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Pins, Portals and Purchases: Examining the Potential for Credibility Carryover Effects on Pinterest

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PINS, PORTALS AND PURCHASES: EXAMINING THE POTENTIAL FOR
CREDIBILITY CARRYOVER EFFECTS ON PINTEREST

by

OLGA KHARITONOVA

B.S.J., Ohio University, 2011

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Pinterest

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The final copy of this thesis has been examined by the signatories, and we find that both
the content and the form meet acceptable presentation standards
of scholarly work in the above mentioned discipline.

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Pins, Portals and Purchases: Examining the Potential for Credibility Carryover Effects on Pinterest

Thesis directed by Professor Michael Tracey

In 2012, America's third-largest social network was still entirely a startup. As one of the fastest-growing major websites in history, Pinterest.com has quickly established itself among the ranks of Facebook, Twitter and other social media behemoths. Pinterest's placement alongside increasingly visual web design and increasing e-commerce activity supports the possibility that emotion-laden visual stimuli may be one of the driving forces behind e-commerce through channels of visual persuasion, as proposed by Barry's Perception Theory. Research regarding the highly visual nature of credibility judgments supports this, showing that credibility assessments influence e-commerce spending. Through its extraordinary success, Pinterest posits itself as more than a case of a startup with good taste and good timing. Rather, it serves as a case study for why visual literacy (or visual intelligence) is becoming more important than ever in light of the increasingly visual (and emotionally influential) web.

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CHAPTER I

INTRODUCTION

“Pinterest is a tool for collecting and organizing things you love,” according to its website (Pinterest, 2013). The website functions like an interactive, digital pinboard, but has otherwise been described as a social image bookmarking tool, virtual scrapbook, visual content-sharing platform and even an inspiration engine (e.g. Chafkin, 2012; Engauge, n.d.; Goodman, 2011, etc.). Pinterest users, referred to as “pinners,” “pin” or post images from across the web onto “boards,” or categorized collections (Pinterest, 2013). Like most other social networks, Pinterest allows users to follow one another, share content, make comments, tag other users in their pins and share pins on Facebook and Twitter (BlueGlass, n.d.). Unlike most (if not all) other social networks, however, Pinterest has achieved remarkably high traffic with remarkable speed, surpassing the 10-million-visitor mark within less than two years of its invite-only launch in March 2010 (Constine, 2012).

Its popularity grew 4,377% between 2011 and 2012 (Perez, 2012), and it attracted 2.7 million users while still in invitation-only mode, accounting only for those who logged in via Facebook (BlueGlass, n.d.). Not surprisingly, the hugely successful startup became the third largest social network in 2012 (Wasserman, 2012; Duggan & Brenner, 2013), making its version of the pinboard possibly more of a household concept than that of the physical object on which it was based. As of March 2013, Pinterest is the 16th most popular website in America and 35th most popular website in the world in terms of traffic (Alexa, 2013). Valued at \$2.5 billion in February 2013, Pinterest became one of the most

valuable venture-backed Internet companies — more valuable than publicly traded companies such as Zynga, Yelp Inc. and Pandora Media Inc., even though it has yet to generate revenue (Levy, 2013).

According to Goodman (2011), Pinterest has been a leader in growth among online pinboard sites, whose main function has generally been to represent users' wants and to store memories. "Pinboards are basically shareable scrapbooks that you create using online content you find around the web," he wrote (Goodman, 2011). The scrapbook metaphor has been applied generously to Pinterest's user interface among media coverage and marketing literature, supporting the possibility that Pinterest functions as more than — or perhaps differently from — a pinboard (otherwise known as a bulletin board) for its users.

Pins and boards from the categories Home, Arts and Crafts, Style/Fashion and consumer Products dominated Pinterest in 2012 (Moore, 2012b). Many pinners use the site to help find inspiration for anything from hosting a party or wedding, remodeling a bathroom or making dinner; a large portion of this process involves using Pinterest to help guide buying decisions (BlueGlass, n.d.).

Women are five times more likely to use Pinterest than men, which was the most pronounced gender divide of any site featured in Pew's 2012 report on social media, though the gender divide has also been reported as closer to 68.2% (Modea, 2012), a number generally more representative of women on social media (Duggan & Brenner, 2012).

As of April 2013, 45% of Pinterest's audience came from the United States, followed by almost 11% in India, 3.4% from the United Kingdom and 3.3% from Canada

(Alexa.org, 2013). The audience spread across the United States has been unusual, however, in that a disproportional number of early adopters were not only female, but also resided in the Midwest region instead of the coasts (Constine, 2012a; Goodman, 2011).

Interestingly, among women in the Northwest and Southeast regions, who, too, were among those over-represented in the Pinterest audience, existed a disproportionately high interest in the Arts and Crafts category compared to the national audience (Hitwise, 2012). This supports Goodman's (2011) hypothesis that there may a relationship between scrapbooking culture in the Midwest and the rapid uptake of Pinterest in regions of the country that are generally associated with late technological adoption.

Across the board, Pinterest users have been found to be highly engaged, high-spending and trustful of the website as a source of information (RichRelevance, 2012; BlogHer, 2012; Moore, 2012b). In 2012, they spent more money than users of Facebook, Twitter or any other major social per shopping session (RichRelevance, 2012; Engauge, n.d.; Hayes, 2012). Pinterest users have been two to three times as engaged on Pinterest as they were on Twitter at a similar time in its history (BlogHer, 2012; Moore, 2012b). Furthermore, Pinterest's net attrition rate was close to 0% in 2012, "which either means that no one who starts using Pinterest ever stops or—more likely—that users who continue to use Pinterest become so much more engaged over time that their activities fully make up for those of any users who leave" (Moore, 2012b). In a BlogHer survey, it was found that women trust Pinterest content more than that of competitors Facebook and Twitter. These findings are not surprising considering women are slowly taking the

majority hold over social media participation and e-commerce spending in America (Abraham, Mörn & Vollman, 2010; Fulgoni & Lipsman, 2012).

As Pinterest stands at the intersection of social media and e-commerce, its recommendation-driven nature allows for and encourages interpersonal influence, and it is possible that its highly social nature contributes to its appeal and trust among users. “There’s no one a woman trusts more for advice, recommendations and guidance than another woman in her circle,” said BlogHer co-founder Lisa Stone in an interview (as cited in Heussner, 2012).

Heussner noted that Pinterest’s size and its design community influence could also contribute to the high interest and trust of its users (2012). “The size of the Pinterest community could be a factor in the high level of trust women associate with it.... It’s an impressively fast-growing and vibrant site. But its traction was helped by interest from the design community,” wrote Heussner (2012).

As a highly visual medium, Pinterest is naturally most useful to either visual content such as images and videos or written content that can be represented visually for linking purposes. Marketing agency Engauge, in its official Pinterest report, described Pinterest as “a visual platform ripe for brands that value the aesthetic” (n.d.), referring to the highly visual user interface and the image-dominant nature of its content.

Pinterest’s interest from the design community comes as no accident. Its intuitive, grid-like user interface has not only helped Pinterest win a Webby design award in 2012, but also set off countless copycat website designs, with some arguing that Pinterest is leading a web design revolution (BlueGlass, n.d.; The Webby Awards, 2012; Vanhemert, 2012; Kanal, 2013; Wilson, 2013). Others, however, have indicated that Pinterest was

never original in its highly visual mosaic-like layout, its application of social media for bookmarking purposes or even image-based bookmarking (e.g. Johnson, 2012). A 2010 article on design website Design Instruct featured 10 different image bookmarking sites “for visual inspiration” (Gube, 2010). These sites includes *Dribbble*, a site that allows members to post previews of their creative work, and *WeHeartIt*, which allows users to create albums called “hearts” and uses its “top tags” system to link users to popular content, both of which existed before Pinterest (Gube, 2010).

One of the most important aspects of Pinterest’s success is its timing. Pinterest’s rise to fame was part of two larger trends: the rise of the visual web and the rise of e-commerce (Duggan & Brenner, 2012). In 2012, Pinterest was considered an important influence upon e-commerce, ranking up alongside Facebook in ComScore’s quarterly report (Fulgoni & Lipsman, 2012; Duggan & Brenner, 2012). From the perspective of credibility research this is plausible evidence for an inter-relationship between consumer influence and website design on Pinterest.

The web has become an increasingly visual medium since the first graphic web browsers sprung up in the early 1990s, increasing steadily in its cultural visibility and importance as a medium for information and communication (Paasonen, 2010). The shift from words to pictures has, too, been illustrated in commercial advertising dating back to the 1800s and moving forward 200 years (Rampley, 2005). As advertising in particular has been notorious for exploiting emotional response through visual stimulation (Barry, 2005), and websites can be conceptualized as advertisements in their own sense (Singh and Dalal, 1999), it is important to consider the implications of an increasingly visual web at a time when e-commerce is expanding alongside it.

The emphasis on aesthetics driven by the rise of the visual on the web plays into perceptions of website credibility, which are crucial to website success and e-commerce spending (Robins & Holmes, 2008). Credibility has been widely touted as a crucial factor in e-commerce by the Better Business Bureau, the federal government and major corporations alike (Gefen, 2000). Visual design is the most important factor in people's assessments of website credibility, and websites of higher design quality typically raise perceptions of credibility regardless of content quality (Fogg et al., 2003; Robins & Holmes, 2008). Even though Pinterest in itself is not an e-commerce medium, it does operate as an interface between users and sellers. And in websites that operate on several layers and largely link users to content from other websites, such as news portals and Pinterest, perceptions of credibility can be carried over from the linking source to the linked source (DiMuzio & Sundar, 2012). Hyperlinks, in such cases, function as implicit endorsements of content, according to DiMuzio and Sundar (2012).

There is also an emotional side to visual design, which stands to distinguish the psychological impact of the increasingly visual web from that of the early, text-heavy web. Visual design factors play an important role in enhancing the appearance of web pages and shaping users' feelings in relation to the page, and evoking emotion in general (Lin, Yeh, & Wei, 2013; Kim, Lee, & Choi, 2003). The design of a website can influence not only its perceived credibility, but also its perceived usability, which can together improve visitor loyalty (Robins & Holmes, 2008; Li & Yeh, 2010; Ou & Sia, 2010). And in relation to e-commerce specifically, people's perceptions of product value can be increased through emotional stimulation, according to research published in 2001 by Fujita and colleagues (as cited in Kim, Lee, & Choi, 2003). Barry (2005) and Norman

(2004) indicated that not only is emotionality central to visual perception, but the emotional aspects of a design can make or break its market success.

According to Barry (2005), people's experiences with visual content can function at a subconscious, emotionally driven level and influence their thoughts and behaviors without their knowing. Barry (2005) indicated that every aspect of perception has profound implications for all areas of communication, and none more so than for visual communication. "Ultimately the key to understanding all visual communication lies in the neurological workings of the brain," Barry wrote (2005).

The interaction of visual perception, emotional experience and human behavior can be argued to comprise valuable aspects of the Pinterest user experience. Singh, Dalal and Spears indicated that user experiences are crucial in making the most of Web content. "The Web has emerged as a powerful medium for worldwide information dissemination and electronic commerce. To fully utilize its potential, though, one must design Web pages capable of providing rich user experience," according to Singh, Dalal and Spears (2005).

Unfortunately, the study of aesthetics, either in reference to the relationship between visual perception and emotion or as the more ephemeral concept of beauty and its associated pleasures, has historically been either very limited or entirely neglected from research in the field of human-computer interaction (HCI), user experience (UX) and website design (e.g. Hoffman & Krauss, 2004; Liu, 2003; Lavie & Tractinsky, 2003). Web aesthetics has been an under-researched aspect of contemporary visual culture and the web has been studied primarily through textual communication and linguistic features (Paasonen, 2010). This is problematic because it limits our understanding of the

implications of an increasingly visual web for human emotion, cognition, behavior and consumption.

Academic literature has not caught up with Pinterest just yet, as very little research exists that focuses solely on it or mentions it at all. The few academic papers that so far exist on Pinterest either discuss its technical side (Goreczky, 2011) or attempt to evaluate its modus operandi through quantitative means (Gilbert, Bakhshi, Chang, & Terveen, 2013).

In an “early snapshot” study of Pinterest, Gilbert and colleagues (2013) attempted to find out what drives activity on Pinterest, what role gender plays in the site’s social connection and what distinguishes Pinterest from existing social networks (particularly Twitter). Using a quantitative approach that relied on a statistical analysis of data obtained from a web crawl of Pinterest, the researchers found that women have fewer followers than men, but are subject to more repins, and that the terms “use,” “look,” “want” and “need” reflect “the ‘things’ at the heart of Pinterest,” according to a language use comparison with Twitter (Gilbert et al., 2013). Because their approach was wholly quantitative and statistical in nature, the findings made claims about broad, large-scale practices on Pinterest but could not uncover users’ motivations and goals for using Pinterest, as could qualitative research (Gilbert et al., 2013).

As one of the fastest-growing, most valuable and most popular social networks of modern times, Pinterest.com sits at the intersection of a series of important trends relating to information design, e-commerce, social media and consumer behavior. Pinterest’s influential placement in the social networking realm carries implications for more than Pinterest users, as the site carries influence in e-commerce, interface design and

individual people's lives. Pinterest is well-known for its highly visual nature, and its strength as a visual medium becomes all the more interesting when taken into account alongside the complex interworking of the human mind, wherein visual perception joins emotional reactions in shaping human behavior through their online experiences (Barry, 2005).

The evolving and ubiquitous nature of the World Wide Web demonstrates both the functional and the emotional sides of design and its many applications in connecting human beings, shaping user experiences and driving behavior. Examining how these effects play out on Pinterest may prove useful to other areas of research, such as traditional and media literacy efforts, especially in light of the rapidly changing media landscape and the countless people who engage it daily.

Research Problem

Pinterest is highly influential, highly visual and highly successful. However, it has not been subject to very much academic research, and no qualitative research has yet been conducted in its regard.

The goal of this work is to expand upon the research of Gilbert and colleagues (2013) by finding out Pinterest's history as a design product and placing Pinterest into a wider historical context.

By piecing together a historical foundation for Pinterest and examining some key metaphors that can be applied in its regard, this work aims to gain insight into the basis of its high numbers of early adoption, retention and consumption-related behavior among its Midwestern-female-dominant audience.

By exploring the relationship between aesthetics and credibility, this work aims to gain insight into its high user trust and e-commerce referral spending numbers.

And by examining the role of emotion and visual perception in shaping online user experiences, this work aims to examine Pinterest's record-breaking success as a visually dominant social media website in order to discuss some of its implications for the increasingly visual web and its relationship to visual literacy strategies in education and beyond.

Research Questions

RQ1: How does Pinterest work and what metaphors/conceptual models best define it and explain some of its user demographics and behaviors?

RQ2: What is the relationship between aesthetics and credibility, and what insights can it offer regarding Pinterest's success in driving e-commerce?

Methodology

My research approach will primarily rely on literature reviews and discussion in order to construct a basis for future qualitative inquiry regarding Pinterest and the relationship between website aesthetics and credibility in the context of an increasingly visual web.

The first section will establish Pinterest's historical background largely on the basis of media coverage and marketing literature. I will combine these findings with academic research on user interface metaphors and some of the historical media practices behind these metaphors.

The second section will primarily comprise academic research from across multiple disciplines in relation to the relationship between aesthetic and credibility, which will tie

in visual perception and emotional responses with the possibility of a carryover effect in e-commerce spending through the portal metaphor's application.

Findings will then be applied toward earlier findings regarding Pinterest, and a discussion will follow to examine the implications for the future of visual culture and visual literacy. I will then offer conclusions and suggestions for future research.

CHAPTER II

PINTEREST BACKGROUND

In 2008, Ben Silbermann teamed with fellow former Yale student and friend Paul Sciarra to found a company called Cold Brew Labs, whose first project focused on creating a shopping app called Tote (Chafkin, 2012; Carlson, 2012). Tote was an iPhone app that pulled data from online product catalogs to create a “meta catalogue for shoppers on the go,” through which users could find particular products across retailers, sorted by location (Carlson, 2012). Though the team raised a bit of seed funding and spent a year refining the app, it still failed to take off (Carlson, 2012):

There were two big problems. One was that people weren't using mobile apps for shopping yet. It was too early. The other was that Apple's App Store wasn't ready to support businesses built on the platform. It was still too slow. Cold Brew Labs would submit an app update to the store and then finish the next version before getting feedback on the prior.

Though Tote was consequentially dropped as a project, Silbermann and Sciarra found that Tote users spent a lot of time emailing images of particular products to themselves, essentially collecting them to view later instead of buying products right away (Chafkin, 2012; Carlson, 2012). Observing this pattern, Silbermann began working with a small technical team to create a website built around this very behavior, but for the web—a more “mature platform” (Carlson, 2012).

An anonymous source who was reportedly close to early employees and to Silbermann spoke with a reporter from *Business Insider*, revealing that Silbermann wanted the product’s purpose to be vague, so that Pinterest could be used by everyone for anything (Carlson, 2010). In addition, the source said that the original version of the

product allowed users to put images of things into buckets, and Silbermann “made sure that the image collection product wasn’t described as a utility for shopping alone” (Carlson, 2012). Silbermann’s girlfriend came up with the name “Pinterest” over Thanksgiving dinner (Carlson, 2012).

Pinterest launched its beta version in March 2010, at which time the website was still invite-only as part of its testing process (Engauge, n.d.). The site achieved major growth while in invite-only mode, acquiring about 1.5 million users, which was promising for marketers as it meant the growth was “organic in spread” (Johnson, 2012; Engauge, n.d.).

In August 2011, *Time Magazine* placed Pinterest as #38 on its list of “50 Websites That Make the Web Great” (Time, 2011; Engauge, n.d.).

Between May 2011 and May 2012, Pinterest’s audience grew 4,377%, according to ComScore (as cited in Perez, 2012a). In a similar study by Experian, Pinterest grew 5,124% between July 2011 and July 2012 (Marshall, 2012). Together with photo-sharing service Instagram, which grew an even most startling 17,319% that year, Pinterest broke into the top 20 social media sites that year (Marshall, 2012). Experian Marketing Service’s Head of Global Research Bill Tancer was quoted in a press release as follows (Marshall, 2012):

The growth of both Instagram and Pinterest over the past year has been phenomenal. The reason for their success is that they haven’t tried to be ‘another Facebook’ to reach consumers. Both networks are image based which people love – we all relate better to pictures than just words. For brands that are retailers for example, a site like Pinterest presents a fantastic opportunity to promote products in a compelling and organised way to a wide group of people across the world.

But its growth didn’t stop there. In April of 2012, Pinterest—still a startup by most standards—overtook Tumblr and LinkedIn as the third most popular social network in the US, behind Facebook and Twitter (Sutter, 2012). Around the same time, Sciarra left the

company (Andersen, 2012). Sciarra was listed as CEO on company documents until that point, transferring the title of Pinterest's one and only CEO to Silbermann upon his departure (Tsotsis, 2012).

Despite its lack of advertising, Pinterest has shown true potential as a marketing platform, earning itself enough funding to continue onward. In October 2011, Pinterest received \$27 million in funding, most of it from Andreessen Horowitz, who evaluated the company to be worth \$200 million (Kincaid, 2011). In March 2013, Pinterest not only received funding for all \$200 million, but was evaluated to be worth \$2.5 billion (Swisher, 2013; Tam & Ante, 2013; Taylor, 2013). The San Francisco-based company had only a staff of about 100 at the time, and a Pinterest representative was reported as saying that money will be put toward "typical growth-oriented initiatives: Hiring, new product and technology development, international growth" and so forth (Taylor, 2013).

E-commerce Statistics

Strong investor interest in Pinterest is not so surprising when its users' spending habits are taken into account. A 2012 survey conducted by e-commerce research firm RichRelevance found that Pinterest users spent the most money per shopping session than those of any other social network. In 2012, Pinterest users spent about \$80 per purchase on average — more than users from Facebook, Twitter, Google, Amazon, Yahoo!, Bing, YouTube or Vimeo (RichRelevance, 2012). The findings are based on data collected from more than 689 million shopping sessions taking place between January 1 and August 31, 2012 (RichRelevance, 2012). The data were limited to the US websites that were using RichRelevance's retail recommendation software, so the results are limited (RichRelevance, 2012). Nonetheless, in the study, nearly 86% of shopping sessions

stemmed from Facebook links, followed by about 11% from Pinterest and slightly under 3% for Twitter (RichRelevance, 2012). Facebook-based shoppers tend to stay longer on the retail sites they visit, in terms of page count, followed by Pinterest and Twitter (RichRelevance, 2012). And yet, while shoppers coming from Facebook and Twitter purchase things more often, Pinterest users spent dramatically more money: The average Pinterest order is \$168.83, compared to \$94.70 for Facebook and \$70.84 for Twitter (RichRelevance, 2012). A ComScore study supported this, indicating Pinterest buyers spent more, bought more items and conducted more transactions than other social media buyers even back in 2011 (as cited in Perez, 2011).

A third, narrower study conducted exclusively among Shopify e-commerce platform clients indicated Pinterest users spent closer to \$80 per purchase, but still double that of users from Twitter and Facebook. Shopify is a web-based e-commerce platform and it gathered its findings by analyzing data from 25,000 of its online Shopify stores (Hayes, 2012). The study found that buyers referred by Pinterest were 10% more likely to make a purchase than those from any other social network (Hayes, 2012). Though Facebook dominated as a source of consumer traffic to other websites at the time, Pinterest was sending more referral traffic to stores than Google Plus, YouTube and LinkedIn combined in 2012 (Hayes, 2012).

User Demographics, Adoption Trends and Engagement

Pinterest has a unique key demographic, and its adoption patterns illustrate this. Most startups' core user bases tend to come from early technology adopters on the East and West Coast (Constine, 2012b). And in May 2011, most of Pinterest's users were contained in the Pacific and North East regions (Constine, 2012b). However, Pinterest

has since developed user strongholds in the Midwest, a region typically known for later-stage adoption, fixating particularly among east-south-central and west-north-central states such as Kansas, Missouri, Minnesota and Mississippi (Goodman, 2012; Constine, 2012b). Midwest region visitors were up to 102% more likely to visit Pinterest than the average US Internet user (Goodman, 2011). And when it came to simply doing a web search for “Pinterest,” Midwesterners were up to 185% more likely to conduct the search as opposed to what Goodman referred to as “Coasters” (Goodman, 2011).

Johnson (2012) noted that Pinterest had a strong, unique personality about its content, especially in its earliest days. Not only did it have quality content, but it also had a lot of it, Johnson wrote (2012). And these are typically contradictory outcomes for new websites, as making a website public is typically the best way to obtain a lot of content, but this approach generally allows for websites to fill up with low-quality content (Johnson, 2012). Pinterest carefully controlled its invites and stayed in beta mode for “quite an extended period of time,” wrote Johnson (2012). “The core group of early adopter pinners really set the stage for Pinterest’s identity and quality expectations,” Johnson wrote (2012). Silbermann personally wrote to the first 5,000 users of the site, giving them his personal cell phone number and even meeting some of them for coffee (though the exact rationale behind these meetings has not been revealed in media coverage) (Griggs, 2012).

Pinterest users have also proven themselves to be extraordinarily engaged. The team at the RMetrics e-commerce analytics company sought to discover whether the usage and engagement numbers for Pinterest were as high as its traffic, and to try to find out exactly what had been driving growth, as Pinterest had been keeping most of its data

private (Moore, 2012a). The team wrote scripts to identify random users who joined at varying times in Pinterest's history, downloaded those users' complete histories of pins to conduct a cohort analysis (Moore, 2012a). In addition, they pulled several hundred thousand pins from the general user population. "We're confident that our sizable random samples are representative of the greater population they were pulled from," Moore wrote (2012a).

Their findings indicated that Pinterest was retaining and engaging its users two to three times as efficiently as Twitter was at a similar point in its own history (Moore, 2012a). The pins linked to a "tremendously large universe of sites," with the most popular source, Etsy, representing only about 3% of all pins (Moore, 2012a). And the quality of the average new user was high but in decline, as users who had joined in more recent months were two to three times less active during their first month than those who joined before them (Moore, 2012a).

However, because Pinterest's net attrition rate was found to be close to 0% in a later RJMetrics study conducted, this suggested indicated either "no one who starts using Pinterest ever stops or—more likely—that users who continue to use Pinterest become so much more engaged over time that their activities fully make up for those of any users who leave," according to Moore (2012b).

Content

As mentioned above, Pinterest has a relatively well-focused key set of content that likely sprung out of its initially invite-only user base and has since continued. But combining its high-quality content with its highly engaged user base, it comes as no surprise that Pinterest is also a hotbed for viral content, as well. More than 80% of

Pinterest content is recycled, or comprises repins, which illustrates the highly viral nature of its content in contrast to Twitter, for example, on which only 1.4% of Tweets were found to be re-tweets in the same study (Moore, 2012a).

RJMetrics conducted a study in order to find out what categories of pins and pinboards comprised some of the most popular content on Pinterest in 2012 (Moore, 2012b). Staff members sampled almost one million pins by browsing ID numbers and usernames from the general population, retrieving pins from about 9,200 unique users, stored across pinboards with about 15,000 unique names (Moore, 2012b). They found that the all-time most popular board categories were Home (17.2%), Arts and Crafts (12.4%), Style/Fashion (11.7%) and Food (10.5%) (Moore, 2012b). “Products I love” was the most popular pinboard name, and pins in this category were the most likely to be “liked” by other Pinterest users (Moore, 2012b).

The fastest-growing board category and the most likely to be repinned was food, which generated on average 50% more repins than its runner-up, Style/Fashion (Moore, 2012b). Food was established as the hands-down most viral content category, based on both repins and likes (Moore, 2012b). According to Goodman, these trends may foreshadow a more mainstream future for Pinterest’s content (2012b):

Pins about the home, arts and crafts and inspiration continue to dominate the content landscape, but the growing popularity of more broadly-accessible topics like Food and Product Recommendations could indicate that Pinterest is heading toward a more mainstream and commercialized future.

New Pinterest Features

To sustain business interest and make use of its data, the Pinterest team has launched a series of new features on its website. On February 12, 2013, Pinterest launched an

analytics system that would measure how much interest and traffic Pinterest was sending to other websites through its links (Tate, 2013). Pinterest was using the Pinterest Web Analytics feature as part of the process of laying the groundwork to begin selling advertising in its near future, and it was doing so by showing other sites just how valuable it was to them (Tate, 2013).

Pinterest product manager Cat Lee said the idea behind the analytics option was to help brands with their content strategy (as cited in Delo, 2013). To gain such insights before, users had to work with other startups, such as Curalate or Pinfluencer, to gain analytical data insights into the Pinterest-related performance of their content, but Pinterest decided to give it out for free (Delo, 2013). The analytics feature would be available to any account that completed the automated verification process upon registering (Delo, 2013). The tool lets users track how many people pinned content from their sites, how many visitors they received from Pinterest and how many Pinterest “impressions” their content had generated (Delo, 2013).

Among a series of other recent changes, Pinterest also rolled out a special account option for businesses in early 2013, stepping away from its previously indistinguishable account format that served commercial and private users alike (Pinterest, 2013). However, despite the different internal functionality, it does not yet appear that business pinners and private ones are at all visually distinguished among Pinterest’s streams of content or publicly viewable profile pages.

Awards

Pinterest has won several awards since its founding, beginning with the 2011 Crunchie award for “Best New Startup” for its “crazy traffic and growth” (Perez, 2012b).

It won the 2012 Breakout Digital Trend award at the annual South by Southwest Interactive Conference in Austin, Texas (Price, 2012).

For the 16th annual Webby Awards held in 2012, Pinterest won the official Webby award for social media and the “People’s Voice” award for “Best Visual Design – Function” (The Webby Awards, 2013). The nominees for both the official Webby winners and the Webby People’s Voice award winners are chosen by the International Academy of Digital Arts and Science (IADAS), which comprises more than a thousand members including web experts, business figures, creative celebrities and so forth (The Webby Awards, 2013). People’s Voice winners are decided by millions of votes from the worldwide web community, whereas the official Webby award is decided by IADAS (The Webby Awards, 2013).

In order to establish the basis of a functionally based award, it is important to discuss how Pinterest works. The following section will largely address the basic interactive functions on Pinterest, while later sections will attempt to gain insights into the various conceptual models Pinterest users may employ through the examination of Pinterest-relevant metaphors.

How Pinterest Works

“Pinterest users employ intuitive curation tools to assemble, update and share their interests,” according to Popescu (2012). Boards, which are otherwise referred to as pinboards, are collections of image/video pins that are acquired either through Pinterest’s bookmarking tool for web browsers (“Pin It”), through direct upload of photos from smartphones carrying Pinterest’s mobile app, or through the repinning of existing Pinterest content pins (Pinterest, 2013; Popescu, 2012).

The pin is the cornerstone of Pinterest's user interface and is represented by a fixed-width rectangle that consists largely of an image file (figure 1). Individual pins carry small captions below images, and beneath those captions are indicated the numbers of repins, likes and comments for each pin. Below that, there is a small image of the last person who pinned the pin and his/her name, as well as a snapshot of pins from the boards onto which it was pinned, and the board's name. When one rolls over a pin with a mouse cursor, this brings up a red Pin It button and a gray Like button in the upper left-hand corner of each pin (figure 1).



Figure 1. Typical pin with rollover features. The above image shows a typical pin, featuring a caption, most recent pinner and pinboard onto which it was pinned, as well as the pin's options when one has rolled over it with a mouse. (Pinterest, 2013).

Starting in December 2012, Pinterest began to roll out a redesigned version of its user interface that accommodates larger pins, among other changes to its overall design and layout (Pinterest, 2013; Indvik, 2013a). As a result of the redesign, Pinterest's key

content categories can now be accessed by rolling over a small button in the upper-left corner of the top bar, which sits next to the search feature (figure 2).

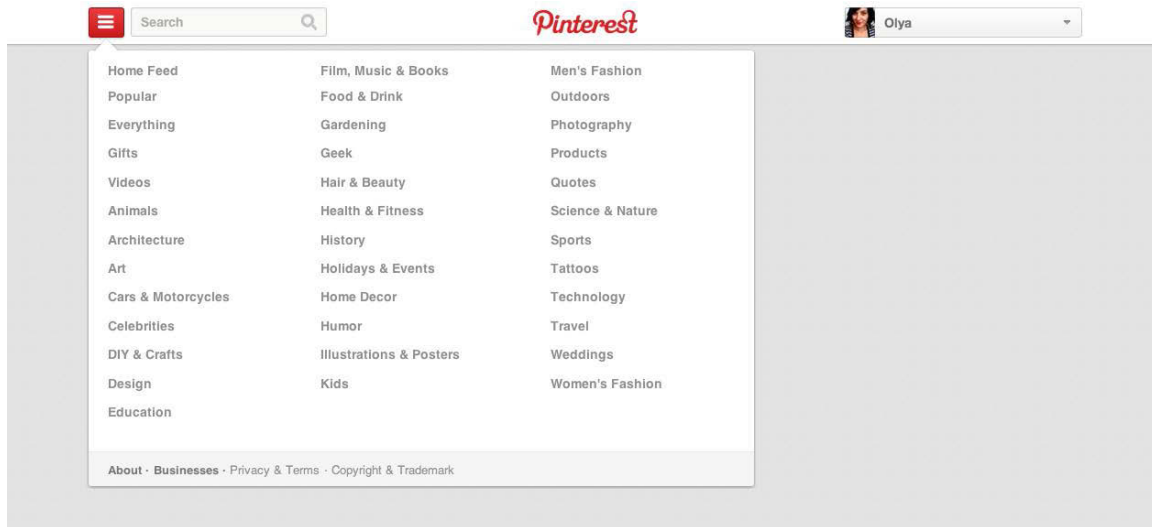


Figure 2. Drop-down content category menu. The above image shows content categories that can be accessed by rolling over the button at the top-left of the bar featuring the Pinterest logo. (Pinterest, 2013).

Opposite the search bar, on the other side of Pinterest's logo, there is a profile page button with small square featuring Pinterest user's profile picture and name. It serves as both a link to a user's profile page and as a drop-down menu (Pinterest, 2013) (figure 3). As seen on the screenshot below from *Mashable* writer Lauren Indvik's personal profile page (figure 3), the drop-down menu offers users direct access to their own content, as well as a way to add a pin from within the site and access other features (Indivk, 2013a).

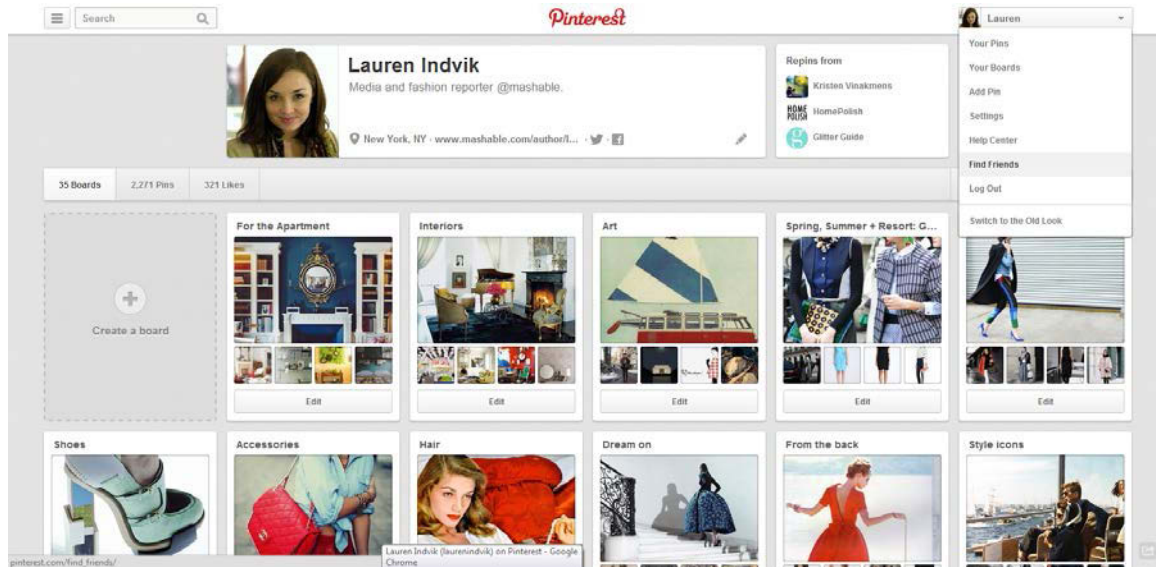


Figure 3. User profile page/homepage with dropdown menu. This image shows a typical user homepage, which features various boards, basic user information and the number of pins, boards and likes belonging to each user, as well as the ability to switch between them. The button in the upper-left corner shows the following options upon rollover: Your Pins, Your Boards, Add Pin, Settings, Help Center, Find Friends, Log Out, and Switch to the Old Look. (Indvik, 2013a; Pinterest, 2013).

Most pins work as links to individual websites or image source files. In order to pin a pin, one can either use the “Add a Pin” function on one’s “Your Pins” page, or use the “Pin It” bookmarklet, which Pinterest has developed with a drag-and-drop install function for web browsers. Pins can be created from most image and video files across the web, as well as from original user content. Users have the option to accessing their own content via URL, computer file upload or by taking a photo by phone, if they have a camera-ready smartphone with the Pinterest mobile app installed. Though pins that are already featured on Pinterest can be pinned as well, they generally qualify as a “re-pins,” which comprise 80% of all pins (Moore, 2012a). In the process of pinning or re-pinning, pinners must allocate a board for each pin, categorizing their content or sending it into a catch-all

board. If a user wishes to only click “like” on a pin, s/he does not need to assign it to a board but can still access all of his/her “liked” pins from his or her profile page.

When one clicks a pin, it is enlarged within the same window, showing, through a collection of three closely placed but not connected rectangles, additional information and providing options for sharing the pin through other media, for directly accessing the pin’s original source website (figure 4). The “Website” link button sits to the right of the now-always-visible Pin It and Like buttons, which together sit above the image but stay in a fixed location at the top of the screen as one scrolls down. On the right-hand side of the enlarged image appears a snapshot of pins from the board onto which the original pin was pinned in that instance, giving the user the option to follow or unfollow the board, as well as access it directly. Below it, there is a three-by-three square image grid containing other pins from the original source website, which, too, can be accessed directly.

According to Indvik (2013a), this part of the redesign helps improve Pinterest’s strength as a content-discovery tool, as it helpfully suggests for users sources of similar content.

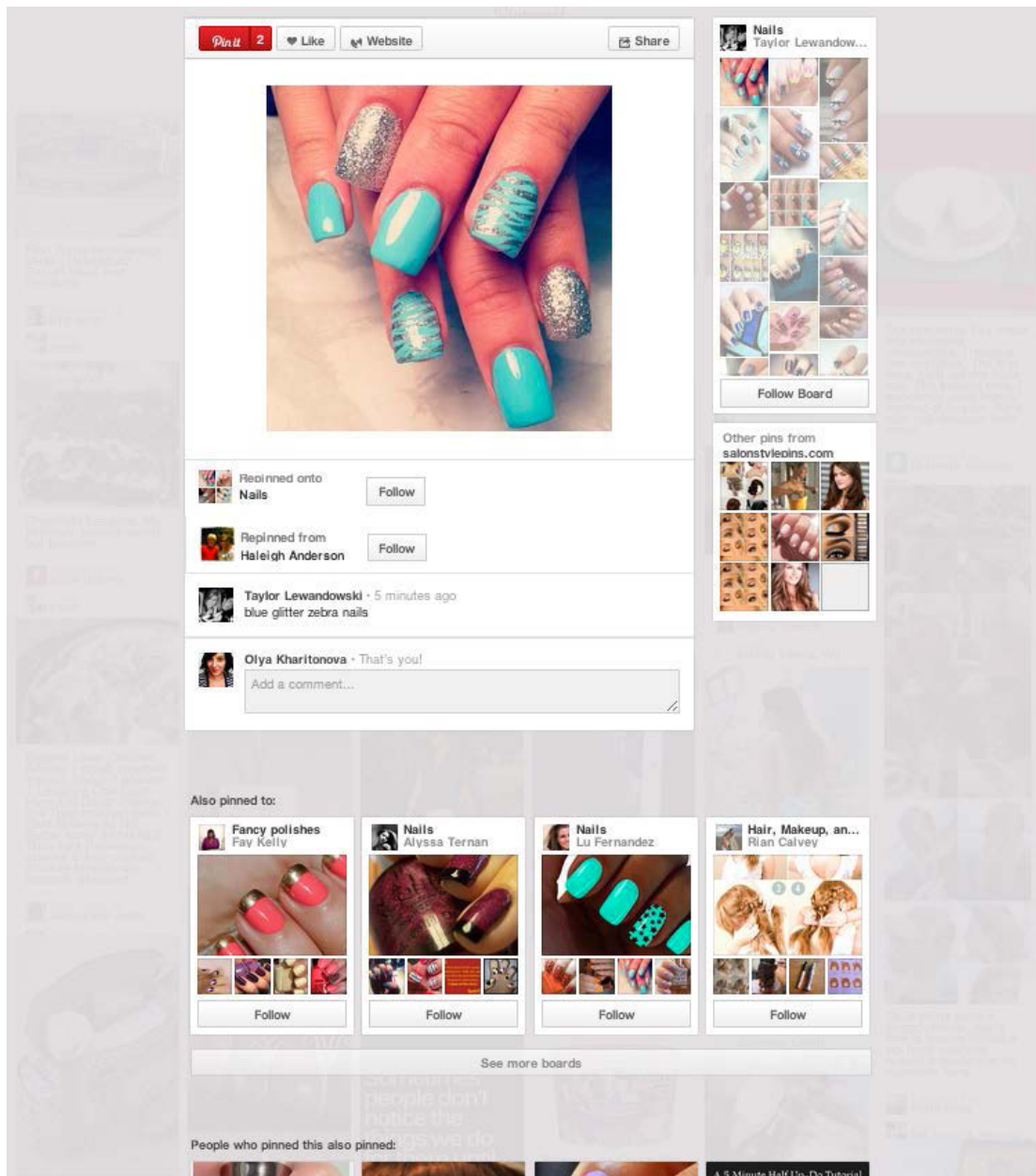


Figure 4. Pop-out pin view. This image shows the pop-up view of a pin once a user has clicked on it, and the accompanying features that come up as a result of the most recent Pinterest redesign. (Pinterest, 2013).

Unlike in the smaller version of each pin, the expanded pin window indicates the time since the given pin was pinned or repinned and the last person from whom the pin was repinned, when applicable. This information sits directly below the enlarged image of the pin. However, when one rolls over it, a small bar pops up which features the name of the

original source website below the image (which serves as another direct link) to the left of the bar, and hosts a small flag-shaped icon to the right of the bar, offering users the opportunity to “flag” inappropriate content. If one keeps scrolling down, then an overlay of pins can be found, showing other pins from users who pinned the above pin in an infinite scroll setup.

Although the Pinterest homepage, the “Everything” page (figure 5) and even results page of a term-specific search could all arguably all qualify as boards, as they barely differ in structure, the website only uses the term “board” to refer to content collections belonging to individual users, as found on their profile pages. Boards are in many ways comparable to photo “albums” on other websites, like Facebook, in that they contain a modular arrangement of images that enlarge once clicked.

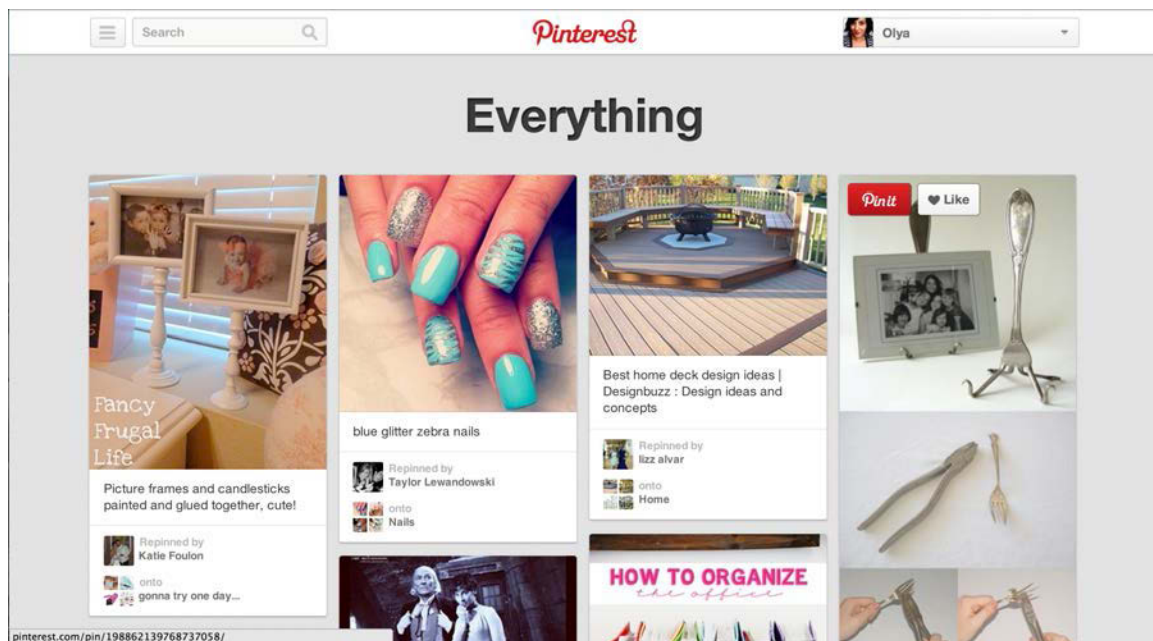


Figure 5. Everything page. This is the “Everything” page on Pinterest, which is a catch-all content category that features content from all boards and users, aside from private boards, as it comes in. The first three pins from the left illustrate regular pins, while the pin to the far right shows a pin when one has rolled over it with a mouse. (Pinterest, 2013).

Pinterest users can choose to follow individual boards just as they can follow individual Pinterest accounts/members.

Pinterest pages have been noted for their infinite scrolling—a feature for which a plugin had been introduced back in 2008 (Johnson, 2012). Infinite scrolling automatically loads content as a user comes close to the bottom of a page, which eliminates the usability barrier of clicking “next page” and allows for uninterrupted viewing (Johnson, 2012). The Facebook newsfeed, referred to by Johnson as “the epitome of website addiction,” uses infinite scrolling.

Infinite scrolling is also one of the key differences between Pinterest and WeHeartIt, which is a website that is similar to Pinterest and also preceded it (figure 6). Founded in 2008 by Fabio Giolito in Brazil, WeHeartIt is an image-oriented site that refers to itself as “a home for your inspiration” that allows people to organize and share things they love (WeHeartIt, n.d.). At one point, WeHeartIt was almost five times the size of Pinterest—carrying 7.7 million unique visits and 460 million page views in July 2011, while Pinterest was still in its early stages with only 1.5 million unique visitors and 91 million page views (Shontell, 2012). Like the Pinterest Pin It button, WeHeartIt uses a “Heart” button that is installed into one’s web browser and allows users to quickly link content from other sites (WeHeartIt, n.d.).

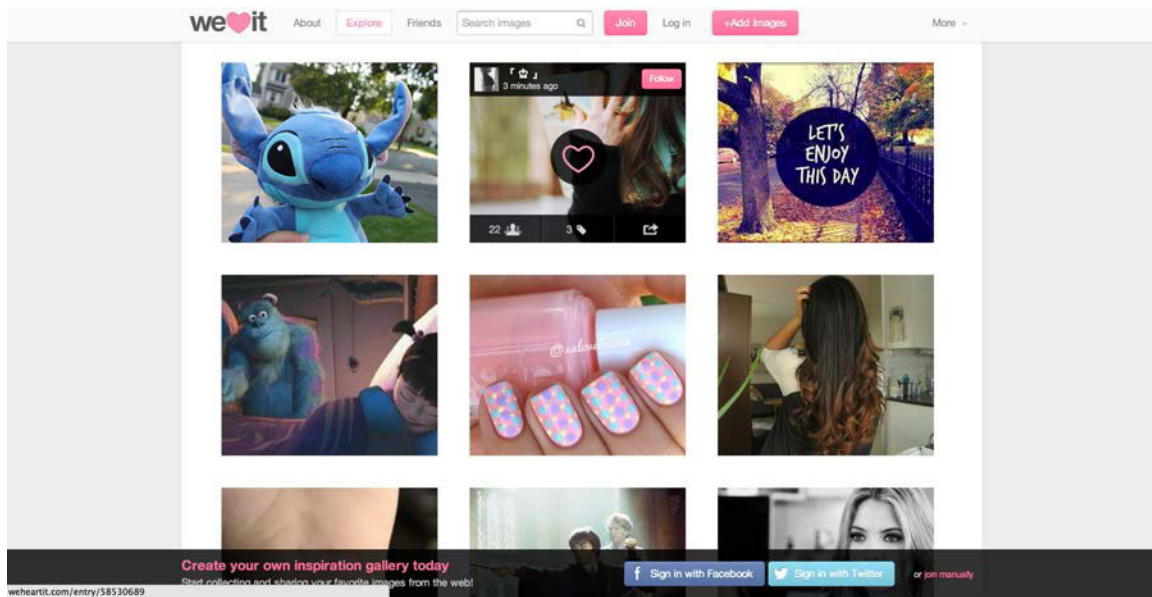


Figure 6. We Heart It homepage. This is a screenshot from We Heart It, a high visual and Pinterest-like website that actually preceded Pinterest. The center-top pin shows the roll-over options, and the heart in the center is comparable to Pinterest’s “like” feature. (We Heart It, 2013).

Pinterest uses a masonry style layout, which is a relatively recent web development trend named after the jQuery Masonry plugin, though Pinterest uses its own scripts (Johnson, 2012). “Basically, masonry style layout creates the most efficient utilization of space possible given varying image heights,” wrote Johnson (2012). However, websites such as Image Spark had integrated the layout style prior to Pinterest, showing that this design feature alone does not offer full explanatory power regarding Pinterest’s strengths in terms of the originality of its interface (Johnson, 2012).

CHAPTER III

PINTEREST METAPHORS

Silbermann's lifelong fascination with collecting bugs that inspired the basis for how Pinterest is used, Silbermann indicated in an interview (Chafkin, 2012). In the interview, Silbermann said that as kid he would find bugs such as flies, grasshoppers and weevils, pin them to a piece of cardboard, dry them, tag them and put them into shadow boxes—creating his own miniature museum of natural history (Chafkin, 2012). At Chafkin's suggestion that “this sounds like a slightly ridiculous stab at a creation myth,” Silbermann reportedly smiled and responded by saying he grew up in the Midwest (Chafkin, 2012). According to Chafkin, “Silbermann suggested that a digital collection--of books, clothes, or even insects--could be a powerful medium for self-expression” (2012).

Pinterest's founding designer Sahil Livingia wrote that Pinterest's design works so well because it builds on concepts with which people are already fully familiar (2012):

Why does a board on Pinterest look the way it does? Because other people determined what a pin board should look like and what it is used for, what ‘to pin’ means, and what it implies. Good design means building on earlier ideas, just as in math or physics.

Johnson, too, noted that, in his opinion, Pinterest's key metaphor was one of its key strengths (2012):

The metaphor behind Pinterest is instantly understandable and quite catchy to discuss. The idea is that Pinterest is your “virtual pinboard.” You create various “boards” and assign them categories, then use a bookmarklet or the main feed to “pin” items to your boards. Other users can then follow boards from users they like and receive a custom stream of content tailored to their specific tastes.

While the idea of pinning pictures on boards appears is a simple and straightforward one, there also appears to be overwhelming evidence that Pinterest's pinboard interface metaphor is not wholly representative of the kind of activity that takes place on Pinterest. As a result, there may be a mismatch between the designer's conception of how Pinterest is used and the reality of its applications among users, particularly among some of Pinterest's strongest audience bases — Midwestern women who are traditionally late technology adopters, and happen to be high-spending consumers as well as arts and crafts aficionados. In order to examine Pinterest's appeal among this demographic, it may be important to examine other metaphors, as well.

Furthermore, the pinboard metaphor represents Pinterest as essentially a single-layer environment in which users bring content together and store it for themselves. In reality, however, Pinterest content is predominantly linked to outside sources, which indicates that it serves at times as an intermediary between e-commerce sites and potential shoppers. This role of Pinterest, too, needs to be further examined so that a comprehensive conceptualization of Pinterest can be formed on the basis of relevant, descriptive metaphors that offer more insight into Pinterest user behavior. First, however, it is important to discuss the role of metaphors in user experiences and their historical context, which explains why older media have a tendency to be used in describing newer media.

User Interface Metaphors and Models

User interface metaphors are important in website design because they help shape how users think about their interactions and help make new technologies learnable and accessible on the basis of existing knowledge.

Translation is the most key role of the user interface. Because computers work in small pulses of electricity, which are translated into zeros and ones, the computer's language is not only textual, but also nearly impossible for a human to understand (Johnson, 1997). Humans tend to better remember images than text, thus the visual nature of the user interface is intended to be exceptionally human-friendly (Johnson, 1997). Johnson described interface design as the intersection of art and engineering, and interface designers as a fusion of the two, acting as people "charged with the epic task of representing our digital machines, making sense of information in its raw form" (1997).

Metaphors act as conceptual models for people in the technological context. "Whenever a new technology is introduced, people often employ metaphors as conceptual models to help them define its use and potential," according to Gill (2010). These metaphors are generally applied toward user interfaces, which serve as translators or mediators between computers and users, making each sensible to the other (Johnson, 1997). As such, the largely unintelligible language of zeros and ones used by computers ends up, more often than not, being replaced by a metaphorical representation, starting with virtual folders on virtual desktops (Johnson, 1997). The desktop metaphor, which persists to date, providing users a way to conceptualize their computer interactions (Gill, 2010). However, the "evolution of function and form necessitates a corresponding evolution of metaphors," Gill wrote, adding that, otherwise, people's ability to use and understand technologically advanced devices can be inhibited (2010).

Just as the physical trash bin has made its way onto digital machines as a tool for deleting data, there is a long history of metaphors that recycle existing ideas. "The term *computer* itself derives from low-tech roots: computers were human calculators in the

days before digital code, workers skills with the slide rule and old-fashioned long division,” Johnson wrote (1997). According to Johnson, there is some irony to the use of outdated metaphors in developing cutting-edge interfaces for technology (1997):

Organic, low-tech metaphors once belonged to those lagging behind the machinic power curve, the Luddites and the antediluvians, the poets and the novelists, the ones reaching for older analogies because the shock of the new had so overwhelmed them. In today’s society, the task of translation has migrated to the technicians. In the age of the graphic interface, with its visual metaphors of trash cans and desktop folders, imaginative flashbacks have become programming feats, conjured up by high-tech wizards hacking away in assembly language.

Since the Web went public in 1991, the “Web page” metaphor has stood in its representation, which makes sense considering the original Web was the domain of researchers, scientists and professors who used it largely for storing, retrieving, searching, sharing and displaying of various academic documents (Gill, 2010). “In fact, the innovation of hyperlinks can be seen as operating in much the same manner as a table of content, footnotes, or an index in printed form,” Gill wrote (2010). However, individuals and organizations from outside the academy quickly embraced the Web (Gill, 2010). New Web technologies such as Macromedia Flash, audio and video streaming, cable modems and broadband brought with them an influx of interest from media artists and communication designers who wanted to realize their creative visions through web design (Gill, 2010). As a result, websites began resembling pages less and less (Gill, 2010):

Prompted by the desire to create onscreen Web *spaces* rather than Web *pages*, communication designers with backgrounds in art and design drew upon visual and spatial metaphors borrowed from architecture and CD-ROM design. Their terminology—portal, site, site map, image map, information architecture, navigation, browser window—is now part of the Web lexicon. As we observe shifts in creative practice, it is important and appropriate to re-examine the language we use to guide,

describe, and analyze that practice. Pages continue to have a place on the Web, but *the page as a dominant metaphor no longer provides an accurate conceptual model.*

Conceptual models are important in that they determine how people are likely to approach a medium in terms of creative, interactive and critical practice (Gill, 2010). Good conceptual models allow people to predict the effects of their actions and contribute to the usability and understandability of systems (Norman, 1990).

Mental models are conceptual models of the way things work, events take place or people behave and they form on the basis of people's tendencies to form explanations (Norman, 1990). The term "mental model" was coined in the 1980s in describing mental representations of knowledge about HCI systems (Qian, Yang and Gong, 2011). Though the field of computer science largely focuses on the function of mental models, a mental model has been historically understood as knowledge about a system and about how domain tasks are manipulated with it (Qian et al., 2011). Mental models are developed through people's experiences, training and instruction (Norman, 1990). In the case of technological devices, mental models are formed when people interpret a device's perceived actions and visible structure (Norman, 1990). Norman referred to this type of model as a system image (1990).

The design model is the conceptual model belonging to the designer of a system, and the user's model is developed through a user's interaction with the system (Norman, 1990). The design model is, in ideal scenarios, based on the purpose of a system and accounts for all the materials required for system functions, but its comprehensiveness largely depends on the designer's professional knowledge and personal characteristics such as cognitive style and cultural background (Qian et al., 2011).

“If the system image does not make the design model clear and consistent, then the user will end up with the wrong mental model,” according to Norman (1990). As mental models are often shaped on the basis of fragmented evidence, a poor understanding of what is occurring and “with a kind of naïve psychology that postulates causes, mechanisms, and relationships even when there are none,” faulty mental models can result in user frustration or even devastating accidents, in the case of larger-scale projects such as aircraft design (Norman, 2009). However, because there is an imbalance of system knowledge between system designers and users, it is expected that their mental models are not the same (Qian et al., 2011).

According to Qian and colleagues, though it has been long held that interfaces should fill the knowledge gap between users’ and designers’ mental models, there are no suitable tools or techniques for designing user interfaces based on a specific mental model, especially considering that the concept of the mental model itself has been lent to multiple interpretations (2011). It is important for designers to build interfaces that are similar to users’ mental models, as the user’s model provides both explanatory and predictive power and determines the user’s performance (Qian et al., 2011).

Regardless of whether or not Pinterest’s interface was built around the pinboard metaphor, or simply dubbed with it after the fact (and perhaps after the site was named by Silberann’s girlfriend), examining the strengths of the pinboard metaphor can help identify its weaknesses all the same.

Pinboard Metaphor

According to the online Oxford Dictionaries, a pinboard is “a board covered with cork and fixed to a wall so that messages and pictures can be pinned on to it for display”

(2013). According to Merriam-Webster's online dictionary, however, a pinboard is "a board set with numerous pegs on which yarn bobbins or spools may be placed for transportation and use" (2013). The latter definition falls more closely in line with that of a bulletin board (or corkboard), which is supported by the fact that Wikipedia redirects the search for "pin board" and "pinboard" to its "bulletin board" page (2013).

In its definition for all three items, the Wikipedia entry states the following (2013): "Bulletin boards are often made of a material such as cork to facilitate addition and removal of messages, or they can be placed on computer networks so people can leave and erase messages for other people to read and see." As such, I believe the bulletin board metaphor is interchangeable with the pinboard metaphor, and Pinterest should be evaluated under the former.

Though it is difficult to pinpoint the exact invention of the bulletin board, US patent records indicate it existed well into the 19th century and changed form several times until the modern corkboard came about. Bulletin boards, otherwise known as advertising boards, were around before 1896, when Harold E. Lean and Nicholas S. Bray applied for a patent for an improved board that held messages, which written on thin slats that could be slid in and out of the pockets on the sign (Lean & Bray, 1896; Cannon & McGrath, 1887). Cork-based variations can be traced back to patent records as far as the early 20th century (Loveless, 1919; Fox, 1940).

Very limited historical record exists on the bulletin board outside of patent documents. Its digital counterpart, however, has been far better documented.

Early Bulletin Board Systems

Bulletin Board Systems (BBS) were the bulletin boards' technological counterparts, whose heyday took place between the late 1970s and mid 1990s (BBS Corner, 2009). BBS referred to the "traditional cork-and-pin bulletin board often found in entrances to supermarkets, schools, libraries or other public areas where people can post messages, advertisements, or community news" (BBS Corner, 2009). However, though physical bulletin boards may be conducive to visual media, their technological counterparts long preceded graphical user interfaces (GUI) and were, instead, used in establishing some of the first social networking to ever take place (Hafner, 1997). "Social design for interactive digital spaces has been around since the earliest bulletin board system," wrote Crumlish and Malone (2009) in their book *Designing Social Interfaces*. Like the bulletin board, social spaces predated the Internet and GUIs, such as in the case of The Well (Crumlish & Malone, 2009; Hafner, 1997).

"Bulletin Board Systems were in many ways a precursor to the modern form of the World Wide Web and other aspects of the Internet," according to The BBS Corner (2009):

A Bulletin Board System, or BBS, is a computer system running software that allows users to connect and log in to the system using a terminal program. Once logged in, a user can perform functions such as uploading and downloading software and data, reading news and bulletins, and exchanging messages with other users, either through electronic mail or in public message boards.

Early BBS connections could be dialed into by phone, and were used for social networking (BBS Corner, 2009). The Well began in 1985 as a VAX computer and rack of modems in California and attracted highly educated, male, largely baby boomers in their late 30s and early 40s (Hafner, 1997). Another, even earlier online forum was

PLATO, which was founded two decades before the World Wide Web and arguably led to the emergence of possibly the world's first online community (Woolley, 1994).

PLATO was developed in the 1960s at the University of Illinois's Urbana campus as a timesharing system, and in 1973 Woolley wrote a program for it that allowed users to report system bugs online and get help from more experienced system users (Woolley, 1994). Between 1973 and 1974, a sense of online community began to develop out of PLATO, starting with campus faculty, students and staff and expanding outward nationally to host conversations, multiplayer games and more. Whereas PLATO's community emerged spontaneously from a program designed for other purposes, The Well was an intentional community, and its founders were most likely unaware that PLATO ever existed (Woolley, 1994). "Among the online services I have seen, the WELL has best succeeded in building a community comparable to PLATO's. Ironically, the WELL has its roots with EIES and Confer; as far as I know, its founders were unaware of PLATO," Woolley wrote (1994).

The popularity of BBS died down as Internet use became widespread in the 1990s (BBS Corner, 2009).

Pregnancy Bulletin Boards

One type of bulletin board did persist into the Internet age from the text-era Internet, even before the wide spread of advanced GUIs on the web, collected the attention of late adopters of technology and was dominated by women much like Pinterest: pregnancy bulletin boards (Nakamura, 2008). According to Nakamura, pregnancy bulletin boards and blogs have in modern times assumed a default female user (2008). In her examination of the bodily representations of women on pregnancy bulletin boards,

Nakamura wrote that pregnancy research was an early motivator in bringing women, who were typically late adopters of web technologies, online:

Many North American women take pregnancy as an Internet search assignment, using the medium to find health information, both official and anecdotal; to share stories, fears, and anxieties with other program women whom they may or may not know; and to view and exchange visual image of their own pregnant bodies as well as those of others.

Websites such as Babydream.com, iVillage.com, Pregnancy.org and ParentsPlace.com have brought together women who were pregnant, trying to conceive and already mothers (Nakamura, 2008). It should be noted that since Nakamura's study, Babydream.com has turned into an Amazon-affiliated commercial sales website and ParentsPlace.com has shut down, while iVillage and Pregnancy.org have both caught up to speed with modern trends in design and took up more visual interfaces (iVillage, 2013; Pregnancy.org, 2013; Babydream.com, 2013). Furthermore, though Nakamura referred to the communicational pages of these sites as bulletin boards, there is no evidence that the site creators themselves referred to them as such. In the case of iVillage, for example, the forums are referred to simply as "boards," which means they could also serve as message boards, which is also a common approach to the text-dominant aspects of such websites on which users interact (iVillage, 2013).

While early posts on the websites comprised predominantly text-based information, women appended avatars that represented them as cartoons to their digital signatures. "These signatures, or 'siggies,' as they are called on pregnancy Web sites, were an enduring feature of early e-mail visual cultures before the graphical Web," according to Nakamura, who added that such signatures also included ASCII art images, all of which

were part of the Internet's early DIY culture (2008). An example of a digital signature from Babydream.com can be seen in figure 7.



Figure 7. Pregnancy bulletin board post and digital signature example. The above image is an example of a typical post and its accompanying digital signature on now-defunct pregnancy website Babydream.com. (Nakamura, 2008).

According to Nakamura, the users of such websites were often stay-at-home mothers, and they used their digital avatars and decorative digital signatures to signify “identities in progress, literally often in transition between the social and bodily states ‘woman’ and ‘mother.’” Women comprised a very small minority of Internet users in this era:

Parenting Web sites exemplify the ways that women use the Internet to graphically embody themselves in specific reproductive states, that is, as pregnant women, nursing women, and mothers. They draw significant numbers of women who exemplify the profile of the “late adopter” of the Internet; that is to say, they are often stay-at-home mothers who are from the working or middle classes rather than professionals who might be required to use the Internet for work. According to Nielsen research, moms are 61% more likely to use Pinterest than the average American (2012).

Pinterest as a Bulletin Board

Because physical bulletin boards, early BBS systems and even the somewhat decorated pregnancy bulletin boards of the ‘90s originally hosted primarily written communications, the application of the bulletin board metaphor on Pinterest seems to offer only a limited explanation as to how it is used by users. Early BBS served in large part as the predecessor to social networking, relying on written information just the same.

The social networking aspect of BBS would appear to apply to essentially all other social media, though perhaps less to websites like Pinterest and Instagram, as they rely predominantly on visual, rather than written, content. The text-dominant nature of both the earliest physical bulletin boards, pregnancy bulletin boards (alternatively known as message boards or forums) and of BBS does not adequately represent the Pinterest user

interface, as they all preceded GUIs in the first place. The only relevant thing about the physical bulletin board to Pinterest's user interface, then, appears to be the practice of "pinning" content.

Whereas this was traditionally done by pinning sheets of paper to cork with pushpins or thumbtacks, Pinterest's version of the paper is actually referred to as the pin itself (Pinterest, 2013). Thus, Pinterest users pin pins onto boards, but the actual substance that is being pinned is not referred to as anything more than a pin itself. This term allows for a kind of ambiguity regarding the actual content of a pin, whose options have expanded from simple, flat images to videos in 2012 (Pinterest, 2013). However, much like the early pregnancy bulletin boards, Pinterest has in fact been successful in attracting women, particularly those who stem from parts of the country known for its late adoption of technology. As Pinterest is dominated by women, it is naturally dominated by women's content, as well. There may be a case to be made regarding the representation of pregnancy and pregnant bodies on Pinterest, as the website was founded in an era when digital, personal photography was inexpensive and easily attainable, allowing for user-generated content as well as amateur blog content to be made visible on the site. It is possible Nakamura would consider a step in a positive direction regarding the presentation of pregnant bodies. Nakamura described relatively simple, low-quality images with interchangeable cartoon body parts and clothing that women used to put together their personal avatars and signify their pregnancy status.

On Pinterest, images of pregnant women can be seen in a variety of categories, ranging from professional photography illustrating romantic pregnancy images of couples, to user-created photos showing their personal progress in a pregnancy, to photos

of mixed origins representing clever pregnancy announcements, showing either the woman alone or as part of a couple, for example (figure 8). Pinterest also features informational content on pregnancy, which ranges from infographics, pregnancy tracking apps and links to books to blog entries and articles on everything ranging from early symptoms to the treatment of pregnancy-related disorders (Pinterest, 2013). There are also pictures of pregnant celebrities, pregnancy fashions and even excerpts from pregnancy scrapbooks (Pinterest, 2013).

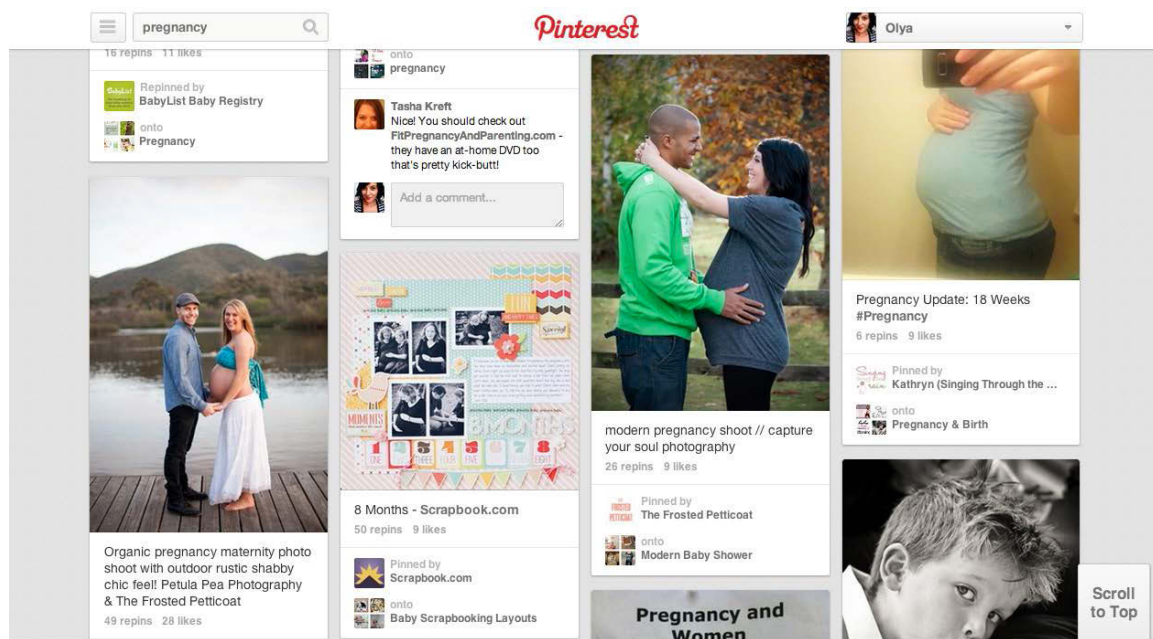


Figure 8. Pinterest pregnancy search term results sample. This is a screenshot from a keyword search of “pregnancy” on Pinterest, which shows various representations of pregnancy, ranging from professional photos to personal status update images and even a excerpt of a pregnancy scrapbook. (Pinterest, 2013).

Naturally, there appears to be a similarity in the way women have used pregnancy bulletin boards and Pinterest to disseminate pregnancy-related information, seek advice and share progress. However, Pinterest’s visual nature appears to have strongly expanded past the capacities of early, low-tech pregnancy bulletin boards, in that it links users to a wide array of information, products and tools while allowing them to directly upload photos of their personal “baby bumps” in place of having to create avatars.

Scrapbook Metaphor

While the bulletin board metaphor has been applied to computer services that existed long before the Web, some argue that modern social media websites more closely resemble the practice of scrapbooking (Good, 2012; Nakamura, 2008). Such as in the case of Pinterest featuring scrapbook pages from pregnancy scrapbooks, scrapbooks appear to strongly resemble the kind of memory-storing functions for which Pinterest itself has been used by its audience. In his examination of Pinterest's popularity in particular, Goodman indicated that he believed the website's proliferation and popular appeal in the Midwest was likely connected to scrapbooking, as well (2012):

My anecdotal research (i.e. me speaking with my female colleagues in Chicago who introduced me to the site) suggests that Online Pinboarding mirrors scrapbooking as an activity, which is apparently huge in that area of the country. This is further backed up by my discussions with my East/West coast colleagues who all seem to agree; they are just not scrap-bookers at heart. The real growth to this point has come from the scrapbook-heavy Midwest, and it is only recently that the too-cool-for-school Coasters have begun to catch on. [sic]

Hunt defined scrapbooks as “cultural artifacts that contain expressions of the literary and rhetorical impulse to express oneself in words, pictures, and other artifacts” (2006). In *The Scrapbook of American Life*, Tucker, Ott and Buckler (2006) wrote that scrapbooks have historically served as “a central storehouse for U.S. memory.”

From commercial or “clipping scrapbooks” to memorabilia scrapbooks, women dominated the scrapbook scene, as scrapbooks tended to fall in line with traditionally female interests and duties of the nineteenth century (Tucker et al., 2006). However, professional scrapbooks were, too, employed — particularly among men. Scrapbooks became commonplace around the late nineteenth century and experienced a bit of a revival in the late 1990s and 2000s, though the digital era has increasingly appropriated

them to the Web (Tucker et al., 2006). There does not appear to be any conclusive evidence that scrapbooks are used primarily in the Midwest, though there does appear to be a stronger interest in the Arts and Crafts category of Pinterest among its Midwestern users, which may imply that scrapbooks, too, are more popular in that part of the country (Hitwise, 2012).

The scrapbook metaphor has been widely thrown around media coverage of Pinterest already, as one of the many ways in which the site's functionality and use can be explained (e.g. Nakamura, 2008; Good, 2012; Goodman, 2012). One blogger for Sys-Con Media actually indicated that the number one reason he does not expect men to ever fully balance the scales of Pinterest's demographic is precisely because Pinterest works as a scrapbook (Palmer, 2013).

Women in the Northwest and Southeast regions of the United States have been shown to take a disproportionately high interest in Pinterest, and among nine out of 10 top over-indexed states, there is also a disproportionately interest in the Arts and Crafts category of content (Hitwise, 2012). This evidence appears to support Goodman's (2012) speculation that there is an inter-relationship between Midwestern scrapbookers and Pinterest users. In particular, this relationship could help explain Pinterest's strongholds and growth in parts of the country where technological adoption has tended to come later, as well as women's overall over-representation on Pinterest and their high spending via referral traffic, as compared to more established websites such as Facebook and Twitter (RichRelevance, 2012).

Scrapbooks as Tools for Nostalgia

Scrapbooking has historically been a female-dominated activity, just like the making of albums, and both were linked to “traditional female concerns of holding families together and preserving nostalgic items,” according to Tucker and colleagues (2006).

Nakamura noted that much of women’s online activity can be conceptualized as rooting from scrapbooking (2008):

Indeed, it may be critically productive to envision women’s blogs, digital signatures, and other representational products online as an extension of the offline material culture of scrapbooking, part of a complex of tasks that women have performed since time immemorial: the management of family memory. Scrapbook hobbyists refer to themselves somewhat touchingly as “memory consultants,” implying that their function has to do with the business of memorializing the ephemeral “look and feel” of family life with small children.

Digital signatures and avatars that were present in early pregnancy bulletin boards functioned “as a form of vernacular memory management,” which women used to share the lives of their offspring alongside their lives as new and soon-to-be mothers (Nakamura, 2008). Comparing the production of digital signatures on pregnancy boards to quilting, Nakamura argued that both comprised scraps of information that are differently sourced and perhaps mismatching, while containing meaning all the same (2008).

One early scrapbook variant was the *album amicorum*, or “friendship book,” which was used from the sixteenth century to the eighteenth century (Tucker et al., 2006). Good drew a comparison between scrapbooks used as friendship books, such as the *album amicorum* and autograph albums, and Facebook, indicating that both kinds of media depend on diverse streams of personal content and “serve as reservoirs for that content,” particularly in documenting and preserving memories of friendship (2012). “Although

friendship books and Facebook initially flourished through youth practices of exchange in educational settings, neither format remained limited to students or to textual inscriptions for long,” Good wrote (2012). Just as the explosion of print media overturned textual scrapbooks into more visual media, Facebook’s eventual addition of photo features, news feeds and other applications greatly expanded its capacity as a multimedia outlet for communication (Good, 2012).

Pinterest, on the other hand, started out as a photo-centric website, becoming only more visual through its most recent update that featured larger pins, and becoming multimodal by adding video functionality, as well, in 2012. And while Pinterest allows for a more open social environment in which strangers can follow one another without necessary permissions and comment on, repin or like one another’s work, Pinterest still remains a social network in that it relies on such personal interaction for the diffusion of content. Nostalgic practices can take place by tagging one’s friend(s) in the captions of pins, and through commentary and reflection on friendship that can be observed through the sharing of “Humor” pins (figure 1). Even though Pinterest, as a platform for social interaction, may appear as somewhat impersonal, it does allow for the expression of sentiments regarding friendship as well as interaction between friends through likes, repins and comments on pins.



Figure 9. Friendship-related pin sample. A pin from the “Humor” category on Pinterest, which serves as a commentary on friendship, stating: “You know we’re good friends when I no longer feel the need to clean up before you come over.” (Pinterest, 2013).

Scrapbooks as Consumer Tools and Status Makers

According to Tucker and colleagues (2006), scrapbooking has historically fed two opposing impulses: first, to “grab and hoard” what people can before it moves out of reach, and second, to “select the exact thing and discard the rest.” While some have conceptualized scrapbooking under the “poaching” metaphor, Garvey referred to this practice as “gleaning” (2003):

Gleaning shifts from the implied masculinity of shooting game, engaged in a kind of warfare with the landowner, to a model of gathering that is not passive or compliant, and is decidedly open to feminine participation.

The scrapbook reached maturity around the same time industrial capitalism reached its first peak, when the late nineteenth century exploded with consumer goods, and mail-order catalogs and half-tone images were made accessible to consumers (Tucker et al.,

2006). It should be noted that magazines also came with a gendered component, as well. This took place around the same time as the Consumer Revolution, when consumer culture as we know it today began to take shape with the help of technological advances in the machinery of production (Damon-Moore, 1994). According to Damon-Moore, magazines such as the *Ladies' Home Journal* and the *Saturday Evening Post* “were prototypes that aided in the creation, development, and sustaining of the commercializing of gender and the gendering of commerce,” influencing gender roles as early as in the late 1800s (1994).

Such corresponding timelines must be examined more closely, especially if one takes into account Pinterest’s own overlap with the e-commerce boom and its top-notch spending statistics. Damon-Moore indicated that there was a strong inter-relationship between the magazine publishing industry, advertising and the rise of consumer culture, which together established females as important consumers and shifted advertising in their direction (1994):

Since a number of the earliest mass-produced items were assumed to be of interest to women, and since producers needed to move them and used advertising to do it, a significant proportion of early advertising was targeted specifically to women. By the late 1800s women were perceived to be at least potential consumers of a variety of products like clothing and entertainment items, and they were already viewed as the major consumers of household good. One analyst calls this development the feminization of American purchasing.

Scrapbooking has long proven itself as a consumption-oriented, at least among the commercial scrapbooks. “As caches for the booty of capitalism, scrapbooks fit seamlessly into the rituals of consumption and etiquette that helped new members of the middle class identify one another,” according to Tucker et al. (2006). This behavior was part of the consumer demand for visual material that took place toward the end of the

nineteenth century and brought with it a renaissance in printing and book design, according to Tucker et al. (2006). Through the act of separating and reconstituting images, individuals collected commercial messages and infused them with personal value inside their own homes (Tucker et al., 2006). Scrapbooks, and “clipping scrapbooks” in particular, are rooted in traditions that revolve around the collection and display of commodities, according to Good (2012). Scrapbooks also supported consumers into the early twentieth century “as they manipulated cutouts of furniture, packaged food, store-bought clothing, and other mass-produced items” (Tucker et al., 2006).

Scrapbooks and social media both have a side to them which thrives on positive self-representation. Good indicated that one major similarity between the uses of Facebook and scrapbooking was the expression of taste and building of cultural capital that took place on both media, “which can potentially translate into real-life gains in cultural capital” (2012). The same can be said for Pinterest, I believe, which is potentially even more conducive to the construction of cultural capital than Facebook, as the social aspects of the social network are significantly downplayed on Pinterest.

According to Rampley (2005), “culture” denotes both the process of “cultivation,” or individual and social development, as well as things produced by society, such as novels, art, musical compositions, poems and buildings. In Western society, persistent practice of material acquisition as a means to cultivate one’s social status has resulted in cultural capital, or symbolic wealth via culture and education, defining social hierarchies of status and class (Rampley, 2005). “Mass culture, and the consumerism associated with it, have often been regarded as ‘feminine,’” according to Rampley (2005).

The strong presence of consumer products on Pinterest, alongside Pinterest users' high spending and high activity in the realm of consumer goods, comes as no surprise in taking account that women are more active consumers of products and of social media than are men, comprising 61% of social media users in 2012 (Pew, 2012). According to the 2012 ComScore report, while women comprise just about half of all Internet users in America, they are responsible for 61% of all online purchases and spend almost \$6 for every \$10 spent online. Offline, women have been shown to account for as much as 85% of all consumer purchases in recent years, totaling \$7 trillion in the US and \$20 trillion globally (Marketing to Women Conference, 2013). Almost 75% of women self-identify as the primary household decision-makers when it comes to shopping (Catalyst, 2013), and overall accounting for 80% of all household spending, according to the US Census Bureau (as cited in Engauge, n.d.).

Furthermore, social media users have been shown in various studies to engage in impression management, identity performance and taste expression/performance (Barash et al., 2007; Liu, 2007; Papacharissi, 2009; Zhao et al., 2008). Though no research yet exists on the uses and gratifications of Pinterest users, Pinterest as a medium is ripe for the expression of personal taste, which can be argued to be one of its strongest appeals for many users. After all, the board title of "Products I love" is one of the most popular board titles on Pinterest, despite the fact that consumer products also generally make their way into at least two others of the top three categories — namely, items for the home and style/fashion (Moore, 2012a).

Additionally, the content categories employed by early scrapbookers, as mentioned by Tucker and colleagues (2006), strongly echoes the top content categories of Pinterest,

which include items for the home, food and style/fashion (Moore, 2012a). As Pinterest users have an advantage over traditional scrapbookers in that they typically have instant and direct access to the e-commerce context for their collected content, this raises the possibility that commercial scrapbooking translates, in the digital realm, to the high spending of Pinterest users.

However, neither scrapbooks nor Pinterest have been entirely limited to neither female users nor commercial interests alone.

Scrapbooks as Professional Tools

Aside from memorabilia and clipping scrapbooks, early scrapbooks have also been applied in the professional realm, where the majority of male scrapbook keepers could be found (Tucker et al., 2006). Men who were antiquarians, academics, artists and even medical professionals used scrapbooks to collect information, instead of publish memories as women traditionally had (Tucker et al., 2006).

Professional uses of scrapbooking may not be as commonplace today, as there are countless ways to collect and store information with the help of computer technology, particularly when it comes to documents of written information, but it does explain in part why a large subset of Pinterest's audience initially came from the design community (Johnson, 2012). It is plausible that, for people who work in visual media, scrapbooking via Pinterest is a helpful methodology in seeking out creative inspiration and collecting visual imagery in organized boards. For example, a screenshot from the "Design" category on Pinterest shows professional-level visual design content, among other types of design (such as product design and interior design) (figure 10).

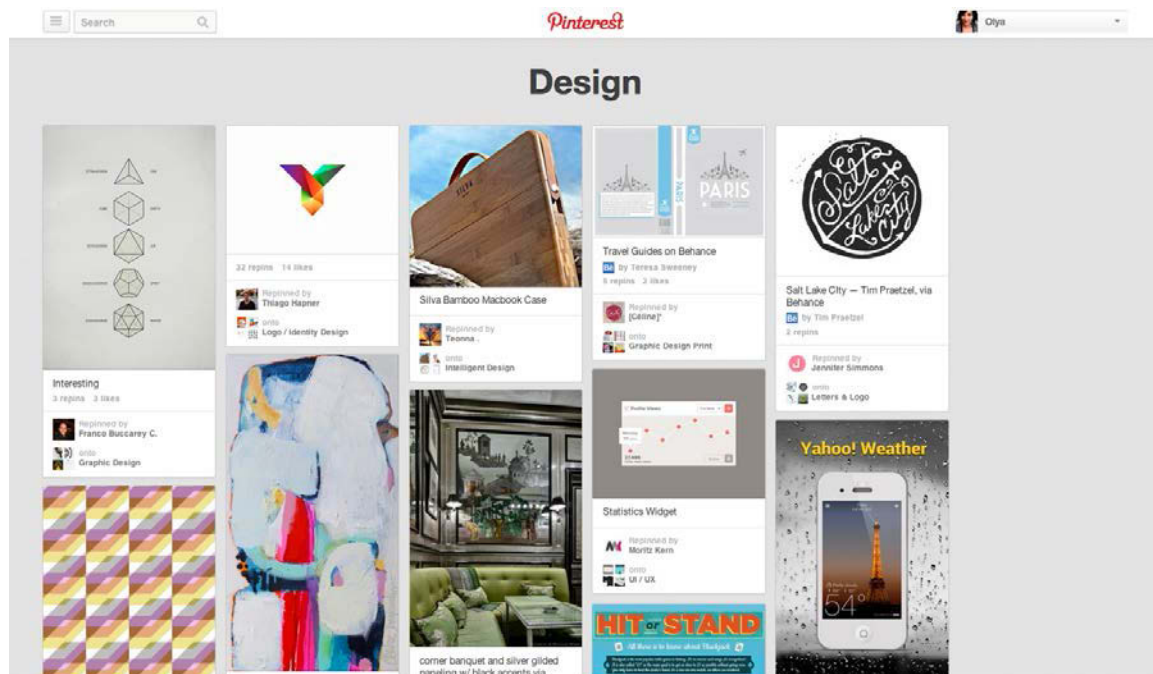


Figure 10. Pinterest “design” category screenshot. This is a screenshot of the “Design” content category on Pinterest. (Pinterest, 2013).

One post-Pinterest website that takes advantage of this is Niice.co (figure 11), which is “an inspiration search engine” that allows users to search across websites such as Behance, Dribbble and Designspiration, all of which are visually oriented websites targeting artists and designers (Niice, n.d.).

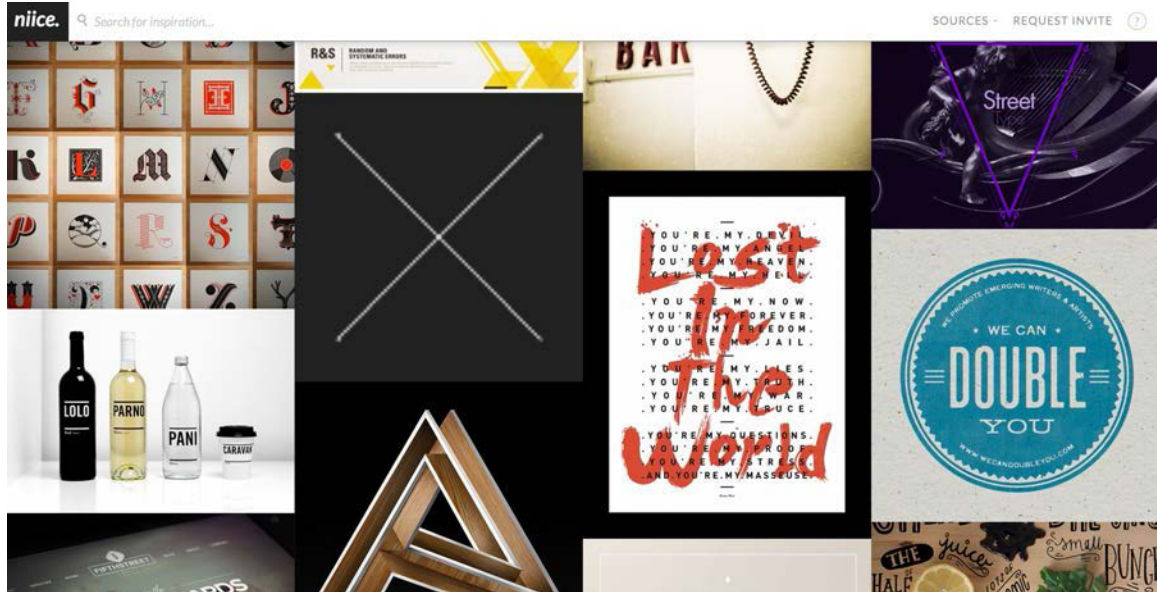


Figure 11. Niice.co website screenshot. This is a screenshot of Niice.co, a design-focused website that came around after Pinterest and has strong similarities to Pinterest’s “Design” category page. (Niice.co, 2013).

On the basis of the above findings, it is evident that Pinterest offers outlets for both male and female scrapbookers. Like among the majority of scrapbookers, Pinterest reflects a predominantly female audience. But like among scrapbooking’s professional (and more often male) subset, it has drawn sufficient interest from professionals in the design industry, inspiring a design-centered Pinterest lookalike for that very purpose.

Scrapbooking and Curation

The modern version of scrapbook-based “gleaning,” as seen on Pinterest, appears to also fit the definition of a wider practice that is growing in popularity across the Web: curation. (Rosenbaum, 2011; Engauge, n.d.)

According to Rosenbaum, curation is becoming more accessible to non-professional media consumers, who are taking an increasing interest in sorting out content for themselves (2011):

Curation was once a word that seemed to mean highbrow, expensive, out of reach of mere mortals. But today museum curators must compete with media curation at Newser, collections of handmade crafts at Etsy, or the curated collection of the best roll-on luggage at Squidoo. Certain curation means quality, but now quality is in the eye of the beholder.

For Rosenbaum (2011), curation is to humans what aggregation is to computers, and without curation, he wrote, aggregation of online content would simply result in unmanageable overflow that lacks qualitative organization. Rosenbaum (2011) indicated that curation will noticeably affect editorial enterprises like websites and magazines first, and though it may appear to be waging war with these institutions, it will more likely save them down the line. Curation acts through the mobilization of like-minded individuals in sharing, gathering and purchasing as groups (Rosenbaum, 2011). “Curated experiences are by their very nature better than one-off decisions about what to buy or whom to trust,” according to Rosenbaum (2011).

However, not everyone is a fan of such forms of inexpert curation, such as one of Rosenbaum’s (2011) sources, who criticized the practice precisely because it reminded him of scrapbooking: “Curation is what museums do. Unfortunately in recent months, it’s come to mean something else: lazily cutting and pasting and quoting from other people’s hard work and calling it content. Curation without expertise is just scrapbooking,” said Paul Carr, a former magazine journalist and TechCrunch writer (as quoted in Rosenbaum, 2011). Garvey (2003) defined scrapbooking in largely a complementary way:

Making and keeping scrapbooks allowed participation in some of the functions of the author and publisher without lifting a pen, as compiled adapted writers’ words to fit

new and personal meaning. Like present-day website builders, they adopted a fetishized selection of trappings of publication that appeared to grant authority as well. Through their new medium, scrapbook makers straddled the personal and the mass-circulated.

Like the early media of amateur curation, scrapbooks drew their content directly from print media for a long time, though at one point the flow became multidirectional and turned into more of a dialog between scrapbookers and the press (Hunt, 2006):

Possibly taking advantage of the broad interest in scrapbooks, publishers began speaking directly to scrapbook makers and it appears that scrapbook makers talked back. As a result, discourses about scrapbooks in the press improved the visibility and reputation of scrapbooks and scrapbook makers.

According to Indvik (2012b), Pinterest is becoming a top traffic driver for women's lifestyle, home décor and cooking magazines, "some of which are seeing bigger referral numbers from the image-collecting service than from major portals like Facebook and Yahoo." Furthermore, the curation of magazine content has successfully made its way into the digital era, as magazines such as *Vogue*, *Lucky*, *Elle Décor*, *Architectural Digest*, *Harper's Bazaar*, *Martha Steward Weddings* and *Real Simple* all have strongholds on Pinterest (Pinterest, 2013; Bazilian, 2012; Leon, 2012). The proliferation of magazine content on Pinterest demonstrates not only a strong parallel between how early scrapbookers used print media, but also supports the fact that there is a strong appeal among Pinterest users in curating magazine content as part of the modern trend outlined by Rosenbaum (2011).

If curation without expertise is just scrapbooking, as Rosenbaum's source put it (2011), then it only further supports the possibility that scrapbooking really is the best way to describe what users do on Pinterest. After all, the personal interaction that takes

place in product suggestions on Pinterest may very well be a factor in the high levels of trust associated with the website among its female users (BlogHer, 2012).

Scrapbooks as Websites

Though scrapbooks experienced a resurgence in the late 1990s and early 2000s, websites have begun to replace their functions as memory storehouses, according to Tucker et al. (2006). According to Hunt (2006), one of the key differences between traditional scrapbooks and their online counterparts lay in audience size:

Although paper-based scrapbook makers also externalize their memories, they tend to share them with a limited and known audience. When scrapbook makers externalize their memories to the Internet, they make them available to a global and anonymous audience.

According to Good (2012), there are many similarities between scrapbooks and contemporary social media websites such as Pinterest, Facebook, Twitter, Myspace and Flickr—all of which, she argued, could be analyzed as “digital carryovers” of the scrapbooking tradition.

Not unlike the modern users of Pinterest and other social media websites, scrapbook makers of the nineteenth century participated in “an elaborate circuit of recirculation, one that trespassed or found easements across the enclosure of authorship and publication,” according to Garvey (2003). The recirculation of content applies more strongly to Pinterest than to other (both visually and verbally oriented) social media networks, because the vast majority of Pinterest’s content comprises repins (Moore, 2012a). Only 1.4% of Twitter content comprises Re-tweets (Moore, 2012a). In the case of Instagram, content is inherently original and user-generated.

While books were expensive or difficult to obtain in the early days of scrapbooking, newspapers and magazines were becoming widely available and constituting a new type of media—cheap, disposable and valuable, upon separation from its ephemerality (Garvey, 2003). “Readers adapted to this proliferation of print by cutting it up and saving it, reorganizing it, and sometimes recirculating it,” Garvey wrote (2003). Scrapbooks were one of the ways in which such content was preserved (Garvey, 2003). The digital and costless content found on Pinterest could be easily conceived to operate in the same fashion – saved, organized and recirculated to preserve its value by separating it from the ephemerality of the Web.

Scrapbooks had limitations, however. For instance, they could not contain all of the content one wished to be able to return to without becoming too large to be useful or easily navigated (Garvey, 2003). “Even focused or classified scrapbooks are miscellaneous; they may have started out to hold or categorize one kind of material, but materials ultimately slip out of category, demonstrating their instability,” Garvey wrote (2003). Garvey’s (2003) “focused” or “classified” scrapbooks strongly resembles the “board” categories of Pinterest as well as the existing categorization system in place on the website, which allows for the perusal of “Everything” as well as specific topics such as food, fashion, humor and quotes (Pinterest, 2013). Unlike in traditional scrapbooks, Pinterest’s pins can be re-organized and re-categorized after the fact (Pinterest, 2013).

Garvey herself drew a parallel between the function and structure of websites and that of scrapbooks (2003):

In reusing both the form of the book and the clippings pasted in, scrapbooks resemble websites, which mingle the link-compiling function of the bookmark with content borrowed without attribution from other websites. The same recycled source codes

underlie thousands of websites, just as scrapbooks silently borrowed their formal qualities from one another and from the volumes that structured them.

Unlike social media websites, traditional scrapbooks were typically shared in tight-knit circles or kept as part of a family library, serving largely as a form of private publication, being “often characterized as too personal and revealing to even be shown to others,” Garvey wrote (2003). In some cases, however, scrapbook makers who put a lot of work into their books and organized them into separate volumes on different subjects were known to lend their books out or let others read them on their personal premises, according to Garvey (2003). Naturally, more organized scrapbooks that provided useful information to others, such as domestic and professional tips, would find larger appeal (Garvey, 2003). Such scrapbooks were most often compiled on the basis of taste, with information the creators found would be worthy of later re-reading (Garvey, 2003).

According to Hunt (2006), in the process of scrapbooking losing some of its intimacy to the digital era, it creates a more communal conception of memory as well as becoming a communal platform for invention. “As part of a larger database of knowledge, memories may become searchable, unexpectedly connected to other memories, or incorporated into the memories of others,” Hunt wrote (2006). The externalization of memories to the web also allows opportunities for interactivity, community engagement and broader discourse (Hunt, 2006). However, it should be noted that, though most early scrapbooks were used on a personal basis, group scrapbooks, too, existed far before the advent of the Internet and even before BBS. Paper scrapbooks compiled by individuals tended to express individual creativity, while public or group scrapbooks from the print era expressed shared experienced, interests and outlooks, revealing information about

public external spheres, according to Tucker and colleagues (2006). According to Garvey (2003), scrapbooks were even at their early uses ambiguous in terms of their public and private lives:

Scrapbooks were a domestic form, like the ‘profiles’ on a personal computer, storing the user’s choices for what should be on the desktop, for example, yet the circuit of recirculation within which they were engaged was neither wholly domestic nor wholly public. The line between the scrapbook of the home and the published periodical was further blurred by the user of the word *scrapbook* in the titles of several magazines...

In 2012, Pinterest added the functionality of private boards, allowing each user to have three boards that are not featured on profile pages (Pinterest, 2013). In addition, Pinterest allows for group-based pinning, in which any number of people can contribute to the same board, hosted by an individual’s account (Pinterest, 2013). Pinterest can be conceptualized, then, as largely a public/group scrapbook with some personal scrapbook capacities as made possible with the three-private-board limit that was introduced in 2012 (Pinterest, 2013).

Pinterest as a Scrapbook

If Pinterest’s core users, by and large, are individuals who are familiar with the practices of scrapbooking, and they were able to translate this knowledge into an understanding of how they can use Pinterest, then it would seem plausible that scrapbooking could be a factor in lowering the barriers of adoption for many pinners. According to Bandura (2009), it is the differences in knowledge, skills and resources that particular innovations (like new social media sites) require that decide the rate of acquisition among the public.

Furthermore, according to research by Tornatzky and Klein (1982), “innovations that are difficult to understand use will receive more reluctant consideration than simpler

ones” (as cited in Bandura, 2009). It is perhaps because of Pinterest’s aesthetically ambiguous and simple interface that it does not appear to hold back users from accomplishing what they want to accomplish in using the site, despite the possibility of highly differing user and design models. In that case, Pinterest’s disconnect between design model and user model could be by large a harmless oversight, even if the original pinboard its founders and designers had in mind was one of the spool-storing variety.

Unlike scrapbooking, the bulletin board metaphor can be used only in its secondary re-application, borrowing from the early days of BBS). In this context, however, it still appears more applicable to Pinterest’s wider function as a social network but not to its visual nature. As such, the bulletin metaphor offers very limited explanatory and predictive power in terms of Pinterest’s applications in its key demographics. Further, even though early pregnancy bulletin boards drew similar interest from women as does Pinterest, the main form of communication of textual, whereas visual avatars in digital signatures presented personal information (Nakamura, 2008).

Scrapbooking as a metaphor for Pinterest use, on the other hand, may better explain why the majority of Pinterest users are female, why its core audience comprises serious arts and crafts fans, why commercial content is used in a self-expressive way on the social network (and succeeds in driving sales in the process), why design professionals are drawn to Pinterest, and why the Web was able to step in where scrapbooking came short: in its limited space, organizational problems and ease of use. If scrapbooking truly does describe how a large segment of Pinterest users use the site (or the user model for these individuals), then it would appear to imply that Pinterest’s design model and most common user model do not fall precisely in line with one another.

Portal Metaphor

One final metaphor that is worth consideration in reference to Pinterest is that of the portal. This metaphor is intended to more so represent the informational structure or Pinterest and its capacity for connecting varying sources than the user's mental model or design model.

“At a rudimentary level, a portal can be conceptualized as a Web site that serves as a primary starting point for users connecting to the Internet. Some of the current major portals, according to this definition, include iGoogle, Yahoo!, and Netvibes,” according to Kalyanaraman and Sundar (2008). Kalyanaraman and Sundar (2008) indicated that portals can serve as gateways, billboards, networks, niches and brands.

Portals as Gateways

When portals serve or are viewed as gateways, the emphasis is placed on control as a defining feature (Kalyanaraman et al., 2008). Users exercise control and allow themselves empowerment when they choose their preferred gateway based on the gatekeeping practices that fall in their with their interests (Kalyanaraman et al., 2008). In the case of Pinterest, which has been widely touted as a search and discovery tool (e.g. Chafkin, 2012; BlueGlass, n.d.; Johnson, 2012), users can supplant a traditional Google search for a specific recipe, for example, with a keyword search on Pinterest and arrive at community-generated results. Pinterest users who fall within its dominant demographic may prefer to search certain information via Pinterest precisely because of its community foundation.

Portals as Billboards

“A portal can also play a powerful role in building consumer awareness and confidence in other portals or Websites. This is especially true of megaportals (mammoth or extra-large portals such as Yahoo! and WebMD),” according to Kalyanaraman et al. (2008). Because of how difficult it can be to build high traffic on a standalone commercial website, smaller websites oftentimes establish alliances with larger portals, such as MSN, to maximize their “billboard potential,” according to Barua, Desai and Srivastava (2001) (as cited in Kalyanaraman et al., 2008). “Thus, the portal is a veritable gallery that serves as a billboard advertising a diversity of content, both informational and commercial,” according to Kalyanaraman et al. (2008). Pinterest links to a vast world of content and sources, ranging from dead-end image links of all sorts to personal blogs, promotional content and product websites. The most-referred website from Pinterest is Etsy.com, an arts-and-crafts product sales website that itself serves as a portal between buyers and makers/sellers (Moore, 2012a). However, Pinterest also allows for user-generated content, such as through its direct connection with smartphone cameras, which makes uploading original photos simple. As such, it is evident that Pinterest is prime territory for both informational and commercial content, and the lines are entirely blurred from the viewer’s standpoint.

Portals as Networks

Portals also operate as networks, otherwise referred to as virtual communities, according to Kalyanaraman et al. (2008). These communities, especially among successful portals, are at their best able to leverage common interests to form networks of likeminded users, who may end up feeling a sense of belonging or membership (Kalyanaraman et al., 2008). Kalyanaraman and Sundar mentioned social networks such

as Facebook and MySpace as examples of such virtual communities, and I believe that Pinterest naturally falls into this classification, as well. Pinterest has a strong identity, an easily identifiable core audience and similarly visible core interests which stand out among the wide array of content the website was designed to handle (Moore, 2012a; Moore, 2012b).

Portals as Niches

Niche marketing focuses on specialized audience segments that tend to be more receptive to the products of services being advertised. According to Wind and Rangaswamy (2001), targeted information works through the customization of advertising features to the attributes of a niche market, which helps consumers relate to the presented information (as cited in Kalyanaraman et al., 2008). Depending on its degree of specialization, a portal can either be a vertical or niche portal, or a horizontal or all-purpose portal, according to Kalyanaraman et al. (2008). In Pinterest's case, the extent of personal customization can vary, particularly regarding the boards or users one chooses to follow. A user who chooses to exclusively follow other users may have a homepage flooded with pins of unrelated information, comparable to Pinterest's "Everything" page. On the other hand, a user who chooses to search exclusively by category or search term is similar to a user who makes a point to follow only specific boards, rather than other users. Nonetheless, because Pinterest has received some criticism regarding its female-oriented content, and even inspired websites such as Manteresting.com to pop up and offer a wider scope of content, it would seem that even the "Everything" page of Pinterest reflects a content base that is specialized enough to sustain a female user majority and turn away prospective male users, for whom more

content may simply not be as relevant (Wang, 2012; Blackall, 2013; Boone, 2013; Manteresting, 2013). For those reasons, it appears that Pinterest likely better fits the vertical portal category than the horizontal portal category.

Portals as Brands

Kalyanaram and Sundar indicated the portal can be its very own brand as it can create a brand name for a given category of content (2008). “A portal acts not only as a gateway but also a one-stop shopping complex,” they wrote (Kalyanaram & Sundar, 2008). In the case of Pinterest, the idea of “Pinterest” brand content is not too far out of reach, considering the site has already been reported as having a rather specific sort of content. It is possible that, because the site is still relatively new, its personal brand may become more defined with time.

Pinterest as a Portal

Pinterest seamlessly fits into all five aspects of what defines a portal, as proposed by Kalyanaram and colleagues (2008), and it is important to apply the portal metaphor to Pinterest for several reasons. First, such a metaphor encourages researchers and critics to evaluate Pinterest’s influence on e-commerce spending through its referral traffic. Because Pinterest is presently the third largest social network in the US and one of the heaviest drivers of referral-based spending, we need to make sure to compare Pinterest with other sites that drive e-commerce in order to examine some of its strengths in their comparison.

Second, perceiving Pinterest as a portal has important implications regarding the way perceptions of credibility and user trust operate on the site. According to BlogHer (2012),

Pinterest users trust Pinterest more than they do more-established websites such as Facebook and Twitter. Combining this with their high referral spending, it becomes clear that Pinterest is a highly trusted and highly influential social network (RichRelevance, 2013; Hayes, 2013; BlogHer, 2012). However, the portal metaphor reminds us that the bulk of Pinterest's content does not originate on Pinterest, but rather is a product of carry-over information from a wide array of sources that vary in their legitimacy and credibility (Moore, 2012a). Furthermore, the scrapbook metaphor reminds us that Pinterest is driven by recirculation (and data indicates this is, in fact, largely the case) (Moore, 2012a). The presence of commercial content on Pinterest cannot be denied and deserves to be studied further, especially as the company gears up to monetize upon its success (Tate, 2013).

Third, according to DiMuzio and Sundar (2012), in the case of news portals, there appears to be a carryover effect from readers' perceptions of credibility regarding the portal to their perceptions of credibility of the sources to which the portal links. However, because Pinterest is not a news site, the consideration of such a possibility must also take into account its structural differences as compared to news sites. Namely, the fact that Pinterest is a predominantly visual medium, as characterized by the scrapbook metaphor, should be taken into consideration, as the visual aesthetics of a website tends to shape perceptions of credibility, as well (Fogg et al., 2001; Fogg et al., 2003; Robins & Holmes, 2008). Furthermore, as it has been established that user perceptions of websites' visual appeal are formed within 50ms of exposure, credibility in the context of a visual portal and social network such as Pinterest is established very quickly, and as a result carries over with great speed onto external sources (Lindgaard, Fernandes, Dudek & Brown, 2006). As such, Pinterest's influence over the design of other websites should be

examined more closely, particularly as part of a larger trend in the rise of visual content on the web (Simon, 2012).

CHAPTER IV

PINTEREST AND THE VISUAL WEB

Pinterest may be just another social media website, but research regarding the interconnection of visual communications and emotional experience suggests that Pinterest content differently affects its users than do more traditional, text-heavy social websites (Barry, 2005). Furthermore, Pinterest's functioning as a portal to other websites is an important observation because, in conjunction with its award-winning aesthetics and reports of high user trust, it supports the possibility that aesthetics play a strong role in establishing user trust and possibly driving e-commerce referral spending (BlogHer, 2012; DiMuzio & Sundar, 2012; Robins & Holmes, 2008). The interplay of aesthetics, emotional response and pre-cognitive processing found on Pinterest may offer insight into Pinterest's success as a driver of e-commerce and as a highly engaging social network. To begin the analysis of these inter-relationships, it is best to start with an examination of the visual trend in mass communication, which has now made its way onto the web.

As mentioned earlier, scrapbooks boomed during the late nineteenth century, when the proliferation of print media created a more temporary and less costly genre of publishing — newspapers and magazines. As such, scrapbookers began instilling value in the ephemeral content of magazines and newspapers, recirculating them in much the way of the digital images of Pinterest and inscribing into them personal value. These practices paralleled an explosion of material consumption, in reaction to which scrapbookers

collected what they could in their scrapbooks, putting together books that reflected their tastes, interests and consumer desires.

Like scrapbooks, Pinterest paralleled a new resurgence and shift in print media and consumer culture, though this time, these shifts presented themselves as an increasingly visual web and an increase in e-commerce, mobile commerce and overall online consumption (Fulgoni & Lipsman, 2012). These trends were presented in the 2012 ComScore report on the state of America's online retail market, which further indicated that Facebook and newcomer Pinterest were both key influencers of e-commerce (Fulgoni & Lipsman, 2012). The idea was echoed by McManus (2012b), who said the increasingly visual web serves reflection of the increasing importance of images and video in shaping what people consume online, and further stated that "Pinterest is the best example of that larger trend."

The visual web trend was observable earlier on, however, even though Pinterest has been touted as a solid reflection of the trend. In an earlier article from 2012, McManus wrote that "Tumblr was probably the first social media service to exploit the Visual Web trend on a mass scale, but it's been Pinterest that has captured the public imagination in 2012" (2012a). Tumblr is a blogging platform with multimedia capabilities that "lends itself more to image and less to 1000 word missives" and has become the world's largest blogging platform, hosting 20 billion blog posts, 50 billion blogs and more than 120 million users (Kim, 2012; Singer, 2012). Digital strategist Stephanie Wierwille (2013) observed that the visual trend largely defines "Web 2.0":

Nothing screams Web 1.0 like a clutter of text. Even text accompanied by an image is so 2.0. Welcome to the visual Web: a place where images create the experience and text plays second fiddle, adding a bit of context. The visual Web is Pinterest, Instagram, Tumblr and your Facebook news feed. But it's also the content you're

creating, sharing and watching. It's your new favorite website and your mobile experience.

The use of visuals is especially important for brands because it leads to more engagement, according to Wierwille, who indicated there is a strong inter-relationship between the rise of the visual and the growth of e-commerce on sites like Pinterest (2013):

Facebook posts that include an album, photo or video increase engagement by 180%, 120% and 100%, respectively. In search, 60% of consumers are more likely to contact a business if an image shows up. And on product sites, 67% of consumers say the image of a product is very important, compared with 53% who say the online reviews. It can also mean more referral traffic. A year ago, Pinterest accounted for less than 1% of social media e-commerce referrals. Now it accounts for 26%.

Pinterest has also been credited with making informational consumption easier in the social media era. According to Engauge (n.d.), people are actively seeking ways to consume content online in a less stressful manner, in addition to being able to filter and organize their findings, and "that is the behavior Pinterest exploits." Wierwille indicated that visuals help audiences handle the overwhelming amount of content they encounter online (2013):

When there's so much to say and no ears to hear, a picture's worth a thousand words. It kicks off the story and creates an instant emotional connection. As web designers strive to increase site engagement, big, bold visuals have out on top in creating a user experience that is just: an experience.

Design reviews and examinations of Pinterest's interface have appeared to be overwhelmingly positive, indicating Pinterest has made a big splash in the design world. From earning itself Webby for its functionality to inspiring serial copycat attempts, Pinterest even has some saying it is driving a web design revolution (Kanal, 2013;

Wilson, 2013; Vanhemert, 2012; The Webby Awards, 2012). One critic credited the site design with shaking up more than a decade of design tradition by slowing down users' scrolling, forcing their eyes to zig-zag through content and packing more images on the screen (Vanhemert, 2012).

Pinterest was also ranked among the most influential website designs over the last 15 years, being listed among the likes of Amazon.com & Ebay, MySpace, Yahoo! and Facebook in its contributions to design (Simon, 2012):

From a Web design perspective, is Pinterest somehow “better” designed than other sites? That’s the wrong question to ask. The better question is, why are so many other sites rushing to copy Pinterest? Short answer: We can process and “pin” photos very quickly and we get tired of text. Images are often easier to digest than words.

Its information-processing-friendly interface has been likened to an antidote of the informationally overwhelming Web. “People start into a firehose [sic] of information every day, and it’s having an impact,” stated Engauge’s report on Pinterest (n.d.). “Fire hose” is exactly how Vanhemert described the informational impact of Twitter, one of Pinterest’s biggest rivals (2012):

Twitter took the river of news concept and turned it into something like a fire hose: all the content, all the time, with very little curation outside of who you chose to follow. The emerging popularity of tile-based layouts could even be seen as a response the breakneck speed and Sisyphean scrolling engendered by the Twitter timeline.

The Pinterest effect has been spotted in the Facebook Timeline’s “distinctly more tiled in appearance,” as well how its photo pages now have larger thumbnails, smaller borders between the thumbnails and interactive “like” and “comment” options toward the tops of tiles, materializing as one floats a cursor over it, according to Simon (2012). More obvious evidence can be found on Devstand, a website focused on web design and

development information, which has so far posted a tutorial on how to design websites in the style of Pinterest and a collection of 34 “Pinterest-like” WordPress themes (otherwise known as website design templates) (Devstand, n.d.).

Both Pinterest’s content and design have been described as “viral.” In March 2012, *Cnet* published an article entitled “Pinterest design spreading like a virus, because it works” (Needleman). In an attempt to figure out the rationale behind creating Pinterest lookalikes, Needleman spoke to a series of entrepreneurs who had adopted the look, and one of these was J.R. Johnson, CEO of Trippy, or what Needleman referred to as “the Pinterest of travel advice.” Johnson said he adopted the look because “Pinterest stood out as being an inspiration-discovery mechanism. It has a focus on images, browsing and serendipity” (as quoted in Needleman, 2012). Johnson said he viewed Pinterest’s design methodology as a major shift from search to discovery on the web, which makes it a strong platform for helping users consume content, particularly when they do not yet know what they’re looking for (as quoted in Needleman, 2012). Traditional web structures like blogs allow users to vertically scroll through content at a rapid pace and, instead of allowing for lingering, it rather results in sheer transactional speed, as he put it (Vanhemert, 2012). Pinterest’s tile format is “predicated on scanning as much as scrolling,” according to Vanhemert, and will likely continue to thrive (2012).

Pinterest’s highly visual nature has also been examined in the sense of its emotional charge in media coverage. In dissecting the picture-grid design approach embraced by Pinterest, Vanhemert (2012) argued the tiles lend themselves to “emotional heft,” writing:

There’s also something about the grid and tiles, on a visceral level, that just feels more cohesive and still lively. Where the standard river of news-style blog post

comes with all the traditional blog trappings--headlines, timestamps, bylines, and the rest--grids put all the focus on the content. It's equal parts organized and overwhelming. There's so much visual stuff on your screen, you can't help but feel like someone has designed the experience for you. The tiles impart a sense of curation--and thus, human emotion--to the content.

However, the relationship between emotional experience and visual communications is rooted deeper than in journalistic commentary alone. Advertising creators and other media professionals have long used images to appeal to the emotional part of the brain in attempts to persuade consumers to make purchase decisions without bringing logic into play (Barry, 2005). This kind of strategy tends to be helpful in particular when selling luxury goods as well as items like cigarettes and alcohol, or making any other kind of "pathos" argument (Barry, 2005).

A shift from the written to the visual was observed by Raymond Williams through an analysis of two centuries' worth of advertising, for example, which analyzed the progression starting with ads in the 1800s (as cited in Rampley, 2005). In a 1999 study conducted by Singh and Dalal, the researchers argued that the website homepage could be both conceptualized and analyzed as an advertisement. And not only that, but Singh and Dalal (1999) proposed that such websites should qualify for evaluation according to the emotional-cognitive dichotomy of communications.

It is unclear whether the advertising metaphor is as applicable to Pinterest, as it could only be argued to serve as a meta-advertisement under the portal conceptualization. Nonetheless, the observation that websites are capable of both informing and persuading audiences, in the same sense as traditional print and television advertising has, is important because it puts to the forefront the possibility that increasingly visual web content brings with it increasingly powerful persuasive capacities (Barry, 2005).

To consider the context for visual influence online, it is important to also consider the potential influence in broader visual culture. Much like the modern web, Western society has become a predominantly visual culture, too: a state that was “facilitated and probably even initiated by certain technologies,” according to Rampley (2005). “Others have suggested that a further reason may be the dependence of consumerism on visual spectacle,” Rampley wrote (2005).

Seppanen indicated that visual culture is powerful and passionate. “Passions ... surge in the sphere of visual culture,” wrote Seppanen (2006), referring to way media communications influence visual orders. But images like advertisements and brand logos are not alone in affecting social influence and consumption (Seppanen, 2006): “Movies, photographs, home videos and computer interfaces contain visual orders that articulate in various ways in people’s lives,” Seppanen wrote (2006). According to Seppanen (2006), power exists where social order exists, and visual orders are social orders—thus, power is inseparable from visual orders. This power is both restrictive and productive, and it “works when people adapt themselves to visual orders, interpret them in certain ways and begin to see them as self-evident and unquestionable.”

Like Barry (2005), Seppanen (2006) argued the pictorial is interwoven with not only other sense and code systems, but also with “experience we receive through them of the world, the individual body, psychological states, images and emotion.” Seppanen (2006) continued on to say “it is hard to estimate how large will be the impact of the new user interfaces on the increase of multimodality.”

As such, the inter-relationship between visual perception and emotional experience warrants further exploration, so that we can arrive at a better understanding of the

implications of an increasingly visual media and come to better understand how Pinterest's highly visual user interface may play into its users perceptions of trust and referral-based spending on connected e-commerce websites.

CHAPTER V

THE INTERSECTION OF EMOTION AND VISUAL PERCEPTION ONLINE

Examining the neurological aspects of visual perception, cognition and emotion allows unique insight into the underlying mechanisms of information processing that lead to certain human behaviors. This approach, in turns, helps us to better gauge the potential for influence and persuasion on the increasingly visual web, and in particular relation to e-commerce.

Barry (2005) coined the term “Perception Theory” in describing “the application of neurological research and accepted psychological principles to the study of visual communication.” By addressing how the mind/brain receives information, processes it, derives meaning from it, and uses it, Perception Theory adds new information to the study of visual communication and helps people assess the efficacy of existing theories of communication derived from social research (Barry, 2005). Most importantly, it upholds the primacy of emotions in all information processing (Barry, 2005). And in doing so, it targets visual communication as the target of the process of perception — which is dependent on primary emotion-based systems of response (Barry, 2005):

In light of current neurological research, for example, we can no longer assume that a person’s response to visual images will be conscious, or logical. Rather, neurological research reveals that visual may be processes and form the basis of future action without passing through consciousness at all.

On these premises, Barry indicated that all communication theories and assumptions made about how people process images and what impacts images have on them must be compatible with neurological research (2005).

Emotion research, combined with visual perception research, can offer powerful insights into what makes consumers act by examining how consumers see—and feel—the content they access on the web.

Overview of Emotion Research

“Unfortunately, one of the most significant things ever said about emotion may be that everyone knows what it is until they are asked to define it,” wrote LeDoux (1996), citing Fehr and Russel (1984).

Late in the nineteenth century, Charles Darwin, William James and Sigmund Freud all had written extensively on the nature of emotion, giving it a privileged place in scientific discourse (Damasio, 1999). However, throughout the twentieth century and until relatively recent times, emotion was given “a very cold shoulder” by researchers from neuroscience and cognitive science, who considered it too subjective, elusive and vague for the laboratory (Damasio, 1999). Even psychology ignored emotion for a long time, despite its dealing with many complex issues in the realms of clinical and developmental psychology that were thoroughly involved in “the rubric of emotion” (Kavanaugh, Zimmerberg and Fein, 1996).

Emotion has a history of being devalued in the sciences, being considered far inferior to reason. “Emotion was at the opposite end from reason, easily the finest human ability, and reason was presumed to be entirely independent from emotion,” Damasio wrote (1999). Damasio (1999) referred to this as a “perverse twist” on how Romantics had viewed humanity: by placing emotion in the body and reason in the brain:

Twentieth-century science left out the body, moved emotion back into the brain, but relegated it to the lower neural strata associated with ancestors who no one

worshiped. In the end, not only was emotion not rational, even studying it was probably not rational.

One potential explanation for emotion's long-held status at the bottom of the scientific hierarchy across many disciplines may be its image as a rather animalistic or primal function. Emotion was for a long time perceived as an evolutionary leftover from humans' animal origins, considered a problem that needed to be overcome by rational, logical thinking (Norman, 2004). Until the mid 1980s, it was assumed that emotion came after conscious and unconscious thought processing and was added through the hippocampus, according to Barry (2005). Around that time, neurobiologists such as Joseph LeDoux began to map the limbic system in a more precise manner and came to realize what some perceptual psychologists long suspected: that the human mind contains two routes of sensory perceptual processing (Barry, 1997).

The limbic system is a division on the central nervous system (Damasio, 1994). The term acts as a catchall for various evolutionarily older structures, though many neuroscientists abstain from using it. The cingulate gyrus, cerebral cortex, amygdala and basal forebrain are the main structures of the limbic system (Damasio, 1994). The limbic system was originally proposed by Paul Maclean, who thought emotion likely was rooted in the hippocampus, though the hippocampus has since become known as a key player in the temporal lobe memory system, one of the most important cognitive systems of the brain (LeDoux, 1996). Damasio indicated that limbic system aids in biological regulation related to the brain stem and hypothalamus (1994). LeDoux was responsible for creating a more precise view of the limbic system, putting forth that the subcortical region of the brain's temporal lobe, otherwise known as the amygdala, is the center of most emotional activity (Barry, 1997). The amygdala prepares the body for danger by attaching

emotional significance to incoming sensory data and signaling the hypothalamus to secrete hormones that ready the body for action via fight-or-flight response (Barry, 1997).

“Science now knows that evolutionarily more advanced animals are more emotional than primitive ones, the human being the most emotional of all,” wrote Norman (2004). Damasio indicated that emotions are inseparable from all human experiences (1999): “Emotion and the biological machinery underlying it are the obligate accompaniment of behavior, conscious or not. Some level of emoting is the obligate accompaniment of thinking about oneself or about one’s surroundings.” According to Barry, the brain’s amygdala serves as the seat of human emotion, and does in fact date back to the reptilian era (1997). But that is not to say it is a useless human feature, as the amygdala “still plays a primary and dominant role in all our perception” (Barry, 1997).

Emotion is largely inseparable from visual perception. First, both are rooted in the right hemisphere of the brain, unlike the more experientially remote and less emotionally involved verbal processing capacities, which are rooted in the left (Barry, 2005; Stafford, 2008). Second, humans are not only wired to be highly emotional creatures, but also to be predominantly visual learners, as the brain evolved to process and respond to visual images more so than words (Damasio, 1999; Barry, 2005; Barry, 2007). And third, while the more emotional, image-centric half of the brain stands separate from the more logical and verbal one, emotions have been found to easily leak across hemispheres, differing from other sensory information (Barry, 2005).

Split-brain surgery, a procedure that severs nerve connections between the two hemispheres of the brain in an attempt to control very severe epilepsy, was instrumental in revealing fundamental psychological dichotomies between thinking and feeling,

cognition and emotion (LeDoux, 1996). It was through this procedure that the scientific community found out the two hemispheres of the brain cannot communicate with each other (LeDoux, 1996). However, though sensory information cannot travel between hemispheres, it was found that emotional reactions can and do, thus guiding test subjects in their ability to identify objects through emotional response (LeDoux, 1996).

“The right hemisphere was unable to share its thoughts about what the stimulus was with the left, but was able to transfer the emotional meaning of the stimulus over” according to LeDoux (1996). As a result, according to Barry (2005), emotional information both unconsciously shared and unconsciously learned in its hemispherical transience, and “this realization should put emotional processing of visual messages at the forefront of all visual communication research.”

Until recent days, most research on emotion focused on negative emotions such as stress, fear, anxiety and anger (Norman, 2004). Today, research is turning more toward positive emotions, which have been found to be as important as negative ones in that they are critical to learning, curiosity and creative thought, according to Norman (2004).

Damasio valued emotion within a multifaceted context (1996):

The pervasiveness of emotion in our development and subsequently in our everyday experience connects virtually every object or situation in our experience, by virtue of conditioning, to the fundamental values of homeostatic regulation: reward and punishment; pleasure or pain; approach or withdrawal; personal advantage or disadvantage; and, inevitably, good (in the sense of survival) or evil (in the sense of death).

According to Brave and Nass (2002), emotion has two generally agreed-upon components: First, it is accepted that “emotion is a reaction to events deemed relevant to the needs, goals, or concerns of an individual.” Second, “emotion encompasses physiological, affective, behavioral, and cognitive processes” (Brave & Nass, 2002).

LeDoux viewed emotions as biological functions of the nervous system, attempting to take an approach that studies emotions as brain functions, in contrast to how they have traditionally been handled in the field of psychology (1996).

Similarly, Damasio summed up emotions as collections of chemical and neural responses that form patterns, and their role is to assist organisms in maintaining life (1996). They are biologically determined processes that depend on “innately set brain devices” that were laid down throughout evolution (Damasio, 1996). “The devices which produce emotions occupy a fairly restricted ensemble of subcortical regions, beginning at the level of the brain stem and moving up to the higher brain” and all of these devices can be engaged automatically, or without conscious deliberation, according to Damasio (1996).

While on an individual level emotions may appear to vary very much, on a biological level emotions have shown themselves to be relatively predictable, which may offer hope to those who are interested in studying them. Damasio (1996) described the biological function of emotions as a two-fold process: First, they produce specific reactions to inducing situations. And second, they regulate organisms’ internal states so that they can be prepared for the aforementioned specific reactions (Damasio, 1996). While learning and culture alter the expression of emotions, and both culture and individual variations play a role in shaping some inducers, these variables do not “deny the fundamental stereotypicity, automaticity, and regulatory role of emotions,” according to Damasio (1996).

At the modern stage of emotion research, it has been made clear that emotional processes help guide personal, social and even economic decisions, thus both emotional

and cognitive functioning are vital in making effective judgments (Barry, 1997; Barry, 2005; Norman, 2004). Bringing emotions yet again to the forefront of scientific research opens up a wide array of questions and an incomprehensible amount of potential consequences, according to Damasio (1999):

The consequence of extending emotional value to objects that were not biologically prescribed to be emotionally laden is that the range of stimuli that can potentially induce emotions is infinite. In one way or another, most objects and situations lead to some emotional reaction, although some far more so than others. The emotional reaction may be weak or strong—and fortunately for us it is weak more often than not—but it is there nonetheless.

As such, it is important to consider the role of emotions, and in particular the relationship between visual perception, emotional experience and their influence over human behavior and decision-making in light of an increasingly visual web. But because websites are far more complex, accessible, interactive and overall pervasive than print, radio and television advertising, I believe it is important to examine the intersection of visual imagery/visual perception and emotion on the visual web first through a historical overview of emotion research in the field of human-computer interaction.

Emotion in Human-Computer Interaction and User Experience

Much has changed since emotion was able to re-establish its legitimacy in many disciplines of scientific research which had previously neglected it. In computer-oriented fields, specifically, emotion appears to quickly be gaining importance for its insights into user experiences (Brave & Nass, 2002; Hassenzahl & Tractinsky, 2006). “Emotion is a fundamental component of being human. Joy, hate, anger, and pride, among the plethora of other emotions, motivate action and add meaning and richness to virtually all human experience,” wrote Brave and Nass (2002):

Traditionally, human–computer interaction (HCI) has been viewed as the ‘ultimate’ exception; users must discard their emotional selves to work efficiently and rationally with computers, the quintessentially unemotional artifact. Emotion seemed at best marginally relevant to HCI and at worst oxymoronic.

The field and practice of UX is often seen as a countermovement to the task- and work-oriented usability paradigm that has dominated HCI, according to Hassenzahl and Tractinsky (2006).

Research on emotion has quickly begun to make its way into the study of user experience (UX), which is part of the broader field of human-computer interaction (HCI). However, much like traditional research in psychology, HCI research has for a long time ignored the role of emotion, instead focusing almost exclusively on the achievement of behavioral goals in work settings, wherein the task was central to usability testing and other user-centered analyses and evaluation techniques (Hassenzahl & Tractinsky, 2006; Brave & Nass, 2002; Forlizzi & Battarbee, 2004).).

The Affective Computing project, led by Picard in 1997 (as cited in Hassenzahl & Tractinsky, 2006), was one of the pioneering attempts to call attention to the importance of affect and emotion in HCI. However, it took a computer-oriented perspective and dealt primarily with questions relating to how computers can sense user affect, adapt to it or even express their own affective responses. Furthermore, it primarily addressed negative emotions, attempting to detect, prevent and reverse them almost like “an automated version of anger management” (Hassenzahl & Tractinsky, 2006). UX takes a more human-oriented approach toward emotion and, more recently, a focus on positive emotional outcomes of HCI such as joy, fun and pride (Hassenzahl & Tractinsky, 2006). Addressing human emotion, and particularly positive human emotions, can be very useful in design.

Research on the relationship between humans, computers and emotion grew in parallel to the development of UX as a subfield within HCI. Not unlike emotion, UX has its own definitional ambiguities. According to Forlizzi and Battarbee (2004), “The term ‘user experience’ is associated with a wide variety of meanings, and no cohesive theory of experience exists for the design community.”

Though HCI researchers and practitioners readily adopt UX theories and practices, UX is at the same time subjected to extensive criticism for being vague, elusive and ephemeral (Hassenzahl & Tractinsky, 2006). Nonetheless, there is significant and growing interest in the subject area, and there have been attempts at creating theories of UX as well as attempts to “exemplify and categorize specific types of experience as they relate to designed products” (Forlizzi & Battarbee, 2004; Ardito, Costabile, Lanzilotti & Montinaro, 2007).

“Emotion is at the heart of any human experience and an essential component of user-product interactions and user experience,” according to Forlizzi and Battarbee (2004). Hassenzahl and Tractinsky (2006) proposed two basic ways in which emotions are addressed in UX. The first line of research stresses the importance of emotions as consequences of product use, based on research by Kim and Moon (1998), Desmet and Hekkert (2002), Hassenzahl (2003) and others (as cited in Hassenzahl & Tractinsky, 2006). The second line concentrates on the importance of emotions as antecedents of product use and evaluative judgments, citing research by Singh & Dalal (1999) and Donald Norman’s 2004 book *Emotional Design* (Hassenzahl & Tractinsky, 2006).

Emotions and experiences interact with other emotions and experiences in order to build up to and yield larger experiences over time through what Forlizzi and Battarbee

referred to as *scalability of experience* (2004). Though researchers can map smaller experiences inside bigger ones to understand the relationship of different variables in the UX of a product, the “associated emotional responses are hard to understand, let alone quantify” (Forlizzi and Battarbee, 2004). According to Forlizzi and Battarbee (2004):

New research methods are needed to better articulate the relationship between what we feel and what we do. A current trend, for example, is to use biometric data collected from wearable sensors to attempt to capture the most fleeting emotional experiences.

Much like user interfaces and their accompanying metaphors, emotion can be perceived as yet another bridge between technology and users. “From a design standpoint, emotion shapes the gap that exists between people and products in the world,” Norman wrote (2004). According to Norman (2004), everything people do has both a cognitive and an affective component: the cognitive assigns meaning and the affective assigns value and changes how people think. The social media sphere adds another layer of complexity to the equation, however. Social context has been found to be important in determining people’s emotional experiences, as experiences can quickly change in the presence of other people, activities, artifacts and environments (Forlizzi and Battarbee, 2004). People’s interactions with one another, with computer interfaces and with their cultural contexts all come to shape their overall experiences with social media alongside their visual perceptions and emotional states.

Aesthetics in UX and Website Design

“The Web has emerged as a powerful medium for worldwide information dissemination and electronic commerce. To fully utilize its potential, though, one must design Web pages capable of providing rich user experience,” according Singh, Dalal and

Spears (2005). According to Hassenzahl and Tractinsky, UX is influenced by a user's internal state, characteristics of the designed system and the context in which interaction takes place (2006).

One of the most interesting contributions from the field of UX to classical HCI is the inclusion of more subjective attributes such as the aesthetic, emotional and social aspects of a design space (Ardito et al., 2007).

Aesthetics has been long absent from the agendas of HCI researchers and is only in recent times gaining true momentum as a subject of research (Lavie & Tractinsky, 2003; Liu, 2003). "While aesthetics has always played a role in the success of product and work design, aesthetics is neither on the list of goals of human factors nor incorporated in its field of systematic studies," according to Liu (2003). And in the realm of HCI research, aesthetics has historically played a very small role, though researchers have increasingly strived toward a balance between traditional HCI concerns and the considerations of aesthetics (Lavie & Tractinsky, 2003). "The robust findings regarding the importance of aesthetics in most walks of life make its absence from the human-computer interaction agenda harder to justify," according to Lavie and Tractinsky (2003).

Beauty (or aesthetics) was part of an early attempt to define UX, immediately challenging the narrow, instrumental focus of HCI and positioning itself as an end rather than a means (Hassenzahl & Tractinsky, 2006). Beauty was found to be important because of its intrinsic value, according to Postrel (2002) — an idea that strongly resonated of Maslow's research back from 1954 in which he indicated that beauty satisfies a general human need (as cited in Hassenzahl and Tractinsky, 2006). This led toward a multidimensional conceptualization of UX that linked product attributes with

needs and values and aimed toward the inclusion of non-instrumental factors in attempting to create more holistic and complete HCI products (Hassenzahl & Tractinsky, 2006). Hassenzahl and Tractinsky indicated that non-instrumental needs must be better understood, defined and operationalized so that the interplay between product attributes and user needs, as well as its importance, can be better understood (2006).

Mahlke and Thuring took a similar approach in 2007 when they argued that a broader perspective on UX necessarily needed to include both the aesthetics of system design and emotional experiences during system usage. As such, they indicated that UX should be based on three basic elements (Mahlke & Thuring, 2007):

1. the perception of instrumental qualities, such as the controllability or the effectiveness of a system
2. the perception of non-instrumental qualities, such as visual aesthetics or haptic quality, and
3. the user's emotional responses to the system behaviour.

The researchers found that both instrumental and non-instrumental qualities influences is likely to influence users' emotional experiences, though all three should impact the overall appraisal of a system by the user and influence their future decisions and actions (Mahlke & Thuring, 2007).

This approach could also be integrated into web design practices, as its practitioners have generally been split into the function-oriented designers from the technological school and the aesthetics-oriented ones from artistic backgrounds, posing the two approaches at odds with one another despite the fact that a powerful UX design would ideally account for both (Hsu, 2011).

Implications for Pinterest

As Pinterest sits atop the rise of visual content on the web, it becomes increasingly important to consider the possibility that some of the factors driving e-commerce on the site are grounded in emotion-laden visual stimuli. From Pinterest's highly trusting audience to their high-spending habits, the role of visual perception and emotional influence cannot be discounted as influencing the behavior of Pinterest users—much less anyone else.

Visual design alone cannot be expected to explain away Pinterest's influence, as emotional experiences are key in user experience. The conceptualization of UX components put forth by Mahlke and Thuring illustrated that the most emotionally satisfying systems were those that featured both high usability and appealing design (Mahlke & Thuring, 2007). As such, in considering some of the sources of influence in a highly visual user interface, one must not only consider the relationship between visual perception and emotional experience in guiding decision-making, but also the overall UX, which accounts for factors such as usability and functionality, as well.

CHAPTER VI

ROLE OF AESTHETICS IN WEB CREDIBILITY AND E-COMMERCE

E-commerce has been growing at an exponential rate in recent years, and websites like Pinterest and Facebook have been attributed with significantly influencing online consumers (Gefen, 2000; Pew, 2012). The importance of the visual web and e-commerce boom may appear limited to social media users, web designers and marketing experts, but it has potential importance for traditional retailers, as well. Some have suggested the explosion of online spending may be responsible for the downfall of traditional shopping malls (Moore, 2013):

Evidence suggests that the decline of the American mall, a classic late-twentieth century space, has something to do with the rise of twenty-first century virtual space. Online shopping in America grew 14% last year, while overall retail sales were up only 3%, according to digital business analysts ComScore and the National Retail Federation. 129 million virtual shoppers stampeded the online sales on Cyber Monday last November, spending a record \$1.46 billion.

Citing research by Green Street Advisers, the CoStar Group issued a press release that indicated 10% of America's 1,000 total enclosed malls are expected to shut down by 2022 and be converted to non-retail uses (Drummer, 2012). Whether or not increasing Internet use and e-commerce consumption are responsible for the decline of shopping malls in America, Pinterest's popularity as an e-commerce-driving social media platform suggests that virtual window-shopping might be as enjoyable as the real thing.

Touting Pinterest's strengths as a mechanism for product discovery, Chafkin (2012) praised the site for enabling the kind of "free-associative leaps that routinely happen in a shopping mall." Chafkin noted that Pinterest's emphasis on curation has lent itself to the creation of a boutique-like product environment that is akin to a window-shopping

experience for users, possibly making Pinterest “one of the greatest selling engines ever devised” (2012). In Chafkin’s article, Pinterest co-founder Ben Silbermann himself pointed out that the website should feel boutique-esque for its users (2012): “When you open up Pinterest, you should feel like you’ve walked into a building full of stuff that only you are interested in. Everything should feel handpicked for you.”

As mentioned earlier, Pinterest users have been shown to be more likely to make a purchase than those from any other network and spend more money per sessions, doubling the spending of Facebook and Twitter users both in 2011 and in 2012 (Hayes, 2012; RichRelevance, 2012). Taking into account Pinterest’s unprecedented growth in terms of visitors since it became public, it is safe to anticipate that Pinterest’s influence over e-commerce — which was estimated at only 11% in 2012, behind Facebook’s 86% — can only be expected to gain momentum in the near future (RichRelevance, 2012).

Pinterest’s highly visual nature may play a role in the high trust levels attributed to its users (BlogHer, 2012) and their high spending. This seems is particularly likely because credibility has been shown to be a key component of e-commerce success, and aesthetics have been shown to heavily influence credibility perceptions among website users (Gefen, 2000; Teo & Liu, 2005; Robins & Holmes, 2008). As a result, the remainder of this chapter will be spent examining the relationship between website aesthetics and credibility perceptions, so that I can establish a basis for the possibility that Pinterest’s high-quality, highly visual interface design may be contributing to its highly trusting, high-spending users.

Credibility and Website Aesthetics

“Trust plays an important role in many social and economic interactions involving uncertainty and dependency,” according to Teo and Liu (2005). According to Gefen, people’s trust in Internet vendors has been widely cited as a major factor in shaping the proliferation of e-commerce (2000). The Better Business Bureau has indicated that one of the major reasons people do not make online purchases is rooted in trust issues regarding the security of online payments, reliability of companies and the lack of privacy policies on certain website, according to Gefen (2000). In his research, Gefen was able to confirm the notion that trust is critical in e-commerce purchase-making, and added that familiarity was found to be almost as important (2000).

Robins and Holmes defined credibility as the extent to which website users trust the informational content they come on a given website (2008). Because web-based information exists in a sort of publishing anarchy, a greater burden is placed on website users for judging the credibility of content (Robins & Holmes, 2008).

Credibility judgments in relation to a website’s information and content are critical for websites that provide information and/or sell products because websites that are not perceived as being credible are not likely to be used (Robins & Holmes, 2008). Due to high competition for goods, services and information on the web, corporate survival anchors on its ability to project credibility in its web presence (Robins & Holmes, 2008).

In the field of communication, credibility as a theoretical construct has been discussed under Source Credibility Theory (SCT), and this approach more recently made its way into the field of HCI and into Information Science, which adopted and expanded upon source credibility to explain interaction with information and information systems (Robins & Holmes, 2008). “SCT reveals that people tend to evaluate the credibility of

communication primarily on the basis of the communicator's expertise, trustworthiness and dynamism, and, to a lesser extent, on various other criteria," according to Robins and Holmes (2008). Web users make judgments on factors such as authority, which is similar to expertise, and reputation, which is similar to trustworthiness (Robins & Holmes, 2008; Rieh, 2002; Toms & Taves, 2004). In relation to the dynamism criterion, Robins and Holmes (2008) indicated that the closest variable to dynamism in web-based communication involves unwritten factors such as design and aesthetics.

Credibility as a Visually Determined Variable

Not only does a large portion of people's visual experience in modern times come vicariously through media, but the human brains tends first and foremost to respond emotionally to them (Barry, 2005). According to Gillbert (1993), this process is common in particular when people are faced with shortages of time, energy or conclusive evidence that prevent them from rejecting ideas which they involuntarily accepted during sensory comprehension. Gillbert's findings supported the early work of philosopher and scholar Baruch Spinoza, who proposed that comprehending an idea necessarily entailed initially believing it (1993). "Believing is so easy, and perhaps so inevitable, that it may be more like involuntary comprehension than it is like rational assessment," Gillbert wrote (1993). Such outcomes necessitate a better understanding of perceptual processing and have significant implications for media effects research (Barry, 2005).

In a study conducted by Fogg et al. (2003), it was found that the most frequently addressed factors in determining people's perceptions of credibility were those of design look (which held a 46.1% incidence rate among participants), information design/structure (28.5%) and information focus (25.1%). Furthermore, the functionality

of a site was shown to reduce credibility perceptions in cases where there were problems (Fogg et al., 2003). “No matter how good a site’s content, the visual aspects of a Web site will have a significant impact on how people assess credibility. To create a highly credible Web site, one should invest in the design look of the site,” according to Fogg and colleagues (2003).

Websites have proven to be highly susceptible to first impressions. “Because the web is a visual medium, the first credibility cues are perceived very quickly. Before any reading or other cognitive processes take place, preconscious judgments based upon visual design elements are already made,” according to Robins and Holmes (2008). Lindgaard and colleagues found that first impressions of websites’ visual appeal are formed and can be assessed within as little as 50ms of exposure, and held consistent for 500ms exposure conditions (2006).

Perhaps contradicting the old adage about not judging a book by its cover, web users have shown to do just that in establishing the credibility of websites. Robins and Holmes (2008) found that websites with high aesthetic treatment, or ones of higher quality design features, elicited higher ratings of credibility among viewers than those with low aesthetic treatment, illustrating a statistically significant interaction between credibility and design. In about 90% of cases, some type of aesthetic treatment was shown to improve credibility ratings for the same content, regardless of how the original credibility rating had been (Robins & Holmes, 2008):

In other words, when the same content is presented using different levels of aesthetic treatment, the content with a higher aesthetic treatment was judged as having higher credibility. We call this the amelioration effect of visual design and aesthetics on content credibility. Our study suggests that this effect is operational within the first

few seconds in which a user views a web page. Given the same content, a higher aesthetic treatment will increase perceived credibility.

“The importance of the findings presented here is that design has impact beyond decoration,” wrote Robins and Holmes (2008). “Our focus has been on a sort of ‘instant credibility,’ or a visceral-level judgment. Without that, it is possible users will not stay and use information on a site that may well be credible, but is not perceived as such,” the researchers wrote (Robins & Holmes, 2008).

The fact that credibility perceptions are determined predominantly on the basis of websites’ aesthetics treatments has major implications for e-commerce, as it demonstrates the extent to which first impressions really count. The highly visual nature of credibility determinations implies that credibility perceptions are largely grounded in the right hemisphere of the brain, which means that credibility judgments of e-commerce websites may be evaluated in a largely emotion-driven fashion, as per Barry (2005).

Furthermore, because emotions have been reported to easily transfer between hemispheres, they can in such cases be expected to influence consumer behavior and decision to larger extents, as well (Barry, 2005). It is plausible that well-designed and highly visual websites not only make consumers more willing to make purchases due to increased perceptions of credibility, but also encourage them to spend more money, as people’s perceptions of product values have been shown to increase with emotional stimulation (Kim, Lee & Choi, 2003).

However, though Pinterest has a highly trusting user, award-winning interface design and highly visual nature, it is not an e-commerce website, but rather serves as a portal to other e-commerce websites (BlogHer, 2012; The Webby Awards, 2012; RichRelevance, 2012).

Transference of Credibility on Portal Sites

According to research by Kang, Base, Zhang and Sundar (2012), in the case of news portals, readers tend to judge the credibility of portal sites as if they were the original sources. In other words, in the presence of multiple layers of content, “the most salient or proximate source is going to exert greater influence on readers’ content judgments than other source cues on the interface,” according to Kang and colleagues (2012). This idea supports and reflects the concept of “credibility transfer,” originally put forth by Schweiger (2000), as cited in Kang et al. (2012).

In another study, DiMuzio and Sundar (2012) found that user perceptions of interest, or appeal, carry over from a linking site to a linked site in similar ways as does credibility. However, in cases where there was a discrepancy in relative credibility levels between the linking and linked sources, users did tend to scrutinize content more closely (DiMuzio & Sundar, 2012).

Nonetheless, the awareness of layered sources did not prevent the transference of perceptions of content trustworthiness and newsworthiness from linking to linked content (DiMuzio & Sundar, 2012). Furthermore, the interest value of content appeared to trump considerations of credibility (DiMuzio & Sundar, 2012). “It is clear that hyperlinks indeed function as implicit endorsement of the content they connect, even after statistically accounting for credibility differences in both linking and linked sources,” according to DiMuzio and Sundar (2012). As such, portal websites have proven themselves to be susceptible to a credibility carryover effects.

And while the credibility carryover effect may be an accidental outcome in some cases, it can also be used to strategically bring up content popularity. Interface designers

have the ability to capitalize on the phenomenon of blind transfer in relation to perceptions of interest value if they desire for content to go viral (DiMuzio & Sundar, 2012). However, if the goal is to prevent the transference of perceptions between sources, then the following design strategies can be implemented (DiMuzio & Sundar, 2012):

(1) Highlight sources, ideally with credibility tags, (2) highlight the logic and mechanics of hyperlinking between content from sources of varying credibility, (3) constantly alert users to the pitfalls of heuristic cues, and (4) differentiate between content that has high interest value and that which is reliable.

Implications for Pinterest Users

In light of these findings, the conceptualization of Pinterest as a portal appears very important because it suggests the reported high trust attributed to Pinterest itself can very likely carry over to the sources to which it links (BlogHer, 2012). Furthermore, while the aforementioned largely focused on news portals, I believe such an effect may be perhaps even more likely on Pinterest precisely because it differs from news portals, being a website that is more visually oriented. If the evaluation of credibility is determined largely on a visual-emotional basis, then it is plausible that Pinterest's award-winning interface not only favorably serves its own credibility, but also endorses the content which it hosts and carries over some of its credibility to its associated sites.

Furthermore, it is also possible that individual pins themselves could partially serve to determine Pinterest's credibility (being considered as Gestalts, or units of a larger whole) as well as determining the credibility of their linking sources. Further research is necessary in order to determine the extent to which factors such as photo quality may play into this equation.

CHAPTER VII

CONCLUSIONS AND DISCUSSION

Since its launch in March 2010, Pinterest has exploded as a social media startup, drawing 10 million visitors faster than any other website in history and becoming the third-largest social network in America as of 2012 (Constine, 2012; Perez, 2012a; BlueGlass, n.d.; Wasserman, 2012; Duggan & Brenner, 2013). In attracting an unusual core demographic of late adopters, Pinterest has been most attractive to Midwestern American women (Moore, 2012b; Hitwise, 2012; Goodman, 2012; Constine, 2012b; Goodman, 2011). Pinterest users are more likely to make purchases off referral sites and spend more money than any other social network users (RichRelevance, 2012; Engauge, n.d.; Hayes, 2012). They have shown to be very highly engaged, arriving at an overall attrition rate of close to 0% (Moore, 2012b). And a survey of female social media users has demonstrated that Pinterest is more trusted by women than any other social network (BlogHer, 2012).

In taking account of such successes, it is important to consider the fact that Pinterest has been a distinctive part of two larger Internet trends: the rise of social commerce and the increasingly visual web (Duggan & Brenner, 2012). Its award-winning user interface design and groundbreaking referral spending numbers support the possibility that there is a connection between Pinterest's influence in the field of design and in e-commerce (The Webby Awards, 2012; Duggan & Brenner, 2012).

Such a relationship can be examined through the dual lenses of credibility research and Perception Theory (Robins & Holmes, 2008; Barry, 2005). Perception Theory

proposes that visual information and emotional responses are strongly connected and rooted in the same part of the brain (Barry, 2005). Credibility research, combined with research regarding website aesthetics, has shown that people make decisions regarding credibility instantaneously, and largely on the basis of the quality of website design (Robins & Holmes, 2008). Together, these two research approaches suggest that not only is the highly visual web also a highly emotionally-laden one, but it is also highly influential in the realm of e-commerce, in which trust, otherwise conceptualized as credibility, is a crucial component for consumer spending to take place (Teo & Liu, 2005; Geffen, 2000; Robins & Holmes, 2008).

While Pinterest is not technically an e-commerce website, addressing the interface metaphors which are relevant for its purposes is important because they together provide better insights into women's relationship with Pinterest, all the while grounding the applications and explanatory power of potential metaphors in a firmer historical context. Specifically, it was found that the bulletin board metaphor offers only a partial explanation as to how women use Pinterest. However, as Pinterest has been widely addressed as a virtual scrapbook in the media, such a conceptualization appears to explain a lot about not only its unusual core demographic and well as its future potential. And the portal metaphor was crucial in establishing that Pinterest's power has the potential for a carryover effect that favors its linked sources through referral traffic and referral spending.

Pinboard Metaphor

In examining the application of the pinboard metaphor toward Pinterest's interface, the term "pinboard" has mixed definitions, which range from devices used in storing

spools and bobbins to the more common cork bulletin boards which are used in conjunction with pushpins and thumbtacks to hold content. Examining the patent record of bulletin boards, I found they are rooted in text-based advertising practices, which indicates that bulletin boards were not originally media for visual imagery. However, this very well may have changed over time, with the proliferation of printing that made magazines more commonplace and resulted in the increasing emphasis on visual imagery in advertising from the 1800s and onward (Rampley, 2005). Bulletin Board Systems, were used well before the Internet went public, and before the advances that made GUIs possible. Their history indicates that BBS were some of the first true social networks, though, much like the early physical bulletin boards, they were largely text-based.

The bulletin board metaphor appears to be a highly useful interaction metaphor, as the idea of saving content via (push) pin is very simple, although it did appear rather unusual that both the content and the action are described as “pins” in Pinterest’s case, as the pin itself, in the case of a bulletin board, is absent of any content or value for the pinner.

The one relevant application of the digital bulletin board metaphor I was able to discover revolved around the early use of online pregnancy bulletin boards by women (Nakamura, 2008). These women were credited with being a special case, in that they represented typically late adopter of technology who strived to work together in creating personal avatars, which showed some of the earliest representations of the female body in relation to pregnancy in cyberspace. Nakamura referred to these digital signatures as features of “early e-mail visual cultures” (2008). Nonetheless, the actual posts made by these women were text-based, at times even using ASCII art images.

There is some considerable overlap between the early users of pregnancy bulletin boards and the Pinterest audience. Research by the Nielsen group showed that mothers were 61% more likely to use Pinterest than the typical web user (2012). A keyword search for “pregnancy” on Pinterest resulted in a wide array of visual representations of pregnancy. Combining these two findings, it is possible that Pinterest serves a role similar to that of the early pregnancy bulletin boards for some women. She argued that the presence of digital signatures and avatars on pregnancy bulletin boards served “as a form of vernacular memory management” for women who were parents or soon-to-be mothers (Nakamura, 2008). Nakamura indicated that it may be highly productive, then, to conceptualize women’s blogs, digital signatures and other forms of representation on the Web as the online application or extension of scrapbooking (2008).

Scrapbook Metaphor

Goodman used anecdotal evidence in proposing that one of the main reasons Midwestern women were apt to use Pinterest, unlike the early adopters of technology found on the coasts, is because scrapbooking is a culturally Midwestern practice (2012). Though I was unable to verify that scrapbooking truly is rooted in the Midwest, I did find that women have historically dominated the activity (Tucker et al., 2006). In support of Goodman’s suggestions, however, Midwestern Pinterest users were, in fact, found to have a disproportionately high interest in the Arts and Crafts content category of Pinterest compared to others, which may indicate that scrapbooking does account for some of their interest in Pinterest (Hitwise, 2012).

Furthermore, research into the various applications of scrapbooking indicated that commercial uses of scrapbooking were rooted in American capitalism, the

industrialization of society and the explosion of print media in the late nineteenth century (Tucker et al., 2006). While scrapbooking has held up among nostalgia-centered traditions such as album-keeping, both of which have historically been female-driven, the commercial side of scrapbooking, too, was shown to accurately reflect women's increasing status as consumers and advertising in the late nineteenth century (Tucker et al., 2006; Good, 2012; Nakamura, 2008; Moore, 1994; Garvey, 2003). Such a relationship even showed to carryover into the modern e-commerce boom, with further evidence indicating that both mass culture and consumerism have often been regarded as feminine, and that women are the primary consumers both on- and off-line in modern times (Rampley, 2006; Pew, 2012; Catalyst, 2012; Marketing for Women Conference, 2013).

In addition, Pinterest can also be argued to serve its users' taste performance desires, which are used in cultivating social status representations through the demonstration of taste in consumer products, as well as other behaviors such as impression management and identity performance (Good, 2012; Barash et al., 2007; Liu, 2007; Papacharissi, 2009; Zhao et al., 2008). According to Rampley, visual culture is loaded with symbols of power, and the behavior of commercially oriented Pinterest users could potentially qualify as a demonstration of power through shaping social media representations of one's social status based on consumer taste preferences (2006).

Findings also suggested that scrapbooking has strong similarities to the modern trend of content curation, which has been described as the sharing, gathering and purchasing behavior of groups of like-minded individuals who are non-media-experts (Rosenbaum, 2011). Rosenbaum (2011) indicated that curated experiences are more helpful to users

than “one-off decisions about what to buy or whom to trust,” which supports media commentary on Pinterest’s strength as a handpicked, boutique-like environment in the realm of e-commerce (Chafkin, 2012). Inexpert curation could be seen in the early days of scrapbooking, as people acted to compile, organize and re-adapt published writing and images while infusing them with personal meaning and value (Garvey, 2003).

In all, the scrapbook metaphor has not only been applied to explanation of Pinterest by media professionals, but has also been examined via academic research in its applicability toward social networks such as Pinterest, Facebook and Twitter (Good, 2012). The aforementioned findings suggest that the scrapbook metaphor could be applied in examining the relationship between adoption trends of Pinterest users, as the understanding of scrapbooking could potentially be a factor in lessening barriers to adoption among Pinterest less tech-savvy users. And while there may be a disconnect in the designer’s mental model and the users’ mental model, it is plausible that scrapbooking simply does not offer as helpful a vocabulary for describing Pinterest interactions, or perhaps it would engender Pinterest too strongly in favor of women, whereas its founders may hope for a more balanced demographic.

However, it is also entirely possible that the pinboard metaphor falls so closely in line with the scrapbooking metaphor that, combined with Pinterest’s aesthetically ambiguous and highly simple and functional interface, the two processes are essentially interchangeable and indistinguishable, aside from the choice of terminology alone. In any case, more research is necessary to examine the prevalence of scrapbooking aficionados among Pinterest’s core user base and to test the validity and extent of its influence over technological adoption behaviors and usability outcomes.

Portal Metaphor

According to Kalyanaraman and Sundar, the portal metaphor for websites characterizes them as serving as gateways, billboards, networks, niches and brands. As gateways, portals attract users based on their gatekeeping preferences, which strongly resonates with Pinterest's boutique-like environment, which is shaped by user curation of hand-picked content. As billboards, portals may offer a wide array of both commercial and informational content to their users, and such an outcome is clearly established on Pinterest, where user-generated content and corporate content run together. As networks, portals serve as the gathering places of virtual communities, which is visible in Pinterest's reportedly strong sense of identity and easily identifiable core demographics (Moore, 2012a; Moore, 2012b). As niches, portals rely on targeted information to draw attention from key audiences. On Pinterest, which has become well-known as a women-dominated website, gender-specific content is so visible that it has inspired male-oriented Pinterest knockoff websites such as Manteresting.com (Manteresting, 2013).

In a more obvious way, however, we can conceptualize Pinterest through the portal metaphor simply because it drives immense amounts of traffic to other websites, alongside high referral-based spending. As such, it is vital to consider Pinterest alongside other kinds of portal websites, as research suggests that its strength lay in the traffic it redirects to other websites, whose content it hosts like an intermediary platform.

The most important aspect of subscribing to the portal metaphor in characterizing Pinterest, however, lay in connecting credibility research with e-commerce spending. According to DiMuzio and Sundar, portal websites such as news sites have demonstrated to issue a carryover effect in credibility perceptions, among other factors (2008). Pinterest

has not been subject to much academic research, and none at all in regard to its users' credibility perceptions. However, in light of its similarity to other portal websites, it is crucial to consider the potential influence Pinterest may have over user behavior on other sites, particularly when it comes to user spending, in light of its female users' reportedly high trust in Pinterest and their already high e-commerce spending via referral traffic, among other factors.

Carryover Effects

A vital component of Pinterest's potential for credibility perception carryover lay in its highly visual user interface, findings suggest. According to Barry, visual perception and emotional responses are rooted in the same part of the human brain, and emotional information easily leaks across the two hemispheres, influencing thoughts and actions all the same (2005). This suggests that Pinterest's position as part of both increasing use of visual imagery online and increasing e-commerce activity is not coincidental, but rather a product of the interaction of credibility perceptions and website aesthetics.

As website aesthetics have been shown to be evaluated almost instantaneously by users, and also proven crucial in determining the credibility of e-commerce websites and allowing for e-commerce spending, the visual-emotional judgments of credibility that take place on Pinterest have the potential to not only carryover to other websites via the portal effect, but also influence consumer spending, findings suggest. This possibility is further strengthened by findings that people tend to believe what they see, and must take conscious effort to "un-believe" their visual experience, despite the fact that visual experiences do not necessarily consciously register in many, but are capable of emotionally influencing thought and behavior all the same (Gillbert, 1993; Barry, 1997).

Such a possibility not only warrants further research in regard to Pinterest's visual-emotional influence on perceptions of credibility both locally and on linked sources, but also further examination and applications of Perception Theory in regard to the two major trends with which Pinterest was associated in 2012: the rise of the visual web and the proliferation of e-commerce.

Media Literacy vs. Visual Intelligence

The advent of the printing press made a mandate toward the establishment of universal verbal literacy (Dondis, 1973). "To be considered verbally literate, one must learn the basic components of written language: the letters, words, spelling, grammar, syntax," wrote Dondis (1973). For Dondis, literacy indicated that a group of people shares "the assigned meaning of a common body of information" (1973). Dondis attempted to conceptualize visual literacy under a similar basic framework, indicating it must operate within the same boundaries, more or less, as verbal literacy (1973).

Back in 1998, Bolter indicated that because the most popular and successful websites are typically the most visually interesting ones, rather than those of comprising layers of elaborately linked hypertext, computer technology challenges traditional conceptions of literacy on many levels. "Literacy in electronic environments may have more to do with the production and consumption of images than the reading and writing of either hypertextual or linear prose," Bolter wrote (1998).

"Visual literacy, like visual culture, is complex, multidimensional, and embedded within a range of visual, cognitive, aesthetics, and nonvisual (emotional, ethical) dimensions," wrote Simon (2008).

In a 2003 Engauge report on “21st Century Skills,” it was indicated that visual literacy is just one of eight key skills needed for the digital era, defining it as the following:

The ability to interpret, use, appreciate, and create images and video using both conventional and 21st century media in ways that advance thinking, decision making, communication, and learning.

According to Barry, however, becoming “visually literate” is simply not sufficient for empowering media consumers to tackle the countless messages to which they are regularly exposed (1997):

In a society in which advertising images can lure people into a sense of emotional security while undermining their health, in which political images can affect emotional response before critical analytical abilities are invoked, and in which mass media entertainment images of violence can have devastating arousal effects, the nature of our battle for survival has changed considerably since our current brains have evolved from primal environmental-response patterns.

On Engauge’s report, visual literacy was placed among other literacies and skills such as basic literacy, scientific literacy, economic literacy, technological literacy, information literacy, multicultural literacy and global awareness (Engauge, 2003). Simon criticized the absence on media literacy from Engauge’s list, however, writing that the description of visual literacy reads more as would a description of media literacy in the first place (2008).

In 2010, a paper published regarding the digital and media literacy recommendations of the Knight Commission on the Information Needs of Communities in a Democracy indicated the two literacy skills were mandatory for successful participation in contemporary culture, which involves not just the consumption of messages, but also their creation and sharing. The reported stated as follows (Hobbs, 2010):

In this report, the term “digital and media literacy” is used to encompass the full range of cognitive, emotional and social competencies that includes the use of texts,

tools and technologies; the skills of critical thinking and analysis; the practice of message composition and creativity; the ability to engage in reflection and ethical thinking; as well as active participation through teamwork and collaboration. When people have digital and media literacy competencies, they recognize personal, corporate and political agendas and are empowered to speak out on behalf of the missing voices and omitted perspectives in our communities. By identifying and attempting to solve problems, people use their powerful voices and their rights under the law to improve the world around them.

Taking into account the “constantly connected” nature of the modern American family, the report offered a plan of action for bringing digital and media literacy education into both formal and informal settings (Hobbs, 2010). The report indicated that, for full participation in the media-saturated and information-rich society, digital and media literacy skills should enable American citizens to do the following (Hobbs, 2010):

- Make responsible choices and access information by locating and sharing materials and comprehending information and ideas
- Analyze messages in a variety of forms by identifying the author, purpose and point of view, and evaluating the quality and credibility of the content
- Create content in a variety of forms, making use of language, images, sound, and new digital tools and technologies
- Reflect on one’s own conduct and communication behavior by applying social responsibility and ethical principles
- Take social action by working individually and collaboratively to share knowledge and solve problems in the family, workplace and community, and by participating as a member of a community

Despite its mention of the “emotional competencies” in defining digital and media literacy, and the mention of credibility evaluation competence among one of the five target skills that the literacies should entail, Hobbs’ report appears distinctly lacking in regard to the facets of visual intelligence put forth by Barry (Hobbs, 2012; Barry, 1997; Barry, 2005). According to Barry, too few people understand the functioning of human

perception, emotion and cognition, and even fewer realize how these functions are used in the manipulation of ideas, attitudes and beliefs (1997). In order to arrive at visual intelligence, people must become aware of the inherent power of images and develop a critical understanding of how the media use images to affect thoughts and emotions, according to Barry (1997).

“The concept of visual intelligence ... implies a critical appraisal of conscious perceptual information; an understanding of the emotional affect that accompanies it; and the tapping of creative problem solving ability that begins in perception,” according to Barry (1997). Discussing Gillbert’s findings (1993) on people’s tendency to believe what they see, Barry wrote (1997):

If Spinoza’s model of the mind is correct, as current neurological thinking suggests it is, and we are doomed to first accept what we see as reality and to believe what we are told as true, it is only by deliberate thought and active higher reasoning that we can move into a wider circle of intelligence and truly appreciate hat we see and understand how we come to believe it.

The findings in this section suggest that the typical focus of digital and media literacy skills, which appear to at times integrate aspects of visual literacy, come short of addressing some of the neurological aspects of media influence that anchor on the relationship between visual perception and emotion to influence human thought and behavior. Despite the fact that Hobbs’ report (2010) comes in more than a decade after Barry’s 1997 publication *Visual Intelligence*, the concepts Barry proposed are entirely absent from its highly applied educational agenda.

Suggestions for Future Research

The findings in this work demonstrate that Pinterest has not only already established itself as one of the most influential social networks of modern times, but that its visual interface should be examined more closely alongside research addressing the power of visual-emotional influence in the media, as well as within the context of the e-commerce boom, increasingly visual web and modern visual culture.

While there is a significant amount of credibility research that spans many disciplines, and a considerable amount dedicated to examining the role of aesthetics in shaping perceptions of credibility online, the inter-relationship between visual perception and emotion in determining perceptions of credibility online warrants further research, particularly in light of the growing e-commerce industry. In light of Gillbert's findings on the gullibility of visual perception (1993), there is a strong possibility that visual media such as Pinterest acquire trust on the basis of emotion. As such, the examination of the credibility carryover effect discussed by DiMuzio and Sundar (2012) warrant wider applications, as well, particularly in the realm of non-news portals such as Pinterest, wherein media consumers are more prone to be trusting of information based on visual examination and emotional influence.

Further research is also needed to examine to what extent individual pins may influence perceptions of credibility on Pinterest, and whether specific content categories vary enough in visual image quality to account for differing outcomes in terms of subscribers' perceptions of Pinterest's own credibility, as well as the sites to which it directs them. This approach would ideally take into account research related to the Gestalt principles of perception, as well as factors of usability on Pinterest, in examining the influence of Pinterest's interface as well as its content.

Next, it is important to address the broader implications of Perception Theory in regard to the increasingly visual web trend, ideally through an interdisciplinary approach, through the lens of media effects or through UX research. If addressed via UX, one could potentially apply Mahlke and Thuring's approach, which accounts for instrumental factors like usability, non-instrumental factors such as aesthetics and emotional experiences in UX (2008). This approach is being suggested because, unlike most other UX theories available, it could potentially account for the multidisciplinary aspects of Perception Theory as well as more traditional HCI components related to usability, functionality and efficacy (Mahlke & Thuring, 2008).

It is hoped that this research successfully illustrates the importance of taking an interdisciplinary approach toward examining media trends in the context of visual perception and emotion research. Further examination of the neurological processes behind media influence could also prove useful for fields far beyond the scope of this study, while also being helpful for those who are concerned about the future of visual, digital and media literacy education—which, findings suggest, more than warrants it.

Additional questions that have risen over the course of this research address some of the cultural aspects of Pinterest users, who are largely represented by Midwestern American women. The role of the pinboard and scrapbook in the households of Midwestern women could use further historical examination, as it could play a factor in defining some of the modern activity of Pinterest users who fall into this demographic. This line of questioning should also consider the cultural traditions surrounding pregnancy, such as those that may have played into early pregnancy bulletin boards and define a significant portion of Pinterest content, alongside other women-centric values.

Further, the approach taken in this work to examine Pinterest within the framework of portal sites is limited by existing research on portals, and thus additional investigation into the nature of portal websites could be beneficial to future studies on the credibility carryover effects of websites such as Pinterest that act as non-traditional portal websites.

The media effects concept of two-step flow is worth being further explored in relation to the referral-based spending occurring on Pinterest, as examining the interpersonal influence among Pinterest users was beyond the scope of this work, but may prove useful in illustrating the full range of influence within Pinterest's community. In regard to this, it is also worthwhile to further explore how the public nature of Pinterest (aside from a few "secret" boards) further distinguishes how Pinterest is used in comparison to scrapbooks.

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