

“Welcome!”: Social and Psychological Predictors of Volunteer Socializers in Online Communities

Gary Hsieh*, Youyang Hou†, Ian Chen*

*Communication Arts and Sciences, †Department of Psychology
Michigan State University
{garyh, houyouya, chenyrira}@msu.edu

Khai N. Truong

Department of Computer Science
University of Toronto
khai@cs.toronto.edu

ABSTRACT

Volunteer socializers are members of a community who voluntarily help newcomers become familiar with the popular practices and attitudes of the community. In this paper, we explore the social and psychological predictors of volunteer socializers on reddit, an online social news-sharing community. Through a survey of over 1000 reddit users, we found that social identity, prosocial-orientation and generalized reciprocity are all predictors of socializers in the community. Interestingly, a user’s tenure with the online community has a quadratic effect on volunteer socialization behaviors—new and long-time members are both more likely to help newcomers than those in between. We conclude with design implications for motivating users to help newcomers.

Author Keywords

Volunteer Socialization; Online Communities; reddit

ACM Classification Keywords

H.5.3. Collaborative computing

INTRODUCTION

As a newcomer to an online community, we are often clueless about how we should behave and how to use the available features. Sometimes, we get lucky—someone voluntarily welcomes us and helps us understand the community, teaches us the expected social norms, and even introduces us to new friends. Because he or she helped socialize us to the community, we are able to quickly become active and contributing members. However, sometimes, we are not so lucky. It may take a lot of embarrassments before we finally become comfortable in the community, assuming that we have not given up already.

Despite the important role that socialization plays in helping newcomers in online communities, relatively little is known about those who volunteer their time to socialize

newcomers. Much research on socialization has focused on two things: (1) the tactics used for socialization—how an organization or community can best socialize newcomers [e.g., 1] and (2) the content gained from socialization—what is learned during socialization [e.g., 18]. However, a key research gap that has not been addressed is who are these volunteer socializers? Do most members eventually volunteer as socializers over time, or are certain people more likely to assume the role of socializers? What are some of the factors that may influence users to help newcomers?

Understanding volunteer socializers is a timely problem as we grow increasingly reliant on online communities for information and social support [41]. Unlike traditional organizations, online communities often do not have institutionalized and formal newcomer-socialization processes in place [18,23]. Even for online communities where there are established mentorship programs, because newcomers can join the community at anytime, the newcomers’ first (and often only) impression depends heavily on members who provide help voluntarily. If we can better understand why people undertake the task of socializing newcomers, we may more effectively users to help socialize the newcomers.

To study volunteer socializers, we conducted two surveys on a social news sharing community, reddit (www.reddit.com). In the first survey, with 129 responses, we developed a scale to identify socializers. Then through a more elaborate survey with 1174 responses, we found that personal identification with the community, prosocial-orientations and generalized reciprocity are all predictors of volunteer socialization. How much time per day a user spends on the community, however, is not a significant predictor. Interestingly, membership tenure has a curvilinear effect—new and long-time members are both more likely to help newcomers than those in between.

This work offers several contributions. On the theoretical side, this work provides a first step in understanding the antecedents for individuals to voluntarily help out newcomers in a community. On the applied side, the various predictors found can help designers and community builders to encourage more newcomer socialization. In addition, we also introduce a 7-item newcomer socialization

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behavior scale that can help future work in identifying volunteer socializers.

VOLUNTEER SOCIALIZERS

Socialization is the process through which newcomers acquire the behaviors and attitudes essential to playing their roles in a group or an organization [47]. It is through socialization that newcomers are welcome to the community and learn the skills and knowledge that are necessary for them to become full-fledged members.

The importance of socialization has been recognized in organizational setting. The socialization process contributes greatly to the newcomers' successful adaptation to an organization in the initial period of their entering the organization. For example, it has been shown that socialization reduces newcomers' anxiety and uncertainty [43,78] and thus decreases role ambiguity and role conflict [7,39]. Socialization also benefits several other "proximal outcomes" of adjustment such as role clarity, perceived job and perceived organization fit [15,39,62]. From the long-term perspective, successful socialization also greatly benefits some "distal outcomes" of the newcomers. Studies have shown that socialization positively relates to job attitudes such as job satisfaction, organizational commitment, and intention to remain [3,7,10,64]. Additionally, newcomers show better work performance [10,36,64] and are less likely to turnover from the organization [2,62].

Recent research has turned to the study of socialization in online communities. These studies have found that the benefits of socialization also extend to the online context—socialization can increase newcomers' likelihood to participate in the future [5,20,27,42]. However, unlike traditional organizations, there is often no institutionalized socialization processes in online communities. For example, studies on WikiProjects, the task-oriented groups in Wikipedia, showed that newcomers are rarely assigned mentors nor are they given clear guidance on how to behave in the project [20]. Even in production-oriented environments, such as Python's open-source software development community, socialization is informal, and newcomers learn by simple trial and error [23]. Due to the lack of centralized administration or any "managers" who are responsible for socializing newcomers, socialization has become heavily reliant on volunteer socializers – users who help socializer newcomers even though they are not paid or asked to do so.

Due to this reliance of online communities on volunteer socializers, it is important to understand what leads people to volunteer to help newcomers. The closest to studying volunteer socializers are prior research on the naturally emerged mentorship between a newcomer and a senior member in the work setting (informal mentorships) [14,19,54,55]. However, only limited studies have explored why people volunteer and assume the role of mentors. For

example, some have found that informal mentorships develop due to perceived competence and interpersonal comfort [4,38,40,54]. What has been missing is an understanding of social and psychological factors that predict people's likelihood to volunteer. If we can understand what influences people to help newcomers, we may (1) more effectively motivate people to help newcomers and (2) identify these volunteers and offer them tools to more effectively mentor newcomers.

In this paper, we hypothesize that people's likelihood to be volunteer socializers in online communities is influenced by their identity with the community, their personal prosocial values, generalized reciprocity, their tenure and opportunities for socializing newcomers.

Social Identity

According to the social identity theory, people seek to classify themselves and others into social categories by membership, affiliation, age, gender culture and others [6,76]. Through this process of self-categorization, individuals are able to locate or define themselves in the social environment.

One of the consequences of social identity is that it can enhance support or commitment to groups in which the individuals "belong". Social identity implies a sense of emotional involvement with the group. It suggests attachment and emotional commitment [e.g.,11,26], and can foster loyalty and citizenship behaviors [e.g.,11,46]. Applying social identity theory, Mael and Ashforth found that alumni's identification with their alma mater predicted the alumni's recruitment of students, donation to that institution and attendance at functions [44].

Extending to online communities, social identity has been found to increase general contribution and commitment in the group [49]. Through this heightened attachment and commitment to the community, social identity may motivate members to socialize newcomers to grow and increase the prominence of the community while ensuring that the newcomers learn and internalize the values and beliefs of the community. Thus:

H1. Members' positive social identity will predict their likelihood to socialize newcomers.

Personal Prosocial Values

Volunteer socialization can be thought of as a prosocial act [24], where the volunteer is trying to help or benefit the newcomer. From that perspective, much research has shown that individual's prosocial orientations may help predict their volunteering behaviors [e.g.,17,45]. Prosocial orientation can predict volunteerism as prosocial individuals experience strong empathy towards others, have a strong sense of personal and social responsibility, and believes in their capability to help (self-efficacy) [56].

In this work, we use prosocial values from Schwartz's Value Theory. Values are "desirable, trans-situational goals, varying in importance that serve as guiding principles in people's lives" [50]. Schwartz et al. derived 10 basic human values from their study of people's value priorities from 67 countries [67]. Out of which, self-transcendent values of universalism and benevolence are designed to measure prosocial orientations [71] and have been found to predict prosocial behaviors in various contexts [12,65,69]. As explained by Schwartz, self-transcendence values lead individuals to care about societal poverty and others' welfare [70]. "Benevolence values may increase perception of need, empathic concern, and perspective taking in relation to members of one's in-group; universalism may do the same in relation to out-group members and strangers." [p.13,70] In addition, self-transcendence values may also positively influence self-efficacy beliefs to prosocial behavior—the more people value others' welfare, the more likely they will strive to develop the abilities to help others [16].

Therefore, we posit that these prosocial orientations can also influence members' likelihood of helping newcomers:

H2a. Members' prosocial values will positively predict their likelihood to socialize newcomers.

Prior research suggests that social identity moderates the psychological process and motivations underlying helping and volunteering behaviors [22,57,67,75]. In particular, shared group membership facilitated the translation of dispositional factors into actual helping behaviors [75]. This could mean that prosocial values would more strongly influence newcomer socialization for members who more strongly identify with their community.

H2b. Social identity will moderate the effect of prosocial value orientation on being a newcomer socializer.

Generalized Reciprocity

Generalized reciprocity is the exchange of goods and services where the giver does not know who will make a return (or how or when) [25,63]. It is more commonly referred to as "pay it forward." Real world examples of generalized reciprocity include blood banks and food banks, where people contribute expecting that they would receive aid when they themselves are in need [see 48 for review].

In the context of communities, generalized reciprocity contributes to social capital and has been used to explain why people contribute to communities even though they could just choose to free ride on others' efforts and contributions. According to theories of collective action, individuals forgo their tendency to free ride due to the influence of social capital [e.g.,58]. Instead of maximizing individual-based capital, individuals try to enhance the resources embedded in a social structure—social capital. One of the key sources of social capital is the norm of generalized reciprocity, where individuals are willing to

help others with the expectation that down the road, someone will return the favor. Previous research has used the concept of generalized reciprocity to explain why people contribute e.g., knowledge [79] and files [35] online.

Along the same vein, generalized reciprocity may also play a role in influencing volunteer socialization in an online community. A basic norm of reciprocity is a sense of mutual indebtedness—individuals usually reciprocate the benefit they received from others to ensure ongoing exchanges [72]. Therefore, if members of a community are themselves socialized by others, they may be more likely to pay it forward and help other newcomers.

H3. Members who were socialized by others will be more likely to help socialize newcomers.

Opportunities and Tenure

Another set of predictive factors may relate to how frequent and how long someone has participated in the online community.

Perceived need is an antecedent of empathy. If people were to volunteer to help socialize newcomers, they must first notice newcomers. In addition, increase in perceived need has been shown to increase volunteerism [e.g., 29]. The more time a member spends in the community, the more likely they will be exposed to newcomers' requests for help, which could increase their likelihood to socialize newcomers.

H4. Members who spend more time per day in the community are more likely to socialize newcomers.

Research on the effects of membership duration (tenure) on participation is not definitive. Some findings suggest that tenure in an online community actually predicts lower participation as users become "bored, disappointed or otherwise less enthusiastic" [13,52]. Whereas findings from other studies suggest that interacting with others in the community overtime may increase their connection to others and increase in participation [34]. Other evidence also showed that tenure modulated the many motivation factors regarding their effect on community participation [53]. If we view volunteer socialization as a type of online community participation, then it is unclear if and how tenure predicts members' willingness to help socialize newcomers. Therefore, we proceed with a general research question exploring the relationship between tenure and socializing.

RQ. Can and how does a member's tenure predict the degree to which they socialize newcomers?

REDDIT.COM

In this work, we focus on reddit.com, one of the most visited, if not the most visited social news site. Social news sites are a form of online communities where members submit stories and the stories are ranked based on popularity. At the time of our study, reddit ranked 8th in the

personalized news category ranking by Alexa, and 115th overall in the world. More than 34.8 million people visit reddit.com per month.

Additionally, reddit.com is a broad and diverse “community of communities.” The site has over 100,000 subforums, which support users from different cities or universities, or those who are interested in specific TV shows, video games, sports, and even world problems. Over 8,400 of these subreddits have over 100 subscribers¹.

Reddit’s interface has remained relatively unchanged since its initial launch. Users can submit links or stories, and other users can comment on the submitted content. Users can also vote on the submitted content, and their up or down votes can increase or decrease the content’s visibility. Users can accumulate “karma” points by submitting links that other people like and vote for; this number offers the user no value, but is intended to “be a reminder of [her] legacy.”

There are two key reasons why reddit is chosen as the focus of this work. First, while it is one of the fastest growing social media sites, it has not yet gained much research attention. The functions of reddit are simple but representative of a wide range of different online communities. Like most other sites, it enables users to submit content, comments, maintain a profile, and curate content. Thus, the findings from the study of reddit may be generalizable to other online communities. Second, unlike other online communities that focus on specific interests or topics, reddit welcomes users with a wide-range of interests through their subreddit design. For example, r/askreddit works like a Q&A site where people post questions and others answer the question by commenting, while r/worldnews is essential a world news aggregator where users post link from major news site from all over the world. This enables us to examine socialization using a potentially more diverse user base.

SOCIALIZER SCALE DEVELOPMENT

In the first phase of the project, we developed a scale to identify volunteer socializers. To develop our scale, we examined existing literature on socialization and mentorship to consolidate the set of behaviors that would constitute as socializing.

Scale Items

Research suggests that there are two major functions of mentoring and socialization: psychological functions and career functions [40,49]. Psychological functions address the interpersonal aspects of a mentoring relationship. It involves providing an acceptance role, friendship role, counseling role, or a role modeling function. On the other hand, career functions help enhance protégé’s career

advancement, and it includes sponsoring, coaching, protecting, providing challenge assignments, and increasing protégé’s visibility.

Our approach to identifying socializers is to measure the degree to which an individual has served these functions to newcomers. Prior work has developed scales to measure mentorship functions [51,60]. However, these scales were developed to measure mentor roles from the perspective of the protégés. In addition, it was heavily situated in the traditional organizational context, assuming that the goal of mentorship is career advancement. Therefore, while we draw upon these scales, we also made significant modifications in our socializer scale.

Most notably, we removed *sponsoring* and *providing challenging assignment* sub-functions from our survey. This is because most online communities are not career-oriented. There tend to be little hierarchical structure and established roles in online communities. It is unclear what advancement would mean to online community members.

Then, we focused on seven of the sub-areas identified, found examples of such behaviors on reddit, and developed a 5-point Likert question item for each sub-area (ranging from 1-strongly disagree to 5 strongly agree). The four are “psychological” functions and the last three are “career” functions.

- *Acceptance-and-confirmation.* To provide positive feedback and compliments. An example is when a reddit user (redditor) responded to another with “welcome newfound redditor”². Our survey item is: *I have welcomed newcomers on reddit.*
- *Counseling.* To discuss personal matters of concern. An example is when a redditor provided emotional support to a newcomer who has a bad habit of overdosing³. Our survey item is: *I have provided emotional support to newcomers.*
- *Friendship.* To help establish a social relationship with the newcomer. An example is when a redditor invited a newcomer to join their gaming team⁴. Our survey item is: *I have tried to build friendships with newcomers.*
- *Role modeling.* To serve as an example to newcomers regarding attitude, values and behavior. Unlike other roles, this is less tied to any specific instances, and more about gaining respect and recognition over time. Our

² http://www.reddit.com/r/AskReddit/comments/mqg9v/why_do_i_need_karma_newbie_to_reddit/c3327av

³ http://www.reddit.com/r/depression/comments/k5d36/hey_newbie_with_a_bad_habit_of_oding/

⁴ http://www.reddit.com/r/bf3pc/comments/tloze/newbie_looking_for_some_friends_to_play_bf3/

¹ <http://blog.reddit.com/2012/01/2-billion-beyond.html>

	Accept.	Counsel.	Friend.	Role M.	Exposure	Coaching	Protect.	Mean	Std	Factor Loading
Accept.	1							2.96	1.22	0.54
Counsel.	0.48	1						2.48	1.15	0.59
Friend.	0.62	0.61	1					2.50	1.11	0.77
Role M.	0.47	0.48	0.65	1				2.44	1.07	0.57
Exposure	0.34	0.45	0.66	0.53	1			2.14	1.09	0.54
Coaching	0.57	0.53	0.51	0.49	0.50	1		2.87	1.30	0.56
Protect.	0.54	0.65	0.70	0.53	0.56	0.54	1	2.60	1.20	0.69

Table 1. Correlations, mean, standard deviation and factor loading of 7-items socializer scale from the initial survey.

survey item is: *I can feel the respect and admiration from newcomers.*

- *Exposure and visibility.* To enhance the visibility of the newcomer to other members of the community. An example of this includes the creation of a specific thread for newcomers to post their questions⁵. Our survey item is: *I have made newcomers more visible to other reddit users.*
- *Coaching.* To offer strategies for becoming an effective member of the community. An example is when a redditor wrote a newbie guide⁶. Our survey item is: *I have explained to newcomers how to use and/or how to behave on reddit.*
- *Protection.* To help shield newcomers from negative comments. An example is when a redditor wrote “I know the other guy was being rude about it, but there are a lot of good resources in the sidebar. It's a good place to start!”⁷. Our survey item is: *I have defended and/or protected newcomers from other reddit users.*

Initial Survey

We conducted an initial survey of the reddit community to test our scale. We deployed our survey to two subreddits that are related to the universities where the authors work; these have about 2800 subscribers. We only targeted these subreddits for the testing and validation of our scale. Doing so also helped establish credibility within the reddit community for the larger deployment where we tested our hypotheses (the second phase of the project). Reddit users were told that participants would be entered into a drawing for one of multiple \$100 Amazon Gift Cards (4 participants received gift cards). They were also told that instead of collecting the gift card, they will have the option to donate the \$100 to a charity of their choice.

⁵ http://www.reddit.com/r/Eve/comments/ck8kq/collective_newbie_question_thread/

⁶ http://www.reddit.com/r/self/comments/d0bia/newbies_newbie_guide_to_reddit/

⁷ http://www.reddit.com/r/LucidDreaming/comments/ssjem/help_points_for_a_newbie/c4gnla5

After cleaning up the results where we removed incomplete responders and those who failed our consistency checks (low variance across all items and high discrepancies between duplicate items), we had 132 responses (out of 236 who started to take our survey and 164 who completed the survey). As expected, most of our survey participants are affiliated with the Universities. 97% are between the ages of 18 and 29. 74% of participants are male.

Socializer Scale Results

The 7-item scale achieved very high reliability ($\alpha=0.89$). Principle component factor analysis with varimax rotation was used to examine the empirical structure of these items. The items all loaded on a single factor (see Table 1). This suggests that the two major functions of mentoring—psychological functions and career functions—may not be distinct in a social online communities setting as it may be in the traditional work setting.

Besides the high reliability, we also sought to validate our scale through three different methods. First, we tested our scale against the survey respondents’ perception of socialization. At the start of our survey, we asked the respondents a likert question of: “Do you help newcomers adopt the behaviors and/or attitudes essential to being a member of reddit?” The correlation between our response and our 7-question item was significant ($r(130)=0.62$, $p<0.001$).

Second, we asked respondents to list the number of newcomers they have helped socialize on reddit. The average ratings from our socializer scale for those who have helped new redditor users are significantly higher ($t(130)=3.10$, $p=0.002$).

Third, we scraped the reddit site and collected our survey responders’ 1000 most recent comments (1000 limitation imposed by the site design). We then checked how frequently those comments were in response to a post or a comment whose poster has joined within 30 days of posting (a newcomer). Due to the non-normal distribution of posting frequencies, we analyzed the correlation using Spearman’s correlation. There is a weak correlation between those who are more likely to respond to these newcomers, provided a higher socializer rating ($r_s(130)=0.15$, $p=0.10$). These convergent tests of self-

reported and behavior data and the high reliability provided sufficient support for our next phase of study.

STUDY OF PREDICTORS OF SOCIALIZERS

To test our hypotheses on the predictors of socializers, we deployed a survey on reddit. The survey was posted a general subreddit, r/self. We also cross-posted our survey on other subreddits in order to attract more redditors (total of ~84,000 subscribers). Again, respondents were entered into the drawing for one of multiple \$100 Amazon Gift Cards or donation gifts.

Measures

The survey contained various psychological and social scales, questions about reddit usage, and basic demographic questions to measure our dependent and independent variables.

Socializer Scale

We used the 7-item socializer scale as discussed in the previous section. The average of the items were used as the dependent variable in our analysis ($\alpha=0.89$). Survey respondents were directed to these questions only if they have seen a newcomer on reddit (either a user claims to be new, or that her profile indicates that she just joined). Once again, the items loaded on a single dimension.

Social Identity Scale

We used a 6-item scale adopted from [21] to measure social identity. This 6-items scale focused on 3 dimensions: cognitive, affective, and evaluative. The average of all of the items were used as the independent variable of social identity ($\alpha=0.76$).

Portrait Value Questionnaire (prosocial values)

We used the 21-item short version of the Portrait Value Questionnaire developed by Schwartz and colleagues [68]. The questionnaire measures 4 high-level value dimensions: self-transcendence, self-enhancement, openness-to-change, and conservation. Self-transcendence emphasizes concern for the welfare and interest of others, and it is used as our prosocial values measure ($\alpha=0.66$). Schwartz explains that the “low” reliability is because the questionnaire items are designed to measure different underlying goals of the values [68]. As per their instructions, we used the normalized version of the rating for our analysis as these value ratings highlight the relative, and not absolute strengths of the values to each individual.

Generalized Reciprocity

Survey respondents were asked to what degree they themselves were socialized by others when they first joined the reddit community, from 0-never to 4-a great deal.

General Usage

Survey respondents were also asked to report their general usage of reddit. Of which, we used the items “how much

time on average do you spend on reddit daily” and “when did you first sign up on reddit” (month/year) as independent variables in our analysis. Due to the skewed nature of reddit-tenure, a log-transformation was applied on the number of months a survey taker has been a redditor. We chose to use the self-reported tenure, as we did not want to limit our findings to only those who have are willing to share their reddit IDs. In addition, some redditors may have over time changed their accounts or chosen to use a “throw-away” account for the survey (an account that is created with no past comments linking them to who they are), in which cases the account’s membership date would not be a valid indicator of actual membership tenure.

Demographic Questions

Basic demographic questions, such as age, gender, education, income, and location of residence area, were also included in the survey.

Results and Analysis

After removing incomplete responses and those that were completed too quickly (<5 minutes) or failed our consistency checks (low variance across all items and high discrepancies between duplicate items), we ended up with 1305 survey responses. We limit our analyses to only those responders who have seen a post by a newcomer while using reddit—who has had at least one opportunity to help socialize the newcomers (1174).

The majority of our respondents identified themselves as male (64%), between the ages of 21 and 29 (54%), and had at least some college education (>80%). On average, these users had been members of reddit for 20 months and were fairly heavy users, spending between 1 to 4 hours on the site per day (68%). Our respondents provided a nice range of user-tenure, offering a mix of new users (9% just joined reddit in the past month), and senior members (5% have been with reddit for more than 50 months).

Our dependent measure of socializing behaviors had a bimodal distribution, where the second mode (centered around 1, out of the 5 point scale) is much smaller than the first mode (centered around 3). Therefore, to test our hypotheses, we analyze our data three ways. First, we used an OLS regression model with the data as is. Second, we excluded the samples with the average of 1 socializer score in the regression to remove the second mode. Third, we employed a multinomial logistic regression (mlogit in stata) to compare across 3 tiers, low, medium and high socializers (1 to <2, 2 to 4, 4+). Social identity, prosocial values, generalized reciprocity, daily time spent on reddit, tenure and the quadratic effect of tenure as the independent variables. The interaction effect of prosocial values and social identity was also included. We also tested various control variables: whether or not the redditor is an administrator in a subreddit, their age and gender. None of the control variables were found to be significant and are not discussed henceforth.

Newcomer Socialization	R ² =0.19					
	Mean	S.D.	Est.	Std. Err	Std. Beta	Prob
Social Identity	2.75	0.65	0.25	0.04	0.20	<0.001
Prosocial (Self-transcendence)	0.86	0.64	0.17	0.04	0.14	<0.001
Social Identity*Prosocial			0.03	0.05	0.01	
Reciprocity	1.90	0.88	0.30	0.03	0.33	<0.001
Time spend daily	4.50	0.98	-0.01	0.02	-0.01	
Tenure (log)	1.19	0.35	0.08	0.07	0.04	
Tenure (log)*Tenure (log)			0.27	0.14	0.06	<0.05

Table 2. Regression model predicting newcomer socialization behaviors.

The predictor variables were similar across the three analyses methods. Here, we report on the first method—an OLS regression model using all the data. The results are summarized in Table 2. The model is statistically significant $F(7,1065)=36.6$, $p<0.001$) and collinearity test shows that the main effects were not highly correlated.

A number of our hypotheses were supported. We hypothesized that social identity (H1), prosocial values (H2a), and general reciprocity (H3) are positive predictors of socializers and our results supported these hypotheses. Respondents who identify with the reddit community, hold prosocial values, and were themselves socialized by other redditors, are more likely to help socialize newcomers on reddit. The interaction effect of social identity and prosocial values, however, was not significant. This suggests that social identity does not moderate the effects of prosocial values on volunteer socialization (H2b not supported).

We also hypothesized that time spent on reddit is a positive predictor of socializing; our results did not support this hypothesis (H4). Finally, our research question tries to examine whether tenure also predict socializing (RQ). We found that while tenure is not a significant predictor of socializing, the quadratic effect of tenure does show that there is a curvilinear effect of membership-length on volunteer socialization. Results suggest that new and long-time members of reddit are more likely to perform socialization behaviors than medium-tenured users. Possible reasons are examined in the discussion section.

DISCUSSION

Attracting and socializing newcomers has been identified as an important problem for online communities [20,23,27]. However, due to the lack of organizational structures in the online communities, much of the newcomer socialization has relied on volunteer socializers—members who voluntarily help out newcomers in these communities. Given the growing importance of volunteer socialization, it has become necessary to understand the underlying factors that influence people to volunteer.

Our results suggest that contextual factors do influence the likelihood of volunteer socialization. Specifically, when members identify with the particular community, and if they were themselves socialized by others within the community, they become more likely to help newcomers.

At the same time, our results also indicate dispositional factors that predict socialization behaviors. Our results showed that individuals who hold prosocial values are more likely to help socialize newcomers. Further, we did not find that social identity moderates the effect of prosocial values on socialization behaviors. This means that individuals holding prosocial values are more likely to socialize newcomers in a community, regardless of how strongly they identify with the particular community. Their willingness to help newcomers also does not amplify when they identify with the community.

Unlike what we have hypothesized, we did not find an effect of socialization opportunities on socialization behaviors. One possible reason is that being exposed to socializing opportunities alone is not sufficient to motivate members to help newcomers. However, given prior research showing that perceived need increase helping behaviors [e.g., 29], a more plausible explanation may be that time spent on site may not be an accurate measure of socialization opportunities. A more direct measure of how frequently members actually notice a newcomer asking for help may turn out to be a significant predictor of socialization behaviors.

Our exploration on the effect of membership tenure on socialization led to the finding that tenure has a quadratic prediction effect on socializers. Prior findings from online community participation suggest that participation may be highest at the start of members' tenure or when they have become senior, full-fledged members. Our results suggest that both may be true when it comes to members' participation in socialization newcomers. Newer members who have recently gone through the learning stage can perhaps more closely identify with the newcomers, which make them more motivated to help those users. In addition,

they may also feel more motivated to demonstrate their membership status and helping newcomers to signal that they are no longer newcomers themselves. On the other hand, senior members perhaps also feel more obligated to welcome and socialize newcomers as they hold a lot of institutional knowledge that others do not have. There may also be self-selection factors at play. Long-time members who are still using the site are perhaps more vested in the community—others might have gotten bored have already dropped out over time. Additional, longitudinal research is needed to better understand the underlying causes of the curvilinear relationship.

Since the examined predictors were measured differently (e.g., different Likert options for the scale), we are cautious in making any strong claims about the relative strengths of the different factors examined. However, using the standardized beta coefficients, it appears that one unit change in reciprocity has the strongest effect on socialization of newcomers, then social identity, prosocial values, and then the quadratic effect of tenure. Future research can confirm this experimentally by manipulating some of these factors to better assess the effectiveness of these factors in encouraging newcomer socialization.

While the focus of this work is in the online community setting, our results also provide a starting point for understanding general factors in predicting volunteer socialization in offline and organizational settings. Prior research has identified reasons why informal mentors select certain individuals as protégés (e.g., interpersonal comfort), but our findings also offer a set of general factors. Extending our work to the organizational context could be particularly useful as informal mentorship in organizational settings are actually more effective and lead to longer-term relationships than assigned mentorship [59]. We should point out, however, that key differences do exist between online communities and corporate organizations and it would be important to explore how these differences (e.g., anonymity/pseudonymity, social versus career-oriented) lead to differences in socializer predictors. As our exploratory factor analyses of the socialization scale indicated, the distinction between psychological and career functions of socialization identified in traditional work settings may not be as strong in the online social community setting.

Practical Contributions

This research offers two key practical contributions. First, results from this research enable us to identify volunteer socializers. We have developed a 7-item scale to identify these members of the community. While more validation is needed, this scale can be useful to researcher or designers as a general measure for assessment of the “health” of an online community. Specifically, this measure indicates of how active the community is at supporting newcomers and can suggest the potential rate of acceptance and integration of new members to the community.

In the near future, knowing what psychosocial factors predict volunteer socializing behaviors may allow us to build computational models to automatically identify these volunteers. We can then offer tools or training to facilitate these volunteers to more effectively socialize the newcomers.

In addition to identifying socializers, understanding the predictors of socializers can also lead to strategies to foster more volunteer socialization in online communities. First, given that generalized reciprocity is found to be a predictor of newcomer socialization (potentially the strongest of the factors we examined), one potential design to encourage more volunteer socialization is to remind members of how others have helped them when they first joined the community. Such a reminder may encourage members to help newcomers as they were once helped.

Alternatively, online communities may also leverage shared social identity to encourage volunteer socialization. Recent research has explored the use of common identity to facilitate the building of online communities [61]. For example, providing members with more community level information or using interface that highlights homogeneity between members may help increase identity-based attachment. This design has been shown to motivate member participation (e.g., visits and attachment to the community), but findings from our study also suggest that through strengthening identity-based attachment, members may also be more likely to voluntarily help newcomers.

LIMITATIONS AND GENERALIZABILITY

Our respondents self-selected into taking our surveys, which may have introduced sampling bias in our data. Certain types of users (e.g., with different value-orientations) may be more likely to respond to online survey requests than others. In addition, with our cross-sectional data, we cannot draw conclusive causal inferences. Additional research with longitudinal data should help validate our findings.

Studies involving a single site also have its limitations. However, since reddit is a broad community with a fairly diverse set of subcommunities (subreddits), we believe the predictive factors we found may generalize to other online and offline communities. However, community-specific features are likely to alter the effect size of the factors. For example, communities that attract a higher number of prosocial-oriented users (such as volunteer communities) are more likely to report higher correlations between social identity and prosocial values, hence affecting the predictive power of each of those factors.

CONCLUSION

In this paper we explored the predictors of volunteer socializers and found both contextual and dispositional factors. Users who identify more strongly with the community and who have been socialized by other users are

more likely to help newcomers. In addition, users who hold prosocial values are dispositionally more likely to be volunteer socializers. Future work should apply these findings to identify and support volunteer socializers.

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