READING CLOUDS:  
AN ANALYSIS OF GROUP TAG CLOUDS IN FLICKR

By

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This Thesis is dedicated to the memory of my father, Edward Archer.

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ABSTRACT

Archer, Jason E

READING CLOUDS: AN ANALYSIS OF GROUP TAG CLOUDS ON FLICKR

Thesis under the direction of
Ananda Mitra, Ph.D., Professor of Communication

Building off of previous social tagging research, the author of this thesis investigated social tagging on Flickr, examined several collectively produced tag clouds on the Web site, and analyzed the discourses generated by, and generating, the tags displayed in these tag clouds. By applying a semiotic analysis, this thesis found that tag clouds are sign systems that are made meaningful through the codes and conventions constituting these clouds and in doing so was able to interpret the social “realities” group tag clouds construct. Specifically, this study explicated the ideological function of group tag clouds and identified six connotative codes that can be usefully applied to further social tagging and tag cloud research.
CHAPTER ONE

Introduction

In recent years, the trend in Internet development and application design has focused on designing spaces that promote social participation (O'Reilly, 2005). These innovations have resulted in what has come to be known as Web 2.0, or the “social Web” (Bojárs, Breslin, Peristeras, Tummarello, & Decker, 2008). These innovations are epitomized by popular social media sites like Flickr, Delicious, and more recently, Facebook, which has emerged as the face of this Internet “revolution” (Kirby, 2010).

Social media sites have designed online spaces that leverage the networking capabilities inherent to the Internet. The potential of these social media sites has been made possible by a growing amount of Internet users1. With the exponential increase of users and bandwidth has come an exponential increase in data, including pictures, videos, documents, Web sites and other forms of digital media.

In response to this increase in data, developers have designed several different systems to organize and navigate the Web. One of the tools that have emerged to help facilitate the design philosophy of Web 2.0 has been social tagging, which has enabled, “user contribution of keywords for personal or shared information organization and retrieval” (Trant, 2009a, p. 2). Social tagging is a practice of labeling private or public content in a way that is personally meaningful (Abbas, 2007). The social aspect of tagging derives from the fact that the practice is often done in an environment where personal tags become part of public spaces. As social tagging has become increasingly

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1 There were 1,733,993,741 Internet users reported as of September 2009 by the (“World Internet Usage Statistics News and World Population Stats,” n.d.). This marks a 380.3 percent increase in Internet users since 2000.
popular\textsuperscript{2} and tags have accumulated, more Web sites have begun incorporating another Web 2.0 tool, known as tag clouds, for visually representing the most popular user-generated tags in the system. See Figure 1.

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{flickr_group_tag_cloud.png}
\caption{Flickr Group Tag Cloud}
\end{figure}

While the study of social tagging is relatively recent, dating back to the early 2000s, Jessica Trant (2009a) provides a comprehensive overview of the growing body of literature and indicates that much of the scholarship on social tagging has been produced from the disciplinary perspective of Library and Information Science. Understanding where these approaches come from helps explain why social tagging systems have primarily been investigated for their potential as alternatives to, and innovations of, traditional subject indexing, classification, and taxonomy (Lancaster, Schwartz, & Schwartz, 2008; Mathes, 2004; McElfresh, 2008; Trant, 2009b; West, 2007). Regardless of perspective, this scholarship has provided much insight into social tagging systems and tagging behavior and has recognized that social tagging is essentially about meaning making, for individuals and collectives. As Abbas (2007) puts it, “users are choosing a

\textsuperscript{2} The most recent official estimates of tagging come from a December 2006 survey by the Pew Internet & American Life Project. At the time the survey approximated that 28\% of Internet users, 7\% on any given day, had tagged online content.
few words or phrases to represent the ‘meaning’ of the text to them” (2007, p. 74).

Despite this recognition, relatively little attention has been given to the discourses that produce and are produced through social tagging. In this thesis, I will begin filling in this gap by analyzing the dominant social tagging discourses constituting group tag clouds on Flickr.

Social tagging lends itself to interpreting one’s own and others’ data and subjectively assigning a tag identifying the digital artifact to the one tagging it. Therefore, social tagging should be thought of as a system produced by and producing discourses, as opposed to only thinking about the system in terms of its management and organizational capabilities. From this viewpoint, the practice of social tagging is fundamentally a socio-cultural one. As a result of this perspective, social tagging may be examined to determine the ways dominant meanings are made, negotiated and maintained, as manifested in tag clouds.

Understanding social tagging as a socio-cultural practice, this thesis will show how tags are ideological. While the term ideology has a long and contested history within cultural studies (see Althusser, 1986; Fiske, 1987; Hall, 1982), this thesis will utilize a broad definition of ideology that derives from Althusser’s theorization about the concept as a framework for analyzing tag clouds and the ideological positions they signify. For the purposes of this study, ideology will be defined as “a manner or the content of thinking characteristic of an individual, group, or culture” (“Ideology,” 2010), as is manifest by the practice of social tagging.

This thesis will investigate the way that Flickr groups are, in part, socially constructed through their group’s collectively generated tag cloud. Accordingly, this
thesis will argue that tags are linguistic expressions that represent a subject’s way of thinking. Because tags are signs that represent the way that a subject has thought about something, they express a manner of thinking. Every time a person chooses to tag something, she/he is making a decision to use *this* tag as opposed to *that* tag. Thus, tags construct a subject’s way of thinking about something, and hence a subject’s ideology. A group tag cloud, which displays the most frequently used and co-occurring tags of any particular collective will construct the collective ideologies dominant within the group. Consequently, tag clouds can be read as ideologically produced texts which may be interpreted.

This thesis will focus on analyzing the tag clouds produced by 4 of the most popular groups on Flickr plus the Web site’s most popular tags tag cloud. I have chosen Flickr for this study because of the relevancy of the site both in terms of the importance that the Web site places on social tagging and in terms of how popular the site is on the Internet³. As I will argue in Chapter 2, Flickr is a popular and well recognized Web site that supports the activity of social tagging both rhetorically and functionally. Flickr was also one of the first Web sites to incorporate social tagging tools and whether it is on their homepage or through their search bar, references to tagging are prolific. The rhetorical importance of tagging is reflected in the actual usage of tags by members of the site. Additionally, Flickr offers an ideal space for tagging because the primary user-generated contents are photographs and videos; these do not contain any searchable “text," and are thus ideal for the application of tags.

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³ Flickr ranked 31st in Web traffic worldwide and 21st in the USA on April 15th, 2010, according to Alexa on April 12, 2010. See Appendix A.
In the remainder of this chapter I will lay out a brief technical and historical background of social tagging to further explain the development and usage of social tagging and social tagging systems. This section will be followed by a social tagging analogy situated in a photo-sharing context in order to give the practice of tagging a “bricks and mortar” existence. The analogy sets up a brief review of social tagging literature that describes the way social tagging systems have been understood in relation to taxonomy and other classification systems. Finally, this literature review provides a point of entry to rearticulate my argument by situating tag clouds as sign systems made meaningful by the codes and conventions produced through social tagging.

**Technical/Historical Context**

From the earliest inception of the Internet, ad hoc labeling and systems of tagging have been used to manage information (Vander Wal, 2007). For example, discussion boards may be organized by topics such as sports, politics, entertainment, and so on. In order to guide the person to the discussion board about sports, there is a discussion thread titled, “sports”. Another way to think about early tagging-type systems is to think about a word processing program. Every time a person chooses to “save as” a word document, they are for all intensive purposes creating a tag for it. The tag is a piece of metadata that the computer uses to retrieve information, but it is also a tool for the user to create a more intuitive search. Instead of having to remember a series of digits for instance, which might represent the name of a picture – attaching the tag “dog” to it makes that picture more easily findable by the user.

Systems of tagging, once relegated to use on one’s own personal computer, have now become standard for managing collections of data on the Internet. The rise of social
tagging was made prominent by Del.icio.us, now known as Delicious, a Web site which encourages users to tag the Web sites they bookmark and share these tags with others. By becoming a member of the site, people can store their Web bookmarks online and organize them into their own categories by assigning tags to them. For instance, a Delicious user may be particularly interested in Web sites about technology, sports, and politics. Whenever that user comes across an article or a Web site that is dedicated to technological trends, that user may assign the tag “technology” to the bookmarked site. It is important to note that the person could have used any tag. Choosing “technology” as the tag is an active choice that represents a particular way thinking about and making sense of that content. If that person finds another Web site about how technological trends are affecting politics, the person may decide to tag the bookmarked Web site with “technology” and “politics”. Because these tagged bookmarks are shared with the Delicious community and because there are multiple users tagging the same resources in potentially similar ways, the process allows the most popular tags to rise to the top of tag lists and become searchable by other members. As Jessica Dye (2006) points out, "Users have control over which labels are applied to what, though most sites do suggest a kind of structure by prominently displaying the most popular tags and showing a list of other users’ tags for any piece of content or bookmark."

The most common way of visualizing the popularity of tags is through the use of a tool referred to as a tag cloud. Figure 1 displays a tag cloud that has been generated from the tagging data of a user group on Flickr. Though the tag cloud displays the top 100 tags, my analysis has revealed that these clouds actually contain 101 tags.
co-occurring tags in this group’s collection of shared photographs, the size of a tag cloud is typically determined by the Web site that hosts the tag clouds. Group tags clouds on Flickr are limited to the top 100 co-occurring tags in the group, whereas the tag cloud that Flickr uses to display the most popular tags generated by the entire Flickr community is limited to the top 150. Tag clouds display tags relationally, meaning that the larger tags in the cloud have higher rates of co-occurrence within the system than smaller tags. One thing that can be inferred from this tag cloud (Figure 1) is that members within this group have used the tag “canon” far more often than the tag “animal”. Like Delicious, Flickr uses a social tagging system as one way of managing data on the site. Unlike Delicious, which uses tags to manage bookmarks, the social tagging system on Flickr is primarily used to manage collections of photographs and videos.

**A Social Tagging Analogy**

Tagging is another name for labeling. Imagine a person who is moving. Before a person moves they typically pack items in boxes and label those boxes using some classification system. This helps them to organize the boxes and know which boxes they want to unpack first. For example, a person may label a box, “kitchen”. For the person using the label and for anyone who packs using the same labeling system, this does not mean that the kitchen is in the box, rather it connotes that this box is filled with objects that are meant to go into the kitchen, such as knives, plates and forks. When a person tags a digital artifact they are generally engaging in a similar activity.

The term, “social tagging systems” refers to the socio-technical context of tagging. Stated differently, the idea of social tagging systems has to do with the context

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5 Here again, Flickr reports that this tag cloud is made up of the top 150 tags, but my analysis has shown that the cloud consists of the 145 tags.
of where and how tagging takes place. Imagine that a photo-sharing Web site is a storage facility. In this case, the storage facility is a place to store boxes of photographs. It is possible to keep a lock on the storage compartment and keep the code for personal use, but the code could also be shared with friends so they could stop by and check out the photos when they like. In fact, it is not necessary for the door to be locked at all. The door could stay open and allow anyone to come in and look through the photographs. Most people at this storage facility don’t lock the door because they like the idea of being able to share their photographs with others. This facility has come up with a way to manage photographs that allows people to tag them with multiple tags and then organize them using this system. When a person tags their photograph of a lighthouse, taken at the Outer Banks, with the tags, “outerbanks,” “lighthouse,” “vacation,” and “fun,” the photograph may be found simultaneously in four locations within the storage facility. This also means that another person, who has tagged one of their photographs with any of the same tags, will find the other person’s photograph and their photograph in the same pile.

In order to see the breadth of this photo-management system, it is necessary to imagine the process occurring on a much larger scale. Imagine that hundreds of people are storing their photographs at the facility. Most of them are using the tagging system to manage their photographs. Depending on the amount of people who tag their photographs with any one of or a combination of the tags that have already been used, their photographs will appear in a pile with many other people’s photographs. When they go and look in the “lighthouse” pile, they are going to find other photographs that are there simply because they are tagged “lighthouse.” This does not mean that the other photographs must have a “lighthouse” in them, although this is likely to be the case. For
example, the pile may contain a picture of a cat. For whatever reason, the person who took this picture and is storing it at the facility has associated the cat photograph with “lighthouse.” Perhaps the cat was near a lighthouse, or maybe the cat’s name is Lighthouse, or possibly the person just wanted their photograph to show up in the “lighthouse” pile.

Finally, because this storage facility has so many people storing and tagging so many photographs, the proprietors have decided to incorporate a tool, a tag cloud, to display the most popular member tags. The idea behind this display is that it will give the storage community and anyone interested in joining an idea of what the most popular categories are, regardless of the fact that the categories probably mean different things to different people. In this tag cloud, “lighthouse” has shown up in the display while “outerbanks” has been left out. In a sense then, the tag cloud can be seen as linguistically constructing the storage facility and the people who use it as this, as in having something to do with lighthouses and not that, what is not present in the tag cloud is suppressed.

**The Traditional Explanation of the Storage Analogy**

Many studies of social tagging phenomena (Cattuto, Loreto, & Pietronero, 2007; Dye, 2006; Morrison, 2008; Trant, 2009b) would be most interested in observing what kinds of tags were produced in the system employed by the storage facility and how well the system functionally operated. In an attempt to understand the functionality of social tagging systems, much scholarship would also compare what was happening in the storage facility to conventional taxonomic systems. This is in part because much of the scholarship on social tagging has come out of Library and Information Science
disciplines, but also because social tagging is prominently discussed as an alternative to existing methods of classification (Lancaster et al., 2008; Weinberger, 2007).

An example of an established classification method/taxonomic system is what Yahoo! first incorporated and still utilizes as part of their Internet search engine (“Yahoo! Directory,” n.d.). This system involves classifying digital artifacts using hierarchical structures arranged by categories that have been established by expert indexers. For example, if we were to go to Yahoo! and search for a 1995 Ford Probe for sale, we may start by selecting a category labeled “Business & Economy”. Under this category would be subcategories including “Shopping and Services”, under this category would be another list of subcategories including “Automotive”, and under these categories may be a list of different car makes, such as “Ford”, “Honda”, and so on.

Yahoo!’s classification system is similar to other offline classification systems, such as the Dewy Decimal System and the Library of Congress’ use of subject headings for indexical purposes. What these systems have in common is that they utilize categories which have been coded by experts and which typically use hierarchies to define relationships, e.g. family, mother, daughter. These systems can be criticized for using explicit hierarchical relationships because they suggest a set of power relations that are categorically defined by a set of ‘experts.’ Additionally, these systems are often defined by a rigid set of codes that may not be accessible to those without specialized knowledge.

In contrast to conventional classification systems, some scholars (Mathes, 2004; Spiteri, 2007) would point out that social tagging systems are flat. In other words, the tagging relationships within the storage facility do not function in accordance with the hierarchies of conventional taxonomies because there are no systematically established
relationships between tags. This does not mean that hierarchies do not emerge from the practice of social tagging, on the contrary, this thesis will argue that they may emerge through conventions of tagging, however there are no established guidelines that must be followed in order to add a tag to a social tagging system.

While much research has focused on social tagging systems’ taxonomic properties (Cattuto et al., 2007; Morrison, 2008; Quintarelli, 2005; Rafferty & Hidderley, 2007; Trant, 2009b), almost all studies of social tagging can trace their roots back to a 2004 article by Mathes. Originally written for a LIS course at the University of Illinois Urbana-Champaign, Mathes’ (2004) descriptive survey has become one of the most widely cited papers on the subject of social tagging. In his paper, Mathes (2004) approached the phenomenon of social tagging in order to describe what he conceived of as an emerging way of generating metadata: “grassroots community classification” (section 2, para. 4) systems. His inquiry into these systems was based on understanding how they differed from traditional, top-down, hierarchical systems of professional classification – like the Library of Congress’ taxonomy. He identified the structural elements produced by social tagging and found that, compared to traditional taxonomy, the user-generated system had limitations for classification effectiveness due to ambiguity of terms and synonymy. Understood through the storage analogy, a tag like “fun”, while descriptive, is not very helpful when considered as a classifier because it is ambiguous and connotes a whole range of meanings outside the possible intended meaning. Mathes (2004) also argued,

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6 Much of the social tagging literature also refers the term folksonomy. Thomas Vander Wal (2007) coined the term folksonomy in July of 2004 to describe an emerging way of classifying and sharing information on the Internet, stating that “folksonomy is the result of personal free tagging of information and objects (anything with a URL) for one’s own retrieval … Folksonomy is created from the act of tagging by the person consuming the information” (final section, para. 1).
however, that despite the weaknesses of these systems as strictly taxonomic systems, social tagging worked to facilitate serendipitous discovery and created lines of interest amongst similar taggers.

Mathes’ (2004) final observations have to do with the way that tags constitute similar manners of thinking, for example, that people who use similar tags are making sense of content in a similar way and thus think in a similar way. When there are two or more users who use the same tag, “lighthouse,” it suggests that two or more people have a shared way of thinking about some ‘reality.’ What is being produced, albeit not explicitly, is an argument about the way that the world comes to be understood through socially situated language and by socially situated language. In this case, the construction of ‘reality’ is done through the language of social tagging. As Fiske (1987) argues:

Language does not represent the world, but makes sense of it for the world is not already divided up into neat categories that language names. But if language makes sense of the world, it makes that sense from a particular point of view. Any system of representation is inextricably linked to the social system in which it operates (p. 52).

The Language of Social Tagging

Social tagging systems constitute sign systems or languages and it is only through social dimensions represented by the conventions of codes, within and outside the Internet, that tags are endowed with any semantic sense. As Stuart Hall (1980) puts it, 'there is no intelligible discourse without the operation of a code' (131). As an example, the language code “English” is one of the easily recognizable codes operating in the group tag cloud in Figure 1. However, the operation of a code does not guarantee that the
discourse will be intelligible. A quick scan over the group tag cloud will likely reveal some tags that are seemingly nonsensical. Their presence however, indicates that they are not only meaningful to the group but more meaningful than other tags within the system that are not present in the tag cloud. Tag clouds represent the most commonly used tags within any defined system, whether it is the entire Web site collective or an individual’s collection. Thus, the tags in tag clouds constitute and make visible those codes and conventions of tagging that are dominant.

The important argument, in light of viewing social tagging systems as sign systems, is that social tagging produces a set of dominant codes and conventions that are represented in other sign systems - tag clouds. Unlike traditional taxonomies, social tagging systems cannot be decoded using some master code that has been developed by a set of experts. Instead, social tagging systems, as represented through tag clouds, are made meaningful through the cultural backgrounds and social experiences that people bring to reading and (re)producing tags. The primary difference between a social tagging system and a traditional classification system is that the codes that are required to understand tags are culturally established codes which constitute collective ideologies. This would seem to indicate that the most meaningful tags in any group will be those that people use over and over again - those tags that constitute tag clouds.

When looking at a tag cloud it is hard not to be taken in by the interpretative possibilities of its significations. There is something about a tag cloud that speaks of that which it represents. As with a painting or any other sign system, the tag cloud is made meaningful by the codes and conventions that constitute it and constructed by the way those codes and conventions are read. There are tags that refer to time and tags that refer
to place, tags that refer to items and tags that refer to moods and so on. That all of these tags can be present within the same tag cloud suggests a diverse and yet socially embedded use of tags in the process of sense-making.

As we read, write, and produce ourselves into cyberspace we are constructing who we are and who we want to be. When we engage in social activities, whether joining a social network or socially tagging, we are arguably constructing our place in that space, where and how we fit. We do this through our discourses, and our language choices are inherently ideological. On the Internet, people establish relationships, organize groups, and build a sense of community all through the use of texts. “We are struck, as we use the Internet, by the sense that there are others out there like us” (Jones, 1997, pg. 17). Our ability to know others like us both online and offline, is only ever the product of language in use (Wetherell, Taylor, & Yates, 2001) – a product of the texts we produce and that produce us.

By framing tag clouds as sign systems, my thesis develops an approach that builds upon other works that have sought to understand the cultural significance of cyberspace (Jones, 1997). Specifically my thesis takes a distinctly textual approach, as suggested by Mitra and Watts (2002), to uncovering how social tagging practices are conventionalized in group tag clouds on Flickr and thus manifest the group’s dominant ideologies.

The next chapter is divided into two parts. In the first part of the next chapter, I begin with a theoretical discussion of tag clouds as texts in an attempt to understand how tag clouds are readable by the collectives that produce them and the visitors who may also be audience to them. The second half of the chapter is dedicated to a review of the Web site Flickr. In examining Flickr, I provide exposition on the social environment
within which my analysis is taking place and establish the reasons that group tag clouds on Flickr present the best units of analysis for this particular project.
CHAPTER TWO

Review of Literature

Texts: Open, Closed, and Producerly

Countless written texts have been analyzed and criticized from various viewpoints, all in an attempt to uncover their meaning, to discover the ways that they make meaning, or to explain the ways that sense is made out of them. However, according to many theorists, especially those whose work may fall under the headings of structuralist, post-structuralist, and cultural studies, the list of things that constitute texts cannot be reduced to the written page (Bakhtin, 1981, 1986; Barthes, 1975, 1977; Fiske, 1987). Paintings, carving, etchings, sculpture, architecture, comics, cinema, television and even hospitals are only a handful of things that also constitute texts. So what connects all of the things listed here and the countless others that have not been accounted for? What then are the characteristics of texts?

A text is anything that signifies and is meaningful. Bakhtin (1986) provides a broad definition of the text, “as any coherent complex of signs” and Fiske (1987) echoes Bakhtin’s notion of the text when he states, “no text is simply a pattern of signifiers: a text is a bearer of meanings” (84). Additionally, Spinoy (2008) points out that Laclau and Mouffe (1985) use a broad definition of texts in congruence with Barthes (1975), viewing texts as “materializations of meaning and/or ideology” (5). Although all of these definitions intersect, Laclau and Mouffe’s (1985) conceptualization of the text is especially relevant because it recognizes the connection between practices and ideology that are proposed by Althusser (1986).
Eco (1979), Barthes (1975), and Fiske (1987) all suggest further categorizations of texts that can help situate tag clouds as particular types of texts. Eco (1979) makes a distinction between open and closed texts. Open texts are those that are not insular in their meanings. Instead of being devoid of many possible meanings they are thick in their complexity and cannot avoid eliciting multiple viewpoints. A closed text is just the opposite, encouraging singular foci by attempting to close off alternative meanings.

To equate an open text with something concrete, one may argue that a Jackson Pollock drip painting is an extreme example of an open text. If the reference is not clear, the paintings of Jackson Pollock generally consist of large canvases coated in seemingly random drips of paint, layered upon one another. The paintings would almost seem to suggest an absence of meaning or in opposition, the possibility of being infinitely meaningful in different ways. The text does not dictate the way it should be read or interpreted and thus encourages multiple, complex and often conflicting viewpoints. A technical manual for building computers could be considered an extreme counter example, one that exemplifies the closed text. The idea behind the technical manual is that anyone who uses it will end up using it in the same way. If we read the same manual we will build the same computer. The fact that manuals are typically printed in so many languages attests to the idea that beyond the distinguishable code of language, the text will be interpreted the same way by everyone. In other words, if the manual did not close off potential meanings it would not be a very useful manual. As the dichotomy between these examples would suggest, many critics see the distinction between the open and closed text to be a distinction that parallels avant garde and mass mediated texts.
The distinction between open and closed texts is strongly mirrored by Barthes’ (1975) readerly and writerly texts, nevertheless, his theorization is more suggestive of the interplay between audiences and texts in the production of meaning. Hence, a closed text is meant to be read in a particular way and typically is read in that way because it works to conceal its own discourse, to maintain its naturalness and in doing so to produce a singular meaning. The open text on the other hand, invites readers to actively participate in producing the meaningfulness of the text, to become writers of the text through the process.

Although these distinctions provide useful tools to understanding how texts might be meaningful, they are likely to be neither completely open, nor completely closed. How many commercials have been made that illustrate the desperate, frustrated and often failed attempts of a parent trying to build the bicycle bought for their child’s birthday using a technical manual? As for the Pollock paintings, the ability to make them meaningful at all suggests that the paintings can be closed – at least temporarily. Moreover, in some media, perhaps all, texts are necessarily open and closed. This suggests that texts are the product of intersecting experiences and shared knowledge more than something that is fixed outside of experience.

Fiske (1987) recognizes that texts are typically not either/or, but both/and, by theorizing the “producerly text” (95). The producerly text is a combination of the open or writerly text and the closed or readerly text, and it is also a further step in the direction of recognizing the role of the audience as active agents in the meaning making process. He proposes this textual category to account for the popularity of television, recognizing that television texts need to be open to a rich, complex and often contradictory audience,
while avoiding complete obscurity, by being easy to read. A popular refrain of some television watchers may go something like, “I liked it because it didn’t make me think”. This sentence quintessentially sums up the closed, readerly aspect of the television text but the evidence that people from different cultural backgrounds can say the same thing but mean it in a different way exposes the open, writerly potential of these texts as well.

**Social Tagging Texts as Open, Closed, and Producerly Texts**

It would be easy to look at a tag cloud and assume that it is just a scramble of words with no logical sense to it and in that assumption one may be correct – so far as it goes. Tag clouds are both “Pollock” and “manual.” The tag cloud does not operate under the rigid logic of traditional taxonomies or pre-defined, expert-determined codes. It may not adhere to any traditional narrative structure. There is no written rule book that guides the construction or reading of a tag cloud. And yet, tag clouds are only produced because they mean something to someone and in the case of groups, mean something to multiple people where multiple people overlap in their tagging codes and conventions. Where tags are meaningful beyond the individual than, tags represent a shared use of these codes derived from shared cultural, social and experiential knowledge.

Consequently, tag clouds most closely resemble producerly texts in the way they treat their “readers as members of a semiotic democracy, already equipped with the discursive competencies to make meanings and motivated by pleasure to want to participate in the process” (Fiske, 1987, p. 95). Moreover, the production of tag clouds is predicated on the literal enactment of this process. Whereas Fiske is referring specifically to a medium that has identifiable producers and consumers, tag clouds substantially blur those lines. It is the discursive competencies of multiple tag producers that are
represented in tag clouds. This quality of tag cloud texts may account for the reason that members decide to be and remain active taggers. Unlike television or books, taggers ultimately have a concrete stake in the meaning production of social tagging systems, and by extension, tag clouds, both through their interpretation of them and through the more material act of tagging. Ironically, the act of tagging serves as a way of closing off the meaning making potential of tag clouds.

Social tagging systems and therefore tag clouds tend to stabilize over time (Golder & Huberman, 2006). When tag clouds are small, meaning they contain only a few co-occurring tags, the tags that account for their content are likely to shift and change somewhat frequently, getting bigger, shrinking, or perhaps disappearing from clouds all together. However, as more tags are added to the system, tag clouds tend to have higher rates of co-occurrence. As co-occurrences increase it becomes harder for new tags, which have not been used before, to appear in tag clouds. Thus, as the tags in the system that make up tag clouds increase, tag clouds begin to close off and focus attention to singular readings.

Despite this stabilization tag clouds also align closely with open, writerly texts that deny them any final closure. Although social tagging systems tend to stabilize over time, there is always the possibility for fluidity in the system. Tag cloud texts are, “like all texts, the site of a struggle for meaning” (Fiske, 1987, p. 93). As different people start to use the system or as existing members decide to alter their tagging habits, social tagging systems and thus tag clouds have the possibility of changing or being opened up.

Coming back to Fiske’s (1987) producerly text, the degree to which individuals and groups are involved in constituting tag clouds is what makes tag clouds meaningful
to any particular group or individual. What distinguishes tag clouds from other types of texts, e.g. television, books, etc., is the way that they are collectively produced texts. While all tag clouds are sign systems that are potentially meaningful, the meanings that will be derived from them and the degree to which they are viewed as closed or open texts will be partially determined by the orientation of the audience. Thus, tag clouds will “make more sense” to the members of the collective who generated them, than to members or visitors who did not.

**The Tag Cloud Code**

Tag clouds, just like novels, poems, academic papers, and so forth, have codes that make them recognizable as tag clouds. The way that a poem is arranged on the page often gives itself away as being a poem, but this is only because we recognize what a conventional poem ‘looks’ like. This thesis is laid out in such a way, according to conventional codes of theses, that anyone with knowledge of these conventions could pick it up and immediately recognize it as such just by flipping through a few pages. A poem need not ‘look’ like it does and a thesis need not be arranged as it is. These are cultural conventions that convey specific meanings about these two texts and work by activating knowledge of similar texts that we have seen in the past of which we already know the codes. Similarly, the form of the tag cloud gives it away as well. Tag clouds inside and outside of Flickr primarily take the form of the tag clouds displayed in this project. Although they may vary in shape and size, they almost always display words of varying sizes to indicate the popularity of tags in relation to one another. Additionally, tag clouds on Flickr may be considered over-coded to anyone with any prior knowledge of tag clouds because beneath each group’s tag cloud is an “instructional text”:
What's this?

This is a list of the 100 most used tags associated with the content in the … pool. The bigger the link, the more popular the tag.

Thus, even without any prior knowledge, the tag cloud is made meaningful in a very specific way. Conveyed is the message, the bigger tags are the more important ones to the group. Even without these explicit instructions for reading the tag cloud, it is likely, based on the visual dominance and relational arrangement of tags, that readers would already assume that those were the “rules.”

Tag clouds on Flickr are also anchored by the “group name/Pool/Tags,” which run across the top of the page and are visually defined, by size and spacing, from the tag cloud. I will refer to it as the “group identifier.” They are clearly not part of the tag cloud, but they inform the tag cloud by situating the cloud as a part of this or that group. This affects the way that one may read tag clouds as it situates the tags as group tags, meaning that a tag like “travel” in the group tag cloud of “Travel Photography,” will likely be read as referring to the group, especially when one considers the size of the tag in relation to others in the tag cloud. This is apparent in each cloud that has a more specifically focused theme or genre such as “Travel Photography,” “BlackandWhite,” and “CatchyColors,” whereas groups that don’t seem to have any particular photographic focus, “The World Through My Eyes,” do not use these same “name” tags. The point here is that they still acts as an anchor through which the cloud is situated because it tells the reader explicitly that this tag cloud belongs to this group.

These anchors, the “instructional text” and the “group identifier,” both play a role in closing off the text by directing the reader to read the tag cloud in a particular way as being generated by a particular group. Despite this, the structure of tag clouds and the
anchors that correspond to them only serve a limited function in closing off the meaning making potential of group tag clouds. The tag cloud code and its anchors are not the only codes at work allowing the tag cloud to convey meaning, they merely situate the other codes within the tag cloud code so that the tag cloud will probably not be read as a poem or as a narrative, even if it shares conventions with these texts.

No text is ever possible in a vacuum. Texts are the product of intersecting cultures, readers, and social experiences – in other words, texts are the products of other texts. This is especially apparent for tag clouds, which are literally constituted through interweaving discourses. Although it is not possible for this or any other project to consider every interrelated text, considering those social settings that are most clearly related to the texts under consideration are a good place to start. Since this project has proposed to analyze group tag clouds on Flickr, the following sections will examine the social context of Flickr. The reasons for choosing Flickr as the site of this investigation are made clear though an exploration of the way that Flickr rhetorically establishes a social environment and places emphasis on social tagging and tag clouds.

**The Flickr Environment**

Flickr, a photo-sharing website owned by Yahoo!, is an extremely popular Web site, hosting billions of pictures on its databases, contributed by millions of members (Graham, 2008). By all accounts, the Web site hosts a large population that is very active in posting and sharing pictures, joining discussions, tagging, and creating and joining groups. As of March 29th, 2010 there were 17435 public groups on Flickr ranging
anywhere in size from 2 members to 117940 members\(^7\). Exploring Flickr, one gets the sense that the site is not just an active space but more so an active community. As one user and review of the site says, “this is a terrific site for finding and sharing photos with other people around the world. It’s easy to search, provides plenty of options for privacy and security, and provides a great sense of community” (Berry, 2003). This sense is influenced undoubtedly by the way Flickr has designed and presents its homepage.

Figure 2: Screen grab of Flickr Homepage on 02/20/10

\(^7\) Nitens Flickr Gadget, “Group Trackr” is a Web application developed to track the growth and development of Flickr in real time. The statistics regarding sizes of groups will be outdated by the time I’m done typing this sentence, but evolving statistics can be found here: http://dev.nitens.org/flickr/group_trackr.php?compare.
Visiting the homepage (see Figure 2), a few messages immediately catch the eye. One is presumably the Web sites’ current slogan, “Share your photos. Watch the world.” There are two inferences that may be made from this slogan. First, the creators of Flickr are suggesting uses of the Web site. The slogan, along with the four texts under the picture, “Share & stay in touch”, “Upload & organize”, “Crop, fix, edit”, and “Explore…” suggest what a person could do if they joined the Web site. More important however, is the way the slogan and other information on the page are used to invoke a certain set of social uses.

These ways of using the site socially have developed alongside a general discourse about the Internet being an open and collaborative space. The utopian and highly politicized message is that, if people power and networking can be leveraged, the world will be a better place. This ethos is most often reflected in social networking sites like Facebook and, more recently, the site Twitter, but was initiated by Web sites like Flickr. What the Web site is promoting is a networked lifestyle, one where you are given access to a world that is waiting to meet you.

The way that the slogan, especially the sentence “Watch the world.” is displayed alongside a photograph is also an intriguing rhetorical choice. It is hard not to imagine that the photograph on the main page is representative of the social space that exists on Flickr, that this is part of the world a member could be watching. It is an interesting choice of photograph, as it features a crowd-surfer jumping from a concert stage into an audience of raucous fans. Typically people who go to a concert are going because they like the same band. By keeping the band hidden, the photograph is able to remain ambiguous enough for a visitor of the Web site to imagine that the band they like is...
onstage and that they therefore already have something in common with the people in the audience. Read as such, the photograph is an invitation to take the jump, to join the Flickr community. The photograph also assures the potential member that Flickr is not just for professional photographers or even good photographers, as is pointed out by the author featured at the bottom of the photograph, “notsogoodphotography”. Although the pictures frequently change, and this photograph happens to offer an especially pertinent message for my argument, any picture alongside the slogan could potentially generate the same sense of a community, waiting just beyond the homepage.

The text that runs underneath the photograph supports the “social” discourse generated by other elements on the homepage. “5,454 uploads in the last minute” is a lot of uploads and it expresses the idea that activity is happening now. It compels me to imagine all the countless people at home on their computers, uploading photographs as I’m writing this. Additionally, if the messages being generated by the Flickr homepage have to do with photographs and community, they also have to do with a vibrant tagging community. “558,832 things tagged with urban” is almost too many photos to fathom, but choosing to display this particular piece of data on the homepage reflects the importance placed on tagging in Flickr.

**Social tagging in Flickr**

There are two main reasons that may account for high utilization of tagging on Flickr. First, the Web site hosts a large number of photographs. Because photographs contain no machine readable text (as in letters and numbers), searching is limited to the textual information that is provided with these photographs. This presents an ideal space

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8 According to the Flickr blog, the Flickr recorded its 4 billionth upload on October 12th, 2009: http://blog.flickr.net/en/2009/10/12/4000000000/
for utilizing tags. By adding multiple tags, up to 75, a Flickr user is able to have her photos found in 75 different ways. The incentives for adding multiple tags are arguably two-fold. First, adding multiple tags provides multiple markers for retrieving the photo later. The second incentive for adding multiple tags has to do with generating greater search engine efficiency. Basically this means that if a person adds more tags, his/her data/material is more likely to be found.

The other reason for wide spread tag usage on Flickr has to do with the way Flickr rhetorically situates tagging. Along with its emphasis on photographs, tags are a key component of the Flickr website. Flickr has made tagging easy to use and reinforces the use of tags on the explore page, in the FAQ section, which has a long discussion on tagging and a suggested typology of tagging, search preferences (“full text” or “tags only”), and tag clouds. If Flickr is all about photographs, it is also all about tags.

To get a better sense of the emphasis that Flickr puts on tagging, it is useful to examine other elements of the site. Click on the explore button at the bottom of the homepage and the page that is displayed features several different options for navigating Flickr. While there are many possible avenues including finding friends and joining groups, taking up a full fourth of the page is a partial view of the 150 most popular tags on Flickr, displayed in a tag cloud. Several tags stand out, including *family, party, travel* and *wedding*. Arguably, these words and the relationship of these words to the words around them influence an audience’s perception of the site. Subsequently, all of the tags previously mentioned in Flickr’s popular tag cloud connote social contexts. The connotations resulting from these tags fits with the positive networking ethos suggested in the last section. Chapter Four will be dedicated to a more in depth analysis of group tag
clouds, but for now it is important to discuss the formation of Flickr groups and group tag clouds.

**Flickr Groups and the Constitution of Group Tag Clouds**

Groups are generally open to join, but some groups have rules and restrictions that they want users to agree to before joining. Of course, users are not legally bound to these agreements, but may be expelled from the group if they post material that is not in keeping with the group rules. For instance “The Portrait Group” lists these rules:

If you agree to these rules, you can join the group

Please post your portraits. I want to keep the definition of 'portrait' vague. This group is about expression, so be creative!

Only three (3) posts per day.

You may start new discussion threads about topics concerning any and all aspects of portrait photography.

Do not post pornography, candid snapshots, vacation or live concert/performance photos. I reserve the right to remove photos that obviously fall under these categories.

Self portraits and animal portraits are acceptable.

Partial or full nudity is acceptable if it is tasteful.

Discussion threads will be deleted after ten (10) months.

Discussion threads with no (0) replies may be deleted after three (3) weeks.

Be polite, respectful and kind. You will be removed from the group if you break this rule.

People may be joining groups on Flickr because they perceive a certain type of community that has shared interests. For instance, a person may join a group called

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“Charlotte” because they are from Charlotte or because they’ve visited Charlotte or possibly because they just want to know more about Charlotte. Regardless of the reason, what the person is aware of concerning this group is informed by the discourses the group produces. In other words, the rules, discussion boards, the pictures and the tags all construct a member’s perception of the group.

Flickr group “homepages” are composed of two primary elements. The top half of the page identifies the “group pool” and displays the most recent photographs and videos that have been added to the group. The second half of the page displays the group’s most recent discussions. By clicking on the “group pool” link, users are taken to another page which displays a larger set of recent photographs along with statistics about “The Top Five Contributors” to the group and a list of “The Top Five Tags”. The first category arguably encourages members to add more content as they are rewarded by having their user names prominently displayed. The second category is additional evidence of the emphasis Flickr puts on tagging. “The Top Five Tags” category is followed by a link to the group’s tag cloud.

When a person joins a group on Flickr they do not automatically bring their whole collection of photographs, videos, and tags with them. Instead, members must actively select the digital artifacts from their collections that they think belong to the particular group they have joined. If the member chooses to share his/her tags with the group, she/he is effecting the articulation of that group. As Zollers (2007) points out:

Users are aware (or may perceive) an audience for their tags. In the context of an audience, tagging a resource is no longer primarily a self-serving activity for the
organization of personal information, but also a social act that impacts the entire community of visitors to a website (p. 1).

Because each member tags her/his items individually and then decides which items and tags to merge with the group, group tag clouds are constituted through the overlapping of individual tags rather than resulting from consciously collaborative efforts. That is not to say that tags in group tag clouds are never the result of consciously collaborative efforts. Many groups ask their members to use specific tags when tagging content that will be added to the group. For example, a text box in the middle of the “Nikon Digital” group page displays part of a discussion thread from a group administrator stating: “When posting images to the pool please tag your photo with the camera model you're using (i.e. L20, P5100, D90)” (Sam_, 2010). It is important to remember that not every tag present in a “group pool” will be present in the group’s tag cloud. The tags in a tag cloud represent the most commonly overlapping tags used within the system. The presence of certain tags in the tag cloud indicates that those tags are more meaningful to the group than other tags and represents a coherence between members about what should and does constitute the group they have joined.
CHAPTER THREE

Description of Method

Introduction

I am taking a position in this thesis about the nature of “reality” that derives from structuralist and post-structuralist points of view. Structuralists seek to describe the overall organization of sign systems as ‘languages.’ Consequently, this study is being guided by a set of epistemological assumptions that, to risk essentialism, argue that “realities” are constructed through representation. In other words, what we ‘know’ of the world is only a product of the way the world is represented through signification. The “reality” that we know does not exist outside of or independent from the way that it is represented. However, structuralist theories have been criticized for an overemphasis on the power of language alone to structure thought. A complex but perhaps more comprehensive view of how “realities” are constructed has been posed by an additional set of scholars (Foucault, 1971; Kress, 2001; Laclau, 1985) who argue that the construction of “realities” is accomplished through representation as understood within social and historical contexts. This representation is accomplished through the signs we use and the ways we encode and decode those signs to establish different meanings. Fiske (1987) argues, “The point is that ‘reality’ is already encoded, or rather the only way we can perceive and make sense of reality is by the codes of our culture” (pg. 4).

Previous chapters have established that: 1) social tagging generates collective discourses that are evident in tag clouds, 2) these discourses are defined by socially generated codes and conventions, 3) social tagging is thus an ideological practice and, 4) tag clouds are constituted by those collective ideologies. It is necessary therefore, to employ a method that can make explicit the codes and conventions generated by groups
that make tags meaningful so that the ideologies of groups can be uncovered. One field of study that offers an approach with a great deal of flexibility, and which that can bridge the gap between the conventions that define the language of social tagging and ideology, is semiotics. Eco (1976) broadly states, “semiotics is concerned with everything that can be taken as a sign” (p. 7). A semiotic approach provides the bridge between the signs and codes that make up the general language of social tagging as readable in particular tag clouds and represented ideologies. As Manning (1987) articulates it, “semiotics is primarily a mode of analysis that seeks to understand how signs perform or convey meaning in context” (p. 25). Semiotics attempts to explicate how things might become meaningful by examining the practices that constitute sign systems. Shared practices represent shared ways of thinking and manifest ideological positions. Tag clouds are constituted at the intersection of shared ways of tagging. Therefore, semiotics will allow me to show how tag clouds are produced and reproduce group discourses and dominant ideologies.

In the following section I lay out the semiotic methods that will be used in my analysis of group tag clouds by using “The World Through My Eyes” group tag cloud as a case study that allows me to show how these methods can be applied and extended to my analysis in Chapter 4. Using this tag cloud (See Figure 3) will allow me to illustrate ways that semiotics can be used to deconstruct tag clouds to reveal the codes and conventions that are implicit in them thereby explicating the social tagging practices prevalent in groups. By making these conventions clear, I will be able to demonstrate the way tag clouds represent collective ways of thinking that produce distinctive group tag clouds.
The direction of this thesis does not permit a full survey of the field of semiotics, but there are many analytic tools that can be derived from semiotic theories that will be useful in developing a method for my analysis including the distinction between signifier/signified, the role of codes in meaning making, connotative and denotative meanings, and paradigmatic and syntagmatic analyses. It is necessary however to begin at a generally recognizable starting point to get a sense of semiotics. For this study, theories of the sign developed by Saussure\textsuperscript{10} (1916) provide that point of departure.

Saussure (1916) makes a famous distinction between langue and parole. **Langue** refers to a system of rules that pre-exists subjects who use the system whereas **parole** refers to particular instances within the system. One way to think about this distinction in practical terms is to think about the way that one basketball game, while being a unique

\textsuperscript{10} There are two distinct approaches to the field of semiotics that are typically recognized. One is the structuralist semiotics that was established from lectures that Suassure gave. Students’ notes from the lectures were later published in the General course in Linguistics. The other approach, based on the logic of signs, came from an American scholar Charles Pierce.
basketball game, is also governed by a system of rules and conventions that makes it an instance of all other basketball games. For the traditional Saussurean semiotician, what is most important are the rules and structure of the system that govern all of basketball as opposed to the performances of a single game.

Saussure’s (1916) contributions to the field of semiotics are not limited to his distinction between langue and parole. He also offers a two-pronged model of the sign – signifier/signified. Think of the tag, window. There are many ways to interpret this sign and make meaning out of it. For instance, perhaps the word “window” makes one think of “a piece of glass.” The signifier of this sign is ”window” and the signified is “a piece of glass.” It is the combination of these two elements that make up the sign.

Kress (2001) explains this relationship in another way, “the sign is a device for permitting form to express meaning because it is a means for allowing one element to be the form (the signifier) through which another element, the meaning (the signified) finds its realization, its expression” (p. 31). The way that the signifier and the signified are connected to constitute the sign is variable, meaning that there is no direct and inherent bond between an expression and the content it is expressing. The word “tree” and the object tree have no necessary relationship. This linguistic relationship is arbitrary, as is the case with most signs. The connections between signifier and signified are learned. These connections are only understood and made meaningful through a set of conventions and rules invoked in a given context and through the codes that guide these practices. “A code is a rule-governed system of signs, whose rules and conventions are shared amongst members of a culture, and which is used to generate and circulate meanings in and for that culture” (Fiske, 1987, p. 4). All of the words in a tag cloud are
already encoded as being tags. In other words, the tag *tree* in the popular tag cloud may signify the object, “tree,” on one level, but knowing the code, “this is a tag” means that what the tag represents is not the object, “tree,” but perhaps, a “photograph of a tree.”

Consider a distinction between rules and conventions. Rules are typically an explicit part of a sign system, established in order to provide a certain level of stability within a system. Rules, whether consciously created to construct a ‘new’ sign system like the Dewey Decimal System, or derived from a system already in place like English, which is always changing, are used to make the codes of a sign system explicit. By knowing the codes generated through rules of the Dewey Decimal System, it can theoretically be read in the same way by anyone who knows the rules. Conventions may be thought of as ways that sign systems are typically used. While rules are explicit or at least can be, conventions tend to be more implicit. From the tag cloud in Figure 3, we may delineate some apparent conventions of tagging, where tags may represent locations (*london, newyork, japan*), events (*wedding, party, Christmas*), and subjects (*people, friends, dog*). Nevertheless, conventions tend to be more dynamic, continually in flux. Every system defined by rules will be more or less the same, as in Morse code, whereas tag clouds that share similar conventions, may be very different in many ways. Despite the distinction between rules and conventions, the importance of both is that they define codes that allow sign systems, like tag clouds, to be meaningful to readers/writers, speakers/listeners, and producers/consumers who share knowledge of those codes.

Furthermore, no single code is ever invoked in the production of meaning. Codes are various and overlap, and often postulated as working in a hierarchical way. There are many systems of codes that are prevalent within the literature of cultural studies, media
and communication. Christian Metz (1986) proposes the existence of at least two codes in any signifying system (p. 38). He refers to these as “cultural codes” and “specialized codes.” The point that Metz (1986) is trying to convey about “cultural codes” is that they are the codes we are seemingly born into, versus “specialized codes” which take special training to recognize and utilize. If we were to apply these two codes to taxonomies and social tagging systems we may make the broad assumption that taxonomies are the product of “specialized codes” because not everyone “knows” how to use and produce the Dewy Decimal System and that social tagging systems are the product of “cultural codes” because social tagging systems are perceived as being intuitive since people bring their own cultural experience to bear on the systems production. The overlapping codes and hierarchical nature of Metz’s coding framework are limited, so allow us to consider another, more fully formed set of codes that is not so vague in its distinctions. Fiske (1987) provides a more comprehensive list of television codes while admitting that they are a bit oversimplified. He divides television codes into four levels including, “social codes, technical codes, conventional representational codes, and ideological codes” (Fiske, 1987, p. 5). Though social codes such as clothing or hairstyle may be easy to identify, other codes, especially those that appear in nature, are not so easy to recognize, but are still there and working. Look outside at two types of trees and the different connotations that they elicit will make one immediately aware of this notion (Fiske, 1987). It is thus important for any semiotic analysis to be aware of and distinguish the relationships between these codes. As was pointed out in the last chapter, tag clouds are already encoded as tag clouds, but the codes operating in the tag cloud are not limited to
the tag cloud code. At least two additional codes operating in tag clouds are identified as:

English, foreign languages and to borrow from Metz (1986), specialized.

**Languages and Specialized Codes in Tag Clouds**

Tags within group tag clouds are made up of characters, letters and numbers. They are combined in specific ways to create words, numerical codes, and sometimes compounded words or even phrases. Each tag is a sign that functions within the sign system of a tag cloud. Out of the over 1261 tags analyzed in this study, three additional codes have been identified. These are English, foreign languages, and specialized codes.

Just as the “tag cloud code” focuses the reading of a tag cloud, these additional codes serve similar purposes.

English has been singled out from other languages because it is the dominant language in the tag clouds under analysis. This is especially true for “The World Through My Eyes,” as there is only one explicit foreign language tag, *espana*. Subsequently this also represents English speakers as being the dominant members of this group\(^ {11}\).

Specialized tags refer to those tags that consist of some combination of letters, numbers, and other characters that do not fit into a predefined language category. These tags may be acronyms like *bw*, *nyc* and *hdr*, letter/number combinations like *50mm* or any other tags that may require specialized knowledge to make any sense of them. For a reader whose native language is English, the appearance of foreign language and specialized codes breaks the seemingly natural construction of tag clouds as only possibly containing tags encoded as English. Additionally, it is important to recognize these codes

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\(^ {11}\) The claim that has been inferred from the dominant language of tags is supported by evidence provided by Alexis (see appendix A), which shows that most site traffic, over 40 percent comes from English speaking countries.
function discursively, separating groups with knowledge of those discursive codes from groups without knowledge of those discursive codes.

Another way signs are made meaningful is through oppositional codes and their relations to other signs. “In a language, as in every other semiological system, what distinguishes a sign is what constitutes it” (Saussure, 1983, pg. 119). For instance, the term and tag night is most distinguishable from what it is not, day. This is an obvious suggestion, but it is important to remember that in our experiences of everyday life, these oppositional associations are often made unknowingly. The meaning of a sign is equally defined by what it is and what it is not.

Two tags that convey meaning through similarity and opposition are Nikon and Canon. Nikon is a type of camera and Canon is as well. Although the tag “canon” could be the signifier for a “device used to propel large objects,” “The World Through My Eyes” constructs the tag Canon as the camera, Canon, because Nikon acts to constitute Canon through opposition. “Canon” is constituted by not being “Nikon” and “Nikon” is constituted by not being “Canon,” but it is this opposition that constructs them as being brands of cameras. Canon and Nikon are also not Kodak, Sony, Polaroid, etc. The presence of Nikon and Canon and the absence of the other camera brands, establish a social convention within these tag clouds and thus represent an ideological position.

**Denotation and Connotation**

The process of signification is often much more involved than simple binary oppositions even if oppositions offer a good starting point from which to make sense of the process of signification. Denotation and connotation are two terms commonly used to make distinctions about the meanings that signs convey. The easiest way to frame these
two terms is by understanding them as describing levels of meaning. The first level of meaning, what is immediately signified by a signifier is considered denotation or the ‘literal’ meaning. The word “tree,” for an English speaker, denotes the object outside with branches and leaves. Subsequent levels of meaning deal with connotation. Thus, the word “tree” may connote the idea of nature. That the tree and nature are both present in the tag cloud also suggests a connotative relationship where tree may connote nature and nature may connote tree. Described in a more formal model, the denotative sign becomes a signifier for another signified or an expression for another content and this new sign is distinguished as a connotative sign (Eco, 1976, p. 55). Denotation conveys the fundamental relationship between word and object while connotation is considered a product of a deeper structure which expresses ideology. Eco (1976) argues that connotations result from connotative codes:

The difference between denotation and connotation is not (as many authors maintain) the difference between ‘univocal’ and ‘vague’ signification, or between ‘referential’ and ‘emotional’ communication, and so on. What constitutes a connotation as such is the connotative code which establishes it (1976, p. 55).

**Functional Conventions of Tags**

In addition to explicit language codes, I have identified six conventional connotative codes, also known as subcodes (Eco, 1976, 56), whereby varying tags can be distinguished in terms of the way they function through social tagging discourses in Flickr tag clouds. The connotative codes I have derived are analogous to some of the functional categories Mitra (2010) has established concerning other forms of textual information users provide on the Internet. These include the functional categories
“spatial,” “temporal,” “casual,” and “activity,” which function to convey different types of information about the users who have used them. In a similar way, the connotative codes that I have derived are codes that signify specific ways of using tags to convey meaning. The following six connotative codes constitute each of the tag clouds under consideration in this study:

<table>
<thead>
<tr>
<th><strong>Connotative Codes</strong></th>
<th><strong>Examples</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Production</td>
<td>nikon, film, canon, macro, portrait, bw, light, photos, geotagged</td>
</tr>
<tr>
<td>Event</td>
<td>music, band, dance, wedding, travel, party, vacation, birthday, trip, christmas, festival, concert, show, halloween, football, tour, holiday</td>
</tr>
<tr>
<td>Location</td>
<td>london, newyork, japan, italy, sanfrancisco, france, europe, california, taiwan, texas, england, zoo, museum, ocean</td>
</tr>
<tr>
<td>Temporal</td>
<td>winter, summer, autumn, spring, day, night, july</td>
</tr>
<tr>
<td>Subject</td>
<td>friends, girl, dog, baby, garden, rock, me, car, clouds, kids, tree, animals, birds, bike</td>
</tr>
<tr>
<td>Descriptive</td>
<td>yellow, love, new, old, fun, green, blue, red</td>
</tr>
</tbody>
</table>

**Production tags:** are those tags that convey a sense of the methods employed in the process of producing content. Production tags are a substantial part of most tag clouds under consideration in this study. Some of these tags may seem more obvious than others. For instance, anyone with any knowledge of camera brands will instantly recognize the *nikon* as clearly denoting a type of camera. On the other hand, a tag like *light* is more ambiguous. Indeed, the *light*, as it may connote many different lighting conditions involved with the technical production of photography, is a good example of a tag that

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12 These six categories accounted for all but 3 of the 1261 tags that were coded. These three tags accounted for two unique tags: sw and life.
may convey one set of more closed meanings to the members who use the tag while being open to visitors.

**Event tags:** are those tags that clearly convey an event, i.e. wedding, birthday, or a sense of action, i.e. travel.

**Location tags:** are those tags that represent places.

**Temporal tags:** are those tags that connote a sense of time.

**Subject tags:** are those tags that convey an immediate sense of the content.

**Descriptive tags:** The connotative code that is involved with descriptive tags may be addressed in grammar as adjectives.

These categories are not necessarily mutually exclusive. Many tags may fall into more than one category or different categories depending on the reader. *Night* has been categorized as temporal because in opposition to day it refers to time, but for members and groups who are more inclined toward using production tags, *night* might also be used to connote the absence of light, thus making *night* a production tag. This denotation and connotation and these connotative codes thus represent ideological positions.

As Barthes (1977) remarks, “This common domain of the signifieds of connotation is that of *ideology*” (p. 49). The segregation of denotation and connotation into levels of meaning may seem obvious, but the distinction is a slippery one, and has more to do with the way that denotation and connotation reflect levels of dominant meanings. Barthes (1974) helps clear up the taken-for-granted distinction between denotation and connotation:

Denotation is not the first meaning, but pretends to be so; under this illusion, it is ultimately no more than the last of the connotations (the one which seems both to
establish and close the reading), the superior myth by which the text pretends to return to the nature of language, to the language of nature (p. 9).

Whereas the distinction between denotative and connotative meanings may be useful as an analytic tool, in practice the division is not as concrete as it first appears. Moreover, Barthes’ recognition of the confluence between denotation and connotation is recognition that both are the domain of ideology.

**Paradigmatic and Syntagmatic Analyses**

As a result of Saussure’s (1916) emphasis on structure and relationships, there are two widely recognized ways that sign systems are argued to affect meanings. These are known as the paradigmatic and the syntagmatic and are typically analyzed independent of one another, but are used in tandem to support an overall interpretation or claim about some meaning conveyed by sign systems. These analytical tools are used to examine the way that signs function within a sign system. Subsequently, the two axes can be manipulated in different ways to convey different meanings. An example of this can be derived from the context of the tag cloud in Figure 3. Paradigmatic choices within this tag cloud concern tag groupings like “style,” where landscape and macro are part of the same paradigm and can be used in relation to one another to convey different meanings. Syntagmatic choices deal with the way that a tag cloud is structurally arranged. A tag cloud where nature is bigger than urban conveys a significantly different set of meanings than it would if urban was larger than nature. Thus, paradigmatic and syntagmatic are terms and tools that help determine the structure of sign systems and situate the ways that meanings are conveyed.
According to Tolson (1996), there are at least four distinct syntagmatic structures identified by semiotic theory that play a role in the production and negotiation of a text’s potential meaning. These have been identified as “anchorage”, “argument”, “montage”, and “narrative”. Although all are important signification structures, “anchorage” and “montage” are the most relevant for this study of tag clouds.

Barthes (1977) identifies one of the simplest forms of textual structures calling it anchorage. The structures of anchorage create additional meaning through a linking of images and words. As Barthes (1977) states, “the text directs the reader through the signifieds of the image” (p. 39, italics in text). Political cartoons are a good example of anchorage. They usually feature some form of animation and are underlined by some written information. Consequently, the animation is anchored to the words – providing a context. The picture of the group tag cloud in Figure 3 is also an example of anchorage. If one considers the tag cloud to be a picture and the group name located outside of the tag cloud to be a text, then the group name can be identified as the anchor for the tag cloud. As a result, the signification of the tag cloud is situated in relation to the text that corresponds to it.

The other relevant signification structure to consider is montage. Montage is a syntagmatic structure in that it relies on a certain spatial or temporal arrangement in order to produce significance. One could produce a basic paradigm of montage by considering that there are at least two distinct types of montage. The first is structured temporally and is more prevalent in cinema and television. In the temporal sense, montage juxtaposes seemingly random images in some chronological order. While the assemblage of images and sometimes sounds may seem ‘random’ at first, a closer look reveals additional layers
of signification. Another type of montage, one that is used in films but is more likely to be seen in paintings, pictures, or poetry, is typically based on spatial arrangements. This form of montage brings together seemingly disparate fragments to compose a whole. The interactions of each element work in concert to signify, but signification of montage is typically not explicit. As Tolson (1996) remarks,

> These juxtapositions may be emphasizing conceptual similarities or contrasts, or they may be used for aesthetic effect, but the crucial point, by comparison with an argument (or indeed a narrative, which we will consider next), is that the connections between signs in a montage structure are implicit, not explicit. A montage structure therefore involves the reader/viewer in an active process of working out the logic (if any) implicit in the inter-connections” (p. 38).

The important point to make is that montage is a structure that *does* signify through juxtaposition. Tag clouds should thus be considered a spatial form of montage, whose signification is partially a product of implicit connections between tags. Any attempt at offering a significant interpretation of group tag clouds and the collective ideologies constructed by them rests on explicating these implicit connections.

**Semiotics and Ideology**

The ways that a group or culture “thinks,” are not apparent by looking at them, instead these ideologies are manifest in the rules, conventions, and practices of individuals, groups, and cultures. The formation of these groups and cultures is predicated on their ability to communicate ideas through a system of signification. In as much as sign systems are also systems of connotation, which they always are according to Barthes (1977), their signifieds are always ideological. Furthermore, the invocation of
language, whether it is a formal language or the ‘language’ of practices, necessarily involves the use of codes and conventions. Codes and conventions are not already manifest in these “languages,” instead they are created through social and ideological practices (Fiske, 1987). “In acting on one’s own beliefs, corresponding to an ideology one follows, one inscribes his own ideas in the actions of material practices” (Althusser, 1986). Thus, it is through a semiotic examination of material practices of social tagging that dominant ideologies represented in group tag clouds can be made apparent.

**Applying Semiotic Analysis to Group Tag Clouds**

The concepts derived from semiotics, in this chapter, are the tools that can and are used to analyze everyday life. Semiotic competencies allow us to function within our cultural environments. The signs, codes and conventions of our culture are what allow us to make shared meanings and engage in common ways of thinking. As I’ve shown, the conceptual tools that have been derived from the literature can be put to work in analyzing group tag clouds in order to make explicit the structures, conventions, codes and thereby ideologies of the system. Examining group tag clouds using these conceptual tools will help define the discourses emerging from these sign systems and may reveal the way that collective ideologies are constructed in group tag clouds.

In the next chapter, I will analyze several tag clouds using the semiotic tools presented in this chapter. While a semiotic analysis can be performed on a single text, it is often more productive to identify the way codes and conventions work by comparing apparently similar or opposing texts. I have selected four groups plus the Flickr collective tag cloud. These groups have been chosen with considerations given to content size, membership size and group names. Group names were used to identify groups that may
present binary oppositions, such as “B&W” and “CatchyColors.” In order to determine
the largest groups by amount of content and population, a statistics tracking tool
developed specifically for deriving Flickr statistics was utilized\(^\text{13}\). A copy of each group
tag cloud examined will be presented in this chapter, but group statistics including
membership and content sizes, as of capturing these tag clouds, can be found in appendix
B.

I will begin the analysis by breaking the tag clouds down into basic signs (single
tags). Functionally this is already done as the tag clouds under consideration are already
composed of single tags. However, the tags will be extrapolated from the cloud and
considered each in relation to the others in order to establish paradigmatic groupings.
These groupings will allow me to interpret the potential denotative and connotative
meanings of the tags. The size of each tag will subsequently be measured and ranked
accordingly from largest (indicating most dominant) to smallest (indicating least
dominant). While the syntagmatic structure of the tag cloud is apparent as an
alphabetically arranged montage, restructuring the tags should make their relationships
clearer. Finally, by comparing and contrasting several tag clouds, this study will consider
the constructions of ‘reality’ produced by the varying ideologies in each tag cloud.

\(^{13}\) (“Group Tracker: Global Statistics: Photos vs. Members,” n.d.)
CHAPTER FOUR

An Analysis of Group Tag Clouds on Flickr

Flickr’s Collective Tag Cloud

The “All time popular tag cloud,” which I will refer to as ATP, offers a good place to start a semiotic analysis of tag clouds because it is constituted by all of the overlapping public tags in Flickr. We might think of the ATP as a giant box and each group tag cloud as little boxes within the ATP box, surrounded by lots of other little boxes. The tags from groups’ tag clouds that are represented in the ATP are those tags that most commonly overlap with other groups’ tags and other individual’s tags. Exposing the codes and conventions in the ATP will thus allow us a point from which all other tag clouds can be compared and contrasted.
Flickr’s Collective Tag Cloud

If the ATP constructs the dominant ways that Flickr users are thinking, what is it they are thinking about and how is this thinking made meaningful through their tags? What kind of “world” are members and visitors of Flickr watching and how are these social “realities” being constructed through tags? To figure that out it is useful to begin by breaking this tag cloud down into the six connotative categories defined in the last chapter: production, event, subject, descriptive, location, temporal.

Connotative Codes and Paradigms

The specialized codes found in Flickr are typically production codes. There are sixteen production tags represented in the ATP. Of the tags that make up this code, *photography* and *photo(s)* are interesting in their obviousness. On a self described photo-sharing Web site the presence of these tags indicates the absence of other media like
video, music, articles, and so forth, but clearly indicates that *photography* is the dominant form of media being represented by members of Flickr. The more frequent use of the word *photography*, instead of the more casual uses of *photo(s)*, signifies a formal way of thinking about this media. Additionally, the use of the term *photography* connotes a process and an *art* form which constitutes an “artistic” ideology, whereas *photo(s)*, merely suggest a product.

Of the sixteen production tags, five could be considered specialized tags: *bw, geotagged, macro, canon, nikon, and iphone*. *Iphone* is significant in this particular tag cloud despite its relative size compared to other camera type tags because unlike the other specialized tags, which actually represent fairly broad categories, the *iphone* is very specific. This tag alone signifies status in a way that the other camera tags do not and connotes an economically advantaged faction of technologically minded users. Moreover, the tags that make up this connotative convention, because they are related to photography, are likely to construct the *iphone* as “camera phone,” not just “phone.”

The most visually dominant codes in this cloud are event tags. There are seventeen event tags that help constitute the ATP. Two of these events, *christmas* and *halloween*, represent significant cultural holidays. *Halloween* also connotes location, United States, as the holiday is not practiced in most other regions of the world. North America is also connoted by *football*, the only sport signified, unless it is decoded as soccer, in which case the tag takes on global relevance. *Holiday* may serve a grouping function, but to a European audience may also stand for *vacation*. While the tags *holiday* and *vacation* could express “time-off work,” meaning staying at home, it is likely, given the plethora of location tags, that these two tags are also related to *travel* and *trip*. These
two concepts, along with concert, festival, music, party, birthday and wedding, are signifiers of which the signifieds may be an active and engaging social life. Location and subject tags support the mostly casual, photography-as-hobby, and social discourses being constructed by these event tags.

There are forty-two subject tags in the ATP that represent relational and hierarchical ways of thinking. These subject tags can be broken down into at least two paradigmatic groupings including culture and nature, which can be broken down further into animate and inanimate subjects, where people may be classified within the animate culture paradigm, birds may be classified within the animate nature paradigm, church may be classified within the inanimate culture paradigm and mountain may be classified within the inanimate nature paradigm. Additionally, animals, provides a broad hierarchical structure under which bird(s), cat, and dog may be categorized. These tags are significant in that they denote domestic animals and backyard birds which, in turn connote “casual photography” as opposed to “professional wildlife photography.”

Given the collective’s set of nature tags, it begins to seem as if every natural environment is represented in these signs, but of course this is not the case. Tree(s) can connote forest, flower: prairie and mountain: volcano, but regardless, these connotations are not directly represented within the tag cloud. The subject tags in this cloud do not represent any particularly specialized discourses that might come from professional photographers, but tags encoded as culture and tags encoded as nature represent a binary opposition that is common in many cultural discourses. It would be a stretch to read any political significance into this opposition, but the binary does express how rooted in symbolic consciousness these oppositions are.
The fourth category of connotative codes in ATP is descriptive. There are twelve descriptive tags represented in the ATP. Of these twelve, five represent colors: black, blue, green, red, white and yellow. Although black and white have been coded as descriptive because of their nature as colors, they are most likely to be meaningful as production tags to members of Flickr because they signify black and white photography, which further connotes a concern with composition and style. This is not to say that black and white only convey stylistic meanings, but given the fact that blackandwhite is an additional tag in the cloud, it is likely that these tags would be read through a similar production code. The other colors, with the exception of green, are primary colors, colors that constitute all other colors in a composition and colors that are often attributed in nature to subjects like sky, tree(s), and sun.

The next code is location and the tags that constitute this code signify a globally connected group, from newyork to london to paris, germany and italy, to china, japan, and even australia. All in all, Flickr’s collective tag cloud is dominated by location tags, accounting for fifty-two of the 145 tags in the group. Out of these fifty-two location tags, forty-three are broken down into a continent, country, state, and city hierarchy, with three of seven continents represented by distinct tags, as well as, twenty countries, five states, and fifteen cities. The importance of location suggests a strong social convention that is also influenced by the way people construct themselves in daily life. For example, a conventional way that people greet others upon meeting them for the first time is, “Hi, my name is…, where are you from?” In the Flickr context, the phrase may be reconsidered as, “Hi, my name is…, where have you traveled?”
Of course, what is not in the tag cloud is part of what may constitute the tag cloud’s meaning and which tags are missing from the tags coded with location are worth considering. Whole continents, Africa and South America, and entire regions, including the Middle East, are missing. This is not a group that is constructed as being from or spending time in impoverished places of political unrest. These tags do not signify a group of photojournalists covering war or any other such thing. This is a result of the most dominant location tags being represented by a few large cities and economically developed countries, mostly in the Western hemisphere.

Temporally encoded tags represent the final category. Eight temporal tags are present in the ATP. Of these eight, five are used to denote seasons. The popularity of the seasonal tags, while temporal, is less about marking time in a systematic fashion and more about connotations that correspond to these seasons. If this was not the case it would be more likely that tags denoting years or even months would be present. It stands to reason that the significance of seasonal tags is dependant on the holidays, colors, food, family, friends, and memories that are connoted by these terms.

Conclusion

The paradigmatic breakdown of the ATP indicates that codes and conventions are apparent in this sign system and work to convey particular meanings through hierarchies and relationships that are constituted by discourses concerning production, events, locations, subjects, descriptions, and time. Arranging this tag cloud syntagmatically, according to popularity, further reveals that the dominant ways of expressing meaning within the ATP are through the use of location, subject, and event tags. While each of these connotative conventions signifies vastly different meanings, underlying and
connecting them are ideological positions that may be defined by the “social”
predilection of this group. The social “reality” of the Flickr collective is constructs a
group that is defined by casual, photographer-as-hobby discourses. These tags do not
represent specialized knowledge that one would expect from a group of professional
photographers and they do not suggest a group producing exotic photographer. This
group is defined by discourses about vacations and discourses about family events.
Furthermore, these discourses, representing the experiences that are shared and which
construct the Flickr collective through its tag cloud, suggest a collective that is dominated
by a “social” ideological position. The point here is that, what becomes represented as
important to this collective are broadly accessible cultural experiences.

There are many social tagging conventions that have been addressed in this
analysis of the ATP that also run through other tag clouds under examination in this
project. Therefore, what will be addressed in the following analyses are the use of those
codes and conventions that make each tag cloud unique. There is no doubt that multiple
and sometimes competing ideologies exist within and between tag clouds, but what this
analysis will bring out are those ideologies that are dominant within each tag cloud.
Although it is important to recognize the function that the group name plays in anchoring the tag cloud, it is also obvious, at least in the case of a tag cloud like this, that the group may be defined by its tag cloud. In other words, without the group name, one could already make the assumption, just by looking at the tag cloud, that this group has something to do with black and white aesthetics, and the other conventions, such as photography and blackandwhite, reinforce this idea.

Connotative Codes and Paradigms

The same connotative codes that constitute the ATP also constitute the “B&W” group tag cloud, but the degrees to which they are present, and the way they are arranged within the cloud, are constituted in very different ways. “B&W” is made up of seven descriptive tags, one event tag, thirteen foreign language tags, twenty-two location tags, seventeen subject tags, thirty-four production tags and six time tags. Beyond the sheer dominance of production tags in relation to all other tags, production tags are also the most dominant tags by their popularity within the tag cloud. Without delving any deeper,
one can already see a clear distinction between the conventions of this group and the ATP.

For instance, unlike the ATP, this group has many more specialized codes such as *monochrome*, *120*, and *50mm*, which may only be meaningful to those who have some knowledge of cameras and photography, where *monochrome* represents a style of producing artwork in shades of gray, *120* represents film speed and *50mm* represents a lens length. Furthermore, the “B&W” cloud constructs an “artistic” ideology, as is made clear through the connotations of black and white and the additional emphasis placed on style tags, locations that connote artistic and “cultural” places, general subject focuses, and finally, by the effusion of foreign languages, which provides a striking contrast to the ATP.

On a denotative level, the tags *black*, *blackandwhite*, *blackwhite*, and *bw*, also the largest tags in this group, denote the group they constitute, and all other tags in the group are read through this black and white lens. Absent are oppositional tags that denote color. Thus, we perceive the *woman* and the *man* in black and white and we perceive *paris* in black and white. The combined terms black and white suggest another level of meaning that is deeply rooted in the fabric of artistic mediums from photography to film. They conjure images from the past, movies and photography of a world without color, the dance of *light* and *shadow*, a *portrait* of a beautiful *woman*, or a *newyork skyline*. But as the tag cloud constructs, black and white photography is not only *old* but *new*, only in being new it still conforms to these same aesthetic qualities of capturing essences established in the past.
Other production tags such as *abstract, candid, film,* and *streetphotography* are also rife with connotative meanings that suggest the artistic emphasis of this group. In this context, *candid* and *streetphotography* appear in opposition to *abstract,* thus where abstract suggests an avant garde style, candid and streetphotography suggest an approach rooted in capturing life as it presents itself—genres of realism. The tag *streetphotography* is particularly interesting because it connotes a whole movement of photography whereby the goal is to capture “life” in the moment, typically in *urban* environments (Turpin, 2000). In this light, the larger tag, *street,* may not be encoded as subject, but as production, to members of the group and those with knowledge of this movement. Expressed in this way, these tags convey meaning through specialized codes.

Additionally, *film,* which connotes an *analog* form constitutes and is constituted by *digital.* Although this opposition exists in the tag cloud and signifies different modalities, it is *analog film* that is represented as being most important. Here again, the term realism creeps back into the vocabulary of this reading because an analog copy is considered more authentic then a digital copy. For an example of this one need look no further than the record vs. CD debate, whereby the analog (record) side always claims that the record is the truer recording.

**Conclusion**

These codes, conventions, and connotations of the “B&W” tag cloud distinguish it from other group tag clouds and represent a group that is most interested in conveying meanings that express “artistic” style. This is not a group whose social “reality” appears to be concerned with events and action, as was the case in ATP, rather what is important for members of the “B&W” group, or at least what is represented as important, is using
tags to convey a sense of style, “culture,” and artistic panache. This sense is not only constructed through the dominant production tags, like *bw, blackandwhite, blackwhite,* and *street,* which create a stylistic focal point for this group, but is reinforced by the dominant location tags, *london, nyc, paris, tokyo, berlin, italy, spain, france,* which all connote modern *urban* epicenters of “high” art and “culture.” These are constructed as historically and artistically relevant places in everyday life and this discourse is reaffirmed in this tag cloud. This “cosmopolitan art world” is further refined by an abundance of foreign language tags, especially in comparison to ATP. Although there are other threads running through this tag cloud, it is this “artistic” ideology as manifest through the intersection of production, subject, location, and foreign language tags that is dominant in the discourse of the “B&W” collective. This dominant ideology is what resides in the tag cloud and this ideology binds its participants together through the codes and conventions produced by their overlapping tags.
To move from the “B&W” cloud to the “Catchy Colors” cloud creates a striking moment of disruption. “B&W” seems calculated and efficient in juxtaposition with “Catchy Colors.” In its visual presentation, “B&W” adheres to a minimalist aesthetic while the visualization of “Catchy Colors” springs forth and catches the reader through its abstract catchy colors. Where “B&W” was devoid of color, color becomes the content and theme through which this group is constructed.

Connotative Codes and Paradigms

“Catchy Colors” is constructed as being as distinct in relation to “B&W,” through the use and arrangement of its codes and conventions, as “B&W” is from the ATP. “Catchy Colors” is composed of twenty-one descriptive tags, three event tags, three foreign language tags, thirteen location tags, twenty-six subject tags, twenty-four production tags and eight time tags. Descriptive tags, dominated by colors, do not constitute the largest set of tags within this group, but the co-occurrence of colors in this
tag cloud is distinct compared to other clouds because they are the most popular tags within this group.

On a denotative level, the tags *catchycolors, colors, and colours* denote the group they constitute, and all of the tags in this group are read through the *colorful* lens constructed by *green, red, yellow, blue, orange, pink, and purple*. *Black* and *white* are also present and typically represent oppositional tags that denote absences of color, but in this context become part of meaningful color schemes. Instead of connoting black and white photography, the terms are more likely to connote contrasts. The point here is that, where this group shares similar codes and paradigmatic groupings with other collectives, these groups and codes are transformed through their relationship with the dominant color theme or rather, the colors that constitute this group are made meaningful through their intersections with particular usages of subject, temporal, and production tags.

The *colors* in “Catchy Colors” are *abstract* until they are considered in conjunction with the subject tags produced by this group. These colors primarily materialize through the signifiers, *flower(s), rose, leave(s), tree(s), sky, clouds, plant, garden, sun, sunset*, and so forth. These tags are significant because they convey a sense of *nature* and this predilection toward the colors of *nature* is further substantiated by their abundance compared to cultural subjects. Cultural subjects, *architecture, graffiti, food, girl, and woman* also constitute this group but for the most part, the more meaningful convention concerning colors in this group derives from *nature*. This is not a collective, as represented by their tag cloud, that is concerned with the stained glass color of a church window or the ruby red of a Cadillac but a group that finds the brilliant red of a rose more appealing.
Although the tags encoded with the temporal tag represent all four seasons, *autumn/fall, spring, and summer* are clearly more popular than winter – which subsequently may account for some of those *white* tags. As I explained in the analysis of ATP, seasons are popular as concepts that can be meaningful in a number of different ways, whether they connote subjects, events or in this case, colors. Furthermore, the colors and corresponding subjects may connote the seasons and in turn, the seasons may connote the colors and subjects. Whereas seasonal tags may connote cultural meaningful holidays like Christmas or Halloween in other contexts, here their meaningfulness is situated by the nature oriented ethos of the subject tags.

The colorful subjects in this group are brought into focus through production tags. There are many production tags in this cloud, constituting the second largest set of tags behind subject tags however, these tags do not make up a large portion of the visually dominant tags, and many are not specialized. In fact, in this group tags like *bright, light,* and *shadow* may just as easily signify modifiers, as in *bright orange* or *light blue.* Despite this, the most dominant production tag in this group is specialized. *Macro* stands out in this group because it is both specialized and popular. The presence of *macro* in this cloud may be confusing to those without knowledge of photography, as it is more likely to connote an “economic model” than a “focal length.” *Closeup,* on the other hand, which is synonymous with *macro,* may be more meaningful to an audience unknowledgeable about camera terminology. Furthermore, in conjunction with *closeup - macro,* which is more popular than *closup,* is made meaningful on another level as it expresses the technical knowledge that is dominant within this group. These two tags represent two different ways of thinking about the same thing and thus construct two different types of
members, but together, the dominance of *macro* and *closeup* are also production conventions that characterize the way colors are brought into focus.

It is worth mentioning the location tags or lack thereof, if only to suggest that where ideology is bound by color, discourses about location do not add anything meaningful to the mix. While this group claims not to be about “composition,” what is represented as being of even less concern are locations.

**Conclusion**

There is a social “reality” being established in this group that is distinct and unique from other groups, one in which what is important is an awareness of the way the world is constituted by colors. From this analysis it is clear that the dominant ideology of “Catchy Colors” is constructed through three connotative codes that converge at an intersection guided by colors. The three themes that emerge from an analysis of the conventional codes used by this group, colors, nature subjects, and macro photography construct a version of “reality” where catchy colors are directly related to nature, especially as experienced up close. Although some of the tags connote a “technical” ideology, the dominant ideology manifest in conventions of this group is “casual.” Furthermore, this tag cloud signifies an interest in conveying meanings that express the “natural” world through Technicolor. Could the color collective even see black and white? Color becomes unquestioned, black and white becomes a disruption.
**Portrait Group**

<table>
<thead>
<tr>
<th><strong>Portrait / Pool / Tags</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>2006 2006 2008 2009 35mm 365days 50mm 5d baby beautiful beauty black blackandwhite blackwhite blonde blue bn bokeh boy bw california canon child children color cute d300 d60 d60 usa dark digital eos eye eyes face faces fashion female film flash girl girls glasses green hair hat india kid kodak life light lighting london love makeup male man me model music naturalight right nikkor nikon noritblanc nyc old olympus party people photo photoshop polaroid portrait portraits pretty project366 red retrato retrato selfie selfportrait sexy smile snow square street strobist studio summer travel urban usa vintage wedding white window winter woman women</td>
</tr>
</tbody>
</table>

**Figure 8.**

“Portrait” is a group similar to “B&W” in that it connotes a style of photography, but through the discourse of the tag cloud becomes defined by its focus on people. The coherence of this tag cloud makes explicit the ideology of “portrait” that is defined by people instead of architecture or nature, and faces instead of places, as constructed through a “professional” lens.

**Connotative Codes and Paradigms**

*Portrait* is clearly the focal point of this tag cloud. It is a tag that firmly directs the reading of the tag cloud and a tag that is made meaningful through the tags that contextualize it. There are thirty-seven production tags, twenty-six subject tags, fifteen descriptive tags, six location tags, eight temporal tags, four event tags, and five foreign language tags that constitute this group. Of the tags constituting this group, production tags are clearly dominant and within these production tags, several paradigmatic groups including camera type, lighting and style intersect to convey a sense of “professionalism” in this group.
There are specialized technical discourses that define this group, but unlike other
groups, affinity toward a particular camera does not seem to be as stuck in the
canon/nikon dichotomy as is typically conventionalized. Despite the fact that these two
tags are still fairly prevalent, this group makes room for kodak, olympus, and polaroid.
This does not suggest that “Portrait” is any less technically focused, but it does
suggest a less homogenized group divided by an affinity to camera brands.

As important as camera types are to conveying meaning about this group,
production tags connoting lighting conditions (light, strobist, and flash), and tags
connoting stylistic considerations (portraits, selfportrait, and bokeh) represent additional
paradigmatic groups that are significant in reinforcing the “production methods”
discourse. Naturallight represents a tag within the lighting paradigm unique to this group
that connotes sunlight, but also may denote light bulbs that provide natural lighting
conditions. This is a relatively small tag compared to other lighting tags however, and the
meaning these bigger lighting tags convey is typically in opposition to the idea of
“natural light,” as in sun light. Strobist denotes a specific way of lighting that is used by
studio photographers, but is also pedagogy of lighting for photography is one connotation
generated by the term. The tags represent a coherent and specialized language that can be
attributed to an ideology of “professionalism.”

Beyond the “professionalism” manifest in lighting tags, other production tags also
paint a picture of “portrait” that involve makeup, model, and studio, which all refine the
meaning signified by the lighting tags. Makeup connotes images of women putting on lip
stick and eye liner in order to look artificially beautiful for their next photo shoot. This
tag takes on additional meaning when juxtaposed with the tags face(s), model and studio,
as face(s) conveys a specific sense of where the makeup is being applied and model connotes a level of “professionalism.” Additionally, studio signifies a location which connotes “professionalism” because in the Flickr context, studios are places people go to have their portraits taken, not places people call home.

Subject tags play another defining role in this tag cloud. These can be broken down into four main groups, gender, accessories, anatomy, and people. Gender is differentiated by generic categories, female/male, adolescent binaries, boy/girl(s), and adult binaries, man/woman/women. These categories suggest a special importance placed on gender that is not as prevalent in other groups but may also be understood as reinforcing the general person/people-centric focus of this group.

This group is not only focused on people, but on specific regions of the body, as is made clear by the accessory and anatomy tags. These tags suggest a focus on face(s), as signified not only on the specific tag but on related tags, such as glasses, hat, eye(s), hair, and smile. These tags are additionally significant in that they are highly denotative unlike many tags which deal with broad concepts.

Additionally, with the exception of snow, there are no nature tags in this group and as I have pointed out, street is more likely to signify a method of photography that is focused on people, than to signify any actual street. In fact, without particular knowledge of street as it relates to photography in a broader sense it is likely that a visitor to this group would find the tag to be nonsensical. Tags that seem obvious are obvious because they are ideological, whereas tags that break the coherence of these tag clouds suggest oppositional ways of tagging.
There are fifteen descriptive tags in this tag cloud. Five out of the fifteen tags represent some version of beauty, although the various forms carry different connotations, especially when considered next to one another. Beautiful, cute, pretty, and sexy all connote vastly different conditions. But the message really being conveyed by all of these tags is, “my subjects aren’t ugly or otherwise.” And if they were, I’ve covered them up with makeup to make them beautiful.

Conclusion

The codes, conventions, and connotations of the “Portrait” tag cloud distinguish it from other group tag clouds through emphasizing technical discourses and represent a group that is most interested in conveying meanings that express “technical” methods. This is not a group whose social “reality” appears to be concerned with locations, rather what is important for members of the “Portrait” group, or at least what is represented as important, is using tags to convey technical methods as they specifically relate to the constitution of portraiture. Considering how the dominant tags in this group convey a sense of importance that is bound to portrait it makes sense that locations may not play a bigger role, but in that it makes sense, also represents the group’s ideological position. The overlapping discourses of this group paint the picture of portraiture as it is more likely constructed by the studio photographer than the casual shutterfly. Thus, this group is represented by an ideology of “professionalism.”
Travel Photography

Travel Photography / Pool / Tags

2008 2009 5photosaday africa america ancient architecture asia australia beach
developed black blue boat boy building bunna bw california cambodia canon
caribbean children china city clouds coast color culture desert england españa europa europe film france
gestagged greece green hdr history holiday holland india island italia italy japan kids
lake landscape leright man mexico mountain mountains myanmar nature night
nikon ocean panorama paris pentax people playas portugal red reflecion river rocks roma
rome ruins sand sea sky snow southeramerica southeastasia spain street summer sun
sunset sydney temple thailand tourism travel tree trees trip urban usa vacation
vietnam water winter woman

Figure 9.

“Travel Photography” is defined by its almost complete opposition to “Portrait.”

Where “Portrait” was signified by *portrait* and *people*, this group is signified by

*landscape* and *nature* and where “Portrait” was defined by a plethora of specialized production tags, “Travel Photography” is defined by an abundance of location tags.

Connotative Codes and Paradigms

The focal point of this tag clouds is clearly *travel*. Through this tag the plethora of location tags in this tag cloud move from *denoting* locations to *connoting* destinations.

There are thirty-four location tags, thirty-two subject tags, twelve production tags, eight descriptive tags, five event tags, five temporal tags, and five foreign language tags that constitute this group. Of the tags constituting this group, location tags are dominant but the intersection between location tags and subject tags and the lack of other tags types makes the association between location and subject a defining element of this group.
There are not many event tags in this group, but those that are present primarily revolve around one theme travel. In this context it becomes much clearer that holiday is synonymous with vacation, as there are no other tags within the event list that would suggest religious, political, or other holidays. This is not a group that is defined by holidays that involve Christmas parties, rock concerts, or wedding showers. This is a group that is more interested in telling people where they’ve gone and what they’ve seen.

Location tags constitute the greatest portion of “Travel Photography,” and cover a relatively large swath of the globe. There are five continents, twenty-one countries, one “region” (caribbean), one state, and three cities represented within this group. Also amongst location tags are three generic locations, city, island and coast. The only cities present, paris, rome, and sydney are well recognized tourist destinations, at least form a Western point of view.

Additionally, these locations are not as homogenized as those in other groups. Represented in this tag cloud are countries lower on the socio-economic scale, such as vietnam, cambodia, and burma. Signified by most other country tags however, are places of greater economic status that are “traditionally” popular tourist destinations. In other words, “Travel Photography” connotes the idea of “travel for pleasure,” as it does not contain a discourse that connotes the work of “war time photojournalists” for instance. The idea is substantiated by the subject tags which, not surprisingly, do not contain any indication of weapons, dead, political figures, or otherwise.

The first reading of subject tags connotes a vacationer’s paradise, lounging on a beach next to the sea, watching the blue sky while the clouds roll by. In fact, with the exception of desert the nature tags that are signified in this group rearticulate a popular
discourse about what constitutes a dream trip. Of the thirty-two subject tags in this group, nineteen are signifiers of nature. Unlike the “Portrait group,” this nature discourse represents a significant contribution to the meaningfulness of this group. The one exception that can be made it not a presence but an absence, as flower(s) does not appear in this group. This is a tag that seems to be a conventional tag in the nature discourses of other groups, but here, it is not present even though, mountain(s), tree(s), sea, ocean, and other tags typically constituting the nature convention are. Apparently travelers are not interested in “stopping to smell the flowers.”

Beyond the popular tourist discourses, there are also less dominant subject tags that seem directly related to the “ancient cultures” and “far-off places” represented in this tag cloud. For instance, this tag cloud signifies temple and ruin, which are unique to this group. Beyond the connotative connection these tags form with certain places, there are also a set of descriptive tags that make reinforce these connotations. Of the eight descriptive tags, ancient, culture, and history are unique to this group. Ancient may be conveying more than a sense of time as it is likely that this a reifying tag for ruins, as in ancient ruins. Additionally, this connotative association may correspond with other subject and location tags unique to this group, such as temple.

There are not many production tags in this group, but they play a significant role in constructing the social “reality” of this group. Without the dominant production tags, nikon, and canon, this group could just as easily be called “Travel” as opposed to “Travel Photography.” Additionally, the emergence of panorama in this group is interesting as this iconic photographic style that conveys a sense of the vast landscapes that may be encountered on a trip to the sun soaked desert in africa.
Conclusion

This group, like the three other group tag clouds examined in this study, guided by a coherent set of codes and conventions that establish the way this group conveys meaning. There is nothing especially out of the ordinary about the “Travel Photography” tag cloud, but this very obviousness, just like the other tag clouds, implies the ideology of this group. This is travel photography through the eyes of a “western tourist class,” one that can afford expensive cameras and even more expensive trips. For instance, the connotation that is drawn by the association of boat and sea could be cruise. The location and subject tags in this group are primarily what construct this discourse of the “seasoned traveler.” Furthermore, by the absence of family and only a vague mention of kids/children, the dominant tags in this cloud suggests that this group is not meant to be a group for families who want to share their experiences at “Disney World,” but it is also not a group that seems to be made up of the “college spring break” crowd either, as there are no tags suggesting parties, beer, or Daytona. Instead, this is a group that represents the ideological position of the “western tourist class,” as established through tagging practices that express shared experiences connoting locations and subjects.
CHAPTER FIVE

Conclusion

This thesis began by making the argument that social tagging is a practice that is made meaningful through shared codes and conventions and where tags produced by social tagging constitute tag clouds, tag clouds represent the dominant ideologies of a group because they represent the most commonly shared experiences and ways of thinking amongst members of that group. By examining how tag clouds are sign systems generated through social tagging, I have been able to apply a semiotic analysis to group tag clouds in Flickr and show how they may be interpreted to make explicit the practices that establish the codes and conventions and manifest group ideologies. In conclusion of this project, I will use this chapter to provide a summary of this thesis. Thereafter, I will extend the discussion of my analysis and suggest the implications of this study. I will present the limitations of this study; using these limitations I will propose ideas for future research that can build off of the findings of this thesis.

This thesis has been guided by a set of assumptions about the nature of language (sign systems) in constructing social “realities.” Given this epistemological worldview, I determined a gap in the relevant literature on social tagging that did not account for the discursive possibilities of tag clouds. In order to understand the socio-cultural significance of tag clouds I established that social tagging systems were sign systems that are made meaningful through shared experiences and cultural backgrounds.

Conceptualizing tag clouds as sign systems allowed me to show how these texts could become readable and thus meaningful to producers and consumers of these systems. I determined that tag clouds are closed, open and producerly texts. This allowed
me to make the important point that tag clouds become meaningful in different ways to
different groups because the meaning that is made of them is dependant on the degree to
which knowledge of the codes and conventions constituting tag clouds are shared.

In the following section, I argued that there were three primary factors that made
Flickr an important site for the study of social tagging and tag clouds: 1) Flickr was an
established social tagging Web site and the incorporation of the tool was widespread and
seemingly active, 2) Flickr provided incentives for tagging, and 3) Flickr provided a
unique space to examine group tag clouds. I pointed out that group tag clouds, because
they are constituted through overlapping tags, suggests to members what should and does
constitute the group.

Having established that tag clouds were sign systems that manifest collective
ideologies, I used the next chapter to lay out a method that could bridge the gap between
these two concepts. Semiotics was chosen as the best method for analyzing tag clouds
because it offered the tools to deconstruct these sign systems in order or explicate the
practices that made them meaningful. I provided a broad overview of semiotics in an
attempt to make the method more accessible to readers who may not have prior
knowledge of it. By applying the theory of codes I was able to identify two codes that
worked to convey meaning at an initial point of entry into the cloud. These were
languages and specialized. After discussing the way that denotation and connotation work
to convey different levels of meaning, six connotative codes that were used in all of the
tag clouds under investigation in this project were identified: production, location, event,
descriptives, temporal, and subject. It was important to identify these six codes as it
offered critical insight into determining how groups use these codes to construct different
social “realities.” Finally, I discussed the distinction between paradigmatic and syntagmatic analyses and examined the way these structures are used to invoke different connotations. Based on this review of method, I determined that the best way to explicate the ideologies manifest in group tag clouds was to divide the tags up into paradigmatic groups and analyze them syntagmatically in relation to one another.

In chapter four I was able to apply these methods to five tag clouds in order to provide interpretations of them. I began by analyzing Flickr’s collective tag cloud. The ATP was analyzed first in order to provide a point-of-comparison through which to compare and contrast the other tag clouds. The analysis revealed that group tag clouds are constructed through different uses and arrangements of the codes identified in chapter three. Furthermore, I was able to show how social tagging works to convey meaning through conventional modes of hierarchy, but more prevalent were represented relationships between tags. Each group tag cloud showed conventional ways of tagging that constituted coherent groups that were similar in some respects to others but also different enough to be unique. In the case of “B&W” and “CatchyColors” these oppositions were, as I suspected, constructed as almost completely opposing groups as represented by their tag clouds. The same held true for “Portrait” and “Travel Photography.” Finally, by examining the ways that tags within these tag clouds were arranged to constitute each other, I was able to determine connotative meanings produced by these relationships and in doing so exposed the ideologies manifest in these groups.

**Discussion and Implications**

In order to complete this study in a meaningful way it was paramount to engage in hermeneutics to identify the six connotative codes constituting group tag clouds.
Subsequently, this coding schema can be one of the most substantial and significant contributions to further social tagging and tag cloud scholarship. The codes are not only the most parsimonious categorization under which these tags could be meaningfully classified, they also function as a powerful framework for analysis and interpretation of tag clouds, and perhaps more broadly – social tagging systems in general.

Another major implication of this study concerns the structure of the tag cloud and the way that it can be seen as working on the level of “the ideological.” The unique quality of the tag cloud is that by being public it can influence tagging habits by constructing some tags as being more important than other tags. By applying tags in the tag cloud to personal content, a tagger can become part of the tag cloud – can become part of the “popular” group. This practice self-perpetuates and further solidifies the potential meaning of the tag cloud and the group it represents. These predominant tags become “naturalized,” common sense, and in becoming common sense they achieve an ideological state because the tag cloud is represented as making sense in this way and in no other way. As Hall (1982) articulates:

This movement – towards the winning of a universal validity and legitimacy for accounts of the world which are partial and particular and towards the grounding of these particular constructions in the taken for grantedness of ‘the real’ – is indeed the characteristic and defining mechanism of ‘the ideological’ (1982, p. 65).

On one level, tag clouds always already marginalize some tags making up a social tagging system because some tags are smaller than other tags and others are absent all together. Essentially, these small or absent tags give larger tags in the tag cloud greater
legitimacy in representing the collective. This process of legitimization of some by marginalization of others can be shown in tag clouds as well.

All tag clouds offer evidence of how the ideological process functions, but to provide an example, look back at ATP and “Portrait.” In both of these groups there are tags that are larger than others. The larger tags represent tags that have essentially solidified their position in the tag cloud over tags that are smaller. Thus wedding is likely to remain in the tag cloud even as love, model, color and many other tiny tags are more likely to disappear as new tags emerge. Wedding has become deeply embedded in the fabric of ATP’s tag cloud through a process of perpetual re-legitimization. At this point, the tag seems to be a “natural” constitutive feature of the tag cloud. It has become an ideological feature of the tag cloud because it would be hard to imagine the tag cloud without this tag or with another tag in its place. If the collective decides that other tags are more important or meaningful, they may become larger, but while becoming dominant, these tags will displace and marginalize others. This give and take of the tag cloud is an ongoing process, but in the moment of stasis that this study has analyzed, the process can still be observed. Hence, wedding is what has become and is naturalized within the Flickr collective, while love, model, color and others have not achieved this same dominant ideological state. Despite this, the dominance of a tag in one cloud may be marginalized in another cloud. For instance, in “Portrait,” model is a much bigger tag in relation to other tags. In this tag cloud it is model that has achieved the ideological by becoming common sense while wedding barely seems to belong. The tag cloud cuts off the possibility of alternative forms of representation by its very nature of representation and in doing so, manifests and maintains dominant tagging practices.
By applying ideology to the study of tags, this project has shown how tags are not benign or apolitical. Their formation is deeply ideological and being able to search for and reveal how these ideologies operate and whose ideologies these tags represent is of paramount importance because tags and tag clouds, like any other media, are effecting the formation of social “realities.” By applying theories of ideology, tags can be shown to have power, they benefit certain significations over others, especially as they are made visible through tag clouds, because they naturalize certain conventions and codes of tagging to the determent of others. Thus as tags are ideological, they are an influencing force that is shaping the “realities” of Web sites like Flickr. In this sense, tags have influence and will continue to have increasing influence on defining culture on the Internet.

Importantly, the methods developed in this study, and the critical insights offered, should be applicable to other studies of social tagging and tag clouds. This investigation explored group tag clouds that were broadly ideological, meaning that there was no expectation of finding ideologies that are typically assumed to have the greatest social implications – political, religious, economic, scientific, and so forth. However, my methods and findings establish a framework and a “doable” process that could be applied to more “predictable” groups. What I am suggesting is that this model could be utilized to uncover discourses emerging from tag clouds of groups like “democrat” or “socialist” that manifest these more polemic ideologies in a way that would be expected based on other investigations into the practices that manifest these systems of belief.
Limitations and Ideas for Future Study

This study provides critical insights into the workings of group tag clouds, but there are a number of limitations that should be considered when judging the efficacy of this study. In acknowledging these limitations I can offer avenues for future research that may fill the gaps left by the current study. The three limitations to this study that need to be addressed concern 1) Limitations of Internet research and the dynamism of tag clouds, 2) limitations posed by tag clouds surveyed, and 3) limitations posed by selection of Web sites.

The ability to replicate Internet research, especially where research concerns textual qualities of Web sites, is difficult. The repeatability of a textual study is dependent on the producers who create and maintain these sites and pages. The Internet is a place constantly in flux as pages are added and erased, information is archived and deleted, and applications are created and displace older ones. These qualities make the Internet seem cumbersome when it comes to analyzing texts and already place limitations on any study done in this environment. As Mitra and Cohen (1999) explain:

Unlike the traditional text, with its central focus on a linear “stand-alone” text, the digital text of the WWW might not leave any traces of its existence. As a file disappears and other authors feel the ripple effect, they may simply remove the link to the nonexistent file, and soon, all traces of that file would vanish from cyberspace (91).

The probable impermanence of Web sites and pages on the Internet has limiting implications for this project where it concerns Flickr specifically but additional limitations are imposed by dynamism of tag clouds. Although I have argued that tag
clouds tend to stabilize over time, they are never permanently static. From day to day, as
tags are added and removed, tag clouds may take on different dimensions and
characteristics. The synchronic approach I have taken in analyzing group tag clouds is
unable to account for this inherent dynamism. However, by providing a snapshot of these
tag clouds, I have provided critical insights that may be adopted in future research.

Flickr hosts hundreds of groups that range in size from 2 to many thousands.
These groups vary a great deal in theme and content. There are political groups and
religious groups as well as university groups just to name a few. The ability to make
generalizations about group tag clouds beyond those in this study is limited by the very
small sample of group tag clouds present on the Flickr Web site. Despite this limitation,
the arguments that I have made concerning the constitution of group ideologies and
supported through my analysis should be applicable to other group tag clouds in Flickr.

Consequently, my decision to focus on Flickr alone presents the biggest limitation
to this study. I don’t have any estimates on how wide spread social tagging systems that
utilize tag clouds are, but anecdotally at least, tags clouds seem to be ubiquitous. While
my argument should be relevant to other Flickr groups, it can not make any statements
concerning the vast number of social tagging systems and tag clouds utilized in other
Web sites and in other contexts. While no study could ever deal with every tag cloud nor
every Web site utilizing social tagging, additional studies that could cope with a greater
range of groups may find a broader range of codes and conventions utilized by tagger
than could be identified in this study.

Given the relative “youth” of social tagging studies, suggestions for future
research seem somewhat unlimited. Therefore, I will focus on suggestions that stem from
the findings and limitations of this study. The first limitation of this study, the dynamism of tag clouds could be addressed by using a diachronic approach. This approach would involve taking screen shots of group tag clouds on a daily or weekly basis depending on the rate of change observed in the tag cloud and the degree of accuracy a researcher would want to base their findings on. A diachronic approach would be able to determine how groups are continually constituted and reconstituted over time. This analysis would better be able to establish the conventionality of tags within a given tag cloud.

Furthermore, this analysis could be paired with a discourse analysis, which could determine the coherency or contradictions of social tagging discourses as they intersect with other discourse on Web sites. For instance, a researcher could focus on the intersections group tag clouds and group discussion boards. By “going native,” and performing more in depth ethnographic type studies, researchers could gain greater insights into the social and rhetorical roles that social tagging and tag clouds play in representing and influencing culture on the Internet.

Another possible direction for future research would extend the semiotic model this study has used to interpret tag clouds between Web sites, as opposed to focusing on groups in one Web site. After completing this study it seems that social tagging conventions are probably content and context specific. That is, social tagging conventions may be determined by the type of media that taggers are tagging. For instance, this analysis was done on a Web site where taggers are most likely to tag pictures or videos. The connotative codes drawn from the group tag clouds seem to be guided by story telling conventions that are concerned with determining who (*selfportrait, me, group anchor*), what (subject code), where (location code), when (temporal code), why (event,
etc), and how (production). These conventions indicate a particular way of thinking that is likely to be directly connected to the type of media that is being tagged. This idea could be tested by comparing the tag clouds of Web sites that host different content. For instance, an analysis could be done between a social music Web site and Flickr.

**The Group Tag Cloud Reconsidered**

Social tagging does not adhere to any formal system of logic. It does not produce meanings in a way that would be recognizable against its taxonomy cousins. But it is clear that there is logic to social tagging and this logic is cultural. In uncovering this cultural logic we can make determinations about the culture from which social tagging emerges. What is important about social tagging is not only how it organizes content but in the way that it connects people and organizes groups through shared interests and common views. The importance of tag clouds is that they represent the foci of these connections. However, these connections are not necessarily explicit. Consequently, “cloud” is an apt metaphor for the tag cloud, as it does not only refer to the shape of the display but also to the haziness of its associations. Unlike language, which may seem to take a more natural structure or shape, the structure of tags and their meanings may seem ‘clouded’ by their presentation within the display.

While social tagging and social tagging systems have received much of the attention from social tagging scholars, this thesis is arguing that tag clouds should not be overlooked by further research in the area. The fact that tag clouds only constitute part of social tagging systems and can not explain how the whole system works may be one reason that tag clouds are often left out of social tagging research. After all, why settle for
a window view when you can go outside? However, to only see the tag cloud as a window is to miss it as a painting.
Appendix A

Flickr Web Traffic Statistics


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<th>Country</th>
<th>Percent of Site Traffic</th>
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<tr>
<td>United States</td>
<td>32.2%</td>
</tr>
<tr>
<td>India</td>
<td>6.4%</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>5.5%</td>
</tr>
<tr>
<td>Germany</td>
<td>5.0%</td>
</tr>
<tr>
<td>Italy</td>
<td>3.3%</td>
</tr>
<tr>
<td>Canada</td>
<td>2.7%</td>
</tr>
<tr>
<td>Spain</td>
<td>2.7%</td>
</tr>
<tr>
<td>Japan</td>
<td>2.6%</td>
</tr>
<tr>
<td>China</td>
<td>2.5%</td>
</tr>
<tr>
<td>Brazil</td>
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Appendix B

Flickr Groups Content and Membership

All statistics displayed in figure 4 were collected on March 29th, 2010.

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<tr>
<th>Group Name</th>
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<th>Membership</th>
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<tr>
<td>B&amp;W</td>
<td>1,694,539</td>
<td>93,760</td>
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<td>Catchy Colors</td>
<td>1,960,283</td>
<td>77,934</td>
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<tr>
<td>Portrait</td>
<td>880,649</td>
<td>74,099</td>
</tr>
<tr>
<td>The World Through My Eyes</td>
<td>2,378,494</td>
<td>68,298</td>
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<tr>
<td>Canon DSLR User Group</td>
<td>903,391</td>
<td>60,221</td>
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<tr>
<td>Travel Photography</td>
<td>814,078</td>
<td>42,592</td>
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</table>
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SCHOLASTIC VITA

Jason Edward Archer was born in Carroll, Iowa on May 31st, 1982. He grew up in Muscatine, Iowa and graduated from Muscatine High School in 2000. Mr. Archer attended the University of Iowa, Iowa City, where he received Bachelor of Arts in Communication Studies in 2005. Fall semester 2004 he studied abroad at University of Aalborg, Denmark, where he studied Intercultural and International Communication. After graduating Jason took time off of school, moved to Asheville, North Carolina and gained professional production experience working as a News Video Editor at WLOS. In 2008 he accepted a teaching assistantship and began the Master of Arts program in Communication at Wake Forest University. During his two years at Wake Forest Mr. Archer helped expand and teach courses: Introduction to Film and Empirical Research in Communication. He continued doing video production work whereby he created educational videos for empirical research studies. In 2009 Jason was elected graduate student representative by his peers and faculty. He received his Master of Arts degree in spring 2010.

Mr. Archer’s future plans are wide open.