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In this exploratory research paper, the popular social tagging system site, Pinterest, is examined through the lens of narrative metadata creation. Based on content analysis taken from a selected sample of 'pinboard' names from Pinterest, and set names from Flickr this research analyzed the types of names given by users. With a specific focus on the use of Hubble Space Telescope images, encompassing ten named items from each site, this paper found that the social network aspect of the Pinterest leads users to express themselves through their choice of 'pinboard' names. In contrast, Flickr users relied on naming conventions that were more descriptive of the image content.

Headings:

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NARRATIVE METADATA CREATION AND PINTEREST:
AN EXPLORATORY STUDY

by
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Introduction

Social tagging systems integrate social tagging and a social network. Pinterest is an innovative example of the form that has found massive success in recent years. The emphasis on the social network aspect of Pinterest makes it unique from other social tagging platforms like Flickr. Within social tagging systems, users participate in more in-depth metadata creation than simple tagging; users are creating narrative metadata. In social tagging systems, the users' connection to the item they've tagged takes an extra dimension. This is because the users are participating in a social network and, there is an increased desire to share and represent the item with a peer group. It is likely that folksonomies created as a result of social tagging systems like Pinterest are more representative of the user than the object being tagged. There is a need to begin exploratory research into this narrative metadata creation.

Folksonomies: A Literature Review

Social tagging is an important aspect of metadata creation. One does not have to be an expert to have the ability to tag. The technical level of expertise required is also quite low, with many systems supporting simple interfaces that just require a user to type out a tag. User-created metadata tags create a folksonomy. Thomas Vander Wal coined the term folksonomy in 2004, combining taxonomy and folk. Unlike taxonomy, a folksonomy is created from the bottom-up. Folksonomies have proponents and detractors, and its defining characteristic, that it is created by multitudes of non-experts, can also be considered one of its greatest weaknesses.

Among the clear advantages to social tagging is that the user and the searcher are often one and the same, “in social tagging systems, taggers are indexers and searchers at the same time. Therefore, the probability that indexers and searchers will agree on the subjects of a given resource and use the same combination of terms to express the given subjects would be higher in social tagging systems than in other indexing and metadata creation systems” (Lu 2010). The folksonomy created is based on the vocabulary of the users, not on a set controlled vocabulary rigidly defined by experts. There is natural language being used effectively within the social tagging system. The language of the searchers, and the indexers is close to identical, no person had to learn the rigidly controlled vocabulary of a taxonomy and alter their own language instincts to find the best available resource. This is important because outside of social tagging, one of the main questions in metadata creation is whether it should be professionally or author created. This question is still an important aspect of metadata creation, but social tagging adds another dimension.

Social tagging allows the inclusion of users and their particular perspective. As phrased by Weinberger (2005) “readers, not just authors, get to tag objects. An author is an authority when it comes to what she intended her work to be about, but not about when it means to others. When it comes to searching, what a work means to the searcher is far more important than the author’s intentions.” All in all, a folksonomy can improve findability due to the tags associated with it. This mantra is repeated by Campbell (2006) when he states “if you let users tag their own resources in their own ways, with their own words, patterns of order will emerge; these patterns will be truer, more convincing, more user-centered, and more useful than the patterns imposed by formal classification schemes.” Social tagging puts power into the hands of the users, and this dramatically changes how resources are accessed.

In previous cataloging systems, the author’s intent was deemed far more important. Author intent was given priority over other’s perceptions. According to Peterson (2006), “recognizing an author's intent can sometimes be difficult; nevertheless, the goal is to recognize the author's intent over others' interpretations.” Taking Weinberger’s argument into account, with a folksonomy, it does not matter what the author intended, only what the author achieved according to the reader. There is no longer a push to keep the author’s interpretation. The only thing that is taken into account is how the user perceives the final product. Author intent does not matter when a searcher is looking to find a resource, if the author was not successful in communicating their purpose, then the resource would not be available under those false pretenses in the results of a folksonomy search. The end result, and the effectiveness of that, is more important than intent. This is not a murder trail, the author could have intended for an

object to have a completely different meaning than what the crowd interprets. However, the crowd has all the power in a social tagging environment.

Another key feature of social tagging is the emphasis on the social aspect. Folksonomies grow up around communities. Angeletou (2007) brings up an important feature about the nature of the community; “one of their distinctive features is that they are open, uncontrolled systems where users can annotate resources with different tags depending on their social or cultural backgrounds, expertise and perception of the world.” The members who make up the community help form the type of social tagging that takes place. A folksonomy is reflective of the folks that lend a hand in its creation. The creation of a community filled with different perspectives of the world also allows for a more diverse and complete view of a collection. A variety of social and cultural backgrounds are represented in social tagging communities that are not possible in the professional class. This will not necessarily result in a folksonomy that is superior to taxonomy, but it will be different. And allowing differing viewpoints and perceptions to thrive is a hallmark of social tagging.

The users surrounding a folksonomy cannot be underestimated, “the context of the use in these systems is not just one of personal organization, but of communication and sharing. The near instant feedback in these systems leads to a communicative nature of tag use” (Mathes 2004). When a user posts a tag, it shows up immediately. Unlike a traditional taxonomy, which is created, then released, a folksonomy is created from the bottom-up, so any term can be added to the folksonomy as soon as a member in the community uses it. Rafferty (2007) makes this same point, “tagging is cheaper and more economical in terms of time and effort than traditional indexing practice, and that the

instant feedback that can be derived from user generated tagging can facilitate a high level of community interaction that would probably not be possible if decisions had first to be made about the codes, conventions and rules governing any tightly controlled taxonomy.” The combination of a community and instantaneous metadata creation means that social tagging takes place in a dynamic environment.

Within this environment, users learn from one another. This important interaction has not gone unnoticed by researchers, it has been noted that the “social aspect of tagging services acts as a kind of feedback mechanism for the folksonomy. When a participant observes how others have tagged a resource, they are more likely to adopt a similar tagging vocabulary when describing related resources” (Sinclair 2008). The inherently social nature of the folksonomy means that the folksonomy is made more accurate and coherent when more users are engaged within the community. This makes social tagging a member of a small group of services that “actually become better as they are more heavily used,” (Campbell 2006) the larger the scale of use, the better. A folksonomy is easily scaled up. Though the larger a social taxonomy gets, the more opportunities there are for mischief. Weinberger (2005) predicted “as tagging becomes more popular, it will become more attractive to spammers who purposefully mis-tag their resources in order to make them more visible.” This can already be seen in multiple social communities. Spammers have already made use of comment sections in order to show malicious links, the infiltration of social tagging communities is not far behind.

There are some forms of metadata creation that are inherently better suited for social tagging. Chief among these are images, sites like Flickr have built part of their platform on user created metadata tags. Angeletou (2007) noticed “when people tag

resources, especially pictures, they more often tend to tag them with specific names rather than more abstract concepts.” Automatic metadata creation for images has not yet been perfected; a large portion of metadata creation for images must be manual. The technology simply does not exist yet. However, social tagging is a perfect medium for the creation of metadata for images. The focus on specific names rather than an abstract concept reflects the needs of the user. As discussed above, social tagging has a feedback mechanism; users desire the use of specific names. Many of the articles examined mentioned ‘desire lines’ and Peter Merholz’s argument that social tagging reveals the desired pathway of the digital community. The wisdom of the crowd is supposedly placed front and center when referring to metadata creation by the social tagging of the community. Whatever the crowd most desires will be present, and this will in turn serve the efficiency of the folksonomy. According to Furner (2010), “the primary innovation of tagging as a form of indexing lies in its democratic, author/reader-led nature.” The fact that the main users of a system, or social tagging community, are also the contributors of content is a vast departure from previous systems. Also dramatically different, is the inherent democratic nature of social tagging. In a folksonomy, every user is given the same weight. The creation of a folksonomy is a bottom-up approach, there is no direction from above, nor any direction except for the wisdom of the community itself as the folksonomy is being built.

Democratic Indexing

Democratic Indexing occurs when “individuals will have their own, potentially different, interpretation(s) of an image: the differences may be manifested as a different focus on parts of the image and different terms to describe the image” (Rafferty 2007). Because every user’s tags are given an equal weight, a true democracy is underway. Multiple interpretations are able to co-exist. Taking this point to the next level, it is possible for multiple contrary sets of tags to exist for the same object. Peterson (2006) takes a slightly negative view when she posits “some of the problems with folksonomies can be traced to problems inherent with relativism. The first is that folksonomy tags are not merely “messy”, they can be inaccurate. Because they assume a non-Aristotelian stance, the tags allow contraries to exist.” A user has complete freedom to tag an image with any descriptor they choose in a site like flickr. It is entirely possible that an image with a Christmas tree can be labeled ‘Halloween’ and ‘Christmas’ and unless we are talking about something specifically related to *The Nightmare Before Christmas*, it is not likely that the image actually supports both tags. One is inaccurate, but due to the democratic nature of the system both tags can exist on the same item. Things that have been tagged wrong are not controlled for within the social tagging community. There is the assumption that these mistakes and misnomers will take place, accidentally and maliciously intended. However, it is also assumed that the wisdom of the crowds will eventually win out. The desire lines that Merholz references will make themselves known in the social tagging community. There may be terms that lay outside of the desire line, but the nature of the desire line is that multiple users build it up over time and in the end, the results reflect the best approach to tagging the resource.

These contrarian ideals are a characteristic of social tagging. Rafferty (2007) takes issue with the inherent social nature of social tagging, “tags are uncontrolled (except by the author of an image) and unmediated; there is nothing to stop inappropriate use nor the generation of tags that are (nearly) identical in meaning or (mis-) spelling to other tags.” The lack of an authority control can be seen as an insurmountable challenge, or as a highlight of a folksonomy and social tagging community. There is nothing to stop the flourishing of inaccurate tags and there is nothing that prevents the flourishing of user-created tags. The lack of a controlled vocabulary means that the community is open to all comers. The trade-off of having a dynamic user community is that, at times, there will be a profusion of inaccurate tags. However, because the community is engaged the folksonomy is “dynamically updated by large masses of people;” thus, “folksonomies reflect the newest terminology within several domains” (Angeletou 2007) there is no lag apparent in social tagging. The community quickly adapts novel terminology since users are learning from one another’s use of tags. What one can view as a weakness of social tagging, another can view as a positive attribute. Social tagging is a dynamic environment that can result in inaccuracies, but also allows a path for a desire line to thrive.

The social nature of tagging provides several opportunities for the semantic web. “An important aspect of a folksonomy is that is comprised of terms in a flat namespace: that is, there is no hierarchy, and no directly specified parent-child or sibling relationships between these terms” (Mathes 2004) so there is a lot of opportunity for connection to be made. Semantic relationships between terms can revolutionize searching within a folksonomy. At the moment, there are few systems that return

anything more than related terms, According to Angeletou (2007) “most of the folksonomies provide functionalities to derive “clusters” and “related tags”, which apparently also rely on co-occurrence information and clustering techniques,” but this does not really provide the user for all available returns. In a semantic environment, a search for Christmas would encompass numerous other terms. Ideally the system would be able to discern that Xmas, Noel, and other terms were related. If these connections could be established, there are more possibilities for search within a folksonomy. Angeletou examined this in 2007 and found that things were not at a point where anything could be placed into practice, but the potential in the future was enormous.

Though the democratic nature of social tagging is one of its key features, it is valid to criticize the limits of search results in a folksonomy. The semantic web may be the future, but currently, there are undoubted issues. As Rafferty (2007) points out, “the uncontrolled use of tags leads to terms that are too broad, retrieving a set that is too big to browse, or so specific that few items are associated with the term.” Users latch on to similar terms, a positive aspect of social tagging, which lends a hand in the creation of a folksonomy that suits the needs of the users. However, the needs of the users of the community might vary greatly for an outsider. Though social tagging is renowned for its extremely low barrier of entry and its inclusive nature, in reality there are barriers for searchers who are unfamiliar with the social tagging community. Once again, the open-source nature of social tagging is at once its greatest strength, and most glaring weakness. “Different individuals have different mental models of the ways in which use of tagging services can potentially help them to pursue their goals,” (Furner 2010) it is the interaction of all these varying mental models that creates a folksonomy. Proponents

of social tagging will adhere to the argument that the wisdom of the crowd will prevail, and the desire lines will be made apparent, but one cannot forget the limitations within a folksonomy. To really gain all the benefits from a social tagging system one must be a user/author, in order to gain perspective on both sides of a social tagging community.

It is important to remember, “ontologies, taxonomies, and folksonomies are not mutually exclusive,” (Morville 2005) they can co-exist. And though there are noted issues within a folksonomy, “the overall usefulness of folksonomies is not called into question; just how they can be refined without losing the openness that makes them so popular” (Peterson 2006). Social tagging is popular because it allows users complete control over their own organizational system. Weinberger (2005) says is best;

It sticks it to The Man, especially if The Man happens to be a traditional taxonomist [. . .] The tagging movement says, in effect, that we’re not going to wait for the experts to deliver a taxonomy from on high. We’re just going to build one ourselves. It’ll be messy and inelegant and inefficient, but it will be Good Enough. And, most important, it will be ours, reflecting our needs and our ways of thinking.

The nature of social tagging communities means that there is a real sense of ownership and independence in the creation of a folksonomy. Users are free to choose their own terms; they can create portmanteaus to suit extremely specific needs. There may be problems with search, certain resources may have contrarian tags placed on them, and the wisdom of the crowd may be misguided at times. However, there are dynamic folksonomies in action, they respond quickly to the needs of the user because of instant feedback. A folksonomy is tailored to the needs of its engaged community, it is not perfect, but it is not meant to be a system that works for everyone. A folksonomy is a

product of its environment; the context of its creation is an indelible feature. In conclusion;

Tags are a simple, yet powerful, social software innovation. Today millions of people are freely and openly assigning metadata to content and conversations. Unlike rigid taxonomy schemes that people dislike, the ease of tagging for personal organization with social incentives leads to a rich and discoverable folksonomy. Intelligence is provided by real people from the bottom-up to aid social discovery. And with the right tag search and navigation, folksonomy outperforms more structured approaches to classification. (Morville 2005)

There are huge opportunities ahead in the field of social tagging.

Social Tagging Systems

The next frontier in folksonomy creation is social tagging systems.

Pinterest is an excellent example of this new breed of social collecting. Zarro and Hall (2012) define social collection as “the collection, categorization, and representation of a digital object in a system that is accessible via the Web.” This is not a private practice; the collections of individuals are made available to the public. Users “create and annotate surrogates of digital objects found on the Web, such as photographs or webpages,” these annotations create metadata. Unlike other widely used public forums like Flickr, Pinterest users are not primarily limited to tagging their own content. The structure of Pinterest encourages users to gather images from a wide variety of sources, which they then curate.

Users ‘pin’ images on ‘pinboards’ and have the ability to ‘repin’ images that have been placed on other users’ boards due to the social nature of the site. Users can have multiple boards, and each board can have as many pins as the user wants. The user names the board, and any pins/images on the board. When a

user repins an image from another user, they have the ability to change the name of the image, and to comment on the image. Personalization is the driving factor behind Pinterest's appeal, and what a wide appeal. In February 2013, Reuters reported that Pinterest had 48.7 million global users, and is among the top ten most popular social media sites.

The social curation occurring among Pinterest's users provides a fascinating study of social tagging. Table 1, below, from Zarro and Hall (2012) provides an excellent analogy of user's actions and traditional information science conventions:

Table 1. Pinterest activity compared to library services

Pinerest Activity	Library Service
Create and name pinboard	Taxonomy development
Assign pinboard to top-level category	Cataloging
Select a website with images suitable for pinning	Collection development
Select image to pin	Surrogate and Representing
Pin item to pinboard and comment	Indexing and Abstracting

Users are doing far more on in social tagging systems than with previous folksonomy creations. Users are participating in what Marlow et al. (2006) describe as free-for-all tagging. Users are free to tag any resource, this differs from self-tagging, where users are limited to items they have created themselves. Additionally, this free-for-all tagging system on Pinterest does not limit the names users can use through a suggestive system. Though there are suggested names for pinboards based on popular categories that Pinterest highlights during the initial tutorial, users have the freedom to choose their own

names, and to change the names of their boards at any time. The changing nature of tagging, and the users ability to change tags through time is an interesting aspect of social tagging systems.

The freedom extended to the user to alter their Pinterest environment encourages narrative metadata creation. Users not only have the ability to name their boards and pins, but they can comment on the images as well. Users share their stories, and relations to the image they have chosen to include on their board. Zarro and Hall (2012) highlight this narrative form of metadata creation as an area ripe for further study. There is a need to study how metadata creation has been impacted by the introduction of more social tagging systems. Assuming that users are taking full advantage of their ability to name boards, without limitations placed by the site, there must be a wide variety of names in use, chosen at the sole discretion of the user. More in-depth and exploratory research into this area is needed.

Research Objectives

The objective of the research reported on in this paper is to begin an exploratory study on the narrative metadata creation currently taking place on the social tagging system Pinterest. A selected sample will be taken from Pinterest and Flickr in order to perform a content analysis. The sample will include an exploration of the scientific terms ‘space’ and ‘hubble.’ The research seeks to discover if the scientific nature of the terms has an impact on the type of narrative metadata that users have created. The role of the social tagging system will be analyzed by comparing the content taken from both sites.

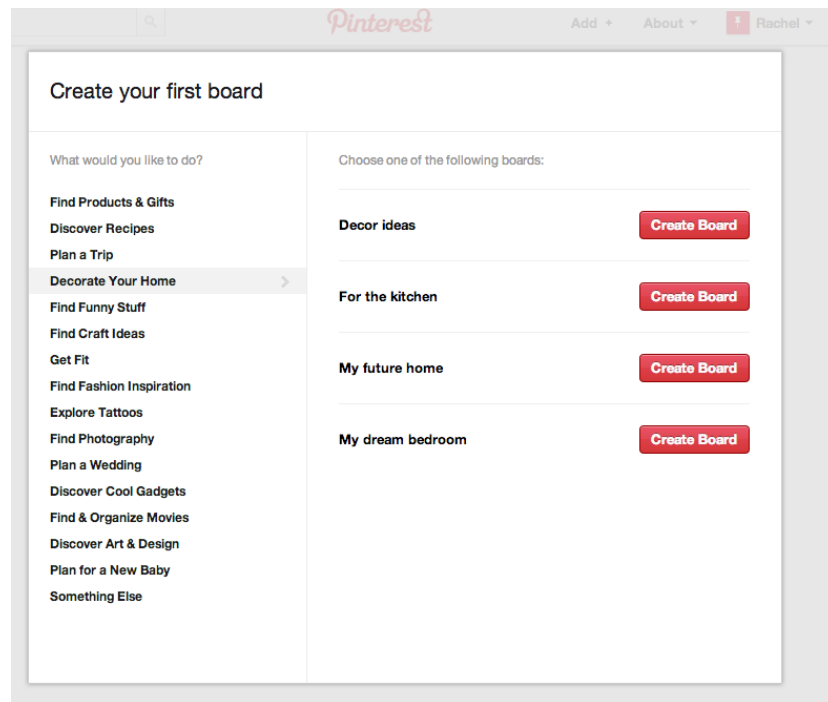
Methods

An exploratory research study and content analysis method were used to study the research goals detailed in the previous section. The researcher began the exploratory aspect of the study by signing up from the free social tagging system Pinterest (<http://pinterest.com/>) and detailing the necessary steps of board creation. After the creation of a board, the search for images to pin was shown in the Pinterest interface. Next, the researcher performed an annotation of the top results found following a search of scientific images. Then after a search for the term space, a more detailed search of the term was performed to gather a collection of images for use as an example. To complete the information gathering needed for the selected sample, a specific focus on the representation of images of the Hubble Space Telescope was used. The Hubble Space Telescope was chosen as the preferred term due to its scientific value and popularity of images of the telescope in pop culture. Searching the term ‘hubble’ was specific enough that it only returned results that were related to the telescope, but the query ‘hubble’ was also used colloquially as a term for images taken in outer space. The researcher collected the names of pinboards that included images from the search of the term ‘hubble.’ Once results were captured, the selected sample from Pinterest was complete.

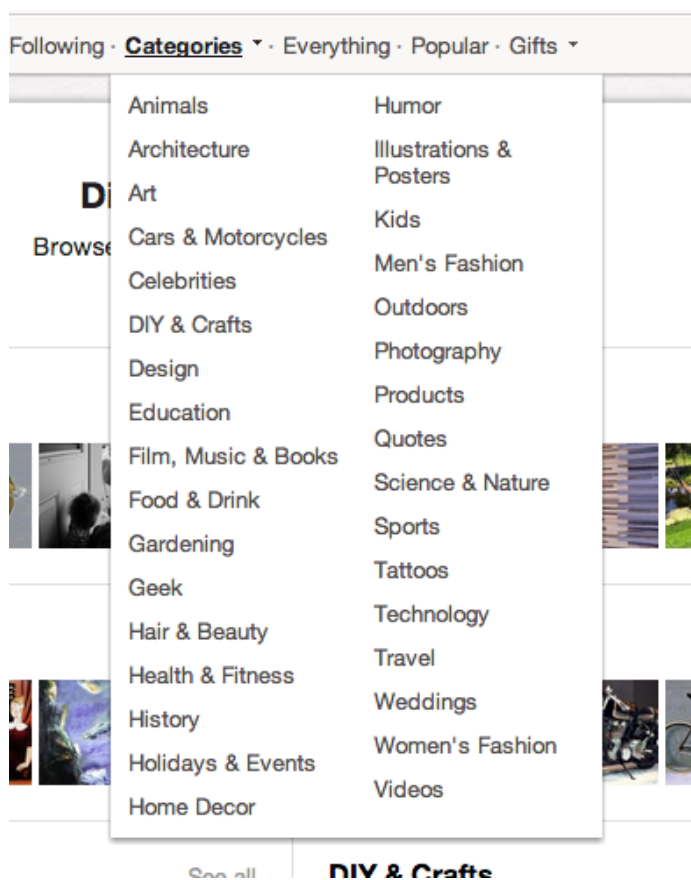
Similar steps followed for the site, Flickr at <http://www.flickr.com/> in order for a comparable sample selection. Due to different interface of the Flickr website, a search for the term hubble resulted in images and names of sets, galleries, and groups. These names are analogous to pinboard names. The researcher collected the names used by Flickr users and completed the sample. The selected data was then analyzed.

Data Analysis and Discussion

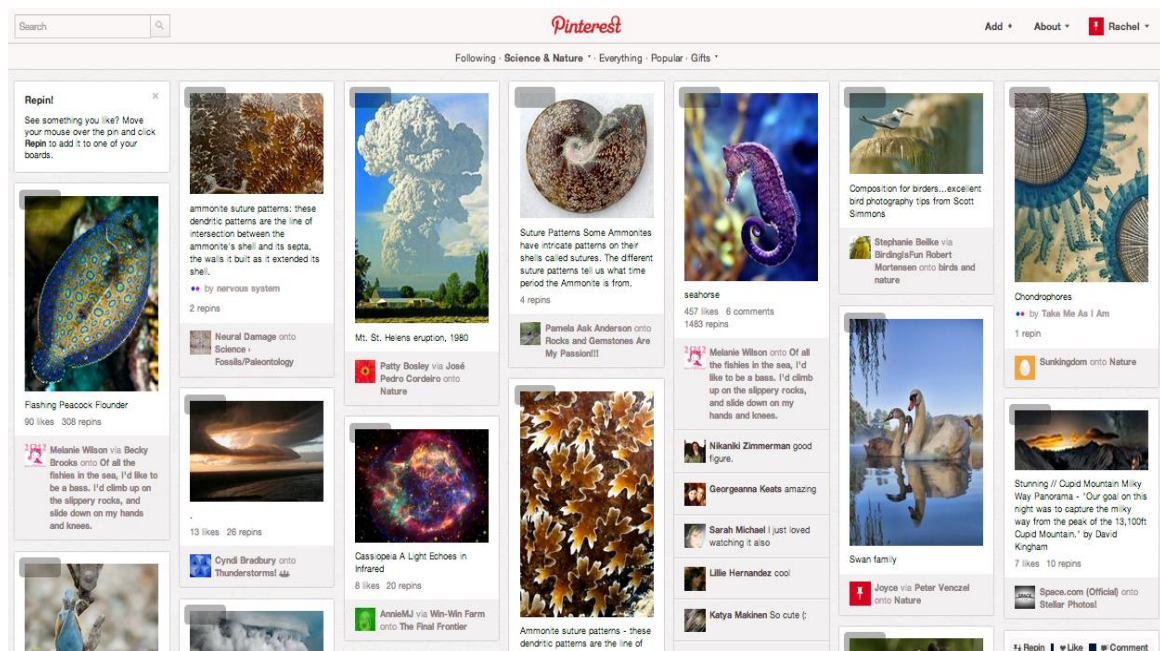
Upon login, Pinterest suggests several board names. The user is encouraged to create a board following the topics and naming conventions chosen by Pinterest. Of the 16 headings answering the initial question of ‘What would you like to do?’ Pinterest has several board name ideas for each. The user is not limited to these board ideas, but the ease of creating a suggested board increases the likelihood that a new user will choose some starter boards from the list.



After the user creates their first board they can begin pinning and repining. In order to explore what is currently on the site, users can search or view categories. Pinterest has divided up categories into 33 separate entities.



From this point, the user can search by category. Under 'Science & Nature' this variety of pins were found on March 2, 2013:

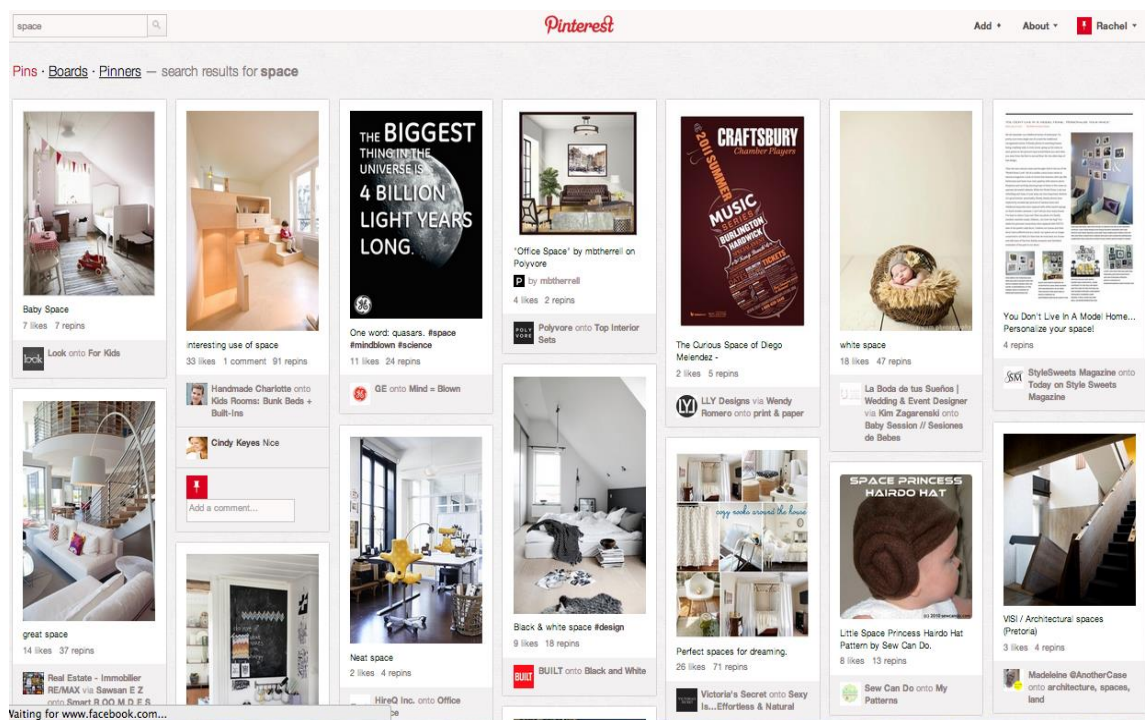


There are a wide variety of board names in use. Among the top ten results the user created board names are—

- birds and nature
- Science > Fossils/Paleontology
- Nature
- Rocks and Gemstones Are My Passion!!!
- Nature
- Of all the fishies in the sea, I'd like to be a bass. I'd climb up on the slippery rocks, and slide down on my hands & knees.
- The Final Frontier
- Favorite Things in Nature
- Thunderstorms!
- Stellar Photos!

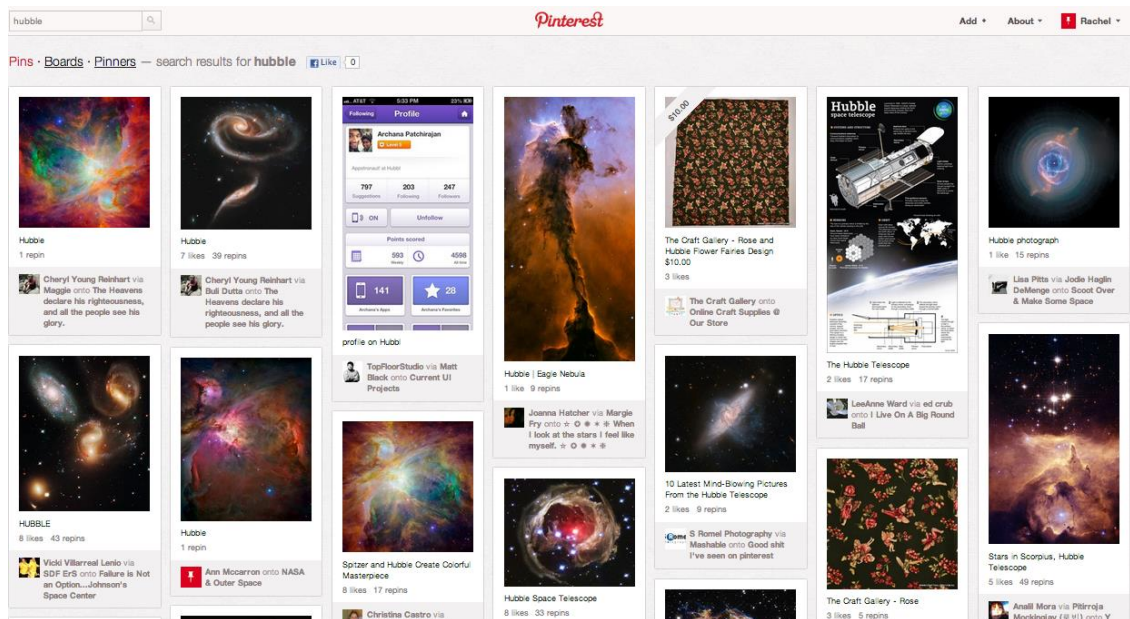
As one can see, there is a range of names, from creative puns—‘The Final Frontier’ for a board that appears to be focused on space photographs, and the simple ‘Nature.’

One can also search by term instead of category. Searching the term ‘space’ introduces the concept of polysemy—one word can have many meanings.



‘Space’ as a noun, can either refer to the great expanse of space beyond Earth, or the great expanse of one’s living room. Among Pinterest’s most popular subject areas are ‘Home Décor’ and ‘Design’ (Hall, 2012), so it is not surprising that the search for space yields such a response. The screen capture above returned results searching by pin. The user also has the option to search by board. When the search type is altered, the same polysemy results are found. In this instance, each board has been titled ‘Space’ and we can see the different concepts of the word represented. However, the two meanings of the word are not used interchangeably. A board focused on space, as a decorative term, does not appear to include any pins about space as a natural or scientific term.

When searching ‘hubble’ there is a higher correlation of pinboards relating to the concept of space as part of the great beyond. There is a collection of pins, and the information below each pin tells us the name of the board from which it is associated with.



This new board also gives us further information about what people are naming their boards. These are more examples that fall under the ‘Nature & Science’ category.

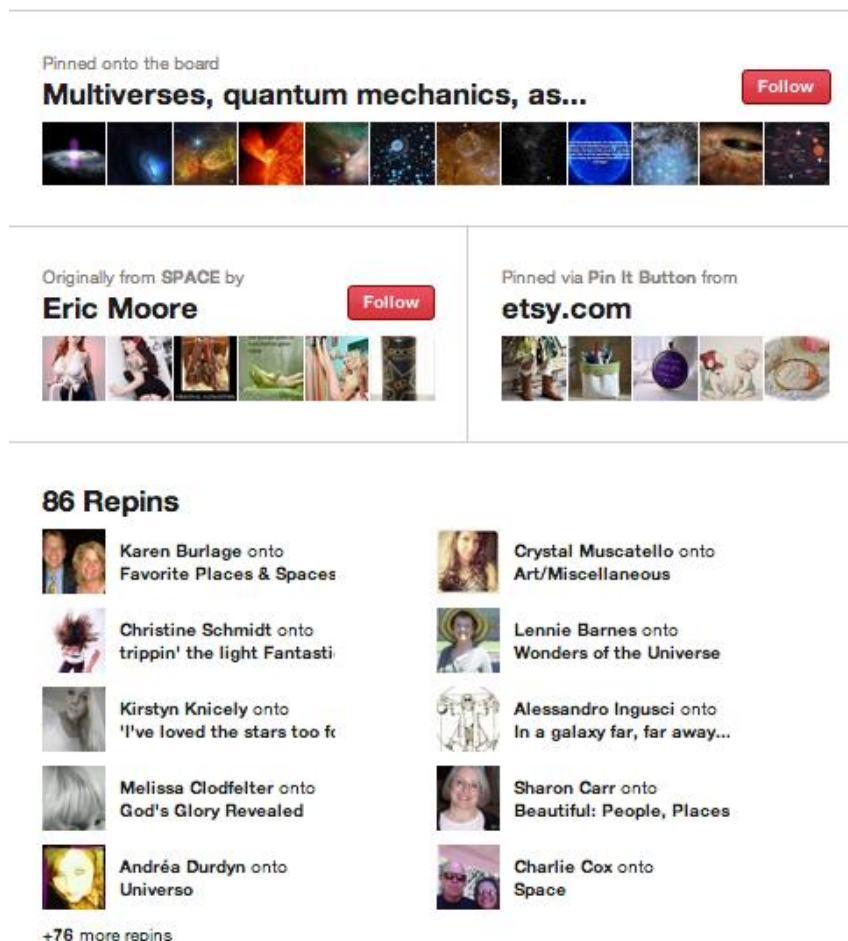
- The Heavens declare his righteousness, and all the people see his glory.
- Failure Is Not an Option...Johnson’s Space Center
- When I look at the stars I feel like myself.
- I Live On A Big Round Ball
- Scoot Over & Make Some Space
- NASA & Outer Space

Looking through the pins that appear from the search of the term ‘hubble’ one can also access information about how many times an individual pin has been repined by other users. The pin ‘Hubble’ has 39 repins, which means that it has been pinned onto 39 distinct boards, each with it’s own user created name. Among the boards to feature the same pin—

- The Heavens declare his righteousness, and all the people see his glory.
- Geek
- Space
- Hubble Telescope Pictures
- Humor
- Beautiful Things
- Space
- Favorite Places & Spaces

Another pin that has been repined 33 times also shows a wide variety in board naming

convention.



Users create their own boards, and their interpretation of the image changes the nature of the image itself. A single image can represent geekiness, humor, beauty, and an example of a type of photograph. The repining of an image changes the meaning. Users are part of a subtle change that occurs every time they interact with an image on Pinterest. The images in question are digital surrogates for items that have been found across the web. The original context is lost, and the item is reduced to an image, which is then manipulated by users as they pin such an image to a variety of boards.

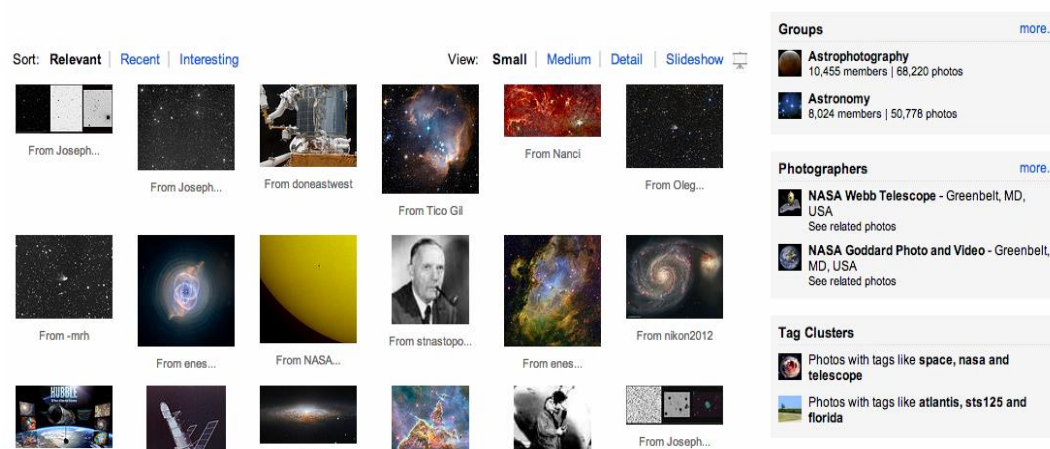
This interaction is very personal and reflects the narrative nature of this type of

metadata creation. Moreover, it reflects Pinterest's role as a social tagging system where users are encouraged to use their curated pinboards as an expression of their individuality. The naming of the pinboards represents a user taking control of an image for their own expressive purpose. However, the social group of peers that interact with each other also drives the overall theme of metadata being created. Interests can change over time, but at any specific point in time, the social norms of a group of friends can drive the naming process. For example, the individual that named a board about space images 'The Final Frontier' was speaking to a group that recognizes the Star Trek reference. Pinterest was not created to aid in image retrieval. In fact, searching for images is an arduous process on the site. Pinterest lets its users visually explore boards that they have chosen to follow, based on existing relationships or similar interests. The social aspect of the site cannot be separated from its role as an aggregator of images.

While individual user expression and personalization is important, Pinterest is also commoditizing lifestyles. Hall and Zarro (2012) found that up to 45% of pins originated as blog posts. Users of the site appropriated outside objects that they desire, or that they deem to represent themselves. The names of the pinboards hint at the striving nature, the ideal that the user tries to establish from their curated objects. Pinterest fully acknowledges that it is peddling the ideal—the suggest board names under 'Decorate Your Home' include 'My future home' and 'My dream bedroom.' The narrative ideal shown in the naming of pinboards is more reflective of the user than the images.

In contrast to the search of the term 'hubble' on Pinterest are the results from the same search on the site Flickr. Flickr is a photo sharing website where the descriptions

do not come across in such an idealistic manner. Here are the results from searching ‘hubble’



Users choose tags like ‘space, nasa and telescope’ there is more of an emphasis on description than narrative expression. This is much clearer upon comparison of the names of the set and galleries that hold Hubble images. In Flickr, the user displays photos together by creating sets and galleries. These sets and galleries are analogous to pinboards on Pinterest. While Pinterest gives examples such as ‘I Live On A Big Round Ball’ Flickr has much more descriptive and simple titles. Flickr users are much more straight to the point. Image retrieval is a more important aspect of the site. The users of Flickr have created a community where the importance of locating images is more important than the expressive nature chose by users in the Pinterest community.

Among the Flickr titles, there are many instances of titles that incorporate the word astronomy. There are titles that involve the term ‘astro-photography’ which is a very descriptive way to describe an image taken from the Hubble Telescope. Some others include:

- Latest Supernovae 2013

- Catalina Real-Time Transient Survey
- Amateur Astronomy
- Astro-Photography and Similiars
- Astronomical Images
- Astronomy
- Astronomers Talk
- Astronomy 123
- Astronomy for all
- ASTROPHOTO

This photo also appears in

- ▶ [Latest Supernovae 2013](#) (set: 142)
- ▶ [Catalina Real-Time Transient Survey](#) (set)
- ▶ [Amateur Astronomy](#) (group)
- ▶ [Astro-Photography and Similiars](#) (group)
- ▶ [Astronomical Images](#) (group)
- ▶ [Astronomy](#) (group)
- ▶ [Astronomers Talk](#) (group: 8,348)
- ▶ [Astronomy 123](#) (group: 6,783)
- ▶ [Astronomy for all](#) (group)
- ▶ [ASTROPHOTO](#) (group)
- ▶ [Astronomy.FM](#) (group)
- ▶ [Astrophotography - Supernovae](#) (group)
- ▶ [BBC Sky at Night and...](#) (group)
- ▶ [Black and White](#) (group)
- ▶ [BLACK AND WHITE PHOTO HEAVEN!](#) (group)
- ▶ [Deep Space Astrophotography](#) (group)
- ▶ [Là-haut parmi les étoiles /...](#) (group)
- ▶ [Nature - Astronomy](#) (group)
- ▶ [Night Sky Observations](#) (group)
- ▶ [Sky @ Night](#) (group)
- ▶ [Sky at Night](#) (group)
- ▶ [Universe II](#) (group)

Instead of representing the user, the terms to describe the image are representative of the image itself. Though Flickr involves many more instances of social tagging than Pinterest due to the larger size of its image collection, the site lacks the social network aspect that has driven the rapid growth and success of Pinterest. With Pinterest, the user chooses images to pin on their boards in order to represent themselves to the world. With Flickr, photos are added to groups because they fit within the stated aims of that group. The title is the best indicator of what that group has sought to collect. Hubble images will be added to groups that have been set up to collect space photography. However, Pinterest users can see a Hubble image and use that to show others an example of an item they find beautiful, or as a representative of ‘God’s Glory Revealed.’ The interests of the user do not matter as much on Flickr as they do on Pinterest because they are not the same driver behind metadata creation.

The results found from analyzing Flickr and Pinterest are not surprising considering the different aims of each site. Flickr exists to share photos for the purpose of sharing photos, Pinterest users share images as representations of themselves. Once this difference is accepted, it becomes clear that Flickr tagging would be more descriptive and geared toward retrieval. The names of galleries, sets, and groups on the site are clearly and concisely named. The names of pinboards on Pinterest are given more narrative names because they are an expression of then individual user.

The wide variety of topics that include images from the Hubble Space Telescope on Pinterest is surprising. Areas far outside of the natural fit of ‘Science & Nature’ were covered. Users chose to pin images taken from Hubble to pinboards that represent a large array of interests and topics. Pinterest provides categories, but users are free to

extend their boards beyond such confines. In contrast, Flickr users do not have categories set aside and labeled for them, but they appear to segregate into more specific categories through their own efforts. On Flickr it is of interest to note that the names assigned to sets, galleries, and groups are so straightforward given that there are no restrictions on titles. Given the same freedom as Pinterest users, Flickr users demonstrate a completely different naming system. Naming conventions express the content of the photos on display in most instances. The context of the social tagging system dictates the naming conventions on display.

Democratic indexing is at work on both sites. The results of this exploratory study indicate that there is a wide range of differences in the kind of narrative metadata creation found among the different social tagging systems.

Conclusion

The goal of this exploratory research was to find out the impact of narrative metadata creation on a social tagging system site like Pinterest. Additionally, this research sought to discover if a scientific term like ‘hubble’ altered how users of the sites Pinterest and Flickr participated in naming conventions, a form of metadata creation. It was found that, due to the emphasis on the social network within the social tagging system Pinterest, the user participates in a more narrative nature of metadata creation that that seen in previous social tagging systems like Flickr. Using a selected sample as the basis for a content analysis, it was found that a search of the term ‘hubble’ brings up similar images on both sites, but the board names and groups associated with the images vary widely.

Limitations of this exploratory study are the very small sample size, and reliance on data that was gathered on a single day. The selected sample was the result of searching a single term; a different topic may have resulted in different results. More in-depth research across a wider range of topics is needed to see the true impact of this narrative form of metadata creation.

Though there were limitations, this exploration was an important first step. This research indicated that social tagging takes on many forms, and is reflective of the community that engages in the tagging. The folksonomy created by users of each site cannot be expected to be similar, because the needs of each individual community dictate the type of tags that the users choose. With Pinterest, the boards are a way for members to express themselves. They might be seeking to showcase their individuality,

or their membership to a group of like-minded individuals. Whatever their inclination, they take the opportunity that naming their boards offer to express themselves to others.

Flickr group names represent a collection of images, and the names of the groups express the image content within those groups to other users.

Bibliography

- Abreu, Amelia. (2013). Collaborative Collecting: A Literature Review. *InterActions: UCLA Journal of Education and Information Studies*, 9(1), Retrieved from:
<http://escholarship.org.libproxy.lib.unc.edu/uc/item/43h2342f>
- Angeletou, Sofia; Sabou, Marta; Specia, Lucia and Motta, Enrico (2007). Bridging the gap between folksonomies and the semantic web: an experience report. In: *The 4th European Semantic Web Conference 2007 (ESWC 2007)*, 3-7 Jun 2007, Innsbruck, Austria.
- Campbell, D. Grant (2006). A phenomenological framework for the relationship between the semantic web and user-centered tagging systems. In *Proceedings of the 17th SIG Classification Research Workshop*. Online:
<http://www.slais.ubc.ca/users/sigcr/sigcr-06campbell.pdf>.
- Furner, Jonathan (2010) 'Folksonomies', *Encyclopedia of Library and Information Sciences*, Third Edition, 1: 1, 1858 — 1866
- Golder, S., and Huberman, B. A. (2005). *The Structure of Collaborative Tagging Systems*. HP Labs technical report, 2005. Available from
<http://www.hpl.hp.com/research/idl/papers/tags/>
- Hall, Catherine and Zarro, Michael (2012). Social curation on the website Pinterest.com *Proceedings of the American Society for Information Science and Technology* 49:1 p.1-9 <http://dx.doi.org/10.1002/meet.14504901189>

- Heckner, M., Muhlbacher, S. and Wolff, C. (2007). Tagging tagging: a classification model for user keywords in scientific bibliography management systems, Proceedings of the 6th European Networked Knowledge Organization Systems (NKOS) Workshop at the 11th ECDL Conference, Budapest, Hungary, available at:
www.comp.glam.ac.uk/pages/research/hypermedia/nkos/nkos2007/papers/heckner.pdf
- Kipp, M.E.I. and Campbell, D.G. (2006). Patterns and inconsistencies in collaborative tagging systems: an examination of tagging practices, Proceedings of American Society for Information Science and Technology, Austin, Texas, available at:
<http://dlist.sir.arizona.edu/1704/01/KippCampbellASIST.pdf>
- Qingfeng Li; Lu, S.C.-Y. (2008) Collaborative Tagging Applications and Approaches, *MultiMedia, IEEE* , 15, 3, pp.14-21, July-Sept. 2008
doi: 10.1109/MMUL.2008.54
- Caimei Lu; Jung-ran Park; Xiaohua Hu; Il-Yeol Song; (2010) Metadata Effectiveness: A Comparison between User-Created Social Tags and Author-Provided Metadata, *2010 43rd Hawaii International Conference on System Sciences (HICSS)*, pp.1-10, 5-8 Jan. 2010
doi: 10.1109/HICSS.2010.273
- Lu, Jung-ran Park and Xiaohua Hu. (2010) User tags versus expert-assigned subject terms: A comparison of LibraryThing tags and Library of Congress Subject Headings. *Journal of Information Science*, 36 (6) 2010, pp. 763–779
doi: 10.1177/0165551510386173 765

- Marlow, C., Naaman, M., Boyd, D. and Davis, M. (2006). HT06, tagging paper, taxonomy, Flickr, academic article, to read. Proceedings of the seventeenth conference on Hypertext and hypermedia (New York, NY, USA, 2006), 31–40.
- Mathes, Adam (2004). Folksonomies - Cooperative Classification and Communication Through Shared Metadata.
- Morville, Peter (2005) Ambient Findability, O'Reilly ISBN: 0-596-00765-5.
- Peterson, Elaine(2006) Beneath the Metadata: Some Philosophical Problems with Folksonomy. D-Lib Magazine, Vol. 12 Num. 11. ISSN 1082-9873
- Rafferty, Pauline ; Hilderley, Rob (2007) "Flickr and Democratic Indexing: dialogic approaches to indexing", Aslib Proceedings, Vol. 59 Iss: 4/5, pp. 397 – 410
- Sinclair, James and Cardew-Hall, Michael (2008). The folksonomy tag cloud: when is it useful? Journal of Information Science 2008 34: 15 originally published online 31 May 2007 DOI:10.1177/0165551506078083
- Van Hooland, S, Rodriguez. E. M. & Boydens, I. (2011). Between Commodification and Engagement: On the Double-Edged Impact of User-Generated Metadata within the Cultural Heritage Sector. Library Trends 59, 4, pp.707-720.
- Voß, Jakob (2007) 'Tagging, Folksonomy & Co – Renaissance of Manual Indexing?' Submitted to the 10th International Symposium for Information Science, Cologne.
- Weinberger, D. (2005) Tagging and Why It Matters.
<http://cyber.law.harvard.edu/sites/cyber.law.harvard.edu/files/07-WhyTaggingMatters.pdf>
- Yi, K., & Chan, L. M. (2009). Linking folksonomy to Library of Congress Subject Headings: An exploratory Study. Journal of Documentation, 65(6), 872-900.

Zarro, Michael and Hall, Catherine (2012). Pinterest: social collecting for #linking #using #sharing. Proceeding JCDL '12 Proceedings of the 12th ACM/IEEE-CS joint conference on Digital Libraries. Pages 417-418 doi>10.1145/2232817.2232919