

# Readers are Not Free-Riders: Reading as a Form of Participation on Wikipedia

Judd Antin and Coye Cheshire  
School of Information  
University of California - Berkeley  
{jantin, coye}@ischool.berkeley.edu

## ABSTRACT

The success of Wikipedia as a large-scale collaborative effort has spurred researchers to examine the motivations and behaviors of Wikipedia's participants. However, this research has tended to focus on active involvement rather than more common forms of participation such as reading. In this paper we argue that Wikipedia's readers should not all be characterized as free-riders – individuals who knowingly choose to take advantage of others' effort. Furthermore, we illustrate how readers provide a valuable service to Wikipedia. Finally, we use the notion of legitimate peripheral participation to argue that reading is a gateway activity through which newcomers learn about Wikipedia. We find support for our arguments in the results of a survey of Wikipedia usage and knowledge. Implications for future research and design are discussed.

**Author Keywords:** Wikipedia, participation, free-riding, motivation, incomplete information, social computing

## ACM Classification Keywords

H.5.3 [Information Interfaces]: Group and Organization Interfaces – Collaborative computing, Computer-supported cooperative work, Web-based interaction

**General Term:** Human Factors

## INTRODUCTION

As an example of collective action, Wikipedia is unparalleled in size and scope. As of September 2009 Wikipedia, the “free encyclopedia that anyone can edit,” spanned 267 languages and contained more than 13 million articles [17], forming the 6<sup>th</sup> most visited website in the world [2]. Some have noted with awe that Wikipedia thrives in spite of a challenge that can short-circuit the production of public goods: when a good is freely available to everyone (it is non-excludable) and one person's use does not diminish the amount available to others (it is non-rival), an individual's most rational option is to “free-ride,” or take advantage of the efforts of others [18]. When individuals can free-ride, it creates a social dilemma in which the individually rational choice leads to a collectively irrational outcome. If everyone chose to free-ride, Wikipedia would not exist.

Permission to make digital or hard copies of all or part of this work for personal or classroom use is granted without fee provided that copies are not made or distributed for profit or commercial advantage and that copies bear this notice and the full citation on the first page. To copy otherwise, or republish, to post on servers or to redistribute to lists, requires prior specific permission and/or a fee.

*CSCW 2010*, February 6–10, 2010, Savannah, Georgia, USA.  
Copyright 2010 ACM 978-1-60558-795-0/10/02...\$10.00.

And yet Wikipedia does exist. Many have opted against solely free riding, and instead participate in a variety of ways. Prior research on Wikipedia has tended to focus on active participants such as frequent editors and administrators. This body of research has illustrated, for example, how valued work is rewarded on Wikipedia [7] and the manner in which Talk pages are used for strategic planning and policy enforcement [16].

In this paper we focus our attention on the other end of the participatory spectrum: Wikipedia's readers. Building on prior research, we present three arguments on reading as a form of participation: (1) a characterization of all readers as free-riders is inappropriate since many readers have incomplete information about their options; (2) reading itself constitutes a form of contribution, and; (3) reading Wikipedia is a form of legitimate peripheral participation through which individuals gain entrée and can move towards more active participation.

## READING ≠ FREE-RIDING

Contribution behavior in collective action is usually reduced to two categories: those who participate and those who free-ride [18]. In practice, however, this dichotomy proves overly simplistic [13]. Many Wikipedia readers are likely to be free-riders in the traditional sense – they make informed decisions to take advantage of the efforts of others instead of pitching in. However, it is essential to differentiate between reader-free-riders and reader-participants. Consider a scenario in which an individual reads a Wikipedia entry and notices errors, but does not fix them because he does not know what the system allows him to do. Acting on incomplete information, this individual is not a free-rider because the traditional notion implicitly assumes an informed choice [18].

This example illustrates that the presence or lack of information is an important factor in decision-making and participation. Incomplete information has been shown to exert a key influence on behavior in social dilemmas (e.g. [10]). Research in this area has typically focused on issues such as asymmetric information about others' endowments or the quality of goods in the market. Another important issue, however, is what individuals know about the “market” itself – details about how a collective action system actually works.

These details have been called operational knowledge, defined as information about the products of collective action, the processes through which those products emerge

and change, and the other people who participate in and benefit from the collective effort [3]. Since individuals differ widely in how they use and participate in online systems such as Wikipedia, most individuals are likely to have at least some gaps in their operational knowledge.

In the above scenario, if we assume that the individual chose not to edit with full knowledge of his environment we might erroneously infer a lack of motivation or a disregard for the benefits of contribution. If active user participation is an explicit goal for designers, accurately characterizing users' motivations, behaviors, and knowledge is essential. The key point is that, because many readers have incomplete operational knowledge, it would be a mistake to characterize all Wikipedia readers as free-riders.

### THE VALUABLE CONTRIBUTIONS OF READERS

As a descriptive term, "free-riding" has a negative connotation. Free-riders are often considered the scourge that prevents successful collective efforts, so much so that the basic challenge to the provision of public goods has been called the "free-rider problem" [18]. Much of the research literature in collective action is devoted to reducing or eliminating free-riders.

Wikipedia, however, is indicative of situations in which free-riding can be an asset rather than a hindrance. Prior research has acknowledged, for example, that reading is an indicator of the value of Wikipedia articles [12], and that reading without modifying a piece of text can reflect the perception of reliability [1]. Readers also provide a valuable service by acting as an audience [4]. In a study of the Chinese Wikipedia, Zhang and Zhu [19] took advantage of a reduction in audience size (as a result of the blocking of Wikipedia in mainland China) to do a pre-post comparison of contribution levels on the site. They found that the reduction in audience size corresponded to a decrease in contributions among users who were *not* blocked.

Research has shown that social and psychological influences such as the approval of others [5] and gaining reputation [8] can promote participation in collective efforts. Zhang and Zhu's results suggest that at least some rewards are sensitive to audience size. Wikipedia's readers, then, help to strengthen the rewards that motivate others to participate in more active ways.

### READING AS LEGITIMATE PERIPHERAL PARTICIPATION

When individuals enter new communities of practice, they tend to acquire knowledge about and experience with relatively simple tasks which are nonetheless important to the larger system. Lave and Wenger call these activities *legitimate peripheral participation* (LPP) [9]. Over time individuals become more embedded and engaged in the community and obtain complex knowledge about tasks that are more important for the community's goals.

In its role as a gateway to Wikipedia, reading constitutes a form of legitimate peripheral participation. Reading is clearly

the most common type of activity on Wikipedia [15], and likely the first activity that a newcomer undertakes. Lave and Wenger suggest that peripheral tasks tend to be simple and low-risk. For example, apprentices in West African tailor shops learned basic skills such as pressing clothes before moving on to more complex tasks like sewing undergarments [9]. As a peripheral task, reading Wikipedia is essential to the process of community engagement because it provides newcomers with *entrée*, a role in the larger system, and access to processes, products, and knowledge associated with full participation [9].

In their qualitative study of contributors to Wikipedia, Bryant et al. [4] draw on Lave and Wenger's work to examine the transition from novice Wikipedia editor to "Wikipedian." Their research reveals that many new participants arrive at Wikipedia in search of information about a particular topic. On finding it, newcomers also tend to fix errors and add content on topics that they are already familiar with through a process the authors call "serendipitous editing" [4]. The simple, low-risk activities of browsing and searching content, then, lead some individuals to more active forms of participation over time.

In their study of lurking in online forums, Preece et al. [11] also found that reading provided newcomers with the opportunity to learn more about their environment. Even if many or most individuals never actually contribute, Preece et al.'s findings support the suggestion that reading can be an important form of LPP in online environments.

### WIKIPEDIA KNOWLEDGE AND PARTICIPATION SURVEY

In order to explore reading as a form of participation, we conducted a Wikipedia knowledge and participation survey. In addition to basic socio-demographic questions, we focused on measuring the prevalence of operational knowledge about Wikipedia and whether that knowledge was systematically related to other forms of participation.

**Sample.** Participants in the survey were undergraduate students recruited from among the population of a large West Coast public university. The survey was given to participants while they awaited payment for their earlier participation in various unrelated experiments at the university lab facility. The survey took approximately 20 minutes to complete. 165 people completed the survey, 95 women and 70 men. The mean age of participants was 22.

**Survey Instrument.** We asked questions about frequency of reading and editing article content, as well as reading and editing Talk pages using a standard 6-point scale [6]. Participants also completed a 10-item true/false and multiple-choice quiz containing questions about operational details on Wikipedia. Based on a broad review of the literature on Wikipedia, we selected a set of representative questions about three core areas of Wikipedia knowledge: (1) functional capabilities and restrictions; (2) standards, policies, and power structures, and; (3) issues of authorship and audience (See Table 1).

Question (Topic Area)	% Correct
Anyone can add a Wikipedia page on any topic. (Capabilities)	57.0%
Wikipedia pages on some topics may be locked for editing. (Restrictions)	54.6%
An administrator on Wikipedia has which of the following powers? (Power Structures)	37.0%
Wikipedia cannot keep track of my edits when I'm not signed-in to my account. (Authorship)	32.7%
On average, how many people visit Wikipedia each week? (Audience)	23.0%
How far back in the edit history of a Wikipedia article is it possible to browse? (Capabilities)	20.6%
You must create an account in order to edit or create content on Wikipedia. (Restrictions)	18.2%
Automated computer programs called 'bots' can make changes to Wikipedia articles. (Authorship)	13.9%
Wikipedia encourages scholars to post original research on the site. (Standards)	10.3%
How are administrators chosen on Wikipedia? (Policies)	3.6%

**Table 1 - Questions on the Wikipedia operational knowledge quiz with topic area in parenthesis, ranked according to the percentage of participants who answered correctly.**

Participants were never forced to answer any question: “I Don’t Know” was always an option.

Since our instrument was an initial pilot of the operational knowledge survey, we chose a select set of questions to assess both general and specific knowledge about Wikipedia. Our goal was to develop a set of questions that could be refined and modified for future surveys.

#### **FINDINGS AND DISCUSSION**

Our participants overwhelmingly reported reading Wikipedia on a regular or semi-regular basis. All participants spent at least some time reading Wikipedia. More than 70% of participants said they read Wikipedia at least several times a week, and almost a quarter reported reading several times a day. Editing Wikipedia was a much rarer occurrence. 84% of our participants said they had never edited Wikipedia, and only 3% said they edited more often than once every few weeks. Only 25% of our participants reported ever having read a Talk page, and less than 5% reported ever having edited one. Since the number of Talk page editors was too small for inference (N=8), we did not include them in our analyses below.

The average quiz score was 2.7 out of 10 correct, although there was a notable amount of variability in our sample (Std. Dev. = 1.8). No one had a perfect score; the best score was 8 out of the 10 correct answers. However, all questions were answered correctly by at least some participants.

We have argued that many readers cannot be classified as free-riders because they have incomplete operational knowledge. Our survey reveals evidence in support of this claim. Everyone in our sample reported reading Wikipedia at least some of the time, yet only 10% of participants knew that Wikipedia has a policy against posting original research. On the other hand, functional details about how to edit and how/when Wikipedia keeps track of edits were among the most widely known items. Thus, general details about editing and adding content were known by many, while specific policies were known by relatively few.

We also looked for relationships between knowledge of specific details and increased participation of certain types. We compared the average frequency of three specific kinds of participation (article reading, article editing, and Talk page reading) for individuals who answered each question correctly or incorrectly. Table 2 displays the statistically significant comparisons for each type of participation in addition to practical significance (Cohen’s *d*) for each test. These comparisons reveal several insights with respect to reading as a form of LPP, as well as the progression from peripheral to full participation.

First, individuals who knew that pages can be locked for editing and that Wikipedia’s edit history is available back to the article’s inception read more than those who did not know those details. Importantly, we observed this same relationship among individuals who read Wikipedia but never contributed in any other way. These results support the assertion that reading is a key activity through which newcomers learn about Wikipedia and familiarize themselves with functional details about editing.

Second, Table 2 helps reveal the progression of activities as individuals move from peripheral to full participation. Our results suggest that reading Talk pages – the behind-the-scenes discussions about Wikipedia articles – signals a transition towards more active forms of participation. Increased reading of Talk pages was more strongly associated with knowledge of operational details than any other type of participation. Our results also highlight that Wikipedia provides opportunities for different varieties of reading. Individuals who frequently read Talk pages may have very different profiles of behavior and knowledge than those who frequently read articles. For example, although only 10% of individuals knew about Wikipedia’s policy on original research, those who answered that question correctly read Talk pages 53% more frequently on average than those who answered incorrectly.

Finally, we note that although more frequent article readers were more likely to know about edit locks and edit tracking there was no similar relationship for article editors. This finding emphasizes that, though reading is an important peripheral task, it is not the only important one. Many are likely to move quickly to simple editing tasks such as the “serendipitous” editing that Bryant et al. note [4]. Indeed, Lave and Wenger suggest that there is no sequential path from peripheral to full participation [9]. Similarly, Wikipedia presents many paths towards active engagement, and many types of engagement and authorship.

#### **CONCLUSION AND FUTURE WORK**

In this paper we have presented several theoretical arguments for re-casting readers as valuable participants in the Wikipedia ecosystem. Prior research indicates that reading is important for participation [13] and building a sense of community [11] online. Our contributions is to provide empirical evidence about *how* readers contribute to Wikipedia and learn to become more involved participants.

		Article Read	Article Edit	Talk Read
Edit Locks	I	2.9(.35)**		1.2(.44)***
	C	3.4		1.6
Edit Tracking	I	3.0(.45)***		
	C	3.5		
Edit History	I		1.1(.58)*	1.3(.67)***
	C		1.3	1.6
Account Creation	I		1.1(.83)***	
	C		1.4	
Bots	I			1.3(.76)*
	C			1.9
Original Research	I			1.3(1.16)**
	C			2.0
Admin. Powers	I			1.3(.39)*
	C			1.6

\* p < .1, \*\* p < .05, \*\*\* p < .01, Cohen's d effect size in parentheses

**Table 2 - T-test results for incorrect (I) and correct (C) responses by activity. Results are reported as frequency of participation between 1 (Never) and 6 (Several Times a Day).**

In doing so we shed light on the multi-faceted process of engaging with the Wikipedia community.

These results support a call for changing the manner in which we discuss participation and free-riding in Wikipedia and similar online environments. Evidence suggests that many readers are not self-interested actors taking advantage of others [11]. They are deliberately cautious individuals, dipping their toes in to passively participate [14] while learning more about a complex system.

For designers who are interested in promoting active participation, our results suggest the need for empirical research into the valuable work of readers, as well as the progression from reading to other forms of participation. An understanding of what participants of various kinds pay attention to and know about Wikipedia can reveal a great deal about their attitudes, behaviors, and intentions.

Our survey provides suggestive findings about the association between various types of operational knowledge and types of participation, but future work is clearly needed. Our work is demonstrative of a research methodology that should be expanded to explore the importance of less-studied forms of participation in Wikipedia as well as other online collaborative systems. In our ongoing research we will continue to develop surveys that investigate operational details on Wikipedia among larger populations beyond the university setting.

## REFERENCES

- Adler, B., Chatterjee, K., de Alfaro, L., Faella, M., Pye, I., and Raman, V. Assigning Trust to Wikipedia Content. *Proc. WikiSym 2008*. ACM, Porto, Portugal.
- Alexa.com, "wikipedia.org - Traffic Details," 2009. <http://alexa.com/siteinfo/wikipedia.org>.
- Antin, J., "Motivated by information: information about online collective action as an incentive for participation," in *Proc. GROUP 2009*. ACM: Sanibel Island, Florida, USA. pp. 371-372.

- Bryant, S.L., Forte, A., and Bruckman, A., "Becoming Wikipedian: transformation of participation in a collaborative online encyclopedia," in *Proc. GROUP 2005*. ACM: Sanibel Island, Florida, USA. pp. 1-10.
- Cheshire, C., Selective Incentives and Generalized Information Exchange. *Social Psychology Quarterly*, 2007. **70**(1): 82-100.
- Horrigan, J.B., *A Typology of Information and Communication Technology Users*. Pew Internet & American Life Project, 2007. Washington, DC.
- Kriplean, T., Beschastnikh, I., and McDonald, D.W., "Articulations of wikiwork: uncovering valued work in wikipedia through barnstars," in *Proc. CSCW 2008*. ACM: San Diego, CA, USA. pp. 47-56.
- Lakhani, K.R. and Wolf, R.G., "Why Hackers Do What They Do: Understanding Motivation and Effort in Free/Open Source Software Projects," in *Perspectives on Free and Open Source Software*, J. Feller, et al., Editors. 2005, MIT Press. Cambridge, Mass.
- Lave, J. and Wenger, E., *Situated Learning: Legitimate Peripheral Participation*. 1991, Cambridge, UK: Cambridge University Press.
- Palfrey, T.R. and Rosenthal, H., Private incentives in social dilemmas : The effects of incomplete information and altruism. *Journal of Public Economics*, 1988. **35**(3): 309-332.
- Preece, J., Nonnecke, B., and Andrews, D., The top five reasons for lurking: improving community experiences for everyone. *Computers in Human Behavior*, 2004. **20**(2): 201-223.
- Priedhorsky, R., Chen, J., Lam, S.K., Panciera, K., Terveen, L., and Riedl, J. Creating, Destroying, and Restoring Value in Wikipedia. *Proc. GROUP 2007*. ACM: Sanibel Island, Florida, USA. Pp. 259-268.
- Rafaelli, S. and Raban, D., Information sharing online: a research challenge. *International Journal of Knowledge and Learning*, 2005. **1**(1/2): 62-79.
- Rafaelli, S., Ravid, G., and Soroka, V. De-lurking in virtual communities: a social communication network approach to measuring the effects of social and cultural capital, in *Proc. HICSS 2004*: 70203.
- Swartz, A. Who Writes Wikipedia? 2006. <http://www.aaronsw.com/weblog/whowriteswikipedia>.
- Viegas, F., Wattenberg, M., and van Ham, F. Talk Before You Type: Coordination in Wikipedia, in *Proc. HICSS 2007*: 78.
- Wikipedia, "Wikipedia Statistics," 2006. <http://stats.wikimedia.org>.
- Yamagishi, T., "Social Dilemmas," in *Sociological Perspectives on Social Psychology*, K.S. Cook, G. Fine, and J. House, Editors. 1995, Allyn & Bacon. Boston. pp. 311-335.
- Zhang, X. and Zhu, F., Group Size and Incentives to Contribute: A Natural Experiment at Chinese Wikipedia. *SSRN eLibrary*, 2009.