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Testing the Pub Principle: A Look at Push and Pull Communication on Facebook

Tyler Grant Page

A thesis submitted to the faculty of
Brigham Young University
in partial fulfillment of the requirements for the degree of

Master of Arts

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June 2015

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Abstract

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This research tests the value of push and pull communication on Facebook in the first effort to test the validity of the Pub Principle and Social Intrusion Theory. This theory explains how audiences engage in a tug-of-war with commercial forces during mass communication and that commercial messaging is ultimately dependent upon the acceptance or rejection of its intended audience. The pub principle explains that social media is unlike traditional mass media and that the rules commercial forces must play by are different than for other mass media.

Using a mixed-method approach, this research confirms the validity of this principle and theory. It finds that Facebook users spend significantly less time looking at push content like paid advertisements than at pull content like fan pages. This research also shows that audiences prefer dealing with pull content over push content on Facebook. The Pub Principle and Social Intrusion Theory are therefore supported by this research.

Keywords: social media, Facebook, eye tracking, advertisements, fan pages, push, pull, pub principle, social intrusion theory, marketing, communication, commercialization

Acknowledgements

This theory is Robert Wakefield's and I'm grateful to him for allowing me to test it. More than that, I appreciate the decade in which he has mentored me. He will always be a dear friend and a man I admire greatly.

Steven Thomsen provided invaluable assistance with the eye tracking and quantitative statistics herein. Pamela Brubaker helped me develop a good and coherent way to talk about this very complex subject. Kevin John spent more hours than either of us care to count setting up the eye tracking lab, restoring the lost data, and helping me explain the methodology herein. Each of these three have been wonderful throughout this process.

Ed Adams isn't listed as a committee member here, but that is only because he stepped aside and insisted I get the ideal committee for this project. I can't put into words how much his guidance and kindness has meant to me throughout my Master's degree. His help on this project is just a small part of the kindness he has shown to me.

Finally, I am nothing without my parents, my siblings, and my bride. They are the reason for everything good I ever have done or ever will do, including this work.

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Introduction

Social media are a major topic in the communication world today.¹ They have turned much of traditional media on their heads and sent communication departments around the world scrambling for strategies to promote products and services within social media. To date, the business and academic worlds have failed to coalesce around one idea or understanding of how social media operate and how audiences will react to promotion within them.

Wakefield, Adams, Page and John (2013) introduced the *Pub Principle* and *Social Intrusion Theory* to help explain the use of social media from a social conversation and promotional perspective. The Pub Principle is a historical analogy asserting that social media do not create a new form of societal communication; rather, they are a return to the way communication occurred before radio and television made it possible to communicate with millions of people at once. The authors asserted that social media to some extent turned the world into the communication equivalent of a pre-Industrial Revolution pub. This makes audience reactions to intrusions by marketers into social media predictable. For example, just as a salesman entering a pub or tavern was seen as an unwelcome intrusion into the lives of visitors, Social Intrusion Theory suggests that attempts to *push* content out to audiences in social media will receive negative reactions, while allowing audiences to *pull* content they want will be much more favorably received. Acting in conjunction, the Pub Principle and Social Intrusion Theory have implications for how promoters attempt to sell products, build brands, and communicate with customers in social media.

This thesis will test the validity of the Pub Principle and Social Intrusion Theory by comparing the value of push and pull communication within Facebook. As Facebook is the

¹ It has become popular to treat “social media” as a singular term; however, this common practice overlooks the reality that social media are really a group of numerous platforms that behave differently. As such, this thesis will treat “social media” with the grammatically correct plural.

largest and most profitable social media tool in the world, it is an ideal place to begin testing whether or not the Pub Principle and Social Intrusion Theory are accurate or true. To do so, this research will combine observation of Facebook users through eye tracking software and self-reporting of reactions and opinions from these same Facebook users. This will provide multiple tests that compare what audiences do and what they think.

Literature Review

This literature review explores the Pub Principle, Social Intrusion Theory and how they provide an important foundational understanding for the relevant literature surrounding social media. This foundation begins with an explanation of the Pub Principle:

Pub Principle

Starting an article about social media with a discussion of pre-Industrial Revolution pubs might seem a bit odd. They are vastly different gathering places separated by up to 200 years of history and seeing light years of technological growth. But the old British pub (and its subsequent American equivalent, the tavern) is important because it helps us to understand the nature of pre- Industrial Revolution communication and what changed with the town square. This article will show that the creation of the town square can rightly be considered to be the beginning of mass communication. Its creation allowed persuasive communication to grow from a random, haphazard, grassroots-like activity into a venue where a single speaker could reach a large group of people all at once. Moreover, people who visited the town square forfeited the right to shut down conversation they disagreed with. Thus, the town square is the predecessor to other mass communication technologies, such as radio and television.

Before the Industrial Revolution took hold, however, England and the United States operated as agrarian societies. That meant people were spread out in small, isolated, and

independent villages. Taverns became the communal gathering places of these communities.

While alcohol certainly flowed in the taverns, they were mostly environments which facilitated social interaction. For many villages and crossroads across the continent, the tavern was the only indoor public space where people could congregate. “It can be argued that taverns were involved in the creation of the public sphere. . . . Given the extent to which the sphere relied on free association and the free exchange of opinions, they did offer a supportive setting. . . . [The tavern] reached past to embrace purely social forms of interaction” (Roberts, 2009). Taverns housed everyday life, engaging all kinds of social interaction within this public sphere. (Wakefield, et. al., 2013)

When the Industrial Revolution started to create larger communities where people could meet, the town square became an early form of mass communication. Individuals would visit the square to hear messages, often from influential citizens or community leaders, for free and participate in social discourse. Soon people tried to commercialize the square by building markets next to them. As a result, often when individuals walked by the square, they might hear a merchant loudly selling his wares. This became an expected part of the experience, and one that audiences could consciously tolerate or tune out at their whim.

This commercialized infusion into public discourse was different from the experience of the pub. If a marketer had walked into a pub and tried to force a commercial message into a conversation by loudly selling wares, audiences would have ignored the pitch, removed the marketer, or left the pub altogether. The only way for marketing to exist in a pub was for the marketer to ask permission to join a conversation. This required consent from the audience and meant that marketing pitches had to be tailored as something audiences were actively willing to hear. However, in the town square setting, this dynamic changed. Audiences came to

consciously accept merchants loudly selling their products as a price of visiting the square. They also relinquished the ability to avoid a pitch they disagreed with. When in the town square, a person couldn't shut down a merchant who was loudly selling fish just because he wasn't interested in buying it. The person could walk away from the pitch or ignore it, but audiences came to accept the fact that the pitch would (and had a right to) take place. This was different from the pub.

As mass communication evolved and technology progressed, the merchant loudly selling wares became commercial breaks on radio and later on television. Of course, audiences could still turn off the television, refuse to read the newspaper, or not visit the town square, but they didn't get to choose the degree to which messages were given. Rather, the decision is simply whether to turn off the medium or to endure the message. Because audiences received free messages by these media, they expected less control over the way products were pitched to them. Over time audiences evolved to allow far more commercialized messages in one-way, town-square-like communication than they ever would have allowed in a tavern setting. Social Intrusion Theory explains that this plays out even today in social media as a continual tug of war between people's innate need to communicate and the desire of commercial interests to monetize any communication that occurs (Wakefield, et. al., 2013).

The Pub Principle and the town square mark the differences between commercial communication in the pre-Industrial Revolution pubs or taverns and the mass commercial messages that occurred afterward, starting with the town square. In the former, marketers had to ask permission to join a conversation, and the message provided was subject to the approval of

audiences. In the latter, audiences simply gave their consent to be pitched with anything by walking to the town square, opening the newspaper, or turning on the television.

Push and Pull

The fundamental difference between the town square and the pub as explained by the Pub Principle is described by marketers today as the push and pull marketing concept introduced above. The notions of push and pull in the world of communication refers to the difference between communication strategies that attempt to “push” themselves into a conversation and those that allow audiences to “pull” content that interests them. Sands (2003) looked at push and pull in early media strategies with search engines presenting an effective pull opportunity and an email newsletter being a push strategy. Wakefield, et al. (2013) alluded to the push-pull correlation of the Pub Principle:

Before the Industrial Revolution, the free-wheeling exchanges of people in the pubs and taverns took place amidst the regular comings and goings of other settlers or travelers. Newcomers would have to request and be granted permission to enter whatever conversation was occurring. Imagine, therefore, the entrance of the “snake-oil peddler” or even the old “Fuller Brush salesman,” who must either play by the invitational rules of the tavern or simply barge in to the exchange to sell their wares. (Wakefield, et al., 2013)

This difference between barging in and attempting to sell wares compared with waiting to be invited to present is the difference between a push and a pull strategy. The Pub Principle therefore posits that audiences will react especially negatively to a push media strategy in a pub-like setting.

The Pub Principle, Social Media, and Intrusion

Wakefield, et al. (2013) tied the Pub Principle and Social Intrusion Theory to social media by explaining that social media, unlike traditional mass media such as television and radio, are more like the pre-Industrial Revolution pubs than they are like the town square. “Roberts’ implication that the colonial tavern was a ‘public sphere’ suggests strong support for comparing the old tavern life to today’s social media” (Wakefield, et al., 2013).

Social media operate much more like a pub than a town square (or subsequent mass communication). This means that audiences will steadfastly reject attempts at push marketing in social media. Therefore, the Pub Principle can inform promoters in the world of social media. It states that the egocentric and interactive nature of social media, where individuals communicate with one another in two-way symmetric fashion, meaning they communicate back and forth as equals, is fundamentally different from television or radio. It is even different from visiting traditional websites where the owner of the site (cnn.com, espn.com, mcdonalds.com, etc.) is talking *at* the audience. Rather, individuals visit Facebook to communicate *with* their friends, not *with* Facebook itself or with other commercial entities. The same is true of other social media sites (Wakefield et. al., 2013).

Sung and Kim (2014) came to similar conclusions in an experiment that evaluated the attitudes of subjects toward real and fake corporations on Facebook that sent interpersonal messages to them. Moreover, they found that these attitudes varied with the Facebook user’s perception of the platform they were using as a private place:

If a person strongly perceives the platform to be a personal space, that person might perceive corporate activities on the platform as an unwanted intrusion. For both real and fictitious companies, our participants who had a stronger expectation toward the platform

as a personal space (a) had a more negative attitude toward the company, (b) felt that the company would invest less in relationship building, and (c) indicated less loyalty toward the company and (d) less intention to buy the company's product than participants with a weaker expectation. (p. 248)

The variability of the response found by Sung and Kim is particularly meaningful, as it suggests that the attempts of commercial forces to market on social media can meet varied, and often negative, reactions. Sung and Kim demonstrate that these reactions will be based upon perception of the social media platform used as a private place like a tavern or pub rather than a more public place like a town square. As a result, the Pub Principle and Social Intrusion Theory posit that, just as consumers would react differently to a marketing pitch presented before a speech in the town square than they would to a Fuller Brush salesman who intruded into a colonial tavern and attempted to sell his wares, individuals will react more negatively to push marketing in social media compared with push marketing on other websites or from pull marketing in social media (Wakefield, et al., 2013). For this reason, it is critical to precisely define "social media" and to distinguish them from traditional media online.

Defining Social Media

The emergence of websites that were distinctly different from traditional sites came early in the Internet's history. These sites were eventually labeled *social media*, though attempts to define the term started even before its use became common. Early social media research often referred to social networking sites, a specific type of website that would eventually describe a subset of social media.

We define social network sites as web-based services that allow individuals to (1) construct a public or semi-public profile within a bounded system, (2) articulate a list of

other users with whom they share a connection, and (3) view and traverse their list of connections and those made by others within the system. The nature and nomenclature of these connections may vary from site to site. (Ellison, 2007, p. 211)

The major technological contribution of social networking sites was to change the orientation of online communities. Rather than organizing around common interests, as with public forums, or being driven by the needs and desires of commercial organizations, social networking sites were structured with the individual as “the center of their own community” (Ellison, 2007, p. 219).

As technology progressed, social media evolved beyond just social networking sites. These new social media did not fit the definition provided in 2007. Further definition and classification were necessary. Kaplan and Haenlein (2010) provided a definition of social media and a classification system of social media tools. The authors explained that social media are built upon an “ideological and technological foundation” of Web 2.0. They described Web 2.0:

While applications such as personal web pages, Encyclopedia Britannica Online, and the idea of content publishing belong to the era of Web 1.0, they are replaced by blogs, wikis, and collaborative projects in Web 2.0. Although Web 2.0 does not refer to any specific technical update of the World Wide Web, there is a set of basic functionalities that are necessary for its functioning. Among them are Adobe Flash (a popular method for adding animation, interactivity, and audio/video streams to web pages), RSS (Really Simple Syndication, a family of web feed formats used to publish frequently updated content, such as blog entries or news headlines, in a standardized format), and AJAX (Asynchronous Java Script, a technique to retrieve data from web servers asynchronously, allowing the update of web content without interfering with the display

and behavior of the whole page). For the purpose of our article, we consider Web 2.0 as the platform for the evolution of Social Media. (p. 61)

Once the authors gave this foundation as the principle platform on which social media are built they could then define social media. “Social Media is a group of Internet-based applications that build on the ideological and technological foundations of Web 2.0, and that allow the creation and exchange of User Generated Content” (Kaplan & Haenlein, 2010, pg. 61).

The authors went beyond simply defining social media, including a classification system that provides a better understanding of the various tools that comprise social media. The categorization system designed by Kalan and Haenlein (2010) distinguished sites based upon the level of self-disclosure and the social presence provided (see Table 1). Social networking sites became a part of social media, but only one subset.

Individual socialization. The use of social media has profound implications for how individuals fulfill their innate desire to communicate. One example of this is that “social network sites can help to address the relationship development and maintenance needs of young adults ... (when) they are moving away from home” (Steinfeld, Ellison, & Lampe, 2008, p. 443). These implications include making it easier for social media users to maintain close and distant friendships in order to fulfill their needs for companionship and bridging social capital.

Social media also enable communication when none would previously have been available. Sutton, Palen, & Shkloveski (2008) documented the use of social media for back channel communication during wildfires in California. The authors presciently noted that such communication methods could become normal during a time of crisis.

Business uses. Social media have practical uses for businesses. They serve as hybrid elements of the promotional mix, allowing organizations to communicate directly with

customers, but also allowing these customers to communicate with one another *and* with the organization. This changes the function of marketing managers substantially. For one thing, “marketing managers’ control over the content, timing, and frequency of information is being severely eroded” (Mangold & Faulds, 2009, p. 360). In place of this control, marketing managers now have the ability to reach out and connect with many more people individually. The role of marketing manager has not been obviated; rather, it has changed, providing new ways to communicate with audiences, as well as new hazards. When used correctly, social media allow for more genuine, personal communication with clients to assuage concerns and fulfill needs that a business would likely have never known existed prior to the existence of social media.

Still, some organizations seem to use social media as forms of electronic bulletin boards, where they can continue to blast one-way messages to their audiences similarly to what they have done through traditional media over the years. However, each individual a company impacts now has the ability to broadcast his or her feelings to the world, meaning a single experience with the company can be shared far more widely, for good or bad. As a result of this ability customers have to get out their feelings about any organization, firms need to adopt a different approach to customer communication. As of yet, this new approach has yet to appear among most companies using social media. Rather, most companies still intrude upon these newly developed forums of interaction with one-way communication that is similar to how they purchase advertisements on television or websites like CNN.com.

As social media have developed and diversified, seven building blocks of each medium have been identified by Kietzman, Hermkens, McCarthy, and Silvestre (2011): identity, sharing, conversations, groups, reputation, relationships, and presence. *Identity* refers to the ability to construct a persona online. *Sharing* refers to the ability to provide this information to other

people. Most tools allow users to control how this information is shared to a degree.

Conversations refers to the ability to interact with other users and have back-and-forth discussions in a one-on-one setting, a small group, or a wide public forum. *Groups* refers to the ability to construct public or private areas for select users to communicate and, in some cases, list these group memberships to other users. *Reputation* refers to the ability of users to rate or rank other users in various ways, thus allowing each user to develop a unique reputation.

Relationships refers to the ability of users to define relationships between users and enhance grow these relationships through communication. *Presence* refers to the ability of users to control which forums within a social media site they participate in.

Each of these seven blocks is less than essential, meaning one or many might not be present in any individual site; however, these seven blocks provide a basis for comparison between sites so functions can be understood in context with one another. Different sites emphasize different elements, which makes each unique and useful to a different audience. This allows firms to analyze their respective situations and develop social media plans that fit their specific needs. For example, the conversation function within Twitter is very limited, as communications are a maximum of 140 characters long. In contrast, Facebook has no discernible limit on posts. As a result, if an organization wants to have short, quick conversations, Twitter might be the ideal location. However, if the messages an organization wants to send are over 140 characters, Twitter may not be the best option for users (Kietzman et al., 2011).

With these changes, business leaders are forced to cope with the reality that their clients have more power and an increased ability to access information very quickly. Social media impact all aspects of a customer's relationship with a business, from pre-purchase information-seeking to post-purchase reporting of satisfaction, but only *if* the customer wants a relationship at

all over social media. Therefore, “Managers who are accustomed to exerting a high level of control over company-to-consumer messages must learn to talk with their customers, as opposed to talking at them” (Mangold & Faulds, 2009, p. 361).

This change has the potential to dramatically alter the way the economy functions within the realm of civil society, developing a participatory economy where individuals have substantially more power than in previous decades.

At its best, social media builds the foundations for a participatory economy where participants gain use-value as the result of community action. People collaborate on social media, and as a return, the action of the individuals produces something new, even unexpected results. The emergence may be profitable business and provide income for firms, but it also has an impact on the social relations and the well-being of individuals. (Lietsala & Sirkkunen, 2008, p. 14)

Facebook

Among the thousands of social media sites that allow individuals to interact with one another on the Internet, Facebook is among the largest. In 2013, Facebook announced it had over 1 billion users, with more than 600 million logging in each day (Associated Press, May 1, 2013). Its robust system allows individuals to create profiles, interact with other people publicly or privately, and create profiles (called pages) devoted to abstract concepts, groups or ideas. “Features within the site make it easier for users both to broadcast information about their own activities and to engage in a form of social surveillance wherein they can track the activities of a wide set of Facebook ‘Friends.’ More importantly, the site provides both the technical and the social infrastructure for social interaction” (Steinfeld, Ellison & Lampe, 2008, p. 443).

Facebook makes it easy to broadcast information through features that allow individuals to send public messages by posting on a wall, send private messages through an internal message system, or simply request contact with the poke feature. Users can also learn more about friends by reviewing their profiles for areas of common agreement. This, along with often-provided contact information, can even spur face-to-face contact (Steinfeld, Ellison, & Lampe, 2008).

So where do commercial entities fit within this individual-controlled communication mechanism? How is it possible to look at this new interaction or tension between society's desires to strictly interact with friends or family versus the need to drive the economic engine through the messages of commercial entities? The most common means for social scientists to examine these situations is through opinion surveys of users and observation of actual behavior. While opinions of social media intrusion are easy to obtain, observation of individuals' web viewing habits is harder to achieve. Fortunately, psychophysiology, the study of how the body reacts to stimuli, presents an answer in the form of eye tracking. This method, in the context of psychophysiology, is described below.

Psychophysiology

Self-reporting is a useful measure that is used throughout social science research; however, it is inherently incomplete. Individuals don't have a perfect understanding of themselves, and their reporting is limited to what they comprehend about themselves. For this reason, some studies combine the use of self-reporting with other measures in an effort to strengthen the validity of their data and conclusions. However, observation isn't always an available solution.

One option for learning more than what an individual can self report comes through the field of psychophysiology, which Andreassi (2007) defined as "the study of relations between

psychological manipulations and resulting physiological responses ... to promote understanding of the relation between mental and bodily processes” (p. 2). Measuring how the body itself reacts to certain stimuli gives extra information to researchers that a subject might not have been able to share through a self-report. Andreassi (2007), for example, explained heart monitoring:

Just as a blood sample tells a physician something about the physical condition of an apparently healthy patient, a sampling of heart rate tells the psychophysicologist something about the emotional state of an outwardly calm individual. It is the point of view here that behavior is the result of ongoing mental processes. Thus, observed behavior is not the equivalent of mental activities, because these activities are not always translated into motor acts. However, these mental activities themselves, although not directly observable, are behaviors. (Andreassi, 2007)

Psychophysicologists use various tools and measures in order to understand different aspects of the relationship between mind and body. In addition to measuring the heart rate, this can include blood samples or even eye tracking.

Eye Tracking

The eye-tracking methodology was first experimented with in the late 19th century, but new technology has given it far more use since the mid 1970s (Rayner, 1998). This era has been “marked by improvements in eye movement recording systems that have allowed measurements to be more accurate and more easily obtained” (Rayner, 1998, p. 372). This growth in technology has allowed eye tracking research to be used in many contexts, ranging from understanding how the brain reads to studies of responsibility messages in tobacco advertisements (Krugman, Fox, Fletcher, Fischer & Rojas, 1994) and alcohol advertisements (Thomsen & Fulton, 2007).

This study is primarily concerned with the effectiveness of push and pull marketing online. It focuses on what people see and comprehend during their online viewing experiences. Observing what an individual looks at on a computer screen would be impossible with the naked eye; however, recent advances in eye-tracking technology make this observation of eye movements possible. Therefore, this study combined the use of eye tracking with self-reporting to replicate the function of a self report and observation combination that is common in many social science studies. This strengthens the results and provides extra data points for comparison.

Eye movements. Eye movements consist of fixations and saccades. Fixations are brief periods, usually consisting of 200–300 milliseconds, in which the brain is processing what it sees. During a fixation, at least three things will occur: the brain encodes a visual stimulus, samples the peripheral field, and plans for the next saccade (Pan, et al., 2001). Saccades are quick movements of over 500 degrees in which the focus of the eye moves from one fixation to another. Research has demonstrated that the brain does not process what it sees during saccades, only during fixations. Fixations are not the only time a person is thinking, but they are the only time a person is seeing (Boer & van der Weijert, 1998).

Fixation time is linked with comprehension and understanding of a topic. Just and Carpenter (1980) demonstrated that individuals who are reading fixate longer on terms they are unfamiliar with, suggesting that they need more time to process that term. The model these two researchers developed also accounts for the fact that readers often fixate longer at the end of sentences, which is explained by the need to comprehend the entirety of a sentence.

Since modern instruments can track eye fixations and saccades, and research has demonstrated that fixations are correlated with comprehension, the eye-tracking methodology has become a great way to assess what individuals see and comprehend.

The eye-tracking methodology can also be used to determine what individuals like or desire as people spend more time looking at what interests them. Crespo, Cabestrero, Grzib, and Quiros (2007) demonstrated that this can be measured with the number and length of fixations. Individuals fixate more often and for longer on aspects of an advertisement or other stimulus that interest them.

Eye-tracking instrumentation. The first known eye-tracking experiments occurred in the late 19th century, though there were limits on what technology at that time could see. Researchers began to use eye tracking with greater frequency in the 1970s as technology improved and allowed for more accurate measurements of eye movements. Rayner (1977) participated in this research explosion by tracking eye movements during reading. This research found, among other things, that individuals fixated longer on the verb in sentences, as well as at the start of sentences. Researchers used this information along with other data to conclude that eye movements reflect cognitive processes.

In the 1990s many studies sought to understand and further describe how cognitive processes are reflected in eye movements. Some were even used to control the number of fixations an eye could have while processing an image in order to see if memory was entirely based upon how long a person looked at an object (Christianson, et al. 1991).

Researchers found that eye movements are not purely a mechanical process. Rather, eye movements are prioritized based upon the task the mind is performing or in reaction to stimulation. “This assignment of priority in visual processing is usually termed ‘visual attention’” (Schneider, 1998, p. 1).

Eye tracking on web pages. This study addresses what individuals look at while visiting Facebook. Given that task, it makes sense to consider how individuals look at web pages in general.

“Web pages are different from other visual stimuli, as they incorporate a combination of textual, pictorial, and multimedia content” (Pan et al., 2004, p. 147). This complexity meant that additional patterns for how individuals might look at stimuli could exist.

One of the key differences between browsing web pages and looking at other stimuli is the presence of the mouse cursor. A computer screen is the only place with such a cursor. Chen, Anderson and Sohn (2001) analyzed the mouse cursor with eye-tracking software and found that the cursor actually approximates eye movement during web browsing fairly closely. Admittedly, this study was limited to the web designs that existed in 2001, which were far less complex than web designs today; however, the cursor continues to influence where browsers look on their computer screens.

As time moved on and web design became more advanced, researchers continued to look at the principles of web design to determine how individuals look at a web page. They looked for patterns in how this would happen and the factors that might explain differences. Pan et al. (2004) found at least a few of these patterns: “Web page viewing behavior is driven by the gender of subjects, the order of web pages being viewed, and the interaction between site types and the order of the pages being viewed” (Pan et al., 2004, p. 152).

As commercial sites online are increasingly funded by advertising, research has also delved into whether banner ads and other online advertisements are effective. Dreze and Hussherr (2003) demonstrated that a banner advertisement will be seen by approximately 50% of website visitors. This percentage is substantially lower than for television or other

advertisements. They found that “Not only do they not look at banners, they actually avoid looking at them!” (p. 21).

Dreze and Hussherr (2003) had set out to answer the question of why banner ads are ineffective, and this first finding would have supported that notion; however, they then combined their eye-tracking research with a survey instrument that studied the ability of subjects to recall banner ads they did see. They found that banner ads actually are useful from the perspective of branding, as many subjects were able to recall what they had seen.

We found that traditional memory-based effectiveness measures provide valuable insight into the effects of Internet advertising. These measures outperform the immediate effects measured by the click-through rate. On average, for 100 surfers exposed to a banner ad, 11 recall seeing the ad and can mention the brand name on the ad without any aid 24 hours later. Thirty respondents remember seeing the banner when they are shown the same banner but without brand name. Of those 30 surfers, 18.5 (62%) can name the banner’s brand. In addition, three of the 100 surfers become aware of the brand.... The effect on unaided brand awareness is four times larger than the click-through rate; the effect on unaided brand recall is 19 times larger. (Dreze & Hussherr, 2003, p. 21)

This conclusion suggests that eye tracking of web pages is important. It is useful to see that individuals actively avoid looking at banner advertisements. However, the ability to recall brands still is possible when they do notice the ads. As this research will study the effect of banner ads on Facebook, research will compare the baseline percentages demonstrated by Dreze & Husherr (2003) to see whether Facebook has a unique participant pattern or not.

Pupillometry. Eye tracking research isn’t just limited to fixations and saccades, though. Researchers have also found that the pupil gives psychophysiological reactions that can be

measured. This dates back at least as early as 1964, when Hess and Polt found that change in pupil size while working on multiplication problems could be used to measure mental activity. To prove this, researchers read questions to subjects orally and still witnessed a change in pupil size.

This was confirmed in Watson and Gatchel's 1979 literature review on the subject of psychophysiological responses that found that numerous 1960s studies suggested one could tell the opinion of an individual based upon pupillary response while listening to a discussion of a subject. However, other studies during the same era contradicted this assertion. Instead, Watson and Gatchel concluded that the intensity of feeling should be the focus of pupil research.

What We Can Learn

Eye-tracking research has been used to study many different topics. The third era described by Rayner (1998) started with research that used eye tracking to understand how individuals read; however, it has since expanded to cover a variety of topics. These studies have often combined eye tracking with self-reporting or other observation in an effort to compare or contrast results.

This study uses eye tracking as the principle tool of investigation; however, it also uses a survey instrument to compare and strengthen the conclusions reached. The hypothesis of the author is that individuals will react very negatively to advertisements on Facebook, even more so than they do in other online interactions.

Why Facebook

Facebook is the ideal social media platform to test this theory for three reasons. First, it is the most-used social media platform on earth by a very wide margin. Using online resources that measure traffic ranks, Ebizmba calculated how many unique users the top 15

social media sites had login during the previous month. They estimated 900,000,000 unique users for Facebook. For comparison's sake, the second-most-trafficked site was Twitter with just over one-third of the total monthly unique users at 310,000,000. LinkedIn came in third with 255,000,000 (ebizmba.com, 2015).

The second reason Facebook is ideal is that it is a consistent platform for all users. Some platforms, notably Twitter, allow users to export data to a separate interface where they interact. Thus, different Twitter users see very different pages when they interact with Twitter. This adds a level of complexity and a variable that could potentially confound results.

The third reason Facebook is ideal is that it is very robust in its functionality. As previously noted, Kietzman et al. (2011) identified the seven building blocks that are part of social media platforms: identity, sharing, conversations, groups, reputation, relationships, and presence. Those authors noted that not all social networks have all of these functions. In fact, it could be argued that no social media platform contains them all. However, Facebook comes close, lacking on the ability to rank or rate other users directly. Most other social media outlets expand on one small function of what Facebook can do. For instance, Twitter entirely consists of a variation of Facebook's newsfeed function, while LinkedIn provides a specialized set of networking tools for career building. Thus, Facebook is applicable to the widest audience — hence its enormous user base — and can be used by individuals for their own purposes more than, say, Twitter or LinkedIn. This makes it most like a tavern and the best way to test this theory.

Hypotheses

The Pub Principle and Social Intrusion Theory assert that audiences will react negatively to advertisers who force their way into a conversation on social media as opposed to being invited to join. This suggests that a promoter who builds a Facebook “Fan Page” and interacts just like any other individual — which is pull content — will receive more positive reactions from viewers than it will by push marketing.

H1: When visiting Facebook, individuals will spend less time looking at push content than at pull content as measured by total fixation count and fixation duration.

H2: After logging off, Facebook users will be able to recall more instances of pull content than push content that was on Facebook during their visit based on self-reported survey results.

H2.1: Participants will indicate they are more comfortable making a purchase by clicking on pull content than on push content.

H3: Facebook users will report greater dislike for push content in Facebook than pull content.

This study is done with the recognition that not all Facebook account holders use their accounts in the same way. In particular, some may log in multiple times each day, while others may log in less than once a week. A person entering an unfamiliar situation, such as logging into Facebook after weeks or months of non-use, will look at things differently than one who enters a familiar situation. This may impact the value of push and pull content. Thus, this study will test one additional hypothesis.

H4: Attitudinal (positive vs. negative valence) reactions toward push content and pull content will vary with account holders’ frequency of use.

H4.1: Frequent users will be more likely than infrequent users to report positive attitudes toward pull content.

H4.2: Frequent users will be more likely than infrequent users to report negative attitudes toward push content.

Method

The researcher implemented a mixed-method study in an effort to evaluate the four hypotheses. This method allowed for two different sources of information, observation through eye tracking, and self-reporting, in order to assess what respondents thought, what they recalled, and how they actually behaved. This triangulated the results to give added credibility to the conclusions that could be drawn. Triangulation is a well-known and used method to ensure quality of results.

Good research practice obligates the researcher to triangulate, that is, to use multiple methods, data sources, and researchers to enhance the validity of research findings.

Regardless of which philosophical, epistemological, or methodological perspectives an evaluator is working from, it is necessary to use multiple methods and sources of data in the execution of a study in order to withstand critique by colleagues. (Mathison, 1988, p. 13)

Rather than simply use observation or self-reporting, this research allowed for a more comprehensive view of the experience of subjects that is more credible. For example, if subjects were influenced by advertisements but were unaware of this influence, the researcher also had eye tracking that showed how much respondents actually looked at ads and a test of how many ads could be recalled. Thus, the mixed-methods allowed the researcher to confirm results with

multiple sources of information and prevent the inherent limitations of any one of the methods from corrupting the data and conclusions that are drawn.

The study consisted of 96 participants who were recruited from the campus of a large, private university in the Western United States. Participants were compensated with \$10 for their participation. The study consisted of two parts: First, each participant was asked to spend five minutes on Facebook while their pupillary reactions were measured and recorded using Asl Eye-Trac 6000 and Gaze Tracker version 9. Then respondents spent 10 minutes answering questions via an online survey instrument.

The eye-tracking methodology has been used in many capacities. Rayner, a researcher principally studying what the eye sees during the reading process, is a pioneer in this field that has grown dramatically over the last 40 years, entering what Rayner (1978) referred to as the “third era of eye-movement recording” (p. 618). This era has been marked by improved eye-tracking equipment that is capable of accurately determining where an individual is looking at any given moment (Rayner, 1998). Eye movements consist of two activities: saccades and fixations. Saccades are quick eye movements that represent the continuous movement of the eye as it observes elements in the individual’s visual field. A fixation, usually measured in milliseconds, represents a brief pause in this movement while information is being cognitively processed and interpreted. For this reason, eye-tracking studies focus on fixation density patterns, as well as fixation duration, to determine what parts of an image are stimulating the strongest cognitive responses (Smith, Moriarty, Kenney, & Barbatsis, 2004).

Eye tracking has now been used for varied purposes (see Rayner, 1998), including to determine the difference between experienced drivers and inexperienced drivers (Falkmer &

Gregersen, 2005) and to evaluate whether adolescents view responsibility messages in alcohol advertisements (Thomsen & Fulton, 2007).

This research examined how each individual user navigated a Facebook page during normal use. It specifically focused on what elements of the page they noticed, and how much time they spent fixated on varying elements.

This research operationalized push content as content from paid advertisers on the right side of a Facebook page as shown in Figure 1. GazeTracker allowed the researcher to create a “look zone” out of this box. A look zone is simply a part of the page that the researcher specifically wanted to track exactly when participants gaze entered, fixated and left. GazeTracker was able to maintain this invisible box in the same coordinates regardless of where the subject moved within Facebook. As a result, GazeTracker was able to automatically report to the researcher exactly how much time subjects spent looking at the rectangular advertisement box. These numbers are the reported push content numbers in the results section.

The push numbers should be seen as a maximum. They were tracked by the software by creating a look zone around the location that advertisements appear on most pages within Facebook. However, there are some pages within Facebook where ads do not appear, and the chat function within Facebook can sometimes encroach on the space in which advertisements appear. The software was unable to adjust when this happened so the push totals listed include times when the subject was using the chat function or visiting a page where no advertisement was present. As a result, the correct number of fixation count and duration on Facebook advertisements by these subjects is most likely lower than the numbers recorded here.

Facebook is constantly making changes to where its advertisements appear. For instance, between the time this research was conducted and submitted as a thesis, the size of the

advertisement box has changed. When this research was contemplated and designed, it did not envision “suggested posts” that are effectively paid advertisements appearing within the news feed of subjects. As a result, the research did not treat these suggested posts as push content. This research treated posts in the news feed that were labeled suggested posts as content that was neither push nor pull content. (see Figure 2 for example)

In order for a Fan Page on Facebook to present information to a visitor, that visitor must proactively choose to “Like” that fan page. This means that Fan Page content is, by definition, pull content. Once a Facebook user chooses to “Like” a page, that page’s updates and content appear in the user’s news feed just like that from any of the user’s “friends.”² Pull content was defined as content from “Fan Pages” as opposed to “People.” (see Figures 3 & 4) GazeTracker provided a video recording of each subject’s time on Facebook with a red x indicating where the subject’s eyes were looking at any given moment. GazeTracker also recorded a line-by-line spreadsheet of each fixation made each subject. This includes the duration of each fixation, the start time, and the end time of each fixation. The researcher used each subject’s spreadsheet and video recording to identify which fixations were looking at Fan Page content. The researcher then flagged these fixations in the spreadsheet and used these flags to calculate the total number of fixations on Fan Page content and the total duration of fixations on Fan Page content.

The pull numbers should be seen as a minimum as they were recorded by a researcher reviewing video of respondents with gaze tracking on. It only includes fixations that the researcher observed were on Fan Page content. Many Fan Pages have the name of an individual such as a musician, a politician, or a journalist, and their content appears in the news feed of

² On occasion, Facebook will suggest a fan page to its users if it is a Fan page that a user’s friend has liked. This is similar to tavern communication in that it is peer-to-peer so it was operationalized as pull content. On other occasions, Facebook may show a “suggested post” from a fan page that has essentially paid for the right to display in a user’s news feed. This content is push content, not pull content because the user (or their friend) is not actively choosing it.

Facebook users who have liked their pages just like content from a user's friends. It is entirely possible, and in fact likely, that the researcher reviewing video of subjects did not notice that some of the content fixated on actually came from Fan Pages. Therefore, it should be understood that the reported disparity is the minimum disparity. The true disparity is probably larger.

The survey instrument (see Appendix A) was developed from a published survey on whether audiences like advertising by Shavitt, Lowrey, & Haefner (1998). These authors had conducted a telephone survey on audience attitudes toward advertising and their results have been cited hundreds of times. They found that audience attitudes toward advertising were more favorable than previously thought. The researcher took six of the questions from this survey that would be relevant to both advertisements and fan page content on Facebook and wrote two variants of each – one about advertisements and one about fan page content. The result was a refined instrument that asked six questions about push content and then repeated the same six questions about Facebook Fan Pages (pull content). All the questions were randomly ordered so as to control for any bias created by the order of the questions.

Hypothesis 1 was evaluated using the eye-tracking portion of the study. The researcher conducted a paired mean t test on the total amount of time fixated and the total percentage of all fixation time fixated between push content and pull content.

Hypothesis 2 was evaluated with the online survey instrument. A survey question asked participants to name every advertisement (push content) they witnessed during their session that they could remember. Another question asked subjects to name every fan page (pull content) they saw content from during their session.

Hypothesis 2.1 was evaluated with the survey instrument comparing the answers to Q15 and Q16 with a paired t test. These questions were identical, except that one referred to fan page

content while the other referred to push content. Both asked for the comfort level of respondents toward purchasing an item or items from the push content based upon a click. The question, and the scale, were derived from Shavitt, Lowrey, & Haefner (1998), as mentioned.

Hypothesis 3 was evaluated with the survey instrument. A series of survey questions developed from Shavitt, Lowrey, & Haefner (1998) assessed respondent attitudes toward push and pull content viewed on Facebook. The same six questions were repeated for respondents, referring to advertising in Facebook the first time and fan page content on Facebook the second time. These were compared against one another using a paired t test. (See Appendix A for full survey instrument.)

Hypothesis 4 was evaluated by comparing the number of times a user logged into Facebook in the average week with the attitudes toward push and pull content on Facebook. Using questions asking how many times a user logged into Facebook on the average weekday and the average weekend day, the researcher was able to estimate the number of logins in the average week while providing respondents with manageable estimates they could reasonably make. This was done by multiplying the weekday number provided by each respondent by the number of weekdays, five, and the weekend day number provided by each respondent by the number of weekend days, two, in a week and summing the two products. The researcher then broke respondents into three groups: high frequency, medium frequency and low frequency. Respondents whose weekly login count fell within the range of the mean minus one half of one standard deviation to the mean plus one half of one standard deviation were classified as medium frequency users. Those whose number of logins was below threshold for medium frequency users were classified as low frequency users, while those whose number of logins was above the threshold for medium frequency users were classified as high-frequency users. The researcher

then ran a one-way analysis of variance on each of the push and pull opinion questions compared with these groups to ascertain if frequency of login influenced attitudes toward push and pull content.

Results

The purpose of this thesis is to test the validity of the Pub Principle and Social Intrusion Theory. Social Intrusion Theory explains that audiences push back against commercial messages they see as overly intrusive; however, the willingness of audiences to abide commercial messages depends upon the medium in which it is sent through. For example, an individual might politely walk past a loud merchant selling fish in a town square but angrily storm out of a local pub if the same merchant walks in and attempts to shout out the same message. The difference in expectations from the audience changes what tone and tactics are acceptable for a merchant.

The Pub Principle asserts that modern social media is not the natural heir of our mass media culture, embodied in the town square, newspapers, radio, and television. Rather, the Pub Principle explains that social media is more like communication in the pre-Industrial Revolution pubs and taverns. In mass media culture, push communication, such as paid advertisements, are accepted and regularly embraced by audiences; however, in a non-mass media setting, only pull communication where the speaker is invited to participate is acceptable.

Thus, this thesis sought to test the Pub Principle and Social Intrusion Theory by comparing push and pull communication in the most prominent social network on the planet — Facebook. To do so, the researcher operationalized paid advertisements as push content and fan pages, where audiences or their contacts must actively choose to connect with a page before its content could be shown.

Data

Ninety-six subjects were initially eye tracked and surveyed. Unfortunately, GazeTracker interacted negatively with Internet Explorer, and segmented the results into multiple overlapping segments that were unusable for analysis. The combination of Internet Explorer and GazeTracker also eliminated archives of much of the data. After nearly one year of attempting to reconstruct the data, it was discovered that GazeTracker did save 56 videos of the eye tracking itself. Researcher was able to re-export videos for 56 subjects and have GazeTracker re-analyze these 56. One of the 56 recorded for only a few seconds and so was discarded. The remaining 55 comprise the total valid cases for this thesis.

This lost data presented researcher with several options for remedies. The idea of conducting 41 additional interviews was considered and rejected for a number of reasons. First, 55 is a large and acceptable sample size for an eye tracking study. Krugman et. al. (1994) wrote in their review of existing literature, “The cost and sophistication of equipment and the complexity of data analysis have led to eye tracking studies with small numbers of subjects” (pg. 44). The authors then cited numerous studies with up to 64 subjects. They also noted that many of the published studies “usually contain fewer than 20 subjects each” (Krugman et. al., 1994, pg. 44). This standard has held for studies looking at web browsing. For example, Granka, Joachims and Gay (2004) started out with 36 subjects and came up with only 26 usable cases. Second, it had taken a year to determine what was salvageable and what was not. Since Facebook is constantly changing its algorithm and design, this would have introduced an additional variable to already messy data. Finally, funding secured for the project had already been exhausted with the initial 96 interviews. Seeking more funding would have taken additional

time and allowed Facebook to change its methodology even more before additional research could be conducted.

While eye tracking data for 41 subjects had to be discarded as explained previously, the researcher determined to continue using the survey data from these 41 subjects for a total of 96. The researcher determined to do this for three reasons. First, while 96 subjects is gigantic for an eye tracking study and 55 is still large and acceptable, either 96 or 55 is a very small sample size for survey research. While this small size was accepted because the subjects were also doing eye tracking, the researcher saw fit to use as much data as possible for the survey research hypotheses. Second, in no case was the survey research data compared to the eye tracking data, so the changing sample size did not impact any hypothesis negatively. Finally, there was no reason to expect there was a relationship between the eye tracking records that were lost compared with those that were saved.

Finally, by its very nature, the data from this study was always going to be somewhat messy. A traditional experiment will control everything subjects see, manipulate only one variable and then compare the differences. However, that isn't possible with this research. A core component of *social intrusion theory* is that audiences perceive would-be marketers as intruding into their personal space. Thus, they push back, creating the tug of war described previously. To test how audiences react to this intrusion, subjects had to be in their own personal space. So forcing subjects into a sterile, experiment-like space would not render useful results to test the hypotheses. Moreover, in some instances the entity originating *push* communication through a paid advertisement to one subject might also implement *pull* communication to another who had liked its fan page.

Despite this messiness, the researcher decided to go forward with this research design. This decision was based upon the realization that would-be marketers do not make their choices of push vs. pull communication in a vacuum. Rather, they face the same dilemma that the researcher faced in designing this research.

Thus, this research used a mixed-method approach that included eye tracking, recall questions and a survey of subject opinions to triangulate and provide additional certainty of its conclusions. These three sources gave way to four main hypotheses.

Hypothesis 1

There was a significant difference in the duration of all fixations for fan pages ($M=24.63$ seconds, $SD=34.84$ seconds) and advertisements ($M=5.45$ seconds; $SD=7.68$ seconds), $t(df) = 4.078 (54)$, $p = .000$.

There was also a significant difference in the percentage of total fixation time spent fixated on pull content ($M=12.39\%$, $SD=16.25\%$) and push content ($M=2.85\%$; $SD=3.09\%$), $t(df) = 4.292 (54)$, $p = .000$. (see Table 2)

Therefore, Hypothesis 1 is overwhelmingly supported by this research.

Hypothesis 2

Ninety-six subjects completed the post-eye-tracking survey. Each was given the option to specify which ads and fan page content they saw during their visit. If they couldn't remember the brand or sponsor of the content, they were encouraged to describe what they saw. The researcher then went through the text responses and counted each response for two criteria: total number of instances (fan pages or advertisements) seen and total number of brands subject recalled.

Subjects recalled more instances of fan page content than advertisements by a wide margin. The 96 subjects recalled 156 instances of fan page content, while they recalled only 118

advertisements. In addition, subjects were more likely to remember the brand associated with fan page content than the brand associated with an advertisement. Subjects recalled the brand (or person) who sponsored fan page content in 144 out of 156 total pages recalled. In contrast, they recalled the brand in only 60 out of 118 advertisements recalled. (See Table 3.)

Therefore Hypothesis 2 is strongly supported by this research.

Hypothesis 2.1

Subjects were slightly more comfortable making a purchase by clicking on fan page content than clicking on an advertisement; however, respondents were not very comfortable purchasing with either. Not one of the 96 subjects said they were “Very comfortable” making a purchase using a link on either an advertisement or a fan page. However, more respondents were “Somewhat comfortable” and “Not very comfortable” purchasing from a fan page than from an advertisement, while more respondents were “Not at all comfortable” buying from an advertisement as opposed to a fan page.

Researcher assigned a numeric label to each response, with “Very comfortable” as a 1 and the numbers counting up to “Not at all comfortable” as a 4. (See Table 4)

There was a significant difference in the attitudes toward fan pages ($M=2.99$, $SD=.75$) and advertisements ($M=3.24$; $SD=.63$), $t(df) = 3.599$ (95) $p = .000$.

Hypothesis 3

Hypothesis 3 used the survey instrument’s 12 questions (six questions repeated two times, once regarding advertisements and once regarding fan page content). These six sets of questions were compared against one another using a paired t test. Unfortunately, when Shavit, Lowery and Haefner (1998) created this series of questions, they did not use a consistent scale with the same number of points for each question. As a result, there was no way to compile the

six questions about advertisements or the six questions about fan pages into one composite score. Instead, the researcher compared the pairs of questions against each other, using the p value generated in a paired t test.

The paired t test showed a statistically significant difference between subject attitudes toward fan page content and advertisements in all six pairs. In each case, attitudes were more favorable toward fan page content than to advertisements. (See Tables 5, 6 & 7) Each of these six pairs are described in detail below.

Therefore Hypothesis 3 is supported.

General Like/Dislike. The first set of questions asked respondents to rate how much they like or dislike advertisements and fan page content on Facebook in general. The possible answers were assigned a numeric value, starting with “Like a lot” at 1 and running to “Dislike a lot” at 7. (See Tables 6 & 8 for results.)

There was a significant difference in the attitudes toward fan pages ($M=3.04$, $SD=1.21$) and advertisements ($M=5.02$; $SD=1.35$), $t(df) = 12.982 (95)$, $p = .000$.

Like content exposed to. The second set of questions asked subjects how much they agree with the statement that they like most of the advertisements or content from fan pages they are exposed to on Facebook. The possible answers were assigned a numeric value, with “Strongly agree” as 1 and “Strongly disagree” as 5. (See Tables 7 & 9 for results.)

There was a significant difference in the attitudes toward fan pages ($M=2.72$, $SD=1.07$) and advertisements ($M=3.69$; $SD=.89$), $t(df) = 8.345 (95)$ $p = .000$.

Offended by. The next set of questions asked subjects how often they are offended by advertisements and fan pages on Facebook. Answers ranged from “Never” as 1 and “Often” as 4.

There was a significant difference in the attitudes toward fan pages ($M=2.12$, $SD=.74$) and advertisements ($M=2.41$; $SD=.83$), $t(df) = 3.749 (94)$ $p = .000$. (See Tables 5 & 10 for results.)

Content is informative. The fourth set of questions asked subjects if they agree that the content from advertisements and fan page content is informative. The possible answers were assigned a numeric value, with “Strongly agree” as 1 and “Strongly disagree” as 5. (See Tables 7 & 11 for results.)

There was a significant difference in the attitudes toward fan pages ($M=2.71$, $SD=.92$) and advertisements ($M=3.78$; $SD=.94$), $t(df) = 8.622 (94)$ $p = .000$.

Trust. The fifth set of questions asked subjects if they agreed with the statement that, in general, they feel they can trust the content from advertisements and fan page content. The possible answers were assigned a numeric value, with “Strongly agree” as 1 and “Strongly disagree” as 5. (See Tables 7 & 12 for results.)

There was a significant difference in the attitudes toward fan pages ($M=2.48$, $SD=1.01$) and advertisements ($M=3.34$; $SD=1.00$), $t(df) = 7.616 (94)$ $p = .000$.

Purchase comfort. The sixth set of questions asked how comfortable the respondent was toward making a purchase by clicking on a link from advertisements and fan page content. The possible answers were assigned a numeric value, with “Very comfortable” as 1 and “Not at all comfortable” as 4. (See Tables 4 & 5 for results.)

There was a significant difference in the attitudes toward fan pages ($M=2.99$, $SD=.75$) and advertisements ($M=3.24$; $SD=.63$), $t(df) = 3.599 (95)$ $p = .000$.

Hypotheses 4, 4.1 and 4.2

The researcher broke the subjects into three groups — low-frequency users, medium-frequency users and high-frequency users — based upon their number of logins. The mean number of weekly logins for all subjects was 23.55, with a standard deviation of 19 logins. Using the formula described in the methods section to classify respondents (and rounding to the nearest full login), the thresholds for low-, medium-, and high-frequency Facebook users were established as follows:

- Low — Fewer than 14 logins per week
- Medium — 14–33 logins per week
- High — More than 33 logins per week

The researcher used a one-way ANOVA to compare these three groups on each of the 12 advertisement and fan page attitude questions to see if responses were correlated. None of these comparisons returned a significantly significant result. (See Table 13 for results.)

There was not a significant effect of login frequency on attitudes at the $p < .05$ level for general like of Facebook advertisements [$F(2,92) = .28, p = .756$].

There was not a significant effect of login frequency on attitudes at the $p < .05$ level for general like of fan page content [$F(2,92) = 1.978, p = .144$].

There was not a significant effect of login frequency on attitudes at the $p < .05$ level for like of most Facebook advertisements exposed to [$F(2,92) = .239, p = .788$].

There was not a significant effect of login frequency on attitudes at the $p < .05$ level for like of most fan page content exposed to [$F(2,92) = .691, p = .504$].

There was not a significant effect of login frequency on attitudes at the $p < .05$ level for frequency of offense by advertisements [$F(2,92) = 1.574, p = .213$].

There was not a significant effect of login frequency on attitudes at the $p < .05$ level for frequency of offense by fan pages [$F(2,92) = 1.494, p = .230$].

There was not a significant effect of login frequency on attitudes at the $p < .05$ level for belief that advertisements are informative [$F(2,92) = 1.506, p = .227$].

There was not a significant effect of login frequency on attitudes at the $p < .05$ level for belief that fan pages are informative [$F(2,92) = 1.254, p = .290$].

There was not a significant effect of login frequency on attitudes at the $p < .05$ level for trust in advertisements [$F(2,92) = 1.555, p = .217$].

There was not a significant effect of login frequency on attitudes at the $p < .05$ level for trust in fan pages [$F(2,92) = 1.003, p = .371$].

There was not a significant effect of login frequency on attitudes at the $p < .05$ level for comfort in making purchases by clicking on advertisements [$F(2,92) = 1.178, p = .312$].

There was not a significant effect of login frequency on attitudes at the $p < .05$ level for comfort in making purchases by clicking on fan pages [$F(2,92) = .736, p = .482$].

Therefore Hypotheses 4, 4.1, and 4.2 are not supported by this research.

Discussion

This thesis provides the initial tests of the Pub Principle and Social Intrusion Theory. This principle, and its related theory, seek to explain how audiences will react to commercial messages presented to them while they are visiting social media.

Pub Principle and Social Intrusion Theory Supported

Social Intrusion Theory asserts that the forces that attempt to commercialize communication, whether those forces be a Fuller Brush salesman entering a tavern, a vendor at a town square market, Coca-Cola putting a commercial on television, or an insurance company

advertising on Facebook, face unique and differing audience expectations based upon the medium the message is communicated through. For example, the same person might accept a vendor at a town square yelling to sell wares (or commercials pushed out over mass media) but object if the same tactic was taken in a tavern (or in social media today). Thus, commercial forces must modify their messages based upon the medium they use to communicate.

The Pub Principle asserts that social media bear remarkable similarity to the pre-mass communication taverns of the 19th century and that the rules for commercial forces to receive favorable audience reaction are therefore similar. Since push messaging is generally acceptable to audiences in a town square or as television commercials, and generally unacceptable in 19th-century taverns, the Pub Principle and Social Intrusion Theory assert that social media audiences will reject push communication. However, just as a person in a tavern who is invited to speak is then allowed to do so, the Pub Principle and Social Intrusion Theory assert pull communication efforts will be accepted by social media audiences.

This thesis tested the Pub Principle and Social Intrusion Theory within Facebook as just one example of social media interaction by operationalizing push marketing as paid advertising and pull marketing as fan page content. It combined observation of behavior through eye tracking, memory recall of what audiences remember after visiting Facebook and attitudinal survey questions to assess audience attitudes toward both advertisements and fan pages on Facebook.

Each of these three methods supported the Pub Principle and Social Intrusion Theory as explained. Subjects spent significantly more time looking at fan page content than advertising content. They also recalled more fan page content than advertisements after a five-minute session. Moreover, the rate of recalling the brand represented by fan pages was 92.3%, compared

with just 50.8% for advertisements. This suggests that audiences not only interact more with fan pages but that they remember more from their fan page interactions. Finally, subjects expressed significantly more favorable attitudes toward fan page content than to advertisements in each of six separate contexts. Of these six contexts, the interest in making a purchase from pull communication was distinctly lower than for other pull communication questions. This fits with the Pub Principle as well. Even if a Fuller Brush salesman is able to gain entry into a tavern conversation, it would be unlikely that he would make a sale on the spot. Rather, the communication might be allowed to provide information for a future endeavor; however, a purchase seems less likely in that scenario even with most pull marketing. This fits the results of this research.

Taken together, this research strongly suggests that audiences will respond more favorably to pull marketing than push marketing in social media. This supports the Pub Principle and Social Intrusion Theory.

Limits of Pull Communication

While audiences clearly prefer *pull* communication to *push* communication in social media, this research also suggests that there are still limits to *pull* communication's acceptance. The reaction to pull communication in the survey instrument only included a few enthusiastic supporters, while the median subject was slightly positive about pull communication in each of the six questions on the subject. In the case of willingness to make a purchase by clicking on a link, no subject indicated she was "very comfortable," and 72% of subjects answered "not very comfortable" or "not at all comfortable."

In the other five pull communication questions, the most positive option only received more than 10% support twice: 11% said they strongly agreed that they could trust fan page

content, and 20% indicated they were “never” offended by content from fan pages. This finding is remarkable because fan page content is, by definition, content that the audience has chosen to see. To put this another way, 80% of subjects in this study have invited some commercializing entity into their conversation, only to be offended at least once by the communication they received. And that was the most positive finding for pull communication among the six questions. More than 90% of subjects would not say they “strongly agreed” that they generally liked *most* of the fan page content they are exposed to on Facebook. As each subject had personally chosen which content they would see, this is far from enthusiastic support. Rather, this suggests audiences sometimes enjoy fan page content and often simply tolerate it.

This finding isn’t surprising according to the *pub principle*. While audiences in a tavern might occasionally be willing to invite a speaker to share information, they still may not particularly like what the speaker has to say. They might even become less likely to invite future speakers after one abused the privilege. Similarly, on Facebook, a like on a fan page gives an entity permission to contact a person, but it doesn’t give an unlimited license to do so in any way the entity chooses. And yet, the opinions given by subjects in this research suggest that many fan pages have crossed that line at one point or another to the point of annoying or even upsetting the very people who “liked” their page in the first place.

Login Frequency Makes No Impact

The fact that hypothesis four was not supported is intriguing. This suggests that there was no discernable variation in opinions between those who log into Facebook frequently and those who log in very infrequently. This suggests that the concept of intrusion does not depend upon how familiar the space is to audiences. Rather, it is based upon the shared expectation of how

communication will occur. This expectation does not appear to be influenced by how often audiences log in to Facebook.

This is not surprising in light of the *pub principle*. Whether a person visited a tavern nightly or only once a month, they were still likely to be annoyed by an attempted push communication. This reinforces the notion that users perceive Facebook as their space. All commercialization communication is fundamentally an intrusion, and therefore attempts to do so must tread lightly and follow the rules to obtain even modest attention. But that attention will rarely be overly enthusiastic.

Implications for Marketing

This research should not necessarily be construed as bad news for social media sites or for the commercial entities that pay to reach out to audiences within these sites. Rather, it should be seen as a guide or call for better methods to get the best audience reactions.

Rather than paying for clicks or impressions to push marketing messages at social media audiences, marketers should instead design campaigns around their fan pages that drive audiences to “like” their pages (as an absolute minimum tactic) or otherwise invite communication in other social media. Numerous ways to do this have been pioneered in the market. While this may make social media marketing more complex, it may actually save marketers money, while allowing them to get better results than simply buying banner ads would gain.

Still, marketers should recognize that there are limits to what they can do, even when they are invited to communicate. Marketers would be wise to avoid offending or losing trust of those who had invited them into conversation. This research does not address audience attitudes

toward fan pages that are invited to communicate but then offend their audiences; however, it is hard to believe that the audience reaction to such behavior would be positive or even neutral.

Implications for Facebook

Some might suggest that this research is bad news for Facebook and other social media that would attempt to replicate its business model. To an extent, this is true. However, Facebook's low click-through rate has long been known throughout the market. This research actually suggests a path forward for Facebook. Rather than earning the bulk of its revenue through advertising, it can instead charge fan pages for the right to have pages, post updates, and do other things that draw audience eyes. This research does suggest that there will be limits to how much Facebook can make simply through paid push advertising; however, the fan page network it is building could be a better long-term investment.

Limitations

This is only one study of 96 people with 55 valid eye-tracking units of analysis. While 55 valid cases is an acceptable, if not large, sample for an eye-tracking study, 96 is low for survey research. This limited the ability to study some of the trends this research sought to explore, notably login frequency's impact on attitudes. In addition, this research is limited to Facebook in terms of generalization. Other social media might operate differently from Facebook and therefore come with different audience expectations. Finally, there is a concern that push communication might be less favorable to audiences than pull communication in many different settings. This was not controlled for in this study.

Future Research

Future research should seek to address some of these limitations. Repeating the survey aspect of the research with a significantly larger audience would be useful. In addition,

comparing attitudes toward other push marketing, like television commercials, toward social media push marketing would also present a great comparison of how disproportionate negative attitudes toward fan pages really are. Finally, this study assesses the Pub Principle and Social Intrusion Theory within the largest social media network on earth. It does not assess it within other social networks, such as LinkedIn or Pinterest. Researchers can and should study if this same interaction holds for other social media outlets.

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Appendix A – Survey Instrument

Q1 Thank you for participating in this study today! This quick survey will ask a few questions to help enhance this research. The survey portion of this study should take 5 minutes. Like the eye tracking portion of this study, the survey is anonymous.

When you complete the survey, the researcher will come in and provide you with the promised compensation.

Q2 Please list every advertisement that you recall seeing during your visit to Facebook for this study. If possible, list the person or organization that sponsored the advertisement. If you can't remember the person or organization, just describe the advertisement.

Please list 1 per line.

Essay Text box for Data Entry

Q3 You probably know that Facebook has both people and fan pages. Rather than "friend" a fan page, you click "Like" to select it. Fan pages are used by entities like bands, journalists, athletes, politicians, public figures, religions, and businesses.

Updates from fan pages you like appear in your news feed, just like updates from your friends do. Fan Pages may also message you in Facebook.

Please describe the content from every fan page that you recall seeing during your visit to Facebook for this study. If possible, list the person or organization that sponsored the fan page. If you can't remember the person or organization, just describe the content.

Please list 1 per line.

Essay Text box for Data Entry

Q4 In general, do you like or dislike advertising on Facebook?

- Like a lot
- Like some
- Like a little
- Neither like nor dislike
- Dislike a little
- Dislike some
- Dislike a lot

Q5 I like most of the advertisements I am exposed to on Facebook.

- Strongly agree
- Somewhat agree
- Neither agree nor disagree
- Somewhat disagree
- Strongly disagree

Q6 How often do you feel offended by advertisements you see on Facebook?

- Often
- Sometimes
- Seldom
- Never

Q7 Most advertising on Facebook is informative.

- Strongly agree
- Somewhat agree
- Neither agree nor disagree
- Somewhat disagree
- Strongly disagree

Q8 In general, I feel that I can trust advertising on Facebook.

- Strongly agree
- Somewhat agree
- Neither agree nor disagree
- Somewhat disagree
- Strongly disagree

Q9 How comfortable are you purchasing an item by clicking on a Facebook advertisement?

- Very comfortable
- Somewhat comfortable
- Not very comfortable
- Not at all comfortable

Q10 In general, do you like or dislike content from Fan Pages on Facebook?

- Like a lot
- Like some
- Like a little
- Neither like nor dislike
- Dislike a little
- Dislike some
- Dislike a lot

Q11 I like most of the content from Fan Pages I am exposed to on Facebook.

- Strongly agree
- Somewhat agree
- Neither agree nor disagree
- Somewhat disagree
- Strongly disagree

Q12 How often do you feel offended by content from Fan Pages you see on Facebook?

- Often
- Sometimes
- Seldom
- Never

Q13 Most of the Fan Page content I see on Facebook is informative.

- Strongly agree
- Somewhat agree
- Neither agree nor disagree
- Somewhat disagree
- Strongly disagree

Q14 In general, I feel that I can trust Fan Page content on Facebook.

- Strongly agree
- Somewhat agree
- Neither agree nor disagree
- Somewhat disagree
- Strongly disagree

Q15 How comfortable are you purchasing an item by clicking on Fan Page content on Facebook?

- Very comfortable
- Somewhat comfortable
- Not very comfortable
- Not at all comfortable

Q16 In a typical week, on how many days do you visit Facebook at least once?

- 1
- 2
- 3
- 4
- 5
- 6
- 7

Q17 On a typical weekday, how many times do you visit Facebook?

TEXT ENTRY SPACE

Q18 On a typical weekend day, how many times do you visit Facebook?

TEXT ENTRY SPACE

Q18 What is your age in years?

- Under 18 years
- 18 to 24 years
- 25 to 34 years
- 35 to 44 years
- 45 to 54 years
- 55 to 64 years
- 65 years and over

Q19 Last question. What is your gender?

- Male
- Female

Q20 By now you may have guessed that this study is concerned with audience reactions to push and pull content on Facebook. For that reason, we used the eye tracking equipment to determine when and how often you viewed advertisements while visiting Facebook. We then asked you a series of questions to determine which push and pull content you recall from your visit to

Facebook. In addition, we asked about your reaction to seeing this content in order to gauge your opinion. We ask that you keep this knowledge confidential, as you may have friends or colleagues who will be participating in this study over the coming days and weeks.

The researcher will be with you in a moment in order to answer any questions that you have and provide your compensation.

Thank you for participating!

Tables

Table 1 Categorizing Social Media

	Social Presence / Media Richness			
		Low	Medium	High
Self Presentation / Disclosure	High	Blogs	Social networking sites (e.g., Facebook)	Virtual social worlds (e.g., Second Life)
	Low	Collaborative Projects (e.g., Wikipedia)	Content communities (e.g., YouTube)	Virtual game worlds (e.g., World of Warcraft)

Note: Table is reproduced from Kaplan and Haenlein, 2010, pg. 62

Table 2 Eye Tracking Results

	Push	Pull
Fixation Duration in seconds (Mean)	5.45	24.63
Fixation Duration in seconds (Median)	2.18	12.31
Duration Standard Deviation	7.68	34.84
Percentage Fixation Time (Mean)	2.85%	12.39%
Percentage Fixation Time (Median)	1.51%	5.87%
Percentage Standard Deviation	3.09%	16.25%

Table 3 Content & Brands From Ads & Fan Pages

	Advertisement (push)	Fan Page (pull)
Total Recalled	118	156
Total Recalled per Subject	1.23	1.63
Brands Recalled	60	144
Brands Recalled per Subject	.63	1.5
Percentage of Recalled Where Brand is Remembered	50.8%	92.39%

Note: One element of the messiness of data in this study is the lack of control for how many ads or fan pages each respondent would see. As a result, this research did not calculate the percentage of advertisements or fan pages that were recalled by subjects.

Table 4 Comfort in Making Purchase by Clicking on Ads & Fan Pages

	Advertisement Count	Advertisement %	Fan Page Count	Fan Page Percentage
Very comfortable	0	0%	0	0%
Somewhat comfortable	10	10%	27	28%
Not very comfortable	53	55%	43	45%
Not at all comfortable	33	34%	26	27%
Total	96	100%	96	100%

Table 5 4-Point Scale Question Metrics

Attitudes	Ad M (SD)	Fan Page M (SD)	T-test t (df)
Comfort Making Purchase	3.24 (.63)	2.99 (.75)	3.599 (95)**
Frequency Offended	2.41 (.83)	2.12 (.74)	3.749 (94)***

*p<.05, **p<.01, ***p<.001

Note. Attitudes about the advertisements and fan pages were measured on a scale from 1 to 4, with the higher score representing negative attitudes (less comfort, more frequently offended, etc.).

Table 6 7-Point Scale Question Metrics

Attitudes	Ad M (SD)	Fan Page M (SD)	T-test t (df)
General Like / Dislike	5.02 (1.35)	3.04 (1.21)	12.982 (95)***

*p<.05, *p<.01, ***p<.001

Note. Attitudes about the advertisements and fan pages were measured on a scale from 1 to 4, with the higher score representing negative attitudes (greater dislike)

Table 7 5-Point Scale Question Metrics

Attitudes	Ad M (SD)	Fan Page M (SD)	T-test t (df)
Like Most	3.69 (.89)	2.72 (1.07)	8.345 (95)***
Most is Informative	3.78 (.94)	2.71 (.92)	8.622 (94)***
General Trust	3.34 (1.00)	2.48 (1.01)	7.616 (94)***

*p<.05, *p<.01, ***p<.001

Note. Attitudes about the advertisements and fan pages were measured on a scale from 1 to 4, with the higher score representing negative attitudes (less trust, less informative, etc.).

Table 8 General Like/Dislike Results Ads vs. Fan Pages

	Advertisement Count	Advertisement %	Fan Page Count	Fan Page %
Like a lot	1	1%	6	6%
Like some	2	2%	29	30%
Like a little	8	8%	31	32%
Neither Like nor Dislike	24	25%	20	21%
Dislike a little	25	26%	6	6%
Dislike some	20	21%	3	3%
Dislike a lot	16	17%	1	1%
Total	96	100%	96	100%

Table 9 Like Most Content Exposed To

	Advertisement Count	Advertisement %	Fan Page Count	Fan Page %
Strongly agree	0	0%	9	9%
Somewhat agree	11	11%	40	42%
Neither Agree nor Disagree	24	25%	21	22%
Somewhat disagree	45	47%	21	22%
Strongly disagree	16	17%	5	5%
Total	96	100%	96	100%

Table 10 Frequency Offended By Ads vs. Fan Pages

	Advertisement Count	Advertisement %	Fan Page Count	Fan Page %
Often	6	6%	2	2%
Sometimes	42	44%	26	27%
Seldom	33	34%	48	51%
Never	15	16%	19	20%
Total	96	100%	95	100%

Table 11 Most Content is Informative Ads vs. Fan Pages

	Advertisement Count	Advertisement %	Fan Page Count	Fan Page %
Strongly agree	0	0%	3	3%
Somewhat agree	12	13%	48	51%
Neither Agree nor Disagree	21	22%	19	20%
Somewhat disagree	41	43%	24	25%
Strongly disagree	22	23%	1	1%
Total	96	100%	95	100%

Table 12 General Trust of Content Ads vs. Fan Pages

	Advertisement Count	Advertisement %	Fan Page Count	Fan Page %
Strongly agree	0	0%	11	11%
Somewhat agree	24	25%	49	51%
Neither Agree nor Disagree	27	28%	16	17%
Somewhat disagree	32	34%	17	18%
Strongly disagree	12	13%	3	3%
Total	95	100%	96	100%

Table 13 Results of One-Way ANOVA Comparing Login Frequency Toward Attitudes Ads vs. Fan Pages

		Sum of Squares	df	Mean Square	F	Sig.
Ad Like General	Between Groups	1.029	2	.514	.280	.756
	Within Groups	168.971	92	1.837		
	Total	170.000	94			
Fan Page Like General	Between Groups	5.766	2	2.883	1.978	.144
	Within Groups	134.066	92	1.457		
	Total	139.832	94			
Ad Like Most	Between Groups	.377	2	.188	.239	.788
	Within Groups	72.507	92	.788		
	Total	72.884	94			
Fan Page Like Most	Between Groups	1.611	2	.806	.691	.504
	Within Groups	107.273	92	1.166		
	Total	108.884	94			
Ad Offended	Between Groups	2.144	2	1.072	1.574	.213
	Within Groups	62.656	92	.681		
	Total	64.800	94			
Fan Page Offended	Between Groups	1.619	2	.810	1.494	.230
	Within Groups	49.317	91	.542		
	Total	50.936	93			
Ad Informative	Between Groups	2.660	2	1.330	1.506	.227
	Within Groups	81.277	92	.883		
	Total	83.937	94			
Fan Page Informative	Between Groups	2.125	2	1.063	1.254	.290
	Within Groups	77.120	91	.847		
	Total	79.245	93			
Ad Trust	Between Groups	3.021	2	1.511	1.555	.217
	Within Groups	88.394	91	.971		

	Total	91.415	93			
Fan Page Trust	Between Groups	2.085	2	1.043	1.003	.371
	Within Groups	95.662	92	1.040		
	Total	97.747	94			
Ad Purchase	Between Groups	.922	2	.461	1.178	.312
	Within Groups	35.984	92	.391		
	Total	36.905	94			
Fan Page Purchase	Between Groups	.819	2	.409	.736	.482
	Within Groups	51.139	92	.556		
	Total	51.958	94			

Figures



Figure 1 Advertisement Look Zone

The image shows a screenshot of a Facebook news feed. At the top, there is a search bar and navigation links for Home, Find Friends, and Oliver. The left sidebar contains navigation options like News Feed, Messages, Events, Photos, and various groups and friends lists. The main content area features a post from 'Zimbio.com' with a quiz titled 'YOU ARE RUMPLESTILTSKIN'. Below this, a 'Suggested Post' from Sony is highlighted with a red border. The Sony post includes a video player showing a person wearing headphones and text describing new MP3 player headphones. The right sidebar contains trending news items, sponsored ads for Amazon.com, and other promotional content. At the bottom right, there is a 'Chat (7)' button.

Figure 2 Suggested Post

The screenshot shows a Facebook news feed for the 'Tea Party Army' page. At the top, there is a search bar and navigation tabs for 'Home', 'Find Friends', and 'Oliver'. The main content area features two posts from the page. The first post, highlighted with a red border, is a photo of a man in a suit sitting at a desk. The text overlaid on the photo reads: "4.7 MILLION CANCELATION 2 MILLION SIGNUPS OBAMACARE: UN-INSURING THE INSURED". Below the photo are interaction options: 'Like', 'Comment', 'Share', and engagement statistics: 24,768 likes, 998 comments, and 13,733 shares, posted 6 hours ago. The second post is a photo of a man in a suit with the text: "NO BATTLE WAS EVER WON ON DEFENSE. NOW IS THE TIME FOR OFFENSE." Below this photo are interaction options: 'Like', 'Comment', 'Share', and engagement statistics: 21,105 likes, 535 comments, and 3,162 shares, posted 8 hours ago. The left sidebar contains navigation menus for 'FAVORITES', 'GROUPS', 'FRIENDS', 'APPS', and 'PAGES'. The right sidebar shows trending news items, sponsored content from Amazon.com, and other page recommendations like 'adidas Outdoor', 'Visit Brazil', and 'Gap Year for LDS'.

Figure 3 Fan Page Content



Figure 4 Content from Person