

## Non-public and public online community participation: Needs, attitudes and behavior

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**Abstract** Nonpublic participation within an online community, often called lurking, occurs when an individual joins a community, but does not post. This study examines the nature of lurking, why people lurk and the differences in attitudes between lurkers and posters. The results indicate significant differences between people who lurk and those who post in an online community.

We conclude that when people lurk they are observing, which in no way is a negative behavior. This introverted or passive behavior affects lurkers' attitudes about the benefits of the community, their expectations, and opinions of themselves and others who lurk. In general lurkers are less optimistic and less positive than those who post.

**Keywords** Lurking · Nonpublic participation · Posting · Online community · Survey · Bulletin board

Earlier work on nonpublic participation in online communities, called lurking, found that there are a variety of different reasons why people don't participate publicly and that this behavior differs according to the type of community. For example, the average number of lurkers in technical support communities is almost twice as high as in medical support communities [1, 2]. The work that we report here builds on this earlier work. Our primary objective was to better understand the nature of lurking. We wanted to understand lurkers'

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needs since most research tends to focus on active participants—that is, those who post. We also wanted to learn more about lurking behavior, lurkers' attitudes, and how lurkers differ from active posters. By better understanding the dynamics of lurking and those who do it, online community managers and e-commerce entrepreneurs will be better equipped to build healthy, self-sustaining communities and make the decisions of whether they should entice those who lurk to become active posters [3].

Surprisingly, there has been little research on lurkers and lurking behavior even though lurkers often make up a large portion of people who register or visit online communities [1, 4]. To inform these questions, we went beyond the study of one or two online communities by surveying a large number of members from a broad variety of different types of online communities. We conducted a web-based survey of 375 Microsoft Network communities [5].

**Lurking is not negative behavior.** Until publication of our earlier work [2, 6, 7] and several recent works [8–10], many online community researchers showed little interest in lurking behavior, preferring to focus on those who actively post. Others believed that lurking was “free-riding”; that those who do it should not be considered members of the community; and as such, efforts should be taken to prevent lurking [11]. These researchers believed that lurking drained the community of its social capital because reading was ‘taking’ without giving back. In other words, people who lurk are free-riders.

In contrast, our work showed lurking in a more positive light. Interviews with lurkers and participants revealed that lurking was important for getting to know a community [1]. We also discovered that many lurkers thought of themselves as community members, a notion which surfaced in ethnographic interviews about community dynamics [12] and in interviews to elicit the characteristics that community members attribute to successful online communities [13, 14]. Furthermore, these same studies suggest that community members hold more favorable views of lurking than is often assumed. Therefore, in this study, we explored the attitudes that lurkers and posters hold about each other's behavior.

**Lurking is normal behavior.** More people lurk than post in most communities. A Chicago computer-consulting firm's survey found that 98% of the visitors to large sites with open forums, such as AOL, MSN, and Slashdot, never submit ideas or articles and never post opinions or participate in arguments [15]. This schism between people who post and those who don't is a significant issue for public Web sites for many reasons, ranging from commercial objectives to free speech. However, lurking levels are not always astronomical and vary considerably among online communities. When lurking was defined as ‘no messages during a three month period’, 48% of community members in 77 online health communities and 84% of the community members in 21 online technical support communities lurked [1, 2]. In addition, lurking levels varied by other community variables such as: size of the community, frequency of posting and number of single messages.

**Research questions.** In this study we sought answers to the following questions:

- Can lurking behavior be associated with certain attitudes, demographics or personal characteristics?
- Why do people who lurk join online communities? Are their reasons different from those who post?
- Do people who lurk derive as much satisfaction and benefits from online community participation as those who post?
- Do people who lurk consider themselves to be community members? Do posters resent them? What do lurkers think about themselves and each other?

## 1. Study methodology

### 1.1. Sampling method

It is impossible to bound the population of all online communities, so our approach was to define a diverse cross section of online discussion board communities from which we drew a random sample [5]. The sampling frame was selected from four of the 16 MSN online communities—health and wellness, news & politics, sports & recreation, and organizations—who met the size, access and activity criteria. 1,304 communities met the criteria of having more than fifty members, public access for participation and at least four people posting within the past 90 days. Using a stratified random sampling technique and random number generator, we selected 375 online communities to produce results that would be generalizable to the sampling frame at a 95% confidence level.

### 1.2. Survey questionnaire

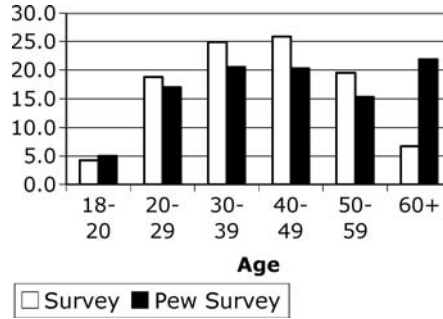
The survey consisted of 12 demographic items and 28 primary coded questions integrated with 20 secondary coded and open-ended questions. Pilot testing was performed to ensure question understanding, to eliminate technical errors and to estimate a response rate. Invitations to participate in the survey were posted as messages on the sampled online discussion groups. Two follow-up ‘reminder’ invitations were posted one week apart. All inquiry email, whether sent as a reply to the posting or sent to the survey Webmaster was responded to within 24 hours. When a discussion board rejected an invitation another random number was generated, and the process of posting was initiated with the newly selected community. The initial survey invitation was rejected in only 18 cases.

### 1.3. Lurking strictly defined

In this survey, one question asked participants to select the item that best described their posting behavior (daily, weekly, occasionally, never) in the online community in which they read the invitation to participate in the survey. Only those who selected ‘never’ in this online community were considered to be lurkers. This strict definition enabled us to examine lurking in its most extreme form. And, because we focused only on ‘the online community in which you received the invitation’ we assumed that a person might not lurk in all the online communities in which they participate.

## 2. Results

The survey received 1188 valid responses of which 18.4% were lurkers. This represented a 2.3% response rate. Although this response rate is low (averaging 3 per online community), we were satisfied with the results because: (1) the total number of valid responses was high (i.e., 1188); (2) lurkers tend not to respond to surveys; (3) the survey was long; (4) the participants were not paid; and (5) they did not know the researchers. The only incentive for completing the survey was an offer to report the results and the satisfaction that they were helping us with our research. The response rate compares with direct mail surveys [16]. We did prevent multiple survey takers using basic IP address comparisons.

**Fig. 1** Survey comparison age

### 2.1. Survey participants closely reflect the overall internet population

We were pleased to discover that our survey participants reflected the overall Internet population closely. We compared our survey participants (educational experience, age, gender, and employment status) to that of the Internet population examined by the 2000 Pew Internet & American Life Project study [17].<sup>1</sup> Although our survey participants self-selected to participate in the survey, this did not seem to bias our sample.

Our survey participants and those in the Pew study had similarly high levels of education: 79.3% of our survey participants had at least some college education and of those, 37.6% were college graduates. In the Pew study 74.9% of the Pew participants had at least some college and of those, 37.6% had graduated from college. The percentage of Pew participants with only high school education was 25.1%, only slightly higher than in our participants at 20.5%.

The age distributions of the two populations are normally distributed and are also similar (Figure 1). Differences in gender are a little stronger. More women (56.3%) than men (43.3%) participated in our survey, while participation was almost equal in the Pew study (50.5%, 49.5% respectively). The majority of participants in both surveys were employed (Figure 2). Our survey population had higher percentages of unemployed and retired participants.

In summary, our survey participant demographics are broadly similar to the general Internet population. However, in our study more women than men participated, and while the employment demographics are similar, Pew had a greater percentage of employed participants. This could be due to the types of communities selected for study, and/or time available for people to complete the survey. Another possible explanation concerns difference in participation behavior between the two genders.

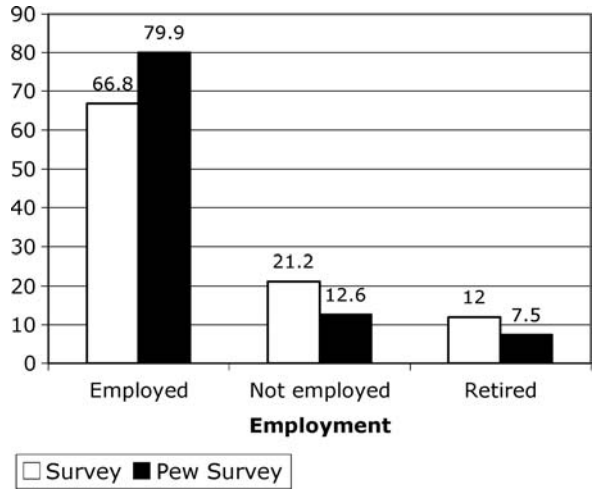
Table 1, Summary of Survey Results, is an overview of the key findings. Each key finding is discussed in the following sections.

### 2.2. Personal needs drive joining behavior in public communities

In previous studies [1, 2] participants described their use of online communities as a mix of personal and work related use. The MSN groups in this study were special interest groups so we expected motivation for being there to be largely personal; in fact, 92.6% of our survey participants use the online community in which they responded to the survey for personal

<sup>1</sup> Pew updated this major demographic survey in 2003 while studying the digital divide issues. They concluded that Internet access has expanded across-the-board in all four of these demographic groups [23].

**Fig. 2** Survey comparison employment status

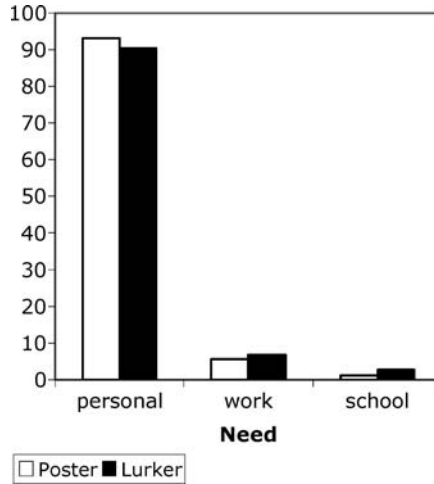


**Table 1** Research findings

Research question	Finding
1. Is the primary reason for joining an online community different for lurkers and posters?	Joining is personal with no significant differences between lurkers and posters. ( $\chi^2 = 1.959, p < 0.162$ )
2. What are the main attractions to the online community and are lurkers and posters attracted to online community for different reasons?	Both come to get a general understanding ( $\chi^2 = 0.002, p < 0.963$ ); significant difference for 10 out of 14 attractions.
3. Why do lurkers not post?	Many and varied reasons were given for not posting with “just reading/browsing is enough” topping the list.
4. Is lurking affected when the community has an offline presence?	An offline presence has no significant affect on lurking. ( $p < .145$ )
5. Do the online communities meet the expectations of lurkers and posters?	Posters feel their needs are better met. ( $\chi^2 = 14.5, p < 0.001$ )
6. Do lurkers and posters perceive different levels of benefits from their community?	Posters perceive more benefit. ( $\chi^2 = 97.75, p < 0.001$ )
7. Do lurkers and posters differ in whether they feel like members of their online community?	Lurkers can feel like members, but posters feel a greater sense of membership. ( $\chi^2 = 199.5, p < 0.001$ )
8. Do posters and lurkers view members who post differently?	Lurkers have less respect for posters. ( $\chi^2 = 79.91, p < 0.001$ )
9. Do posters and lurkers view lurker membership differently?	Posters consider lurkers to be members more than lurkers do. ( $\chi^2 = 15.37, p < 0.001$ )

<sup>a</sup>Chi-square analysis, *p* value for .05, or 5% margin of error.

**Fig. 3** Needs for joining an online community



reasons (Figure 3). Additionally, there was no significant difference between lurkers and posters ( $\chi^2 = 1.959, p < 0.162$ ). The participants may use other online communities primarily for work-related needs.

### 2.3. Lurkers and posters join for different reasons

To understand lurkers’ and posters’ participation behavior and attitudes, we first examined why they were attracted to the online communities in which we found them. Of the 14 possible reasons for being attracted to an online community, four reasons are common and have approximately the same priority for both lurkers and posters (Table 2).

Both lurkers and posters ranked highly two fairly passive reasons: *getting a general understanding of the community* and *reading conversations and stories*. For the other two common reasons: *something to do* was a lesser priority and few were interested in *playing games*. This last result most likely reflects the types of communities surveyed, few of which had anything to do with games.

However, as seen in Table 3, posters have significantly more reasons for joining an online community that require outreach into the community by the participant and/or interaction with other members. These reasons for joining include to: *tell stories, build professional relationships, be a community member, make friends, offer expertise, and get sympathetic support*.

We conclude from these results that posters appear to be more engaged and engaging in the online community. This behavior creates self-reinforcing community interactions.

**Table 2** Common attractions to the online community

Attraction to community	Posters (%)	Lurkers (%)	<i>p</i>	$\chi^2$
General understanding	66	66.2	0.963	0.002
Read conversations or stories	48.5	52.5	0.284	1.147
Something to do	34.7	34.2	0.904	0.014
Play games	3.5	3.2	0.819	0.052

**Table 3** Attractions to community where lurkers and posters differ

Reasons for joining	Posters (%)	Lurkers (%)	<i>p</i>	$\chi^2$
Get answers to questions	70.3	62.1	0.018	5.558
Tell stories or participate in conversations	55.5	23.7	0	72.092
Access to expertise	51.9	41.1	0.004	8.348
Be a community member	48.9	24.2	0	44.172
Make friends	48.6	31.5	0	21.049
Enjoy myself	46	32.9	0	12.551
Offer my expertise	36.5	12.8	0	46.136
Get empathetic support	35.8	23.7	0.001	11.649
Build professional relationships	14.4	7.8	0.008	6.955
Entertain others	11.6	2.7	0	15.515

#### 2.4. Lurking may be a temporary and adaptive strategy

To understand more about the nature of lurking, we asked lurkers to select their reasons for not posting from a list (Table 4). On the surface, many lurkers get their needs met through reading and observing the interactions of others. The most popular reason, *just reading/browsing is enough* was selected by more than half of the lurkers (53.9%).

**Table 4** Reasons why Lurkers do not post

Reason	Lurkers (%)
Just reading/browsing is enough	53.9
Still learning about the group	29.7
Shy about posting	28.3
Nothing to offer	22.8
No requirement to post	21.5
Others respond the way I would	18.7
Other	18.7
Want to remain anonymous	15.1
Had no intention to post from the outset	13.2
Of no value to me	11
Not enough time to post	9.1
Do not know how to post to this group	7.8
Poor quality of messages or group	7.8
Wrong group for me	7.3
Long delay in response to postings	6.8
Concern about aggressive or hostile responses	5.9
There are too many messages already	4.6
If I post, I am making a commitment	4.1
Group treats new members badly	1.4
My work does not allow posting	1.4

However, when we examine other reasons for not posting, two suggest an underpinning for lurking behavior. The second most cited reason, *still learning about the group* (29.7%), suggests that lurking may be a temporary behavior that occurs on entering a group. We suspect that once a person gets acquainted with a community, then lurking behavior may evolve into posting because only 13.2% of the participants to this question indicated they *intended to lurk from the outset*. The third most cited reason, *shy about posting* (28.3%), suggests that self-confidence may play a role in presenting oneself to others in online communities. This could be related to general shyness or a wish to avoid what they have observed in the interactions between posters. This was the case on the Slashdot Web site community where lurking participants reported fear of aggressive comments or being made to look stupid [15].

Lastly, additional reasons for not posting suggest that the poor quality or lack of pleasantness of the community keeps people from participating more actively. With 7.8% of lurkers admitting they did not post because they did not know how, technical and community design flaws contribute to poor quality.

In summary, it appears that although browsing and reading is enough for many lurkers, community interactions and the community itself contribute to people not posting. It also appears that people use lurking as a temporary evaluation strategy.

## 2.5. Posting and lurking are not affected by an offline community presence

Parks and Floyd [18] in their work on making friends in cyberspace describe cyberspace as “simply another place to meet,” and one which frequently extends friendships beyond the online to face-to-face interactions. However, in our survey, only 20.1% of our participants indicated they had interacted offline with members of the online community where the survey invitation was posted. Neither did having an offline presence have a significant effect on the volume of lurking, contradicting the often assumed notion that if one meets offline, one will be more likely to actively participate on-line. Work by other researchers also supports our finding; an in-depth ethnographic study of a patient support community found that people who met face-to-face often did so only to discuss their medical problem which was, in most cases, an insufficient basis for the relationship to continue to develop off-line [12]. Some cancer patients go online only after their face-to-face relationships fail to give them the emotional support they seek [19].

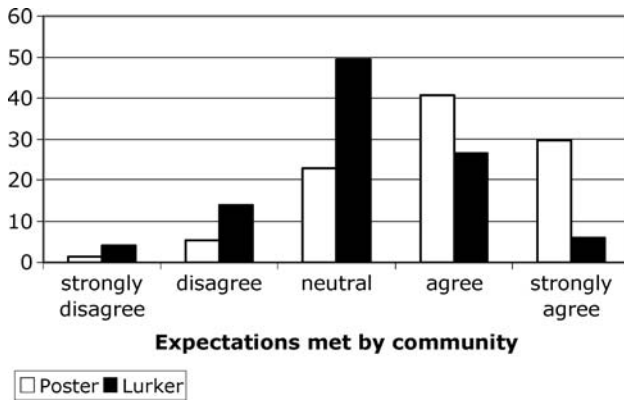
## 2.6. Lurkers are more neutral and less satisfied with their online community experience

The ability of an online community to meet member expectations is more likely, if the participant is a poster, rather than a lurker. In our survey, 70.9% of posters agreed or strongly agreed that their expectations were met, and only 32.6% of lurkers agreed or strongly agreed ( $\chi^2 = 14.5$ ,  $p < 0.001$ , Figure 4). Lurkers were much more neutral about expectations (49.5% vs. 22.8% for posters). Additionally, lurkers were much more negative about their expectations being met (17.9% vs. 6.8% for posters). These results add weight to the notion that lurkers have less satisfying experiences than posters.

## 2.7. Lurkers experience fewer benefits of membership

Lurkers are much less enthusiastic about the benefits of membership. Lurkers indicated that they received less than the expected benefits from the online community in which the invitation was posted (41.8% vs. 16.3% for posters,  $\chi^2 = 97.75$ ,  $p < 0.001$ , Figure 5).





**Fig. 4** Ability of online community to meet expectations

Approximately 50% of each group indicated the level of benefits was as expected. However, only 8.0% of lurkers said they received more than the expected benefit while 36.6% of the posters said they received a greater than expected benefit. We conclude, based on these findings, that lurkers are less satisfied with the benefits associated with their online communities.

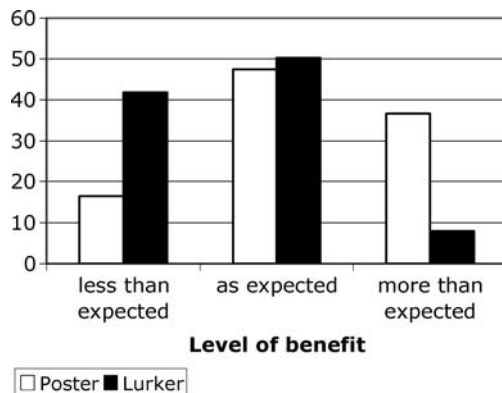
2.8. Lurkers have a lesser sense of community and membership than posters

In a previous study [7], several participants indicated they felt a sense of community while lurking and similar findings have also been obtained from other studies [12]. However, the results of our survey revealed that significantly fewer (20.8%) lurkers felt a sense of community than posters (73.7%, Figure 6). Additionally, 79.2 % of lurkers said they do not feel like they are community members compared with only 26.3 % of posters. So, while it is true that some lurkers feel a sense of community, the vast majority are significantly less enthusiastic than posters about community membership.

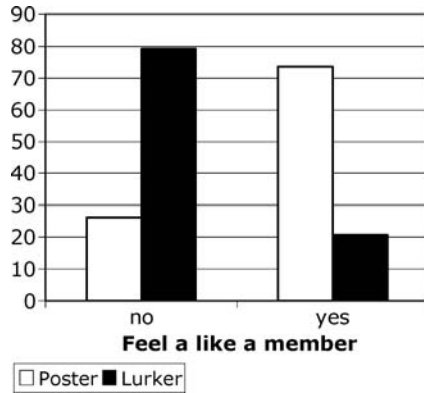
2.9. Lurkers are less positive about posters

In an earlier study [1], it was shown that for many communities, relatively few posters do most of the posting and that for some lurkers, this dominance by a few was off putting. This

**Fig. 5** Ability of online community to provide benefits



**Fig. 6** Attitude toward online community membership



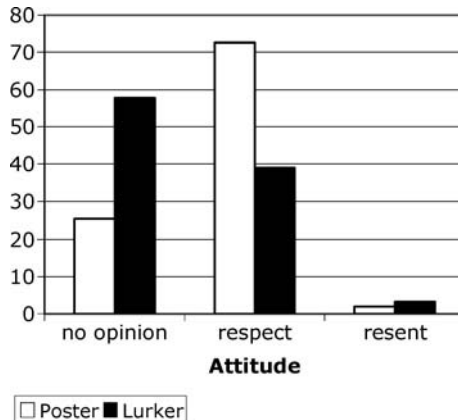
attitude by lurkers about posters is confirmed by our survey. Lurkers indicated significantly lower levels of respect for posters (39.0%) than posters show towards each other (72.6%, Figure 7). However, strong feelings of resentment or hostility towards posters were low (3.3% and 2.0% respectively) for both lurkers and posters.

2.10. Lurkers are less likely to consider themselves as community members

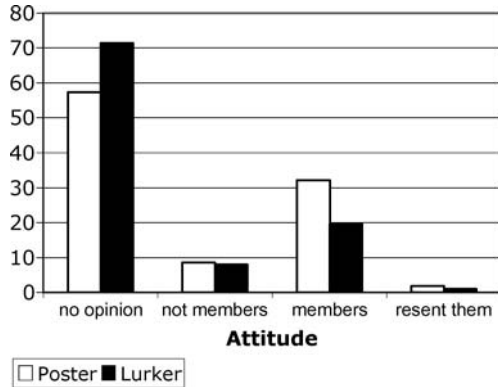
When asked about their attitudes towards lurkers, survey participants expressed very little resentment towards lurkers with 1.8% of posters and 0.9% of lurkers resenting them (Figure 8). However, a higher number of posters and lurkers (8.5% and 8.0%) indicated that lurkers were not members of the community. This suggests a tolerance for lurking by most members; however, for some people, lurkers are not considered to be members of the online community.

A much larger portion of our survey participants considered lurkers to be community members (32.2% by posters, 19.7% by lurkers). This significant result means that lurkers are less likely to consider themselves and other lurkers to be community members. Perhaps they know something about lurking that posters do not understand. Do lurkers feel guilty about their lurking? There is anecdotal evidence of this in previous studies [20]. Do lurkers define membership as posting activity? Interestingly, the vast majority of both posters (57.4%) and lurkers (71.4%) had no opinion about lurker membership status. Whether this is a case

**Fig. 7** Attitude toward posters



**Fig. 8** Attitudes towards Lurkers as members of an online community



of never having thought about lurkers before or some other reason is not clear. Somewhat contradictory is a recent study [13] of members of education support and health support communities. In that study, 64% of education and 71.5% of health community members surveyed thought that it was important to allow lurking for online community success. Less than 10% of members in each community held negative opinions about lurkers [14].

### 3. Conclusions

Our work has painted a picture of lurking that is significantly less optimistic than posting behavior. This should not be construed as defining lurking as negative behavior. On the contrary, we believe, based on our survey results, that people lurk for valid reasons. Over 50.3% said that reading and browsing are enough for their needs to be met. However, their experience is definitely not as satisfying or engaging. Whether the behavior is a temporary, adaptive strategy or a more permanent behavior is unclear. We are hesitant to assume lurkers are introverts, as we all lurked in different online communities from time to time. We also can't say whether lurking behavior causes this dissatisfaction and passivity or whether the community and its member interactions cause the dissatisfaction, which results in lurking. We think that since most people do not intend to lurk from the outset (only 13.2% reported this intention), lurking often arises after observing community interaction. Something in the community culture may be encouraging lurking.

Given this information, the issue for community managers becomes whether or not to support continued lurking or work to reduce lurking. Two alternative approaches to lurking management might be considered. One is to help lurking behavior to evolve into posting behavior. There is potential for participation within those who do not post. In our survey 25% of the lurkers picked *tell stories or participate in conversations* as a reason for joining the community and 13% of the lurkers wish to offer their expertise. Lurkers have valuable contributions to make [8] that would enrich the community, but perhaps, there are barriers that reinforce this reluctance. For example, there might be a mismatch between the community's and the lurkers' expectations and/or difficulties with the human-computer interface that may contribute to lurking. This may be particularly important for communities where lurkers predominate, e.g., technical support communities.

Even people who normally post may become occasional lurkers. For example, a poster may have a special skill, a 'particular' reputation or be an expert such as a physician in a health support community. These people may not wish to expose their ignorance, interfere with peer-to-peer interaction or impugn their 'particular' reputation.

Another approach is to fully accept lurking behavior and support it with better tools to improve the lurking experience. While posters will post a question to get an answer, those who read what others have written to glean answers using community-provided solutions, e.g., searchable archives, meaningful names for messages and threads, and being able to identify ‘quality’ participants, whose contributions are considered by the community as appropriate and timely.

Community managers who do not want to lose lurkers because of dissatisfaction with the online community may adopt a variety of strategies. Educational interventions or improvements in the user interface are potential ways of improving online community participation for lurkers and posters. Peer or manager moderation and mentoring for new members may be helpful for nurturing initial public participation as well as enforcing appropriate net etiquette for the online community as occurs in some gaming communities [21]. Small group activities to get to know about the community and its norms may also help establish a healthy culture in which more lurkers are comfortable contributing posts.

In response to what attracted them to a community, both lurkers and posters ranked highly *getting a general understanding* (66%) and *getting answers to questions* (posters 70.3%, lurkers 62.1%) as reasons for joining the online community. This suggests that mechanisms for supporting passive or self-directed activities such as seeking information and overviews of discussions are important to both posters and lurkers. Therefore community spaces that are designed to better support people’s information seeking and browsing needs without forcing people to publicly participate appear likely to improve all users satisfaction in online communities.

### 3.1. Directions for continued research

Several avenues for continued research on lurking arise from our study. First, we need to know more definitively whether lurking is driven by online community dissatisfaction. We also need to know how long this dissatisfaction can be tolerated before lurkers leave the community in search of greener pastures. We also need to know whether lurkers want to be posters and, if so, what will assist them in becoming active posters.

We need to answer once and for all whether lurkers are draining the community’s social capital [22]. We know, as mentioned above, that the amount of lurking varies in different types of communities [1, 2]. However, we know very little about lurking in gaming, government, recreation and other types of communities. It also appears that at certain stages in the life of a community, too much lurking may be detrimental. A new community that has not established a core, critical mass of active members for a self-sustaining interaction may need to encourage posting and discourage lurking. In contrast, a very large and active community may find lurking advantageous, particularly if it reduces either the frequency that people ask the same questions over and over again, or the number of off-topic discussions. Since most community managers have limited resources, and if lurking does not enhance community sustainability, then resources should be given to supporting posting activities rather than lurking. We should work towards identifying the conditions in which lurking is most detrimental or advantageous and determine the kind of actions community managers can take to manage lurking in those conditions.

### 3.2. In closing

It is exciting to know that lurking behavior is not free-riding or a watered down approach to public participation. We think it is its own behavior, perhaps a strategic behavior. Lurking

should not be eliminated as earlier work suggests, but accepted as valid behavior. The challenge to online community developers and managers is to understand more specifically about why people in their community lurk and how the lurking experience can be more effectively supported to increase feelings of membership and satisfaction with the online community. Although it's clear that lurkers don't have as satisfying experience as posters, we should not conclude they should be converted or transformed into posters. Lurking is not a deviant behavior that needs correction.

**Acknowledgments** We thank Greg Morton, UMBC Research Assistant, for his technical support in distributing the survey; and Olga Heifets, Georgetown University Graduate student in the School of Communications, Culture and Technology, and Russell Voutour of the University of Guelph for their invaluable work on the data analysis. Financial support for this work has come from the University of Maryland Baltimore County, the University of Guelph and Microsoft Research.

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