. Abrams, Inc., 1989), 11.

⁴⁹ Lorraine Daston and Peter Galison, *Objectivity*, (New York: Zone Books, 2007) 17. Daston and Galison associated this brand of scientific objectivism, or mechanical objectivism, as originating in the mid-nineteenth century. Their text studies the ways in which the history of image production collided with this form of objectivity.

⁵⁰ Ibid.

⁵¹ Van Wijk is a Dutch mathematician and computer scientist based at the Eindhoven University of Technology who has written and spoken extensively about visualization. This

"two alternative views on visualization" visualization as an art, and as a scientific discipline.⁵² Van Wijk defines the artistic aspects of visualization by imagining visualists as puzzle solvers who are tasked with creating "new, simple, and elegant solutions which provide us all with intellectual and aesthetic satisfaction."⁵³ However, he goes on to say that art should only ever be used as a secondary tool in convincing observers of the results of the data. To punctuate this argument Van Wijk includes a schematic showing art as a component with a singular, exterior relationship to visualization (See fig. 2). The "real world" produces the science flowing into visualization and in turn it produces the technology flowing back into the world. Art, however, is in its own feedback loop that only contributes to the real world through the mediation of visualization. In his discussion of data visualization as a scientific discipline, van Wijk insists that while knowledge of perception might improve the practice of visualization, it does not contribute to the most important value of data visualization: the quantitative. He continues, "A science of visualization should be empirical, in the sense that concrete measurements of the phenomena studied are done."⁵⁴ Van Wijk is referring to the use of the algorithms that provide a measure of consistency to the overall practice—a consistency that edges visualization toward the realm of the empirical sciences. What I want to underline in the separation between science and art that van Wijk makes is not so much that he brushes aside the process of aesthetic choices, but rather, that visualization would only have value if it were *fully* of the empirical sciences. Furthermore, despite data visualization's reliance on the productions of images, van Wijk again dismisses questions of perception and aesthetics, going so far as to suggest (somewhat ironically with the use of an image) that the principles of artistic design are in a co-constitutive relationship with visualization not derived from, or present within the world.

In the smaller section of this paper which details data visualization as art, van Wijk cites Edward R. Tufte's, whom he points out as a scholar who belongs to the design-minded field of

paper was presented at the Institute of Electrical and Electronic Engineers conference in 2005 (IEEE).

⁵² Jark J. van Wijk, "The Value of Visualization," *VIS 05*. IEEE Visualization (2005): 73.

⁵³ *Ibid.*, 79.

⁵⁴ *Ibid.*

data visualization. He writes, “Tufte gives many useful guidelines and recommendations in his book, however many of these are not quantitative...”⁵⁵ While Tufte undoubtedly figures more prominently within design than computer science, arguing that illustration is as much data visualization as is computational analysis, I would classify both Tufte and van Wijk as operating on a spectrum of practitioners who think of techniques of image production as secondary to quantitative research results. Admittedly, Tufte writes primarily about the principles of design that play a role in information graphics but he insists, “graphical excellence requires telling the truth about the data,” and it is in this conception of “truth” that van Wijk and Tufte intersect.⁵⁶ From the outset of his thinking in *The Visual Display of Quantitative Information*, Tufte maintains design is only an attribute to be used in combination with thorough mathematical work. In his epilogue he re-asserts this premise, writing, “what is to be sought in designs for the display of information is the clear portrayal of complexity...the task of the designer is to give visual access to the subtle and the difficult—that is, the revelation of the complex.”⁵⁷ Hence, visualization is about sharing knowledge through a visual object, and further, it has the power to reveal abstract information that would otherwise remain veiled, the transformation of invisible to visible. The way in which Tufte describes this conversion from data to image, and subsequently revelation, implies that the image is a placeholder for information and that the interpretation of that image is somehow an innate process to those observing it.

The tendency amongst data visualists to treat the image in this way, as the placeholder for data, has its roots in the history of computational culture. In Halpern’s historical analysis of beautiful data she writes that cyberneticists imagined image production devices as recording apparatuses such as photography and film. These ideal recording mechanisms inspired what would become computer interfaces, and she argues that result was that “[the image] was only a medium of representation, not inscription, it could not respond, react or change within the temporal structures of real time and prediction. In doing so, these mediums were no longer the

⁵⁵ Van Wijk., 80

⁵⁶ Edward R. Tufte, *The Visual Display of Quantitative Information: Second Edition* (Cheshire: Graphics Press, 2001), 51.

⁵⁷ *Ibid.*, 191

site of training a perceptual field that was now lent to autonomy.”⁵⁸ There is an expanse of developments to be accounted for in the gap between cybernetic theory and data visualization, but I contend that this framing of images as a placeholder for information extends into the modern computational culture and is apparent in Tufte’s definition of visualization. From the point of view of a scholar who studies images, formats such as photography and film are extremely vulnerable to assemblages of temporality, context, and perception. Thus, it is vital to take seriously Tufte’s belief that a visual or image could or should be the epitome of clarity and verisimilitude.

Tufte’s description of data visualization is also preoccupied with what he terms “graphical integrity” or, the prevention of manipulating a data set to produce what he calls “lying graphics.” Tufte’s concern is that “visual and statistical tricks” could produce panic and/or easily manipulate the opinion of the viewer, insinuating a direct link between data visualization and emotional affect. He writes, “When a chart on television lies, it lies tens of millions of times over...the lies are told about the major issues of public policy.”⁵⁹ The stakes of visualization are thus presented on a broad scale, imagining masses of people who are easily tricked through the observation of a false image. This implies not only that data visualization can have dire consequences, but also that those observing the images are incapable of critical thought. In response to these dangers, Tufte suggests ways in which design practices can achieve transparency. As an example of a visualization that lacks transparency, consider a graph that shows national debt. If the designer of the graph chooses to show spending on a vertical scale using nominal millions, it will almost always appear that spending is skyrocketing. This is because the viewer’s eye is drawn in an upward motion, and the line indicating spending appears to suggest a rate not necessarily supported by the data it is ostensibly based upon. An alternate method would be a horizontal scale using real millions where the same data produces a visual conveying a gradual increase in spending. The eye is thus led more correctly to convey more accurate information. Tufte also suggests that overly ornate or decorative visualizations detract from the information they convey. Despite discussing design principles based upon perception,

⁵⁸ Halpern, 71.

⁵⁹ Tufte, *The Visual Display of Quantitative Information*, 28.

Tufte never contextualizes or defines this mode of perception that he is suggesting is easily subject to manipulation.⁶⁰ He only briefly admits that perception is a difficult quality to measure, writing:

Particularly disheartening is the securely established finding that the reported perception of something as clear and simple as line length depends upon the context and what other people have already said about the lines [...] but what is a poor designer to do? A different graphic for each perceiver in each context? Or designs that correct for the visual transformations of the average perceiver participating in the average physiological experiment?⁶¹

Tufte frames perception as an unreachable benchmark, almost as if considering its implications would dismantle data visualization entirely. But how do we locate this “average person” and “average experiment” without treading further into questions of perception? Both van Wijk and Tufte frame the aesthetic choices of data visualization as the extension of the compiled data and concede that the images produced are not images at all but “perfect representations” of data. However, if a specific visualization fails, and this is particularly true for Tufte, the burden of that failure is suddenly attributed to the aesthetic qualities of the visualization. Despite claims to their methodological differences it should be clear that both scholars are erratic in their treatment of the image, they embody the inconsistent rhetoric present throughout all scholarship on data visualization. It is a rhetoric that insists upon its empirical foundation and identity and yet still clearly relies upon a tradition of image production, and one that is arguably wily, contingent, semiotic, and vulnerable. There is an obvious slippage between submitting image production into the position of representation and vacancy while also implementing those techniques of image production that define it as reactive and inscriptive.

Alexander Galloway confronts the contradiction between the rhetoric of visualization and its connection to semiotics in one chapter of his *The Interface Effect*. Galloway discusses a data visualization that depicts the American military strategy in Afghanistan and asks whether or not the image is, “a work of aesthetics.”⁶² The challenge in answering this question, according to

⁶⁰ Tufte, *The Visual Display of Quantitative Information*, 65-77.

⁶¹ *Ibid.*, 56.

Galloway, is clarifying which parts of the visualization are being measured for their aesthetic value: the algorithm or the data? Galloway goes on to argue that answering this query presents the opportunity to understand how data visualization accomplishes transparency or concealment, and thus, what is possible to represent through informatics. Galloway is interested in probing the distinctions between data, information, and algorithms in order to understand how informatics does or does not establish a politics of representability. Accordingly he presents two theses: first, that “data have no necessary visual forms,”⁶³ meaning that data are defined by their existence in numerical form and cease to be data once they exceed that plane. Therefore any leap from “pure data” to a visual requires “an artificial set of translation rules that convert abstract number to semiotic sign.”⁶⁴ As a result of this, the relationship between the data and the ensuing visual is not an objective one, as there is no obvious translation for a data set. Similarly, Galloway argues the algorithm has a singularity resulting in, “a word cloud equals a flow chart equals a map of the internet. All operate within a single uniform set of aesthetic codes. The size of this aesthetic space is one.”⁶⁵ For Galloway the total absence of an aesthetic means the absence of a logic of representation. He concludes that this issue of unrepresentability is specific to new media because networks, information, data, and algorithms all conceal their mode of production in a way that previous forms of representation have not.⁶⁶

Galloway’s argument is an incisive tool for understanding the dysfunctional relationship that data visualization has to objectivity and beauty. Whereas van Wijk or Tufte would argue that there is a one-to-one relationship between data and the ensuing visual, Galloway shows that there is not, nor could there ever be, an objective correlation between these two objects. Furthermore, the absence of a direct route between data and visual creates a mode of aesthetics that fails to

⁶² Alexander Galloway, *The Interface Effect* (Cambridge: Polity Press, 2012), 80.

⁶³ *Ibid.*, 83.

⁶⁴ *Ibid.*

⁶⁵ *Ibid.*, 85

⁶⁶ It is worth mentioning that *Interface Effect* is the last in series of texts wherein Galloway fleshes out the protological, or protocol. The term Protocol, for Galloway, is a third wave of history wherein computer technologies have resulted in a distributed form of control.

accomplish representation with political value. For Galloway, this issue of representation is key in analyzing informatics, along with the entire subject of the interface. He goes on to frame visualization and the algorithm as a void or a space of oneness—a lack of possibility. I would add that this arbitrary relationship between the data and image not only results in a failure at representation but that it also creates for the possibility of a myriad of potential interpretations of a data visualization, as is the case with the *Insights* blog. The *Insights* visualizations absolutely fail to communicate a politically progressive or complex representation of any kind and yet they invoke an array of meaning laden terms and images that have to do with sex and sexuality. While I draw from Galloway's method of focusing on the topic of representation, I also want to develop a critical reading strategy specific to the Pornhub *Insights* blog. I argue that the politically disenfranchised and yet erotic nature of the *Insights* visualizations call for an interpretive lens that is capable of accounting for the sensual experience that is this blog. I am curious as to what happens when we view the *Insights* blog from the perspective of the arguments and tensions above? What do we learn about *Insights* as a result of understanding the rhetoric surrounding data visualization, and how do our perspectives on data visualization evolve when the practice is thrown into a pornographic environment?

Part II. Explaining *Insights*

In order to more fully comprehend *Insights*, I identified a series of categories under which a majority of the blog posts seem to fall. My description of these categories is in order to offer readers unfamiliar with the blog a general sense of what it includes. I term the first category of post as the international post, which relays the statistics of Pornhub use from a particular country. This generally includes graphs of the top search term(s) by region, charts showing the amount of time that a country's citizens visit the website, and the average number of pages that they visit. Occasionally the post will also provide a word cloud reiterating the most common search terms.⁶⁷ Visuals are the centerpiece in each blog post, accompanied by brief write-ups making humorous links between the history, or character of the country and its relationship to

⁶⁷ A word cloud is an image that displays the most frequently used, or in this case searched for, terms within a text or theme. The size of the word in relation to those words around it indicates its popularity or frequency.

Pornhub.⁶⁸ The next category is the current events post; tied either to a news event or the holidays. Typically, this includes a chart of how the website traffic has changed in correlation to the event in question. One example is a post that analyzed the web traffic in relationship to the capture and kill of Osama Bin Laden.⁶⁹ Another is a map showing the changes in viewership during the government shutdown in the United States during 2013.⁷⁰ One example of a holiday post was the release of a table detailing what people searched for on St. Patrick's Day, 2014. The next category, more frequent during the early days of the blog, is the survey post, where *Insights* staff or "*Insights* statisticians," as they call themselves, survey registered users about a particular question with a set of answers. An early example of such a question was, "Which celebrity do you find the most ugly?"⁷¹ Finally there are posts that relate to more general themes such as, "What Women Are Searching For," a post about what and how women are looking for pornography across the globe.⁷² I want to stress that, while one of the main themes of the posts is the focus on the pornographic practices within specific countries, the majority of *Insights* content is American-centric. All political posts are related to American politics, the events and holidays posts to relevant American holidays. Interestingly, according to Alexa ratings users based in the United States account for only twenty-eight percent of overall site traffic, and while that is a

⁶⁸ "Australia & Pornhub Statistics," *Pornhub Insights* (blog), November 13, 2013, <http://www.pornhub.com/insights/austrias-top-searches-on-pornhub-and-other-interesting-facts>. In this post about Australia the blogger makes a joke that one of the most used search terms, "outdoor" must be related to the fact that a majority of Australia is uninhabitable vegetative areas.

⁶⁹ "Pornhub Traffic Trends Driven by Worldwide Events," *Pornhub Insights*, last modified November 22, 2013, <http://www.pornhub.com/insights/pornhub-traffic-trends-world-events>.

⁷⁰ "Government Shuts Down, Pornhub Views Go Up," *Pornhub Insights*, last modified October 8, 2013, <http://www.pornhub.com/insights/?s=government+shutdown>.

⁷¹ "What Turns You On, and Off Poll Results," *Pornhub Insights*, last modified October 14, 2013, <http://www.pornhub.com/insights/what-turns-you-on-and-off-poll-results>.

⁷² "Women's Favourite Searches Worldwide," *Pornhub Insights*, last modified March 27, 2016, <http://www.pornhub.com/insights/womens-favorite-searches-worldwide>.

majority Pornhub also has significant viewership in parts of the UK and Japan.⁷³ And, as mentioned in the introduction, it is an IT company with offices around the world. Thus, it is worth considering why they might want to frame themselves as such an American-centric enterprise. The posts circulate the web beyond the *Insights* page in a number of ways. Many are produced in partnership with other websites such as *Huffpost* and *Vocativ*. Those companies promote the posts on their website and through their social media presence, linking users back to the *Insights* page. Pornhub also promotes the posts through their own social media presence on sites like Twitter. Finally, if a post is popular enough it will get picked up by various pop news organizations and begin trending on Facebook.

Part III. Experiencing *Insights*: “Very many different things”⁷⁴

In her yonical 1989 text, *Hardcore*, Linda Williams argues that studying pornography shatters the objective distance that researchers often consider necessary to maintain from their object. She explains that studying pornography revealed to her the way in which a researcher’s physical reaction is always “embedded” in whatever analysis they perform. In reference to this revelation she writes:

I would ask instead what the genre does, how it does, and I would remove myself from pro or con arguments as much as possible. Yet this objective, distanced stance of the reasoned observer, neither partisan nor condemner, placed me in a position of indifference, as if above the genre. Was it right, or even useful to the

⁷³ “pornhub.com Traffic Statistics, *Alexa Ratings*, Last modified April 24, 2017, <http://www.alexa.com/siteinfo/pornhub.com>. As of June 19th, 2017 the U.S. accounted for 29.6% of all traffic, Japan coming in second at 6.2%, and India Germany tied for third place at 5.6%. Alexa is an Amazon owned company that provides analytics tools to customers. They utilize a global traffic panel that monitors the habits of millions of Internet users and then produces a ranking of websites based on that information. The page for Pornhub also displays its global ranking within the U.S., brief audience demographics, the daily page views per visitor, the average amount of time spent on the site by users, and the statistics for the upstream website. Just as an aside, Pornhub usually hovers around the 42nd most popular website, globally, placing it amongst [ebay.com](http://www.ebay.com), [google.es](http://www.google.es), and [bing.com](http://www.bing.com).

⁷⁴ Linda Williams, *Hardcore: Power, Pleasure, and the “Frenzy of the Visible,”* (Berkeley: University of California Press, 1989), X.

analysis, to assume to be indifferent to, or unmoved by, these texts? Or, if I was moved, as I was sometimes to either arousal or offence, what was the proper place of this reaction in criticism?⁷⁵

Williams draws attention to the difficulty academic researchers have in understanding the extent to which interactions with an object of study are subjective. For Williams, cultivating an objective stance to pornography was essential in developing a discourse on pornography capable of acknowledging its role in oppression while allowing for it to be defined as a genre. However, Williams is also pointing to the way in which her mode of objectivity had the unintended consequence of evacuating essential questions of the body and embodiment.⁷⁶ In my engagement with the *Insights* visualizations, I have come up against similar scholarly hurdles, although perhaps eliciting a slightly different set of reactions to Williams's. Whereas her acknowledgement of this physical response led her writing to become less neutral and more "prurient" in its investigation of the controversial topic of mainstream pornography, my acknowledgment of my physical response to *Insights* piqued my interest in the affective qualities of the blog in particular, and of pornography in general. With this in mind, the following descriptions of *Insights* visualizations are intended to iterate both my position vis-à-vis the text while at once revealing my scholar's quandary of discussing interactions with this blog. An attempt to conduct analysis of visuals such as those found on *Insights* can quickly snowball into a type of reception study that I am not interested in producing. In particular, I want to avoid utilizing any terminology or methodology that reiterates representational categories or strategies that I find problematic. For example, in the work below I analyze how an *Insights* post produces an account of female desire. However, in arguing that the post precludes certain accounts of sex and desire, or reiterates damaging normative standards for female sexuality I also hazard having to offer a counter narrative of what women *actually* experience. But in doing so, I risk engaging in identical acts of foreclosure to those that I am problematizing. Furthermore, I frame the data visualizations as textual entities, analyzing the narrative that they promote regarding sexuality.

⁷⁵ Ibid., x-xi.

⁷⁶ I differentiate the "body" from "embodiment" in keeping with N. Katherine Hayles theorizing on the topic. I go into more detail on this in the chapter two.

However, this is not done in order to suggest that there is “real” account of female desire provided by them, but rather as a means to reframe the visualizations as visual objects that are open to interpretation. What this amounts to in terms of methodology, as I wrote in the introduction, is that my descriptions of the blog posts have an exploratory and subjective tone, perhaps more so than is often typical in academic writing. Last, in the first chapter of *Hardcore*, Williams discusses the way in which the anti-pornography and anti-censorship represent two different approaches to female desire. In response to this, Williams says, “One thing is clear: very many different things, very imperfectly understood, turn both women and men on.”⁷⁷ This acknowledgment of “very many different things” is the methodological motto for my approach to this thesis, in the sense that I intend to engage with *Insights* in a way that keeps the multiplicities of desire and subjectivity at the forefront without reproducing or making conjectures that will undoubtedly fail to represent the diversity of desire that I argue for.

One of the first blog posts that merits closer examination is entitled “Women’s Favorite Searches Worldwide,” published on March 27, 2016.⁷⁸ The post is noteworthy for the amount and genre of infographics that it employs, in addition to the high number of comments from registered users found in the comments section. The post was released in celebration of National Women’s Day and reports that of the over sixty million visitors that Pornhub receives daily, twenty-four percent of these are women. The declared “goal” of the post is as follows, “For Women’s Day, we decided to leave men out of the picture, and look at how women around the world differ from each other.”⁷⁹ The post includes eight visualizations, most of which are maps. These include: a world map composed of the top search terms globally; close-ups of that map to show a regional breakdown in Canada, the U.K., Asia, and Europe; a map of the United States divided up by top search terms; an infographic comparing top rated search term in certain countries versus the rest of the world; and the average amount of time women spend on the website worldwide. The maps match a color to each popular search term within the U.S. and the world. The search term “teen” is represented in royal blue while “big dick” is represented in teal

⁷⁷ Williams, *Hardcore*, 27.

⁷⁸ “Women’s Favourite Searches Worldwide,” *Pornhub Insights*, last modified March 27, 2016, <http://www.pornhub.com/insights/womens-favorite-searches-worldwide>.

⁷⁹ *Ibid.*

and “anal” in baby blue; “ebony” in ketchup red; “hentai” in a banana yellow; “lesbian” in purple; “arab” in lilac; “asian,” also in lilac; “bondage” in dark brown; “mature” in salmon pink; “threesome” also in purple; and “MILF” in mauve (See fig. 3 and 4). The text on the image is an easy to read, boldface Helvetica. The text is in a thick and formatted horizontally or diagonally across a small country or a number of states. The language of the posts is simple and descriptive, pointing out various details of the map such as, “Women in the Czech Republic prefer the softer touch of “female friendly” porn. Serbia and Macedonia both enjoy “mature” porn, while women in Russia, Ukraine and Belarus like it “anal”. We can see Kazakhstan’s preferred “big dick” coming in just below that.” Comments from registered Pornhub users range from “WOW very nice share information,” to “How do you know it’s actually women viewing these categories???” And, “this is by far the most interesting analytics I have ever cum by...did anyone get the naughty words I just used.”⁸⁰

When I first encountered this blog post the series of maps created what seemed to be a visual flipbook effect. At first, when one looks at the world map, North and a majority of South America are blanketed in a bright purple with the search term “lesbian” running diagonally through both continents. But, as you scroll down and the map of the U.S. zooms out, what was once a deep purple mass transforms into confetti of colors and search terms. Looking at the maps feels as though one is viewing a world from above that is full of women experiencing desire for lesbian pornography. But, upon moving in closer these same women suddenly appear to actually prefer “teen” or “anal,” instead. This change in vantage point in combination with the image of the globe parsed in this way makes me imagine a simultaneous configuration of women watching mainstream pornography; a chaotic earth populated entirely by women either watching porn or engaging in sexual acts. And from different vantage these familiar geographic shapes are correlated with a change in desire. I always wonder if these visualizations are the epitome of the “lying graphics” that Tufte warns about or, if they were exactly as he would have them? Despite the fact that women are reported to make up less than a quarter of viewership on the website, *Insights* has offered us a world full of porn-watching women. They are images that move me to awe, laughter, and annoyance.

⁸⁰ Ibid.

Another post of interest is, “Pornhub Pizza Delivery: Always Hot and Fresh” published on October 26th, 2016.⁸¹ This post takes what it considers to be a time-honored pornographic trope—the pizza delivery boy—and attempts to utilize Pornhub data in order to evaluate the popularity of this cliché with Pornhub visitors. The post includes seven visualizations: a graph of “Popular Pizza Porn Searches;” two graphs that chart the change in popularity of ‘pizza’ and “pizza girl” searches from 2013 to 2016; a graph of “pizza Pornstar” searches; a graph showing popularity by age and the percentages of men that make pizza related searches; a map of pizza search popularity state-by-state within the United States; and last, a world map comparing the popularity of pizza searches including a list of countries that are “Pizza Loving” and a list of countries with “Smaller Appetites.” Each of the visualizations is colour-coded by various shades of orange that seem to compliment the colors of a pizza (See fig. 5 and 6).

Again, I was struck by the oddity of looking at a visual representation of the world divided by pizza and porn. In this instance, instead of an earth populated by women watching porn, all people are measured in terms of their distance to watching and searching for “big sausage pizza.” In every state of America, in every part of the world, swaths of people seem to be masturbating to porn that starts with someone delivering them an Italian-American staple. Below, two charts with Y-axes (that I don’t understand) show searches for pizza spiking in the year 2016. The Pornhub statisticians attribute it to the release of a pizza ad done by a major studio, but I cannot help but think of the economy and the embrace of cheap foods by millennials, the viral fame of pizza rat, or the rising status of pizza as a symbol for being a hipster-white-person and a chill girl that can hang. Then, there is a bar graph that shows the popularity of pizza porn by age. The graph has an orange silhouette of a severed male head with a plus twenty-three next to it—men are looking for pizza porn more often. And, it seems that the older you become or happen to be, the less the combination of pizza and sex appeals to you.

On October 14th, 2016, following the lead-up to Halloween, Pornhub published a post called “Clowning Around,” which included three data visualizations: a chart showing the growth in clown searches from September 15, 2016 to October 11, 2016; a graph of popular clown searches that also includes the statistic, “Women are 33% more likely to search for clowns than

⁸¹ “PornHub Pizza Delivery: Always Hot and Fresh,” *Pornhub Insights*, last modified October 25th, 2016, <https://www.pornhub.com/insights/pizza-porn>.

men;” and a graph of the terms searched for in combination with clowns (See fig. 7). The written portion of the post both makes the argument that more people make “creepy” searches around Halloween and that, “we’ve discovered many times before that increased media coverage will often result in more searches on Pornhub.” A reference to the clown-sighting phenomenon that was particularly prevalent within the U.S. during 2016.⁸²

While all the posts are humorous on some level, this post in particular provokes laughter. A bright colored chart listing the most popular clown search terms shows: “clown porn,” “clown girl,” “clown gangbang,” “clowns,” “clown sex,” “crazy clown,” “sexy clown,” “killer clown,” “clown orgy,” “midget clown,” “clown circus,” “lesbian clown,” “birthday clown,” “clown fart,” and “clown feet.” Next to this collection of search terms, in a bold thick font reads, “Women are 33% more likely to search for clowns than men.” Men might always want pizza while, as soon as the first signs of autumn appear, women start lusting after images of clown gangbangs. *Insights* statisticians explain they wanted to clarify whether or not people look for clowns out of curiosity, or if this is indeed a growing fetish, so they produced an additional chart showing which search terms often proceeded clown; the top two were “Circus” and “Jugalette.” The team of statisticians made no conclusions based upon this information.

Part IV. Analyzing Insights: “Porn is both material and semiotic”⁸³

Taking these subjective reflections as a starting point, I offer a reading of these porny visualizations. I propose an analytical reading strategy for the *Insights* visualization that accomplishes three tasks. First, it is necessary to acknowledge the data comprising these visualizations is pornographic because it is *rooted* in the tactics and architecture of a pornographic enterprise. Next, it is necessary to view these visualizations as “built worlds” and

⁸² Matthew Teague, “Clown sightings: the day the craze began,” *The Guardian*, October 8th, 2016, <https://www.theguardian.com/culture/2016/oct/05/clown-sightings-south-carolina-alabama>. This post was also released around the time that there was an “epidemic” of clown sightings in the United States.

⁸³ Paasonen, *Carnal Resonance*, 2.

not as depictions of sexual activity as they exist in their full complexity. Finally, I propose an analysis of not only the embodied experiences that motivate these data visualizations but also those that arise from interacting with the visualizations. To expand upon what I mean by “built worlds” I begin with Halpern’s argument about how historical forces affect the ways we observe data visualizations,

Visualization invokes a specific technical and temporal condition and encourages particular practices of measurement, design, and experimentation. Visualization, like the term "data," looms, therefore as a never fully defined verb/noun that straddles the actual practices of depicting and modeling the world, the images that are used, and the form of attention by which users are trained to use interfaces and engage with the screen [...] Things that appear strange, ugly, or invisible in one era are not so at other times, and our forms of attention, distraction, beauty, disgust, empathy, are all physically, and psychically real and simultaneously historically modulated.⁸⁴

Halpern argues that visualizations are legible based upon the signs and symbols that they derive from their historical and cultural contexts. Whereas data analysts would frame visualization as a positivist practice, or as one that only creates more accurate and transparent images as time progresses, Halpern is suggesting the transparency of these images is, in fact, based upon the context from which they are being perceived. This argument applies to the *Insights* visualizations in a number of key ways. First, throughout this chapter I have pointed to the way in which data visualization relies upon a positivist objectivist approach. Yet, if we can accept that data visualization relies upon contextually derived aesthetic and semiotic tools to communicate as much as it does those of data analysis then one can problematize this objectivity and begin to fill in how the *Insights* visualizations fulfill the verb/noun role that Halpern suggests. Once we question the message that visualization is truthful and information driven portrayal of physical structures, then we can begin to question what type of world the *Insights* visualizations are attempting to construct versus accepting them as representations of the world. Or rather, the visualizations should be thought of as in the “noun” position for their use of words, images, concepts, and events that hold relevance within with the world that they claim to represent, however, they fulfill the “verb” position in that they are filtering this representation

⁸⁴ Halpern, *Beautiful Data*, 22-23.

through a pornographic funnel. A brief example of this is an interactive world map released in 2016 showing the trends during news events. Most notable is the supposed correlation between the capture and kill of Osama Bin Laden and an increase in traffic in the United States, the “Pornhub statisticians” remark, “When Osama Bin Laden was killed, 7% of Americans pulled up their pants as Osama got caught with his down!”⁸⁵ In this case, Pornhub is representing the politically saturated event of the assassination of Bin Laden through a world map where Americans seemed to have experienced an increased drive to masturbate. The visual of the United States engaging with pornography in response to this political event is possible to comprehend based upon its reference to the physical world, its “noun” capacity. The suggestion that these two activities are correlated or that the knee-jerk response to such an event is to get online and watch porn, is representative of *Insights* acting as “verb.” It has the effect of weaving the act of watching pornography into an everyday fabric, and using a tool that postures as an objective visual representation of the world to do so. Granted, the visualizations are a stunt, but it is hardly insignificant in that Pornhub is using heavy-handed ideological and epistemological tools to endear itself to a bigger audience.

The *Insights* blog is more representative of the type of “proof” that one would associate with hardcore porn. In *Hardcore*, Williams defines the “money shot” as the ultimate will-to-knowledge that cinema has sought since its inception. The “money shot” is the visual evidence of an involuntary bodily truth caught onscreen.⁸⁶ She writes, “It is the obsessive attempt of a phallic economy to represent and ‘fix’ the exact moment of the sexual act’s involuntary convulsion of pleasure. The money shot utterly fails to represent the satisfaction of desire as involving a desire for, or of the other.”⁸⁷ The money shot is the clearest representation of the “phallic economy” failing to represent the difference that is critical to the representation of, and experience of, female pleasure. Moreover it is proof of the phallic economy’s blindness to female pleasure.

⁸⁵ “Pornhub’s 2016 Year in Review,” *Pornhub Insights* (blog), January 4, 2017, <https://www.pornhub.com/insights/2016-year-in-review>.

⁸⁶ William, *Hardcore*, 101. The money shot refers to the scene in a pornographic film where we witness a man ejaculating. It is particularly associated with the advent of hardcore porn, as previous forms of pornography did not include this moment.

⁸⁷ William, *Hardcore*, 112.

Despite the fact that “Women’s Favorite Searches Worldwide” postures itself as a data based analysis of how women are engaging with pornography worldwide, it is just another money shot. To envision women of the world as watching and masturbating to anal and lesbian porn is an erasure of the complexities with which female or female-identified pleasure manifests itself. These visualizations are the perpetuation of a mainstream and generic framework within which the phallic economy relegates female desire. The visualization and imagination of women desiring lesbians in this way is equivalent to the shot of a lone penis ejaculating without care for the “other.”

Despite the fact that they are not as explicitly linked into questions of gender, sexuality, and desire, the blog posts mentioned above (“Clowning Around” and “Pizza Porn”) are a similar erasure of complexity and context. This has partially to do with the obviousness of the information they display. If one has exposure to the Internet and social media, it is a foregone conclusion that young men would be the largest demographic interested in pizza pornography. What precedes their focus on pizza and pornography is not just the pornographic trope of the delivery boy but also the obsession in our current moment with pizza as a symbol. Similarly, it does not feel particularly insightful to argue that users would increasingly search for Halloween related pornography around the time of Halloween. Yet, these blog posts still parade as a display of knowledge made possible and visible through the combined efforts of data visualization and Pornhub. The blog borrows upon the objective credibility of data visualization and big data; offering popular and baseless images with “data based insights” that are often preordained by cultural logics based in stereotypes about sexuality, gender, nationality, and sex. *Insights’* ability to make visual claims in such a way, wherein the relationship between the data and the visual is arbitrary, is symptomatic of what Halpern defines as a commodification and/or organization of the senses. Furthermore, this commodification results in the utilization of a calculative rationality to understand population and territory.⁸⁸

If visualization is an enterprise shaped by cultural, historical, and physical circumstance then one could also engage with the questions of embodied experience. By this I mean, while the visualizations are a semiotics that reifies a normative sexuality, their connection to pornography demands a consideration of the way in which the visualizations connect to embodiment. This,

⁸⁸ Halpern, *Beautiful Data*, 24-26.

quite simply, is based upon the fact that consuming pornography is innately an embodied experience. Carol Clover and Linda Williams famously defined pornography as a “body genre,” wherein the form and function of the genre is defined by the visual display of bodily pleasure with the expectation that the viewer will mimic that pleasure.⁸⁹ To relate this back to online pornography, I often imagine the following: I picture a woman going online and searching for pornography. Perhaps she is sitting in a chair, or lying in bed with her wrist at an awkward angle. As she searches through the online pornographic offerings she expresses a range of bodily sensations: disgust, laughter, and eventually, pleasure. Each embodied response produces some kind of physical and material reaction. Pornhub’s *Insights* blog captures these processes and sifts this contingent embodied output into data that is converted into a visual object; an object that inevitably fails to replicate the embodied activity that propels its existence. How then do we rescue the embodied experience in the visualization examples above? I suggest this can be accomplished through revealing and reconnecting the *Insights* posts to pornography.

My persistent physical reaction to the *Insights* blog is laughter. The blog may elicit feelings of disgust or annoyance, but its general strategy relies on comedy to both communicate and distract the viewer from its problematic claims about sexuality. To interrogate the potential embodied responses a user may have with the blog I implement terminology from Susanna Paasonen’s, *Carnal Resonance*. This work is a landmark text in pornography studies because of its use of affect theory in the analysis of mainstream online porn. Paasonen writes: “The fleshy aesthetic of porn is combined with and supported by a tendency toward hyperbole—exaggeration—in ways of conveying sexual arousal, pleasure, and embodied differences.” And she goes on to say, “These investigations are intimately attached to considerations of methodology (the ways of theorizing and analyzing online porn and affect), questions of materiality (of bodies, technologies, and inscriptions), and the development and range of online

⁸⁹ Linda Williams, “Film Bodies: Gender, Genre, and Excess,” *Film Quarterly*, Vol. 44, No. 4 (Summer, 1991): 4, accessed June 1, 2017, <http://www.jstor.org/stable/1212758>
It is worth noting that Williams also defines pornography alongside horror and melodrama, or those genres that she defines as having to do with the female body in particular. While, I am not as interested in utilizing Williams’ feminist argument, here, I find the concept of an excessive body genre to be worth remarking upon. Particularly this sense that a genre could be considered as “low” because of what it does to the body.

pornography.”⁹⁰ This statement in many ways outlines the tensions that I indicated above—tensions that arise when viewing a pornographic research object as both a textual entity and an expression of embodied experience. Paasonen is critical of the argument that viewing an object as affective prevents a researcher from acknowledging its representational or semiotic properties. Instead, she argues that pornography *demand*s a mode of analysis that can move between the examination of aesthetics, the recognition of affective experience, and the materiality of bodies.

I am particularly interested in the framework that Paasonen develops in opposition to the theory of gaze, which she calls: “grab, resonance, and rhythm.”⁹¹ Paasonen argues that employing theories associated with the visuality of moving image do not suffice in studies of online pornography nor attend to its technological complexities. Instead, she asserts that must we conceive of online pornography as “grabbing” its viewers, or providing a resonance that either compels the viewer to engage harder, click further, or move away. “It is not about depictions of affect finding their expression on and in bodies on the screen inasmuch as it is about carnal address overriding the dictates of narrative, grabbing the viewers, and disturbing their sense of mastery.” Thus “grab,” “resonance,” and “rhythm” are processes by which a viewer’s body is moved, not through identification but through affective experiences that can vary in intensity and focus. “Grab” is this feature of feeling pulled in or away. “Rhythm” is the feel of the narrative flow of pornography. It does not so much involve watching the characters as it does an internal sense of where and how the porno is moving, inviting that same experience of either being drawn in or repulsed. “Resonance” is the intimate act of being moved by what is onscreen. It is not based on comparing oneself to the character, but rather, being moved by an engagement with pornography.

I argue the *Insights* visualizations are affective in a similar way. They move the viewer towards an identification that is not necessarily rooted in a visual referent, but more so in a

⁹⁰ Paasonen, *Carnal Resonance*, 3.

⁹¹ Paasonen is using the term “gaze” in reference to a period of film theory that revolved around the concept of the “male gaze.” A period of film theory that was marked by its relationship to psychoanalysis and what psychoanalytic theories offered to questions of vision and phallogentrism within film. Laura Mulvey’s infamous essay, “Visual Pleasure and Narrative Cinema” (1975) is often cited as the starter gun for these debates within film theory, although it should be mentioned that psychoanalysis, since its inception, has contained female practitioners asking these same sets of questions.

movement of the body. When I laugh at a post on *Insights* it is an embodied experience based upon a complex resonance. I experience an intensity based upon the simultaneity of interest and repulsion. The image draws me in with semiotic signifiers in combination with sexual and pornographic signifiers. The comic graphic of a mushroom in combination with the term “gangbang” makes me look closer while I am drawn towards imagining the narrative tropes of “gangbang” and what that might involve. I move away at the mental image of a lone man watching, I move towards the thought of millions of men watching and masturbating, and I laugh and am annoyed at the thought of millions of men watching. This example is offered in order to suggest the existence of a potential for readers of *Insights* to have an intense and resonating experience with the blog. Again, this is important to suggest because it serves as a means to assert the embodied accounts that *Insights* evacuates.

The above work accomplished three different tasks in my drive to understand the *Insights* blog. To begin, I took a step back from the blog and investigated the rhetoric that data visualization uses to frame itself as a research based scientific sub-discipline. Specifically, the connections between image production and objectivity that the discipline banks upon. Next, from the position of acknowledging my own vulnerability to the *Insights* blogs, I performed a descriptive analysis of a selection of blog posts. Finally, I offered an analytical framework for the blog that suggested its deep connection to pornography as a visual and affective object. In summary, the goal of this first chapter was to reveal the complexities of a Pornhub blog claiming to be safe-for-work through its use of a practice more commonly associated with non-pornographic enterprises. By troubling the methodological foundations of data visualization it became possible to identify not only the ruse of Pornhub as a statistical endeavor, but also the means by which the visual components of these data visualizations produce a bizarre and problematic account of user engagement with pornography. In concert with that, it found it necessary to question the negation of the complex embodied experience with Pornhub and pornography in general, a topic upon which I expand in the analysis of the “invisible” aspects of the *Insights* blog to follow.

Chapter 2

Going From Raw: The Invisible Structures of the *Insights* Blog

I think of two processes when I consider how Pornhub.com accounts for bodies. First, I imagine bodies that perform in the pornography, both the sexual activity shown onscreen and the fleshy experiences the performers had while producing the video. Next, I envision another set of bodies that may be lying down, seated, crouched, or standing, using one hand to browse through Pornhub and the other to touch themselves. While the porn-watching bodies may reach some kind of happy conclusion, the materiality of their pornographic consumption outlasts this encounter, and is transformed. What was at one moment an assemblage of sensuality and fluids becomes instead a form of information data analysts will call “raw data.” Pornhub captures the traces of these embodied encounters through a series of clicks that they then commodify.⁹² Or, as with *Insights*, it is a series of clicks that produces an informatic.⁹³ It is this process of conversion and erasure that invokes questions of what is visible versus what remains invisible on the *Insights* blog. In the previous chapter, I focused on the visibility of the *Insights* blog. In this chapter I want to discuss what remains unseen—how big data and data analysis propels the *Insights* data visualizations. Wendy Chun calls for a “medium specific criticism” of the Internet, defining it as, “engaging visual *and* nonvisual aspects of networked machines—human and machine readings—as well as their economic and political impact,” and she holds that, “these aspects taken together reveal the erasures necessary for the Internet’s emergence as mass

⁹² As a reminder, one of the former owners of MindGeek, Fabian Thylmann is one of the developers of Next Generation Affiliate Tracking Software (NATS) the software program that allows websites to track their user clicks on advertisements in order to be paid.

⁹³ Hyunjing Kang and Matthew P. McAllister, “Selling You and Your Clicks: The Audience Commodification of Google,” *Triple C: Cognition, Communication, Co-operation* 9, no. 2 (2011): 141-153. This act of clicking refers to clicking on advertisements but it also refers to the process by which web users became a source of mineable data for advertising. This is often talked about with reference to the founding of Google in the late 1990s. Google developed an innovative algorithm for their search engine that would propel them into forming a huge media brand that is near impossible not to engage with. Because of their monopoly they have played a key role in developing programs that track users, and algorithms that create user ad profiles.

medium...’’⁹⁴ The concept of medium specificity is especially salient in analyzing the *Insights* blog because it provides a framework for evaluating the role of information in free online pornography, and how these invisible informational structures result in an erasure. In its claims to "dig deep into the data", Pornhub stretches the data mining metaphor to include sexuality.⁹⁵ However, it is precisely this ruse of making the Pornhub data visible that provides evidence of how Pornhub captures, shapes and controls its data within an economy of free online pornography.

The following chapter argues that the *Insights* blog and its use of big data is a reiteration of a phenomenon that N. Katherine Hayles titles, “*How information lost its body*” or “how it is that [information] came to be conceptualized as an entity separate from the material forms in which it is thought to be embedded.”⁹⁶ This chapter shows, from a series of vantage points, how the *Insights* blog dismisses the fleshy experience it claims to be representing through a form of data collection and analysis that is medium specific. In part one I investigate and summarize data visualization’s methodologies for data processing. Next, I engage with the concept of big data and the ways in which data analysts are touting it as a “revolution.” In combination with that I examine Pornhub’s relationship to Google Analytics and discuss the means by which Google Analytics sources data and categorizes the identity of its users. Last, I show how *Insights* is an erasure of the potentiality of embodiment engagement with pornography. I argue this disembodiment is the direct result of the relationship the *Insights* blog has to data and information. In addition to elaborating on the technical aspects of Pornhub’s data visualizations, my goal is to challenge our modern relationship to data and specifically the claim made by data analysts that big data is capable of “[revealing] secrets to those with the humility, willingness, and tools to listen.”⁹⁷ This chapter utilizes the *Insights* blog as the opportunity to engage the

⁹⁴ Wendy Chun, *Control and Freedom: power and paranoia in the age of fiber optics* (Cambridge & London: The MIT Press, 2006) 17.

⁹⁵ “Pornhub Insights,” Pornhub, pornhub.com/insights/.

⁹⁶ N. Katherine Hayles, *How We Became Posthuman: Virtual Bodies in Cybernetics, Literature, and Informatics* (Chicago: The University of Chicago Press, 1999), 2.

argument that, if used correctly, big data will reveal the world and manage it in a way humans have not capable of prior. I am particularly concerned with the way in which the treatment of big data presents a distance between humans and technology that fails to account for the co-constitutive relationship that these entities *actually* engage in. I am also concerned this may have the unfortunate consequence of re-instating what N. Katherine Hayles calls the “congealed metaphors” of informational technologies and the human, respectively.⁹⁸ By which I mean, the historical and cultural structures that have constrained the body and kept it separate from technology or, structures that prevent the freeing of the historically confined human body and restrict the exhilarating possibilities of a symbiotic relationship between humans and technology. So, while the main thrust of the chapter is analyzing the invisible forces of *Insights*, I also situate the blog as a fruitful research object for making possible an analysis of the larger issues at hand during this current moment of data and information.

Much as Orit Halpern and Susanna Paasonen’s frameworks are at the heart of the first chapter, in this chapter Hayles’ work is the theoretical foundation. In her *How We Became Posthuman: Virtual Bodies in Cybernetics, Literature, and Informatics*, Hayles offers three different accounts of technology: first, how information lost its body; then, how the cyborg was constructed in postwar years; and last, how the human became the posthuman. Hayles does not produce this history in order to argue that the Internet is destroying what we know to be human. Instead, she contends that we have *only ever been* posthuman, and by recognizing that premise we have the opportunity to embody information and open up space for new forms of pleasure. I utilize Hayles’ account of information to suggest the ways in which embodied experience is erased from *Insights*. In addition, I present this erasure of embodiment in order to advocate for a more contingent and dynamic framework for analyzing online mainstream pornography and those products that it generates.

⁹⁷Viktor Mayer-Schönberger, Kenneth Cukier’s 2013, *Big Data: The Revolution that Will Transform How We Live, Work, and Think* (Boston and New York: Houghton Mifflin Harcourt, 2010), 5

⁹⁸ Hayles, 284.

Part I. Data Visualization: the “out there” reality⁹⁹

In Alexandru Telea's textbook, *Data Visualization Principles and Practice*, he uses the term “visualization pipeline” to describe how a data set becomes an image. The pipeline is composed of four steps: “import,” “filter,” “map,” and “render.” The “importation” of data is exactly what it sounds like, although, it requires choosing dataset implementation, or selecting what type of storage system or data collector from which to access data sets. The next step, “filtering,” or sometimes called “enriching,” is the process by which the data specialist makes decisions on what data to include from the “raw” data. The third step, “mapping,” transfers the data to a visual domain, which is an imaginary multidimensional space wherein the data visualist makes choices related to shape, position, size, color, texture, shading, and motion. The last step, “rendering,” is the execution of the visual, or the final product. I want to focus on the process of “filtering,” which Telea deems necessary because, “usually, raw data do not model directly to the aspects targeted by our questions.” He argues, “we must decide which are [the data’s] important aspects, or features we are interested in... [w]e must somehow distill our raw dataset into more appropriate representations [...] which encode our features of interest in a more appropriate form for analysis and visualization.” Telea argues that filtering/enriching is not just apart of the process but a primary benefit of data visualization.¹⁰⁰ With even minimal experience and/or awareness of data management and the research sciences one is aware that discarding data points is not only routine, it is foundational. Researchers throw out data points with the intent of making the result that a *majority* of what the data points to that much clearer. What strikes me about the above quote is the inconsistency between the process of filtering data and the common rhetoric that data visualization is capable of revealing or exploring the “unknown.” How is this possible when one throws out data to focus on only what the researcher considers salient or relevant? In his description of the term “insight,” Telea writes, “an important drive for visualizing data is sheer curiosity. Visualization methods often produce unexpected and *beautiful imagery* from

⁹⁹ Bruno Latour, *Laboratory Life: The Construction of Scientific Facts*, (Princeton: Princeton University Press, 1986). 182

¹⁰⁰ Alexandru C. Telea, *Data Visualization Principles and Practice: Second Edition*, (Boca Raton: CRC Press, 2015) 123-146.

many *exotic* types of data.”¹⁰¹ This is yet another example of a data analyst invoking a set of terms associated with aesthetics while simultaneously banking their practice on the mechanical objectivity and production of fact associated with the scientific method. Furthermore, Telea frames filtering as a process innate to whatever object a researcher is studying, meaning the object will reveal which data is relevant to it. But the question remains—how does an object convey that which is relevant to it? To insinuate that a research object will “reveal itself” results in the type of problematic distance between researcher and object as mentioned in our previous discussion of Williams’s *Hardcore*. Rather, I contend what is significant or revelatory about any object is dependent upon the context from which the object is being studied. Furthermore, from Telea’s comments we begin to see the way in which data analysts endow information with autonomy. Data visualization is not considered the result of the relationship between the researcher and their topic of study, but more so as the consequence of the data that innately springs from an object.

We see this same line of reasoning in the conceptualization of big data. “Big data” is a term or concept that refers to the mass of data accumulating as a result of the increased use of the Internet. Huge amounts of data, ones that exceed typical computer memory, have been generated after decades of mainstream computer use. The immensity of this collection has forced researchers to develop new tools in order to process data. In Viktor Mayer-Schönberger and Kenneth Cukier’s 2013, *Big Data: The Revolution that Will Transform How We Live, Work, and Think* the authors write, “big data marks an important step in humankind’s quest to quantify and understand the world. A preponderance of things that could never be measured, stored, analyzed, and shared before is becoming datafied”¹⁰² Their contention demonstrates how proponents of big data frame the practice as the logical next-step in an ongoing human drive to collect and quantify information about the physical world. The above quote seems to imply that big data is the never before possible accessing of information, and that there are phenomena in the physical world, previously invisible or immaterial, that are revealed by big data. This logic surrounding big data

¹⁰¹ Ibid., 7. Emphasis added.

¹⁰² Kenneth Cukier and Viktor Mayer-Schönberger, *Big Data: The Revolution that Will Transform How We Live, Work, and Think* (New York: Houghton Mifflin Harcourt, 2013) 17-18.

is not unfamiliar; it is the same positivist logic that I identified as operating within data visualization and other fields of research sciences. Mayer-Schönberger and Cukier utilize a set of metaphors and analogies to describe the way in which big data is both inevitable and revolutionary. They compare information to big data through the analogy of the photograph and the moving image, arguing that speeding up a photograph—a quantitative action—would lead to the birth of movies—a qualitative result. Later, they place big data within a history that includes the conducting of governmental surveys during “biblical times.”¹⁰³ Finally, and perhaps most peculiar, they write, “the digital deluge now sweeping the globe is the equivalent of giving every person living on earth 320 times as much information as is estimated to have been stored in the Library of Alexandria.”¹⁰⁴ These comparisons culminate to frame big data as the natural extension of a human curiosity to obtain sources of information without making any distinctions regarding computational technologies.

Pornhub presents the topics covered on the *Insights* blog as natural points of interest. Given their proclivity for humor, it is a foregone conclusion that they would use their vast pool of data to research how many people are looking for clown porn around Halloween. But, arguably, Pornhub *could* use its data pulls to produce much different objects. However, by using its data to create visualizations, *Insights* imports the objectivist tropes of data visualization and distracts us from thinking more critically about how Pornhub manages its data pool and why it chooses to create “entertaining” content. Of course, Pornhub produces visualizations that it thinks will receive the most attention, but this should not prevent us from thinking more closely about the attitudes towards sex and pornography that the blog is producing, or those attitudes that hinge upon a scientific concept of the physical world.

Data visualization maintains absolute connection to representing truth and the way in which visualists describe their methodologies is reminiscent of what Bruno Latour calls the “out there” reality.¹⁰⁵ In his 1986 text *Laboratory Life: The Construction of Scientific Facts*, Latour

¹⁰³ Ibid., 12.

¹⁰⁴ Ibid., 9.

¹⁰⁵ The “out there” reality is Latour’s way of describing a form of research that develops tools and practices that it believes are capturing unfiltered impressions of the world. It postulates

conducts a sociological and anthropological study of laboratories with the premise that if science cannot withstand this type of analysis then it cannot truly know itself. The text also confronts the methodologies that have persisted in dividing the ways in which social sciences, research sciences, and the humanities have demarcated their practices and objects of study. Latour argues, within a scientific context, the difference between an “artefact” and “fact” is reliant upon the circumstances under which research is conducted.¹⁰⁶ Thus the historical moment, funding sources, research questions, the researchers themselves, and even the physical location of the laboratory all have the ability to drastically alter that which becomes “fact”. However, science would define its production of facts as merely a response to what is “out there” whereas Latour argues that, “‘out-there-ness’ is the *consequence* of scientific work rather its *cause*.”¹⁰⁷ Data visualization relies upon this idea of the “out there” reality that Latour defines. Despite the numerous and obvious points in the process of data visualization where the context has the ability to alter the results, data visualization frames itself as merely measuring and responding to sets of realities already in existence. Thus, the same can be said for the *Insights* blog as it follows this methodology.¹⁰⁸

a certain vacuum-sealed research environment that is gathering information on an external environment that is “out there.”

¹⁰⁶ Latour, *Laboratory Life*, 182-183.

¹⁰⁷ Ibid.

¹⁰⁸ Don Ihde, *Bodies in Technology*, (Minnesota: University of Minnesota Press, 2002). 12. It is worth bringing up a slightly more recent text that also responds to the scientific mode of reality. In the introduction to his 2002 text, *Bodies in Technology*, Don Ihde writes about an experience he had teaching a graduate seminar entitled “Imagining Technologies” wherein he brought in skilled image makers from various fields and had them discuss their practice, how it worked and what it produces. He writes that the scientists (an astronomer and radiologist) operated under what Ihde terms “instrumental realism” meaning that despite how they altered their process they seemed sure that “they were getting what was out there, external reality.” They next spoke with film media theorists who Ihde labels the “social constructionists” or scholars that frame whatever they produce as the production of a reality with no relationship to anything external. Last, the computer modelers whom Ihde places as falling somewhere in between the two previous group in the sense that they acknowledged that their methods were inventions subject to change but also hoped they would move towards some type of reality. Thus, there is a differentiation to be made between cybernetics and the history of the research sciences. However, I believe in looking at the statements from data visualists in both the first and second

I want to return briefly to the work of Orit Halpern in order to shape why it is important to examine these characterizations of data. Halpern argues that:

The cybernetic reformulation of reason produced new forms of measurement and methods in the social and behavioral sciences, encouraging a shift toward “data-driven” research adjoined to the valorization of visualization as the benchmark of truth, and as a moral and democratic virtue. In the course of this epistemological shift in values, techniques developed that transferred older questions of political economy, human desire, and social structure into discourses of communication, personalization, and visualization.¹⁰⁹

This quote explains what I consider to be essential in comprehending information and big data. First, it reiterates that cybernetic theory, and subsequently computational culture, has been the primary factor in creating the correlation between data, visuality and knowledge production. In turn, this means it is essential for us to view computational data analysis as a dramatically different way in which to produce knowledge and that the technologies that have developed because of the Internet represent such a shift. Mayer-Schönberger and Cukier may use the analogy of the Library of Alexandria to help people understand a complicated technical process, but big data is not comparable to a material library full of books nor to early surveys, and it certainly is not equivalent to film. The immaterial and invisible processes of big data must be taken seriously because it is these processes that result in disembodiment. Furthermore, the capital that data holds as a standard of knowledge production is the means by which data visualization filters its data sets, manipulates its research questions, and fails to account for its production of “reality.” The *Insights* blog is a prime example of this and represents the very shift that Halpern identifies: from the desirous and the social to the communicative, personalized, and mechanized. This becomes all the more problematic when we consider that this mechanization of pornography is the means by which Pornhub is integrating itself into the online habits of an ever-widening audience.

chapter of this thesis, it becomes apparent that their methodologies do not make room for the contingencies that alter their practice.

¹⁰⁹ Halpern, *Beautiful Data*, 148. The cybernetic model of the mind refers to a historical shift that defines the functions of the mind as autonomous and algorithmic; the propensity to compare the brain to a computer and vice-versa.

I conclude by returning to Edward Tufte's statement that, "graphical excellence begins with telling the truth about data."¹¹⁰ Again, this implies that a data set is an unfiltered representation of the physical world composed of visuals or pictures of numbers that reveal objective truths. If moderated correctly the relationship between data and image becomes an object that a majority of people observes and comprehends in a similar manner. In the previous chapter I exemplified how data visualization hinges its success upon the ability to operate within a mode of scientific objectivity, an objectivity whose goal is to cleanse its results of any trace of interference, or of any "knower".¹¹¹ This section points out ways in which the expression of data with this agenda includes methods subject to interference, or runs contrary to the concept of objectivity established in the previous chapter. As a media scholar I approach information design and statistics from the outside. However, the history of data visualization is not entirely separate from that of the moving image. This becomes more apparent when we remember that chronophotography, or the method of photography that captures several frames of movement within the same print, was utilized to create data sets that contributed to the scientific study of physical motion and anatomy.¹¹² Furthermore, camera obscura tracings and early photography were considered by scientists to be the exact communications of nature from which they would gather data.¹¹³ As such, there is a genealogy of making images for research purposes, for artistic purposes, and for entertainment purposes; these practices have not, historically, been mutually exclusive.¹¹⁴ With the knowledge that data and cinema exist on the same historical spectrum we

¹¹⁰ Edward R. Tufte, *The Visual Display of Quantitative Information: Second Edition* (Cheshire: Graphics Press, 2001), 53.

¹¹¹ Lorraine Daston and Peter Galison, *Objectivity*, (New York: Zone Books, 2007) 17.

¹¹² Tufte, *The Visual Display of Quantitative Information*. 36.

¹¹³ Daston and Galison, *Objectivity*, 256.

¹¹⁴ Lorraine Daston and Peter Galison, 125-137. In a 2007 history of science titled *Objectivity*, authors Peter Galison and Lorraine Daston analyze the history of scientific objectivity and the way in which it collides with modes of seeing. In their section on photography they describe the phenomena by which the medium of photography in the hands of scientists was considered the perfect tool for removing subjectivity entirely and producing the most accurate mechanical reproductions possible, while artists, even those dedicated to the realist

can view data not as truth, but as a medium. By which I mean, we must think of data as a production, as an entity that is just as easily formed and prone to manipulation as other media formats. Perhaps then we can separate ourselves from the idea that data and information are the autonomous representations of truth.

Part II. Pornhub and Data: “turn insights into action”¹¹⁵

Much like YouTube, one must become a registered member of Pornhub to comment or participate in the community section of the website. During the process of registration one is given the option of disclosing the following information: gender (including whether or not you are trans-gendered), your relationship status, your sexual preferences (including age, ethnicity, hair color, and breast size); your favorite categories of pornography and production value preferences, and finally your birthday, current location, and nickname. Pornhub claims to only use this information to improve the personalized user experience. *Insights* blog moderators frequently state that they do not use this member information in the construction of their data visualizations. One example is from the post “Pornhub’s 2016 Year in Review.”¹¹⁶ In the post, numerous users posed questions to moderators regarding the data, for example, user “blablaba”

tradition viewed photography as a form mediated by the presence of an artist, similar to any other form. As an aside, Daston and Galison use the scientific study of the snowflake to exemplify the way in which image production altered the course of the development of scientific objectivity. Prior to the advent of photography, naturalists would draw snowflakes as symmetrical, associating this notion of symmetry with an idea of godliness. However, photography “revealed” that a large fraction of snowflakes were incredibly asymmetrical. Daston and Galison call this revelation metaphysical in that, “This new way of looking at an individual plant or particular bacterium [was] liberated from the second sight of prior knowledge, desire, or aesthetics. In this blind sight lay an epochal novelty in right depiction.” Despite this book chapter using the example of snowflakes, I find it relevant to my argument about information. What Daston and Galison are pointing to is the way in which a mechanical objectivity through image production separated the observer and even the image maker from the ability to question what propels the image or what part they might play in mediating its message.

¹¹⁵ “Google Analytics Solutions,”
https://www.google.com/analytics/#?modal_active=none accessed June 12, 2017.

¹¹⁶ “Pornhub’s 2016 Year in Review,” *Pornhub Insights* (blog), January 4, 2017,
<https://www.pornhub.com/insights/2016-year-in-review>

asks, “do you gather this data (especially gender) from the accounts that people make or some other way?” to which Pornhub responds:

Our anonymized data used on the Insights blog comes from Google Analytics so we can sample traffic from our full 65 million daily visitors. Geographic data is based on IP, so we can see accurate data for nearly 100% of visitors. Additionally, about 30% of visitors have some demographics data attached, mostly by using cookie files saved by Google... This data is most often used for targeted advertising, but is also allows our statisticians to accurately see who is visiting Pornhub and tie that into what type of porn they search for and view while maintaining their anonymity.¹¹⁷

This straightforward response raises a few points of interest. First, as numerous commenters on the thread point out, several of the countries that Pornhub displays data for have strict regulations on Internet pornography. This would skew the dataset because users are more than likely logging in with proxies to mask their actual location and avoid detection. When asked about this a Pornhub moderator responds, “analytics are more challenging for some countries such as China and those who regulate pornography.”¹¹⁸ However, the moderator does not explain any further how they represent the pornographic preferences for the countries where it is more “challenging.” Oftentimes in countries with strict governmental regulations such as China, users employ a virtual private network (VPN) or a protocol called The Onion Router (TOR) in order to either hide their IP address entirely or appear to whatever website they are attempting to access as though they are searching from a different country.¹¹⁹ Next, because Pornhub’s use of Google Analytics means they are utilizing a system intended to gather information for the purpose of

¹¹⁷ Ibid.

¹¹⁸ Ibid.

¹¹⁹ Briefly, a VPN simply misplaces your IP address while TOR is intended to hide it entirely. TOR takes a series of virtual tunnels where each node of the path is only capable of viewing the node that came directly before it but none prior to that or those that come after. This circuit of tunnels is only preserved for a short amount of time before TOR creates an entirely new circuit, even in the case that you’re frequenting the same websites. It is also worth mentioning that VPN’s are a bit more formalized in the sense that you pay for a subscription to them and they provide enhanced protection from malware and hackers.

targeted advertising. Google stores your audio history, device history, location history, and the entirety of your online searches.¹²⁰ The more one uses Google products the larger and supposedly more detailed your digital persona becomes, it further shapes the identity that Google assigns to you. Google Analytics allows the companies that pay for its services to access this proprietary data and utilize it for whatever said companies' personal targeted advertising goals may be. One issue of this problematic exchange is digital personas are sometimes inaccurate in how they identify the user. The most common mistakes are misgendering, incorrect age range, incorrectly identifying topics of interest, and errors that occur because of "gaps" in Google's algorithmic processing. While there is not a wealth of information to demonstrate just how frequently these digital personas are incorrect, for the sake of example, I will cite my personal ad profile.¹²¹ Google correctly assumes my gender, but does not assign me the correct age bracket. They correctly identify a handful of interests that I have including philosophy, reptiles, and pets, but they mistakenly assume that I am also interested in boats, sports, and classic rock. Pornhub utilizes Google Analytics under the assumption that with a larger data set one achieves more accuracy. However, when you consider the consequences of geographic location and the inconsistency with which Google analyzes identity, it behooves us to question how accurate of data Pornhub is offering, and what this means for how we perceive and analyze the blog. I point to these issues to highlight that at each step, from the time that a user reaches the homepage of Pornhub until *Insights* releases a new post, there are numerous moments where the initial encounter that a user has with Pornhub becomes altered. As such, upon close examination of the way in which information is gathered and processed it becomes clear that its use of data is highly pornographic. Both Wendy Chun and Linda Williams argue that online pornography is defined by its relationships to numbers and to the "database complex".¹²² Not only do pornography websites emphasize the amount of content they produce but also their video content treats both user and performer as a number. Narrative is not important. Or as Chun remarks, online

¹²⁰ Hyunjing Kang and Matthew P. McAllister, 150.

¹²¹ Sarah Kessler, "Google Thinks I'm a Middle Aged Man. What About You?" *Mashable*, Jan 25, 2012, <http://mashable.com/2012/01/25/google-cookies/#MpbulmjiUkq5>.

¹²² Chun, 107.

pornography is a “string of ‘events’: the sex scenes are like numbers in a musical, mediating narrative oppositions with sexual union.”¹²³ Whereas the *Insights* blog claims to tell stories about sex and sexuality, it is, in fact, just the conversion of user experience into numbers. Therefore, as opposed to a making beautiful of data, the *Insights* blog is the making pornographic of data, giving the term *raw* an entirely new meaning.

Pornography has played a significant role in the development of the Internet, and accordingly the information technologies that have been developed within the framework of the Internet. In *Control and Freedom*, Wendy Chun argues that questions surrounding whether or not the Internet is a tool of freedom or control reduces the political and economical problems of the Internet into technological ones. In this reduction we do not realize that the freedom of the Internet rests in its failures and incomplete attempts at control. In addition to this arguments, Chun points out the ways in which online pornography was and continues to be key in negotiating the conceptions of public and private that monopolize conversations about the Internet. She quotes Fredric Jameson who stated, “the visual is *essentially* pornographic,” arguing that while Internet pornography is visual “its invisible workings are more significant.”¹²⁴ She points out that pornography has been at the forefront of technical innovations such as: rewriting the “back” button in order to force users to view more content, being the first to utilize pop-up windows, and last, online pornography proved to other commercial entities that people were willing to disclose their private information to pay for goods and services online.¹²⁵ I agree with Chun that it is vital to consider those invisible workings of pornography as it pertains to control, and that online pornography cannot be deduced to its relationship to the visual. I would, however, extend Chun’s argument to say that the invisible mechanisms and layers of porn sites are also *essentially* pornographic. Chun remarks that, “the Internet is public *because* it allows individuals to speak in a space that is indeterminate and pornographic.”¹²⁶ She argues that this

¹²³ *Ibid.*, 105.

¹²⁴ *Ibid.*, 124-125.

¹²⁵ *Ibid.*

¹²⁶ *Ibid.*, 126.

indeterminacy or vulnerability is essential to our understanding of the primary role pornography plays in shaping the Internet. The means by which Pornhub collects data from its users is another form of technological vulnerability. However, whereas Chun sees this vulnerability as key to the Internet enabling the “democratic adventure”, I see it as a means to define the invisible components of the *Insights* blog as pornographic. The techniques of data collection, analysis, and implementation define the making pornographic of data. It is a process that obscures sexual subjectivities and erases the complexities and contingencies of embodied interactions with online pornography. If a woman in Canada gets online and looks through the lesbian category on Pornhub her engagement can be translated in a number of ways. Perhaps she is using a VPN and this makes it look as though her searches are being made within the U.S. She is frequently looking for camping gear that is on sale, and also enjoys sailing, so Google Analytics classifies her as a white male between the ages of the 30-45. She is browsing through the category of lesbian, not necessarily because this is her sexual preference, but because the “lesbian” category on Pornhub is the quickest route to finding alternative amateur content and escaping the homepage. But from the moment she leaves the Pornhub interface or gets off of the Internet altogether, various forms of information gathering and filtering have morphed the details of her sexual and subjective embodied encounter into a neat and quantitative product.

Another way datafication manifests is through the types of user actions that Pornhub tracks and commodifies. The data displayed on *Insights* is almost entirely representative of user engagement with genres of pornography and/or hashtags. While the disembodiment of Google Analytics results from a particular history of the Internet and computational technologies, what I am referring to *here* is an oppression that results from the linguistic categories of pornography. For example, Pornhub represents North America as primarily clicking on and searching for lesbian pornography, but the visualization fails to account for the complex processes by which Pornhub polices that genre of pornography. It fails to show how the Pornhub interface invites and guides the user to this category, and it fails to account for the plethora of reasons that motivate users to search for “lesbian.” Granted, the image is meant to be entertaining but that should not detract from the problem of Pornhub erasing the complexities of sex and sexualities through an objectivist process of categorization. George Lakoff defines this process best in his landmark contribution to cognitive linguistics, *Women, Fire, and Dangerous Things: What Categories Reveal About the Mind*. In it Lakoff employs a particular history of linguistics in

order to engage with the way Western philosophy, particularly post-Enlightenment philosophy, has not only separated reason from embodied experience but also framed the act of cognitive linguistic categorization as an intuitive process. Put more simply—Lakoff criticizes the idea that your brain categorizes objects as they exist. It is a means of producing rational knowledge that posits the mind as a machine that manipulates abstract symbols into information, and that these symbols as they exist within the mind have a direct correspondence with the outside world. The mind only ever mirrors nature, and thought is logical in the sense that it can be mapped onto a system within which all information will fall. Within this system of language, the human body is considered incidental to the process of “coming into knowledge”. In response to this objectivism, Lakoff asserts reason should be considered both embodied and imaginative. This means that our potential for coming into knowledge hinges upon the actual or potential perceptual experiences of our body, “reason is made possible by the body—that includes abstract and creative reason, as well as reasoning about concrete things. Human reason is not an instantiation of transcendental reason; it grows out of the nature of the organism and all that contributes to its individual and collective experience...”¹²⁷ This distinction between the objectivist viewpoint and what Lakoff terms “experientialism” is evident in Pornhub’s pornographic genres. The *Insights* blog banks on a framework of pornography, sex, and sexuality as *category*. Genres of pornography and the way in which they relate to sex and the body should be treated as complex entities, which respond to and result from questions of environment, experience, and potential. However, Pornhub’s interface, the collection of data related to search terms, and the mode in which they display these search terms all culminate to prevent a nuanced analysis of linguistic categories of pornography.

Pornhub’s use of tags functions in a similar way to that of its genre categorization. In a 2012 article for the *International Journal of Cultural Studies* “Tagging It: Considering how ontologies limit the reading of identity” Linzi Juliano and Ramesh Srinivasan argue that tagging is not only a description but also a performance of identity. They write that because tagging is a crowd activity it attaches identity categories to mass popularity, and that it, “mirror[s] extant social codes and, by serving as fixed, linguistic descriptors, fix gender and ethnicity to a

¹²⁷ George Lakoff, *Women, Fire, and Dangerous Things: What Categories Reveal About the Mind* (Chicago: The University of Chicago Press, 1987) xi-11.

culturally specific set of signifiers.”¹²⁸ They argue that even those systems that attempt to foster niche tags are still trapped in the normative paradigms that both language and “data driven retrieval” result in. The authors continue by arguing that tags, by design, seem to be at the will of the user while they are, in actuality, a tactic used by websites to guide the experience of the user while negating their ability to engage with the complex associations that accompany language. They remark, “tags work to create narratives of truth through ‘digital compositing’ where the underlying logic of the database or set of popular tags presents the cinematic story, through interactive practices of browsing, clicking and searching.”¹²⁹

Besides the visualizations themselves, the comments on the blog posts provide an interesting perspective on how Pornhub’s objectivist mode of reason affects its users. In a thread beneath “United States Top Searches,” registered community members make comments such as: “The South really loves ebony porn, huh?” To which another user replies, “Thats where many of the ebony people live.”¹³⁰ After which ensues a long and drawn out series of responses arguing whether or not Southern states watch ebony porn because of the percentage of African Americans that reside in those states, or if it is racist and/or guilty Southerners who are expressing their hostility and/or feelings towards African Americans by using this search term. Another user correlates Southern states with incest by remarking, “The best part is all the hick states and "step" sister and "step" mom.”¹³¹ This confusion is also evident in the publications that re-publish the data visualizations or work in tandem with Pornhub. In the *Huffington Post* repost of “United States Top Search Terms” the author Nina Golgowski writes, “There’s nothing like an election year to illustrate how UN-united the United States of America can be.” And further down, “when it comes to female-on-female action, left-leaning states like California, New York, Massachusetts and Oregon found common ground with more conservative states like Alabama, Utah, Idaho and Oklahoma, the map shows. Of course, it should be noted, that the porn portrayal

¹²⁸ Linzi Juliano and Ramesh Srinivasan, “Tagging It: Considering how ontologies limit the reading of identity,” *International Journal of Cultural Studies*, 15 no. 6 (2012): 619.

¹²⁹ Ibid.

¹³⁰ “United States Top Searches,” *Pornhub Insights* (blog), February 26, 2016. <https://www.pornhub.com/insights/united-states-top-searches>.

¹³¹ Ibid.

of ‘lesbians’ and the actual experiences of women who identify as lesbians are separate things.”¹³² It is interesting to notice how Golgowski makes light of the map and distances herself from the idea that “female-on-female” pornography from Pornhub could reflect the realistic attributes of queer sexual expression. While seemingly benign, I see that these moments point to the way in which observers of the blog posts are struggling to attribute meaning and correlations where none are provided. It is a confusion that results from the mode of reason Pornhub is implementing in order to process and display the information that it accumulates. Another way to describe this effect is what Jodi Dean calls, via Slavoj Žižek, a “decline in symbolic efficiency” wherein the ability of a symbol to transmit significance is rendered inefficient through the lack of risk in cyberspace. Dean writes, “Blogs provide a clear example: sometimes it’s difficult to tell when a blog or post is ironic and when it’s sincere, when it’s funny or when it’s serious... Moreover, the uncertainty, the potential for unexpected meanings, provides its own affective intensity.”¹³³ This is particularly true in the case of *Insights*: full of double-entendres, and double meanings, the visualizations are an entertaining distraction. Simultaneously, Pornhub takes its public relations goals seriously, claims to know the intimate details its users, and is making considerable amounts of money from this data. Pornhub seriously affects how we come to understand identity and desire, but never takes itself seriously.

Part III. How *Insights* Lost its Body

In Pornhub’s review of 2016, a user asks the moderators, “How many gallons of cum got wasted?”¹³⁴ To which the moderator replies, “A lot. According to the interwebs, most men expel 2ml to 5ml of semen -- so let's say an average of 3.5ml. With 23 billion visitors in 2016, and

¹³² Nina Golgowski, “MILFS? Cartoons? These Are Pornhub’s Most Popular Search Terms By State,” *The Huffington Post*, last modified March 2, 2016, http://www.huffingtonpost.com/entry/porn-search-terms-by-state_us_56d6e7cfe4b03260bf78a676

¹³³ Jodi Dean, *Blog Theory: feedback and capture in the circuits of drive*, (Cambridge: Polity Press, 2010) 5-7.

¹³⁴ “Pornhub’s 2016 Year in Review” *Pornhub Insights* (blog), January 4, 2017, <https://www.pornhub.com/insights/2016-year-in-review>.

74% those being men, that's 59,570,000 liters of semen. An Olympic sized swimming pool holds 2.5 million liters of water, so that's enough Pornhub derived semen in one year to fill around 24 pools. Hey, you asked...”¹³⁵ This quote demonstrates that the *Insights* data visualizations are representative of a separation between information and context that results in disembodiment. On the part of the user, their response after looking at multiple of graphs was to question a material aspect of the data, and more specifically, the wasting of sperm. In response the moderator presents the image of Olympic sized pool after pool full of semen. Besides the fact that this conversation endows the penis with autonomy, it exemplifies the following in regards to the argument I make about Pornhub and data. The comment seems to represent a struggle on the part of the user to embody the visualizations or add sex and desire to a series of objects. In response, however, the moderator does some questionable math (a humorous parody in itself of the statistical work that Pornhub engages in) and responds by transforming the data into semen, an image that still has the consequence of complete disregard for the body. The moderator delights in separating the material effects from the embodied experience, adding a laughable level of virility through the image of the “Olympic.” It has the consequence of voiding the body and it is the *literal* making pornographic of the data.

How is it possible that information based upon pornography, a body driven genre, could be entirely evacuated of the bodily context that produces it? To engage with question I again refer to N. Katherine Hayles’ story of “how information lost its body.” Hayles identifies two moments in history that contributed to a state of disembodiment that she characterizes as “the loss of an embodied account as a result of societies’ obsession with the merging of computer and human”: the perpetuation of the liberal humanist subject and the production of a mechanical and informational reflexivity that resulted from post-Cold War panic.”¹³⁶ The liberal humanist subject that Hayles is referring to was born out of Enlightenment era philosophy. This subject is defined by a sense of self that demands autonomy from the will of others through the mind and not the body. It is a subject defined by a sense of agency and cognitive prowess. Hayles notes

¹³⁵ Ibid.

¹³⁶ N. Katherine Hayles, *How We Became Posthuman: Virtual Bodies in Cybernetics, Literature, and Informatics*, (Chicago: The University of Chicago Press, 1999) 2.

there has been a significant amount of scholarly work that links numerous projects of power to the liberal humanist subject. However, and somewhat ironically, when scholars or cultural critics decry the technological advances that seem to be resulting from the merger of human and computer, it is the liberal humanist subject that they are attempting to protect. Thus, Hayles compares this subject with that of cybernetics in order to point out how erasures of embodiment can often lead to “projects of domination and oppressions.” The second historical moment that Hayles argues resulted in a merger between human and information/computer is the Cold War. Hayles contends that a post-war panic fueled a technological era invested in maintaining a steady state of existence, or homeostasis. This led to an interest in generating mechanical and informational reflexivity capable of producing stability. Hayles usefully describes this brand of reflexivity as “*The movement whereby that which has been used to generate a system is made, through a changed perspective, to become part of the system is generates.*”¹³⁷ This reflexivity created an increasingly more entrenched relationship between users and information as cybernetics developed. Most recently it has resulted in “the emergence of the posthuman as an informational-material entity [that is] paralleled and reinforced by a corresponding reinterpretation of the deep structures of the physical world.”¹³⁸ Hayles is referring to not only the changing status of the human as a result of information but also the changing status of reality as a result of cybernetics—reality becomes an information-based program versus one based on deep physical structures. The propping-up of the liberal autonomous subject resulted in the cultivation of systems that privileged the mind and considered the body disposable. During the mid-twentieth century a collision between this subject and a state of panic produced from Cold War politics resulted in the posthuman. The condition of the posthuman is one in which structures of the world move further into the Internet. It negates awareness that information must always derive from some medium, and most importantly, that one can never extract information from its material substrate in entirety.¹³⁹ However, Hayles suggests that embodied experience is still possible during the time of the posthuman if we can move past our conceptions of the

¹³⁷ Ibid., 8-9.

¹³⁸ Ibid., 11.

¹³⁹ Ibid., 1-24.

human. In fact, that the posthuman can be an opportunity to cease recuperating the liberal humanist subject and avoid re-inscribing an imperialist subduing of nature. She writes, “in this account, emergence replaces teleology; reflexive epistemology replaces objectivism; distributed cognition replaces autonomous will; embodiment replaces a body seen as support system for the mind; and a dynamic partnership between humans and intelligent machines replaces the liberal humanist subject’s manifest destiny to dominate and control nature.”¹⁴⁰ This account of the posthuman is one where a coherent self, or the boundaries of the human form as conceived in previous histories, can finally be set aside. As an alternative Hayles advocates for embodied cognition as a distributed function, meaning that the perspective that we have on the relationship between a human and its environment must shift. As opposed to viewing the human as the center from which thinking and problem solving emanate, “thinking” becomes the function of a collaborative and porous relationship between the human and an environment that includes the technological and the artificial. Hayles’ claim that information has lost its body is also an attempt to address the cultural interest in the fate of the body, or the concerns about our relationship to computers. She writes, “I believe they should be taken as evidence not that the body has disappeared but that a certain kind of subjectivity has emerged. This subjectivity is constituted by the crossing of the partiality of informatics with the immateriality of information.”¹⁴¹

In order to understand the historical use of the body as a tool for discourses of power, Hayles is careful to differentiate the body from embodiment. In particular, she is concerned with what she terms the “universal” body as dictated by Foucault, or a concept of the body as an indicator for the production of power. Hayles’ concern is that in order for this universal body to exist, and in order for it to prove power, it is necessary that this body have coherent and consistent boundaries, which in turn negates her conception of embodied experience as one tied to “the circumstances of occasion and the person.”¹⁴² Embodiment is always elsewhere, it is constantly emerging and in interaction with the body and the environment. Hayles offers the example of the stress put on woman throughout history to experience pleasure through the

¹⁴⁰ Ibid., 288.

¹⁴¹ Ibid., 193.

¹⁴² Ibid., 197.

vaginal orgasm. Theories of the vaginal orgasm as the primary mode of pleasure have been justified through both biological accounts and psychological ones. Many women, however, have embodied experiences that are contrary to this account but are then forced to discipline themselves or register as defective in order to fit within a certain construction of the body and subsequently their cultural context. In this example we witness a dissonance that often marks the distance between embodiment and the body, and why it is so difficult to account for embodiment—it defies coherency.

The *Insights* blog is the quintessence of disembodied information. The culmination of data visualization, big data, the partnership with Google Analytics, and its method of categorization all serve to reify the human subject that Hayles identifies. The *Insights* blog traps sex, bodies, and sexuality within a variety of projects of oppression. However, I suggest that the distributed embodiment model that Hayles imagines for this posthuman moment provides for analyzing online pornography. This theory of distributed cognition not only allows us to think more closely with the affective functions of pornography but also think through the means by which the technologies that define online pornography are in a co-constitutive relationship with users. By that I mean, the collection of data and development of digital personas are only growing and it is necessary to imagine the ways in which these technologies and humans are forming one another.

The above work explored the invisible strata of the *Insights* blog. This included: a summary of the ways in which data visualization views the processing of data, a summary of the topic of big data, and the processes by which Pornhub collects its data. In order to explicate the larger implications of the *Insights* blog and Pornhub, I showed how data visualization suffers an objectivism and a relationship to reality that prevents us from considering data visualizations as contextual and aesthetic. Furthermore, in its strong belief that it is an objective, accurate, and superior display of information, data visualization is incapable of analyzing its potential failures. Similarly, I have summarized the way in which the rhetoric that surrounds big data does not account for the history and medium specificity of the Internet. Finally, *Insights*' partnership with Google Analytics imports all of the above issues and in so doing participates in a disembodied informational process with a collection of data that is *essentially* pornographic. Just as *Insights*' data visualizations are vacated of any rigorous account of embodied experience, so too does the

“invisible” portion (i.e. the process of data collection) fall short in accounting for the complex and co-constitutive relationship that online pornography engenders.

Conclusion

In this conclusion I want to provide some closing remarks and a brief epilogue. One of the main struggles of this work has been negotiating the role that Pornhub as a company plays in discourses about vision, information and embodiment. While I maintain that business and marketing strategies have broad and sweeping ideological and epistemological consequences, I have found myself at a loss to engage more thoroughly with the topic of capital. I was, instead, continually drawn towards the visceral and semiotic. When I began this project I intended for it to analyze and investigate the large and shadowy purveyor of pornographic content that is Pornhub, and its parent company MindGeek. As mentioned in the introduction there are very few scholars investigating the way tube sites and free pornography has altered the landscape of adult content. More frequently these sites are mentioned in passing in research analyzing the changing labor practices in adult entertainment or burgeoning amateur communities. It remains rare to find work that focuses specifically on the analysis of pornography as a consequence of Internet platforms. One of my goals for investigating the *Insights* blog was to make secondary space for exploring the strategies by which Pornhub is seeking to redefine itself within the mainstream of Internet content. I return to the comment from the current VP of MindGeek, Corey Price, that, “Being mainstream was Pornhub's goal from day one – it just took a while to get there... Through creative and entertaining data pulls, partnerships and stunts, the general public and media have become more receptive to us.”¹⁴³ This quote from Price illustrates that *Insights* is one tactic among many that Pornhub is using to become palatable to a broader audience. He describes *Insights* as “creative” and “entertaining,” but what type of creative entertainment is it and how is it appealing to an audience that Pornhub does not already have? Based upon the above work, *Insights* is obviously still very plugged into the mechanisms of pornography. As such, it is not the case that Pornhub is attempting to blend into larger audiences but rather that it is working towards the “making pornographic” of interfaces, technologies and audiences that would normally be considered separate from the world of tube pornography sites. Links to the blog are effectively hidden on Pornhub’s homepage, and its content is strictly within the realm of the

¹⁴³ Perry Simpson, “Why Pornhub is an Unlikely Data Driven Marketing Power (100% SFW),” *DMN*, last modified August 16, 2016, www.dmnews.com/digital-marketing/why-pornhub-is-an-unlikely-data-driven-marketing-power-100-sfw/article/516311/.

safe-for-work, but through its use of data and engagement with a semiotics of sex it remains very much pornographic. I do not make this statement with any desire to dredge up arguments about what qualifies as explicit or pornographic, instead, I am attempting to point out that Pornhub is not merely stepping into the mainstream, as Price would describe it, they are adjusting the mainstream.

In addition to Price's comments about *Insights* he also mentions *Pornhub Cares*, their corporate responsibility program that focuses on animal rights, sexual health, and the environment. Price remarks, "we have also been trying to conceptualize campaigns that resonate with our community in meaningful ways."¹⁴⁴ I want to offer a few examples of *Pornhub Cares* projects. First, the "Save the Whales" campaign that donated one cent for every two thousand videos viewed on the website. When you access the page to this campaign it reads, "How can you help?" With a button just below that answers, "Blow your load."¹⁴⁵ Similar to this campaign, Pornhub also sponsored the "Save the Boobs" and "Save the Balls" programs that raised awareness and funds for breast and testicular cancer, respectively. In the case of breast cancer, Pornhub offered to donate one cent for every thirty videos watched in either the "big boob" or "small boob" category. The PSA about testicular cancer did not donate money, but invited users to "watch porn" and "save your life" by viewing a video of performer Charlotte Stokely showing how to conduct a testicular exam.¹⁴⁶ Then there is Pornhub's program for the visually impaired: a selection of porn that is described for the user. This program takes popular videos on Pornhub, including the Kim Kardashian sex tape, and describes the actions that are occurring onscreen for those that are unable to see pornography.¹⁴⁷ Next, "Give America Wood", a campaign for Arbor

¹⁴⁴ Perry Simpson, "Why Pornhub is an Unlikely Data Driven Marketing Power (100% SFW)," *DMN*, last modified August 16, 2016, www.dmnews.com/digital-marketing/why-pornhub-is-an-unlikely-data-driven-marketing-power-100-sfw/article/516311/.

¹⁴⁵ "Save the Whales," *Pornhub Cares*, <http://www.pornhub.com/cares/save-the-whales>.

¹⁴⁶ It is worth noting that the title of the video is "Charlotte Stokely teaches you to last longer."

¹⁴⁷ I would like to point out how the visual impairment program imports the same sets of issues that I attempted to address in chapter one. This program assumes that if you did not have eyesight that you could not enjoy porn. Pornhub's answer to this, narrations, has the hilarious

Day that promised to donate one tree for every 100 videos watched in the “big dicks” category, promising that, “While you’re watching some nice pieces of ash, you’ll be helping to spruce America up...Go get wood.”¹⁴⁸ Finally, Pornhub offers a yearly scholarship to college students, the last of which was a \$25,000 award to women working in the fields of science, technology, engineering, and mathematics (STEM). In order to apply for the scholarship applicants were required to submit a 1,500 essay answering the question “how are you working towards making the world a better place?”¹⁴⁹ 2016 was the first year that Pornhub offered a scholarship exclusively to women in STEM, previously the application was open to college students working in all disciplines who could best answer the questions, “how do you strive to make others happy?”¹⁵⁰

Pornhub Cares, perhaps more than *Insights*, exposes the deeply troubling ideological consequences inherent in the company’s economy of desire. *Pornhub Cares* not only works to create an image of Pornhub as liberal, progressive, and sympathetic, but it invites users to believe that through the consumption of pornography they are becoming more environmental, health aware, and contributing to the education of young women. While most major corporations and media conglomerates have corporate responsibility programs, Pornhub is the only company that asks its users to save whales through masturbation. Whereas online porn has been repeatedly coded as the private expression of hidden desire, this program allows users to factor in humanitarian efforts to what were formerly anonymous expressions of perversity. I am not concerned so much with the implication that one could nullify their guilt around watching porn by telling themselves, “I just saved a tree.” Rather, I see this as a questionable tactic by which Pornhub is attempting to reformulate what a body engaging with Internet porn is. The program

consequence of effacing the sounds of pornography, which one could argue is just as essential to the experience of pornography.

¹⁴⁸ “Pornhub Gives America Wood,” *Pornhub Cares*.
<https://www.pornhub.com/event/arborday>.

¹⁴⁹ “Pornhub Cares Women in Tech 25K Scholarship,” *Pornhub Cares*,
<https://www.pornhub.com/cares/stem-scholarship>.

¹⁵⁰ “Pornhub 25K Scholarship,” *Pornhub Cares*,
<https://www.pornhub.com/cares/scholarship>.

markets itself as a way to give back while watching pornography but in actuality it is the corporatization of desire, an innovation that I fear has troubling consequences for better understanding and allowing for the expression of sexual desire.

Analyzing this marketing tactic is necessary not only because it constitutes a bizarre pornographic capitalism, but also because it reveals the way in which many other major companies use these programs in an equally exploitative manner. Consider Slavoj Žižek's theory of cultural capitalism: using the example of the Starbucks Ethos bottled water and fair trade coffee Žižek argues that in order to create a sensuous and enjoyable experience, cultural capitalists such as Starbucks convince consumers that buying products is a time of self-enjoyment where they can also be charitable and participate in a larger ecology. He writes, "we are not merely buying and consuming, we are doing something meaningful, showing our capacity for care and our global awareness, participating in a collective project."¹⁵¹ Through a necessity that the act of consumption is one of pleasure, cultural capitalism must necessarily draw consumers into a feedback loop where they desire to have self-enjoyment, feel guilty about world suffering, and then absolve that guilt through purchasing sustainable and charitable goods. It is an ethics of purchasing that is even more satisfying than regular capitalism because we get to overcome that pesky awareness of the suffering all around us. Pornhub's corporate programs fit into but also pervert this framework. To an audience that does not use Pornhub.com, *Pornhub Cares* could seem like a benevolent use of their resources. However, it also puts this same audience in the position of considering pornography as the pre-requisite to planting trees or saving whales. For those who regularly interact with pornography it gives them the opportunity to feel as though there is a possibility that their watching pornography is funding college educations and perhaps this propels them to make an open commitment to Pornhub.

Expanding upon questions of the economies of desire is for future work. Within the boundaries of this thesis, I focused on theorizing embodiment, information, and visibility in relation to the data visualizations found on Pornhub's *Insights* blog. My initial thought was to conceive of ways in which users hacks the Pornhub interface to access alternative content. Specifically, I intended to write about the ways in which search terms could be used in

¹⁵¹ Slavoj Žižek, *First As Tragedy, Then As Farce*, (London and New York: Verso Press, 2009) 54.

opposition to the mainstream heteronormative content of the homepage. However, once I began reviewing the field of pornography studies I realized three things: first, there exists minimal scholarly work that accounts for the intimate and visceral experiences that bodies have while watching porn; second, there is even less work that theorizes how these visceral experiences are shaped by an online environment; and finally there was, again, minimal work looking at tube pornography sites as forms of media. As such, it was my desire to fashion a research object and methodology capable of addressing these issues. This is not to claim that this topic of research is entirely untouched, and there is a vast amount of work within media and pornography studies that researches all those areas I am interested in. The potential I saw in the *Insights* blog was, instead, about building a bridge between discourse communities while simultaneously holding up free pornography websites as a useful tool for examining certain genealogies that have not been studied through a pornographic lens.

The *Insights* blog is data, images, visibility, invisibility, ideology, technology, rhetoric, metaphor, *and* porn. It is a seemingly simple object with a plethora of complex discourses teeming just under the surface. I approached the turbidity of this object by devising a series of meditations analyzing the semiotic and material functions of the blog. In addition, I analyzed the blog's medium specificity by splitting the thesis into two chapters that addressed the visual/visible and the invisible/technical that makes the experience of the blog, and by proxy online pornography, unique.

Chapter one analyzes the visible of the *Insights* blog. I examined aspects of the blog that fall within a definition of visibility that considers it a sensual, aesthetic, and metaphorical concept. I analyzed the way in which data visualization achieves intellectual currency by attaching itself to the conceptualization of objectivity that pervades the sciences. In concert with that I argued that using images as placeholders for the display of data ignores the contextual and perceptual means by which images are interpreted. I engaged in a subjective exploration of the blog and explored my personal perceptions of its signs and symbols. Finally I attempted to rescue the embodied complexity of *Insights* by suggesting that one could have an embodied response to the blog that mirrors that of pornography. I endeavored to accomplish these sections in order to argue the following: first, that data visualization has a dysfunctional relationship to questions of aesthetics. Next, that the *Insights* blog borrows from the objectivist discourse of data visualization in order to distract us from its perpetuation of normative ideas of sex, sexuality and

gender. Next, the *Insights* blog is pornographic, despite its claims of SFW. Finally, that the *Insights* blog is negating the fleshy and sensuous experience that its users are having.

Chapter two had a similar set of prerogatives. I examined the invisible structures of the *Insights* blog that result from its medium specificity. I began the chapter by demonstrating how the data in data visualization is prone to a form of manipulation that is contrary to objectivity. In concert with that I pointed out the metaphors and methodologies that both big data and data visualization implement to frame information as autonomous from its source. Next, I examined how data functions within the world of Pornhub. Finally, I framed the *Insights* blog within the ongoing story of disembodied information. Chapter two argues the following: data is dependent upon its context and should be considered a medium that is prone to manipulation and modulation. Next, *Insights'* use of data is essentially pornographic. Finally, the *Insights* pornification of data does not account for the embodied experience users have with Pornhub. Furthermore, it fails to consider the co-constitutive and symbiotic relationship between the technologies of online pornography and those that are watching and feeling it.

Free online pornography is remarkable for the conglomerate of technical, linguistic, material and visual structures that comprise any encounter one might have with it. I explicated the *essentially pornographic* paratext of the *Insights* blog to begin teasing out these structures. I utilized interdisciplinary methodologies that demonstrated the demand for an approach to pornography that chronicles its visceral and embodied aspects. My goal has been for this work to show that pornography is one of our most useful tools for accessing the posthuman experience. The discomfort, technology, and carnality of online pornography makes space for researchers to interrogate the privileging of “informational pattern over material instantiation.”¹⁵² Finally, online pornography has been, and shall continue to be, the precursor for the development of the Internet. Cultivating an analysis of free porn is essential as we go deeper into this moment of the digital persona.

¹⁵² Hayles, 4.

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Appendix:
Images from Pornhub and the Insights Blog

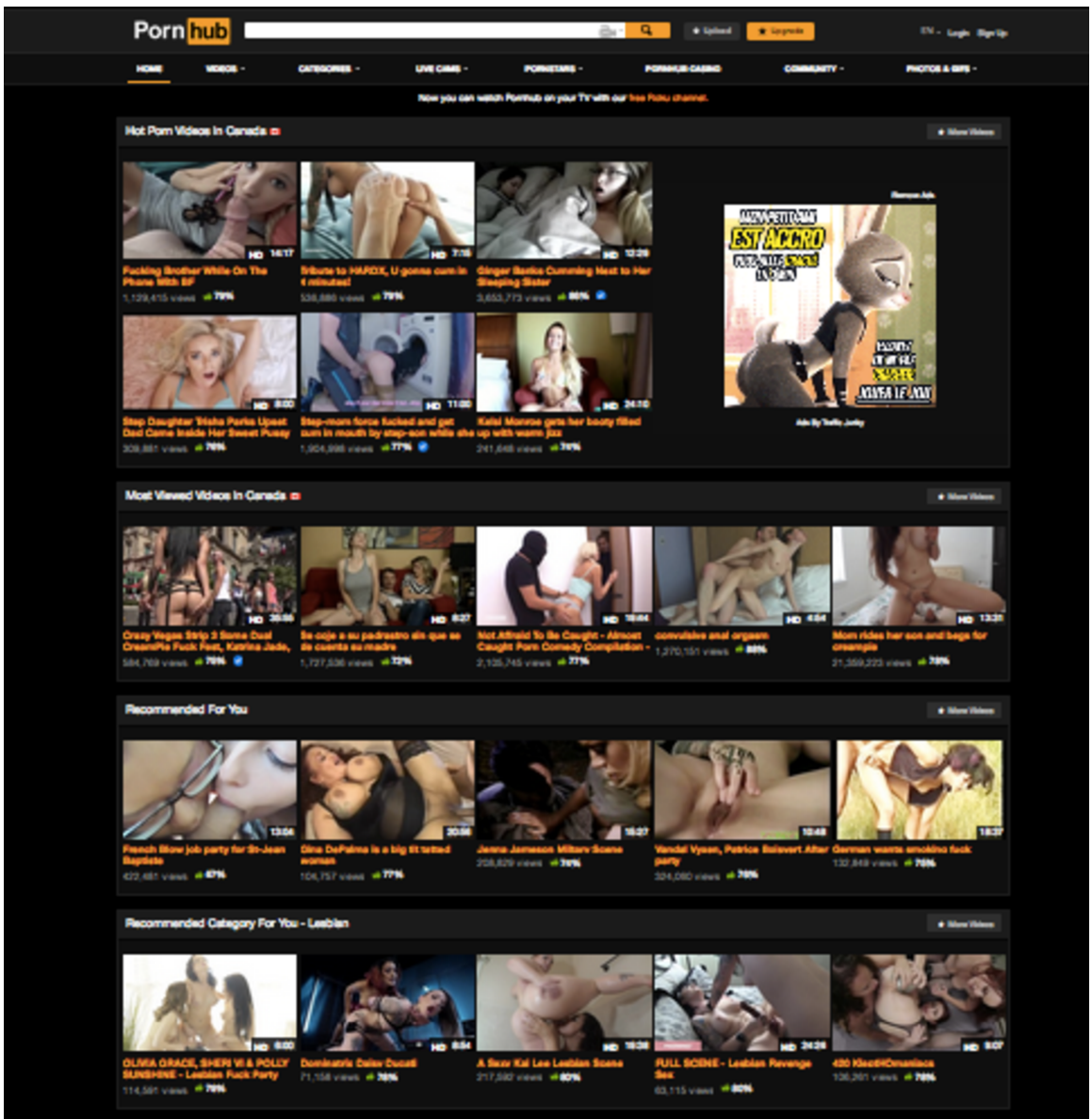


Figure 1
This is an image from the Pornhub homepage from my personal computer. The videos will differ depending on whether or not you have visited the website previously and your country location (Pornhub.com).

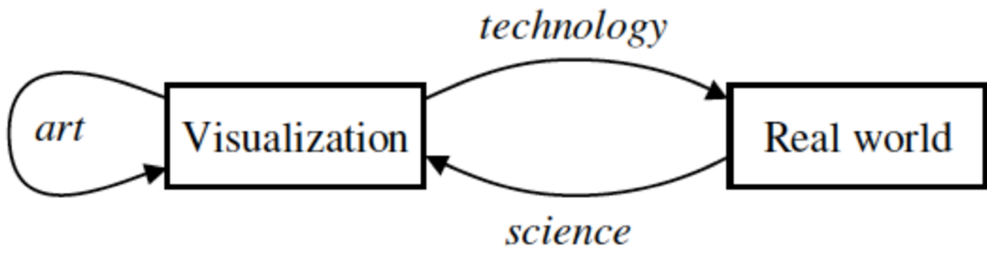


Figure 2
 This is the schematic that Dr. Jark van Wike produced for his essay “The Value of Visualization,” showing how art relates to visualization.

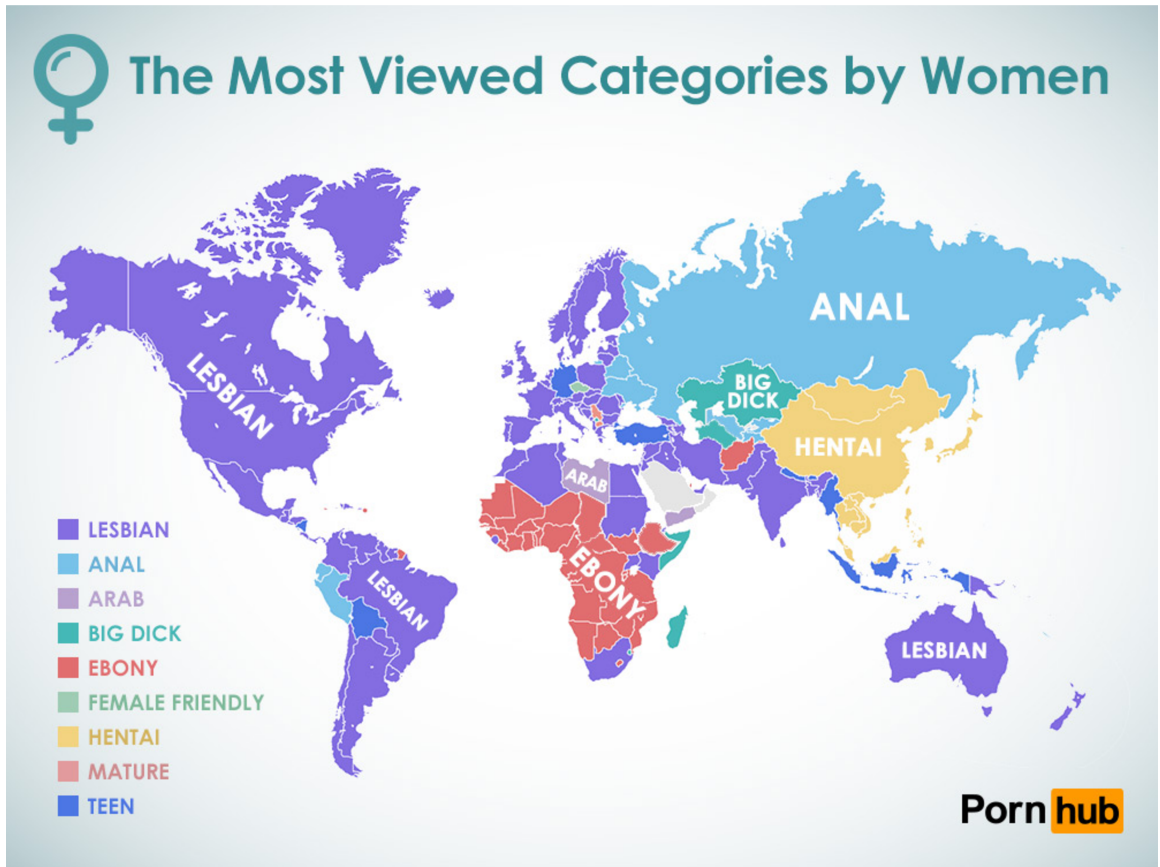


Figure 3
 The thematic map of the world from the *Insights* post “Women’s Favorite Searches Worldwide.”

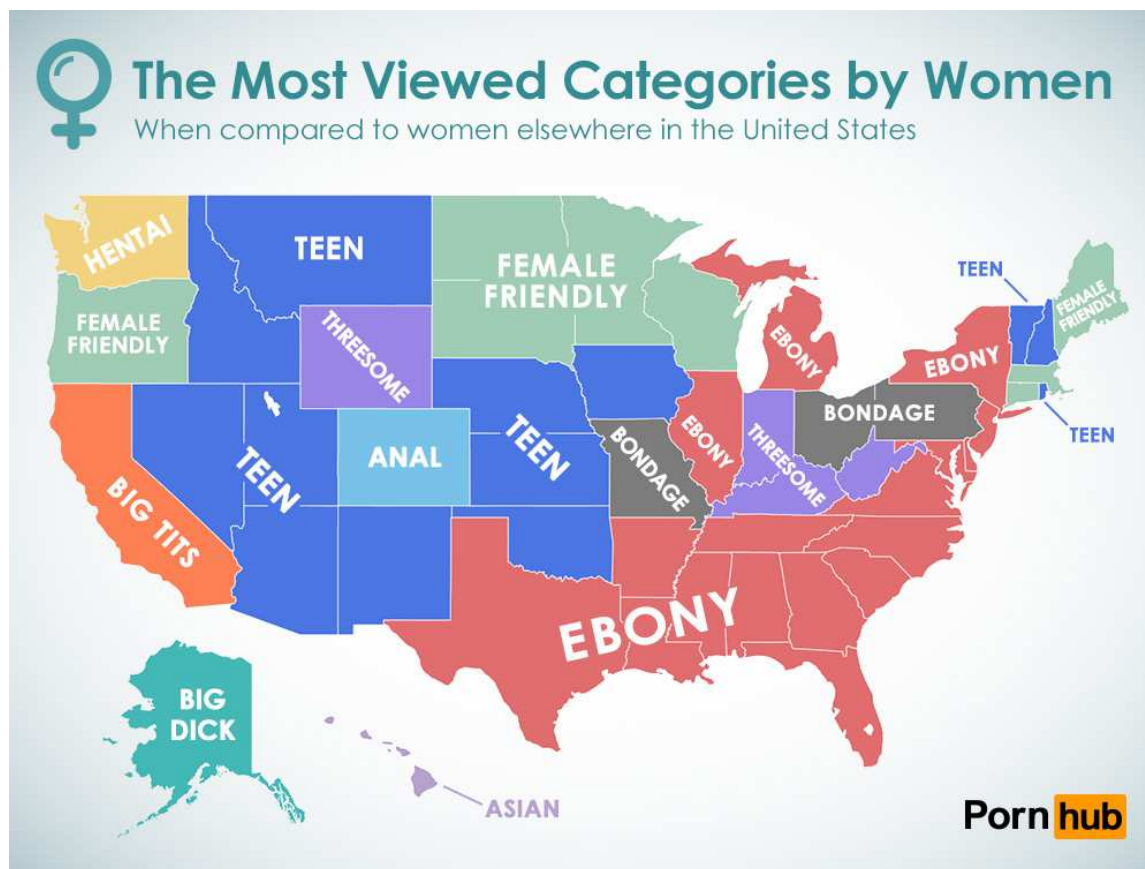


Figure 4
The thematic map of the U.S. from the *Insights* post “Women’s Favorite Searches Worldwide.”

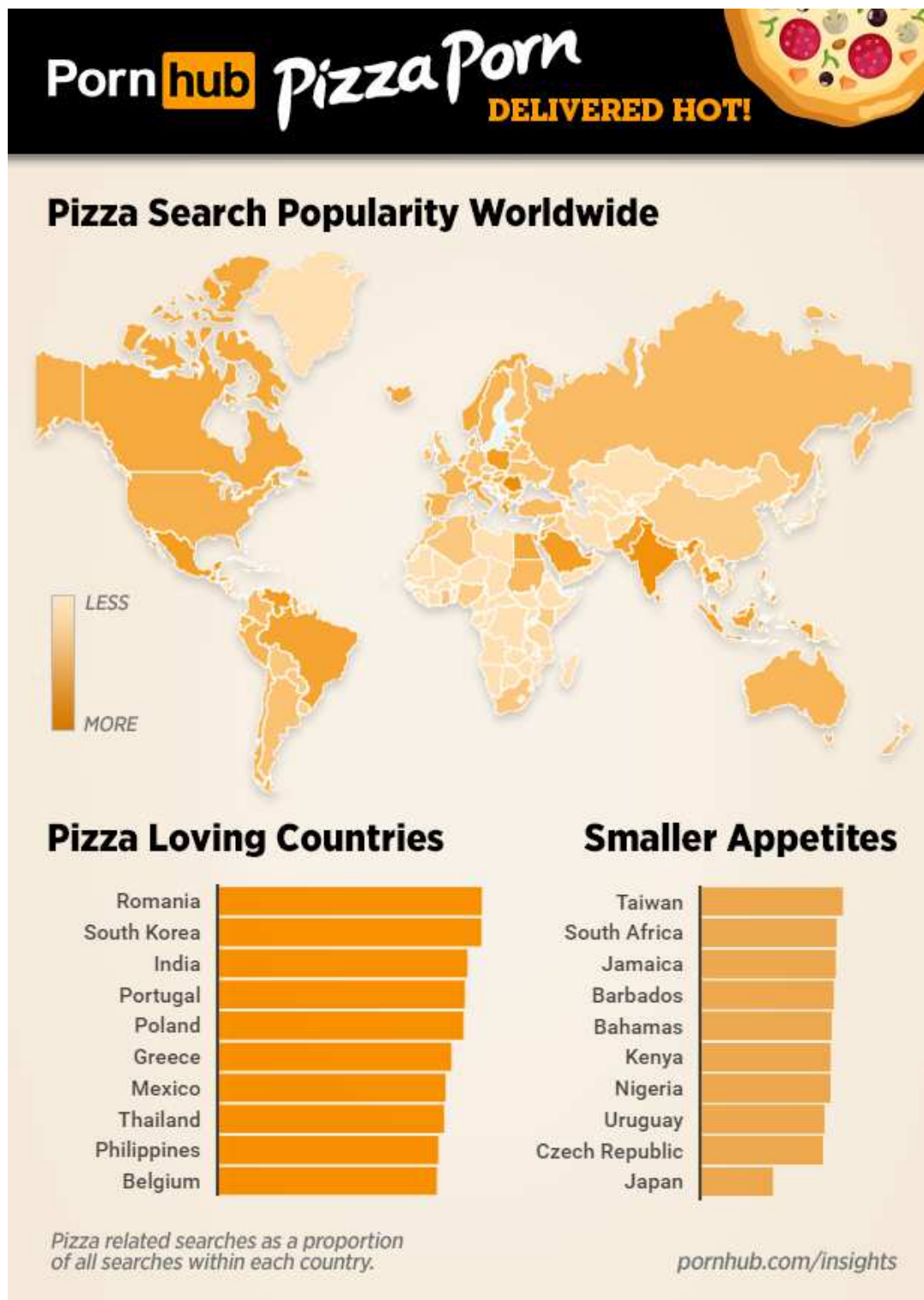


Figure 5
Thematic world map from the *Insights* post “Pornhub Pizza Delivery: Always Hot and Fresh.”

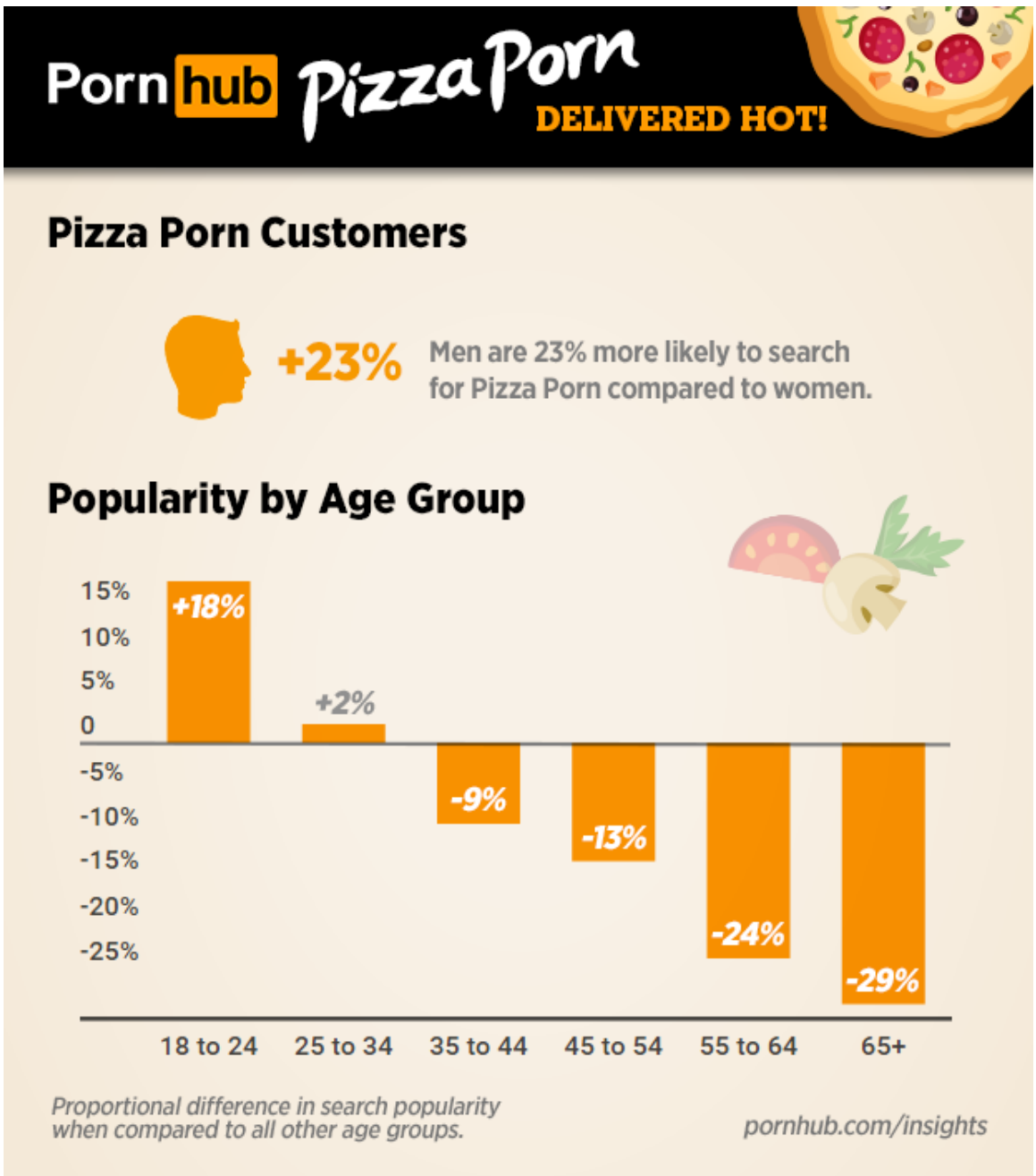


Figure 6
Bar graph from the *Insights* post “Pornhub Pizza Delivery: Always Hot and Fresh.”



Figure 7
Bar graph from the *Insights* blog post “Clowning Around.”

