Psychological Wellbeing as an Explanation of User Engagement in the Lifecycle of Online Community Participation

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ABSTRACT
This study documents users' changes in psychological wellbeing across the lifecycle of their participation in an online community. Through in-depth interviews with 30 long-term users of Everything2.com, and content analysis of their posts, we found that psychological wellbeing plays a large role in the evolution of how users participate in the community over time. Everything2 is a long-running user-generated content site framed as an open encyclopedia. Results suggested that negative psychological wellbeing, such as loneliness and low self-esteem, fueled initial participation; validation and criticism from other users on one's content motivation continued content contribution; but ultimately feelings of relatedness with the community, unrelated to content contribution, was what retained users. Absence of social connections in the online community, as well as improved wellbeing offline, led to exit.

Author Keywords
Online community; psychological wellbeing; motivation; emotional support; feedback

ACM Classification Keywords
H.5.m. Information interfaces and presentation (e.g., HCI): Miscellaneous.

INTRODUCTION
In this paper, we examine the role an individual's psychological wellbeing plays in their participation of an online community. How does it influence their entry into the community, the experiences they have as an active member, and their exit from that community?

Psychological wellbeing is a term used to refer to general mental health and wellness [35]. There are many dimensions of psychological wellbeing, some of which include an individual's positive evaluation of himself or herself (self-acceptance), satisfaction with life, having a purpose in life, self-determination [4], and positive relationships with other people [30-32].

Online communities can enhance positive psychological states by nurturing emotional support. While online communication is now dominated by tools like Facebook and Twitter that support existing relationships [16] there are still many examples of online spaces where networks form, and where emotional support from strangers, often in the form of pseudonymous interaction, is an important component. For example, there are many "mommy blogs" like YouBeMom and UrbanBaby that provide frank and forthright emotional support for women with the shared experience of parenting [33]. Large communities like Reddit have multiple boards where people engage in relational self-disclosure [37] and offer emotional support to one another. Online health communities have strong elements of emotional support, a key feature of this growing genre of online interaction [14, 22]. Even in "extreme communities" like those that promote commonly stigmatized illnesses like anorexia, emotional support has been seen to be an important aspect of participation [46].

While people are using these systems for emotional support, the systems themselves are rarely designed with the explicit intention of facilitating emotional support. In fact, all of the systems described above have the commonality of being an online space where people contribute information—the emotional support that results from online interactions is a result of people utilizing the affordances of the technology in unintended ways. How do people reinterpret and reuse features of an online community to facilitate emotional support?

In order to address questions of psychological wellbeing and online community features, we studied a mature, ongoing user-generated content community, Everything2. This site has persisted for more than 17 years, though its most active time period was in the early 2000s. People who contributed to the site often did so over long periods of time. Through interviews with long-term users, as well as an

GROUP '18, January 7–10, 2018, Sanibel Island, FL, USA

ACM ISBN 978-1-4503-5562-9/18/01…$15.00
https://doi.org/10.1145/3148330.3148351

assessment of their site activity, we looked at how they used the site to meet emotional support needs. We show that for some online community members, social support from other users can provide a very important motivation for committing to the community, and that the features of the system play an essential role in signaling that social support.

The Effects of Lifecycles of Participation

Online communities persist over long periods of time, and users are likely to change their participation in different ways over both their individual tenure within the community, as well as over the lifecycle of the community itself. Iriberri and Leroy [11] focus on how you measure successful outcome of a community over time, but did not consider outcomes for users in that lifecycle. Preece and Shneiderman [26] articulate the "Reader to Leader" framework in which they show how people move between different roles within a community, though they do not discuss in depth how motivations and outcomes are affected by those changes in roles, focusing on the functional elements of the roles. Velazquez et al. [41] extend the Reader to Leader model to talk about motivations associated with change over time, but do not address outcomes for participants in terms of their perceived benefits – like psychological wellbeing.

We are thus interested in the ecology of online community participation and how psychological wellbeing plays a role throughout the entire lifecycle of a user:

RQ1: How does a person describe their changes in psychological wellbeing over the course of their time in an online community?

EMOTIONAL SUPPORT IN ONLINE COMMUNITIES

User-generated content communities are often seen through the lens of their functionality, or through operational processes like member recruitment, rather than for their ability to provide social support for participants.

However, a previous generation of research and reflection did explore the affective benefits of online communities, and theories of affordances over the past decades also show why these processes are as salient in a social media environment as they were in earlier forms of online interaction.

Early online communities, which were largely text-based and pseudonymous, had multiple narratives that showed how emotional support was an important outcome for participants. Rheingold [29] described many incidents in the online community THE WELL where participants offered emotional support to each other. Horn [10] showed how participants in Echo, an early online community in New York City, received emotional support, and in many cases had emotion-based conflicts on the site. Pfaffenberger [25] describes in USENET how pseudonymous interaction led to both misbehavior as well as relational disclosure and emotional support in online communities.

Another aspect of early online community research was how pseudonymous interactions allowed for identity play and exploration. Turkle [40] pointed out in her classic work that pseudonymous interactions allowed for people to try on identities that they weren't able to explore in other areas of their life. For example, people could explore relatively benign identities like a science fiction fan, or express identities that were much riskier in their main interactions. For example, Shaw [37] talks about how early online communities like IRC were important for gay men to meet others like them, especially when there were not many other gay men in their area. Reid [27] described IRC communities where gender swapping was a common activity with a variety of social goals. These platforms described above, though covering a range of different technologies, shared in common a dependency on pseudonymous interaction (enabling identify control) and to some extent independence from geographic proximity, enabling participants to meet like-minded others independent of distance.

Emotional Support in Online Health Communities

Online health communities are another example of online communities that leverage independence from geography and freedom to manage identity. Online communities allow people to share emotional support with those who are geographically distant [12], but share the same health issue. Maloney-Krichmar and Preece [21] did an in-depth description of one online health community and found that strong feelings of social support and mutual reciprocity were expressed by members of the community, which supported people who might not have been able to share their common struggles without fear of being judged. Massimi et al. [22] studied a range of health communities covering different types of illnesses and found that emotional support was often an important feature of use, in that once an acute illness faded, or a person became more used to their situation, their participation would change.

Health communities also show how the threat of stigma makes control over identity signals very important. Newman et al. [24] describe how people are unwilling to share health problems on "real identity" sites like Facebook because of the potential stigma of those illnesses, which could indicate why mostly pseudonymous online health support communities are still such a prevalent and important part of the online social space. Li et al. [20] found a similar result in that people were more likely to participate in a weight loss discussion in a pseudonymous online community as it was less ego-threatening than to do so on Facebook. In a study of "pro-ana" online communities – groups that share tips, support, and advocacy for eating disorders – participants felt like the community was the only place they could go as their motivations were too stigmatized in other relationship

contexts [46]. In a study comparing hypotheses that online communities helped to relieve or avoid stigma, Lawlor and Kirakowski [18] found that participants in these communities were more likely to seek formal help.

Both the early generations of text-only online communities and health-based online communities show that emotional support can result from people who share a common identity (including one established by an illness) where online participation facilitates those interactions.

Re-Use of Communities and Features

There has been growing interest in the HCI community about how to design for wellbeing [39], and an active interest in designing communities for psychological wellbeing and emotional support [19]. Studying how people re-use technical and social features of online communities may help inform how to engage in that design.

In many of the cases described above, people are going to a community for the purpose of sharing information, but often engage in activities that promote psychological wellbeing as a side effect of that activity. In order to show social support in these communities, it may be important to repurpose tools to provide signals of emotional support. Ellison et al. [5] show how "signals of relational investment" on Facebook, like sending birthday greetings or liking comments, is positively associated with perceptions of social support on the site. Burke et al. [3] also found that people who engaged in interactive behaviors on the site (as opposed to consumption only) had better psychological outcomes. This has often been related to the concept of "social grooming" in that use of tools in systems can be a way of signaling attention or support in a cue sparse environment. Lampe [15] argues that features of systems are often reinterpreted by users of those systems to meet their own goals.

RQ2: How are participants using features of the site to send and receive signals of emotional support?

Study Context: Everything2

We conducted in-depth interviews with 30 long-term users of Everything2, an online user generated content community that has existed for more than 17 years. Everything2 was a reasonable site in which to situate this research because its long history enabled us to talk to long-term users. This was important because most prior research focused on initial participation [2,13,17] which made it difficult to have insight into users who have already been engaged in the community for a long period of time. In addition, one of the authors was a long-term participant user of the community, which provided insight into community norms, shared repertoire, and processes. Moreover, some of the users were current users while others were no longer users of the site, which was useful in understanding why people exited the site.

Everything2 is a user-generated content community that allows users to post any kind of content they want, but the community norm tends to focus more on creative writing (e.g., essays, fiction, anecdotes) than factual articles. The site is a collection of independent articles rather than a collaborative effort to create and edit. Users can post content, called "write-ups" and these posts are arranged into topics, which are called "nodes." Each article is written by a single individual, who retains ownership and attribution for their content. The site is almost entirely based on text.

Although Everything2 never reached the size of large-scale user-generated content communities such as Reddit or Wikipedia, users have been consistently active on the site since its inception. Through in-site messaging, offsite communication like email and instant relay chat (IRC), and occasional in-person meetings, users, who refer to themselves as Noders, have a long history of social interaction with each other on the site [41].

METHOD

Participant Recruitment

Semi-structured in-depth interviews were conducted with long-term members of Everything2. Participants were recruited through snowball sampling; we started with one established member of the Everything2 community that knew a great number of connections in the site and asked for a referral to other long-term users. We continued this referral method until we began to see saturation in response. In addition, to avoid the homophily bias of snowball sampling [9] we recruited some users based on server logs of their usage. Some users were selected because they used private messages frequently but contributed few articles, while others were recruited because they were avid writers, but did not engage in messaging. We included both current users as well as those who had not logged in for months to get diverse users (users who were no longer active on the site could still be reached via email). We also contacted users whose content was deleted by administrators. We used this sampling method in order to maximize diversity and to characterize in rich detail a variety of user experiences—this does not imply that these users are representative of a larger population, but rather that they reflect diverse types of users.

Potential participants were sent a message through the site messaging system, or by email to accounts listed on their profile and were directed to an online screening questionnaire. They were then contacted and interviewed by telephone. Before the interview, researchers described the goal of the research and the types of data being collected to the respondent, and received their informed consent. The study was approved by the IRB of the institution where data was collected. Usage log data were provided by the administrator of the site, and all participants were aware of that access as part of the informed consent process.

Respondents also were informed that researchers had looked over their early public posts.

Interviews and Analyses

One-hour semi-structured interviews were conducted using a key-point interview guide [9]. We asked participants about their motivations to participate in their site, and why and how their participation evolved over time. In particular, we asked about different periods in the lifespan of their use and the relationships they had with other users of the site both online and offline. To help users remember their activities, we extracted information of their entire usage history from the site's servers. This information included what kind of write-ups they posted, when they were posted, their voting activity, and their messaging activity. For the sake of individual privacy, we did not look at the content of their messaging activity. We also looked at the public posts that were accessible through the user's public profile. For example, a user would be asked a series of questions like, "The first time you posted was on April, 2001, and it was about XXX. Do you remember this? Can you tell me what was going on with your life when you posted this? What kind of reaction did you get from the community?"

Three coders read through all of the transcripts and iteratively analyzed them by assigning subject codes, or tags, using the software package Atlas.ti [23]. The first few rounds of coding were mainly based on how participants used the site's different features, such as their motivation to post something, interaction with other users, and interaction with administration. This resulted in five overarching themes with a total of 24 categories and more than 60 tags.

Once we saw an emergent pattern of participants discussing psychological wellbeing factors such as loneliness, happiness, and self-confidence in relation to different activities on the site, we went back and coded by users' psychological state. After identifying their psychological state when they joined, any changes during their lifecycle, and when they left the community, we looked at what kind of motivations, writing content, social responses (e.g., voting, social support or lack thereof, social activities on and off the site), and external factors (factors unrelated to the website) were tied to that state. This data was organized as a matrix in a spreadsheet.

RESULTS

Psychological Wellbeing and Early Stages of Membership

There were many different reasons people joined Everything2, some of which include social influence ("my friends made me join") and boredom ("I had 3 hours every afternoon where I didn't have classes so I wound up just killing time in the afternoon"). However, when describing the circumstances of their life when they joined the site, many participants reported being in a state of low psychological wellbeing, desiring companionship and recognition. These users had experienced a major life change (e.g., going to college, moving to a new place) or some life event (e.g., death of a close person, unemployment, poor health) that was associated with negative psychological states and were thus using the site as a shoulder to cry on.

When Henry[1] joined Everything2, he was in poor health and was seeking an alternative social venue. "I found that when I was very ill, my social circle was very uncomfortable with that and they did not want to come around and see me when I was sick because I looked so terrible, but over the Internet that didn't matter," he said. One of Henry's earliest posts was a long entry about Crohn's disease. The first seven paragraphs are factual statements about the disease, very much resembling a post that one would find on Wikipedia. In the final two paragraphs, however, he related his own experience, divulging extremely sensitive personal information:

> CROHN'S DISEASE HAS TAKEN A LOT FROM ME OVER THE YEARS. I'VE BEEN POINTED AT, TEASED, TAUNTED, EXCLUDED FROM SOCIAL GATHERINGS, AND EVEN BEEN ACCUSED OF USING MY ILLNESS FOR PERSONAL GAIN. HOWEVER, CROHN'S HAS GIVEN ME A LOT AS WELL. SINCE I WAS DIAGNOSED AT THE AGE OF THIRTEEN, I LEARNED QUICKLY THAT I WAS NOT INVINCIBLE, SOMETHING THAT MANY TEENS TAKE YEARS AND A NUMBER OF STUPID MISTAKES TO LEARN.

In the case of Mike, his father had just passed away and he was home without a job: "[Everything2] was a grieving method for me in a lot of ways," he said. His early entries echoed Mike's melancholy state and contained subject matter such as tragic novels, alcohol, smoking, solitude, and tragic stories. One entry, titled "Pictures of my father," reflects his mindset at the time. Unlike his other factual entries, this one is comprised of short sentences, almost like poetry:

> PHOTOGRAPHS OF MY FATHER REST IN PILES ON THE PIANO AND THE DINING ROOM TABLE. WE MAKE A COLLAGE ON POSTER BOARDS OF OUR FAVORITES, OUR DEAREST. PICTURES TO REMEMBER THE LEGACY OF HIS LIFE; SCHOOL PICTURES, FROM VIETNAM, SKINNY, WITH A BEARD, AT OUR GRADUATIONS, MY SISTER'S WEDDING. MOMENTS CAPTURED AGO, WHICH NOW, (IN VAIN) TRY TO EXPRESS HIM. THEY JUST DON'T GIVE ENOUGH. THE POSTER BOARDS WERE PUT ON EASELS AT THE FUNERAL HOME. AN OPEN ESCAPE FROM THE OMINOUS COFFIN NEARBY. A CHANCE TO FORGET DEATH FOR A MOMENT AND REMEMBER.

[1] All usernames were randomly converted to different pseudonyms that were consistent with gender.

Participants explained that interacting with others online was an effort to share the burden. Frank, who wrote about his grandfather's death, said that the act of sharing the negative experience helped alleviate his mood. "If you share your pain with someone else, then the pain is halved, but if you share your joy with someone else, it basically gets doubled," he said.

Others, however, did not have a specific traumatic event—they were just lonely and desiring some form of socialization. "I joined because I wanted feedback. It is critical to me and is the glue that holds a lot of this together," Denise said.

Denise's early posts were mostly fiction, dealing with subjects such as vengeance, rape, and death. These posts elicited much feedback from other users, mostly in the form of private messages, according to one of her posts about her appreciation for Everything2.

Lonely users had different ways of coping. Some sought out the site to find people to talk to. Gwen described how her most active time on the site was when she started college. She said that when she first got to college, she had what she thought was an awesome roommate. The two of them built a social circle, but the roommate was later put on heavy anti-psychotics that turned all of their mutual friends away. She said she was in a deep state of melancholy when she joined Everything2:

> *I was just honestly looking for a place to belong, looking for people to pay attention to me and give me some comfort and make me feel less alone. I felt that Everything2 was the only place I could go and feel safe and people there wanted to "hang out" with me. I spent a lot of nights up talking to people and I really think it helped me get through that.*

Other users, however, were not going to the site to seek friends, but rather to pour out their emotions, much like one would write in a journal. Recalling his first year on Everything2, Nate said, "I was living in this tiny little attic apartment and I had nothing going on—literally nothing going on, so I was just sitting in my room at night for like, five or six hours, and I know Everything2 was a big part of that time I spent online." In the first year he joined Everything2, Nate wrote 244 posts, a quarter of which were posted after midnight.

For Sam, most of her early posts were either short, factual entries, or deeply personal anecdotes about her deceased mother and estranged father. Across several entries, she talks about her hatred and fear of men, her psychological state well expressed in the following excerpt:

> SOMETIMES IT'S ALL I CAN DO TO FIGHT THE HATE AND RAGE THAT WELLS UP IN ME AND I WANT TO ATTACK SOMETHING, SPITTING FIRE AND FISTS FLYING. MAYBE THIS IS WHY I HAVE BARELY EVER DATED, WHY MY FIRST KISS CAME SO LATE, AND WAS A "KISS AND RUN." COULD HE FEEL THE PAST ON MY LIPS? DID HE TASTE THE POISON OF WHAT MY EYES HAVE ABSORBED?

Some users, like Frank, titled entries with dates rather than a subject matter, indicating their usage of Everything2 as a personal log. However, unlike a private diary, these users were seeking an audience. Sam said she shared emotional anecdotes because she desired feedback. "If I didn't care about others' responses, I would just keep a private journal," she explained.

Increasing Psychological Wellbeing through Feedback and Attention

A salient theme among the participants we interviewed was the relationship between positive feedback and subsequent feelings of pride, self-confidence, and status. "As trivial and childish as it is, the voting and the cooling system is extraordinarily psychologically rewarding, especially for someone who is just starting out," Rob said, "Getting that sort of positive feedback even on top of the negative feedback, which was pretty acerbic sometimes, was a huge gut punch of super gold pep."

Gerald recalled how his initial write-ups were very well-received by the Everything2 community. "I respected the writing of other things I saw get cools and upvoted so when something I wrote got that, it was validating," he said.

Henry said that the community felt very encouraging and positive, especially in comparison to other sites: "There were always insightful comments. So much of the Internet, if you read comments that people post on other websites, it's 'you're stupid,' or 'you suck' but on Everything2 you get actual feedback on how to make something better."

Increasing self-esteem by participating in the site was a recurring theme in the interviews, especially among participants who were unsocial (offline) at the time they joined the site. Several participants used the term "popularity" to describe how they felt about their status on the site. This was especially salient among participants who described themselves as having never been in the center of attention in offline situations.

"I've never been popular in my life and it was so cool to have people want to meet me after reading something that I wrote. It gave me a confidence that I had never had before and it made me feel like I was part of something for the first time ever in my life," Bob said.

Similarly, Alice talked about how she garnered reputation on the site and a lot of interest from male users, which encouraged her to write more:

> *A very long time ago I had one of the most popular nodes out there. It was named, 'How I nearly killed myself masturbating. A lot of boys wanted to get to know me because I wrote that node. I loved being popular.*

Feedback had aspects of both quantity and quality; in other words, more feedback mattered, but the type of feedback mattered too. Many participants talked about how receiving a lot of upvotes or cools made them feel good. However, a few participants also pointed out that they were affected by individual users who communicated positive feedback through private messages. "I remember there was one particular user who was very encouraging," Kent recalled, "I was very self-deprecating but she said that what I was doing was great and that I should continue doing it."

Many users talked about how they gained confidence from positive feedback for factual write-ups and began writing more personal things or fiction. These more-or-less "subjective" write-ups generated more appeal for those who had social connections on the site because they were writing for a more specific audience. Rachel talked about how the ties with the community influenced her desire to contribute content:

> *Folks who were actively participating in the community side of things weren't writing for the sake of writing. You were writing for this particular audience of people that you cared about and if you had a falling out with them it made you want to take your content away.*

Rachel's posts in her first month of joining Everything2 were mostly factual posts related with biology. Some examples of the titles of her post include 'psychobiology' and 'cortical stimulation mapping.' After a month, however, she began to write more personal things. Her first post that had personal content was simply titled with the date, "October 4," and starts out with: "I saw someone who had been hit by a bus." She goes into detail about how she felt as a witness and her feeling of helplessness in the situation:

> PEOPLE WERE STANDING AROUND, LOOKING AT THEIR WATCHES, ON THEIR CELL PHONES. THEY DIDN'T LOOK DISTURBED. I WAS DISTURBED. I KEPT THINKING ABOUT HOW COLD THE SURFACE OF THE ROAD WOULD BE ON A MORNING LIKE THIS. I WONDERED WHAT IT WOULD BE LIKE TO BE IN HIS PLACE. I JUST HOPE HE WASN'T SCARED. I HOPE HE DIDN'T FEEL ALONE.

In her first three months, Rachel wrote 39 posts—after that, she did not write as much—less than 10 a year—but she actually became more involved in the community. In 2000, she sent 0 private messages, but this number increased to 103 in 2001 and 1011 in 2002. This indicates that while Rachel was not contributing more content, she was engaging in conversation with other members.

The effect of positive ratings, however, seemed only to apply to the early stages of users' membership. Lola described how she was initially driven by reputation, to "show that I was there for a reason." However, once she started to become socially involved with other users, she started posting less and communicating more with other users both online and offline. "What wound up happening is that I made some of the best friends I've ever had. I don't consider them noders anymore. Yeah, I met them because of Everything2, but now I consider them family," she said.

Sense of Community Enhancing Psychological Wellbeing

Use of Diverse Features to Connect

There were several characteristics that made the community in Everything2 seem unique to our interview participants: the common interest in writing, instantaneous nature of feedback, openness of the members, and diversity of users. Many participants described the site as tightly knit community. "It's a dynamic, edgy community and the combination of having a database of writings along with a message board and a chat box was novel and appealing," Leo described.

Lightweight feedback played an important role in introducing and integrating users to the community aspect of the site. "Obviously votes and cools can start a new friendship. If a group of people voted five times on your posts, at one point you will jump into chat with them," Kent explained. In particular, users bonded over discussions that were based on socially sensitive topics, such as having a miscarriage or watching a close friend or family member commit suicide, as they were able to commiserate with others who shared similar experiences.

Roy said, "It was the first time where I was part of an organization and could reach out and communicate with someone in virtually every aspect of professional and personal lifestyles where everybody had this common interest that allowed them to communicate. That was something that I hadn't experienced before and really the heart of social networking."

Flora admitted that she was "actually pretty shy back then" so she would watch people chat but rarely reach out to others. However, she eventually found herself conversing with people who wanted to talk to her about the things that she had posted:

> *People would message me about things that I had written, asking questions, or saying, 'Hey that was a great write up, you forgot to include a comma, you may want to fix that.' As I started having people reach out to me, I started messaging more.*

This sense of community was present even in people who did not write or talk with other users on the site. Tim, who called himself a "lurker," described how he was engaged in site for several years before he started writing, by just reading what people posted and chatted about. He said that watching people interact on the site showed him that there were certain norms and "unspoken rules" governing a site, which helped get his "foot in the door."

The feeling of belonging to a group was stronger for long-term users. "Ultimately, it was a sense of community; you could talk to someone you didn't know and find if you had something in common," Erin said. In fact, information was what lured people to site, but it was not the factor that made them stay. As Jack put it:

> *The nodes were much more interesting to me as a catalyst for the community, an anchor to the community that is a monument that we can build… it was absolutely about interacting with each other rather than people contributing to this static compendium.*

One unique aspect of Everything2 was that the sense of community also spilled over into organization of in-person events. Many participants talked about attending meetings (called noder-meets); ranging from large gatherings that took place over several days to city-wide scavenger hunts and smaller, more spontaneous dinners. Almost every participant conveyed an anecdote related to their noder-meet experience. Flora recalled:

> *I was amazed by people's willingness to trust a large group of complete strangers in their home because oftentimes the larger gatherings were 30, 40, 50 people and you're basically sending out an open invitation to people who may be serial killers or rapists.*

Pseudonymity Facilitating Community

Everything2 allows users to create pseudonyms, which enabled people to be anonymous, yet create a distinct persona. The anonymous aspect enabled people to write freely about any topic without fear of judgment. Isis said that the anonymity in Everything2 made her more comfortable about writing about private things. Isis' posts tended to be peppered with profanity, rants, rhetorical questions, and sharp critiques of society, especially regarding women's body image. "There are certain times in my life when things happen to me and I don't feel like I have anywhere to express how I actually feel about them so I end up coming back to Everything2," she said.

Participants noted that the content was able to become the springboard for social interactions thanks to the design of the system. Erik pointed out that he had more emotional investment in Everything2 than Wikipedia because the content is linked to a specific person or profile:

> *Wikipedia's model does great for peer-reviewed factual writing if you don't mind being completely anonymous or near anonymous, but on Everything2, it's that human factor behind each writeup. I can look at a writeup written by Ta**x or Pa**se and it's not just a piece of fiction—it's a piece of fiction written by someone that I care very deeply about.*

With pseudonymity, the collection of writings under a person's profile enabled others to learn more about them in a meaningful manner. These profiles were more than a static page of self-presentation. By reading someone's work over a long period of time, participants said that they were able to gain an understanding of that person.

Quinn said that knowing people through Everything2 was different from other online communities because she had a good sense of who they were as a person. She said that this made her feel comfortable about meeting some Everything2 people offline:

> *I friended a lot of random strangers on Facebook so I can send them little free gifts from my flash games and they'll send stuff back. I have no sense of who they are, I don't know anything about them, there's no community, there's no interaction, there's no getting to know them. For me Twitter is the same way, you can't get a sense of a person in 140 characters. I've not met anybody through Twitter or Facebook that I'd actually want to get to know or meet in person.*

Posting content through a pseudonym was also a way for participants to convey information about themselves in an indirect, yet rich way. Linda explained:

> *I got emotionally involved with people on the site because they liked my mind and the way it worked, and they just understood my thought process and where I came from and my experiences by reading my nodes.*

Exit Reasons

People discontinued or made major changes to their patterns of participation on the site for largely two reasons. For people who had low psychological well-being, "feeling better" made them use the site less—sometimes the alleviation could be attributed to the site, but other times it was a change in off-site situations, such as getting married or getting a job.

On the other hand, people were also leaving because being on the site lowered their psychological wellbeing—either because the people they loved were no longer present, or they felt like an outsider, which lowered their feelings of self-worth and emotional connection.

Losing Friends and Feelings of Relatedness

For people who had high psychological well-being and were socially active—social problems with site members or departure of online friends lowered their psychological well-being and made them use the site less. Henry commented: "As much as I enjoyed the writing, the longer I was there, the more it was about the community to me—the more it was about the people. And when the people that I knew, left, I didn't really see any need to continue," Henry

said. "The site is kind of an empty room; nothing happening much, kind of like an echo," Bob said.

Loss of the feeling of togetherness caused people to lose a feeling of purpose to be on the site, even when it came to contributing content, because the perceived audience was no longer there. Several of participants who used to be active members but were no longer so, explained that loss of people they considered their "friends" in the community discouraged them to write. "A lot of my content was silly and the people that would read it are not really there anymore. So why would I go write up something silly that 10 or 20 people may read, of which none of them are people I know?" Erin explained. She said that she still occasionally logged in to check her inbox, but that she no longer felt a need to contribute content to the site.

Similar to Erin, Bob said that he still goes to the site to read but does not have the same investment in the site as before because the people on the site have changed. "There was so much going on at one point… it was a big crowded room and you knew everybody. Now, the way I look at the site, it's a kind empty room…few people are here and there but it does not feel like an interesting community as there are not lot of intelligent conversation going on," he said.

For these users, even though they eventually left the site, they still harbored strong feeling of fondness towards the site. Because they left the site because the people they considered their close contacts were no longer on it, it was different from situations such as leaving one site for another. Moreover, many participants continued friendships forged through Everything2.

Pete attributed his time on Everything2 as a very important chapter of his life that he considered a positive experience:

> *I look on it fondly, it's a part of my life, it made me who I am today, I wouldn't be the same person if it weren't for these people, and it wasn't really the site so much as was the people on there, and like some of these people are seriously dear and I don't know what I'd do without them.*

Feeling Like an Outsider

The favorable feeling toward the site was not present, however, with users who left because they felt peripheral to the social groups. The strong mini communities within the site came with negative aspects such as gossiping, strained relationships, and feeling isolated if one was not part of certain groups. "It's so funny, it was almost like a high school social clique in cyberspace," Mary recalled. She said that people were sometimes gathered in the chat room making fun of other users and talking about the people rather than the content that they wrote on the site. "It ended up being a reversion back to high school, which made it interesting; most of the things people talked about were personal, social stuff," she said.

While participants like Jack loved Everything2 for all of the inside jokes, people who did not understand these jokes felt left out. Carol also described Everything2 as being a "series of cliques" that she felt like she was not a part of. Living in Alaska, she felt isolated from the community because she was not able to participate in the offline meetings:

> *They would meet up and hook up and have great parties. It informed so much of what was going on with the site but here in the last outpost of the Pacific Northwest, all you had was to read the subtext in the comments. It was kind of like everyone was playing a game I didn't get to participate in*.

The feeling of being an outsider was not only about social interactions, but also in relation to content contribution. Gwen, who was a content editor, talked about how she was upset because her suggestions regarding administrative aspects of the site were being ignored: "It felt like the direction and the way I use the site was being thrown by the wayside and wasn't important." Frank said he was upset that people he disliked were being supported by others: "There were people whose writing I didn't like and I felt they were being too accepted because I didn't think they were good writers but others were worshipping them. There was one that I really didn't like and he became an editor and I left," Frank said.

DISCUSSION

While interaction on social media sites, which are dominated by "real name" identity tools, has become a default mode of online interaction over the last decade, sites where pseudonymous interaction is the default mode still represent a major part of the online community ecosystem. We use quotations in the term "real identities" as several scholars have pointed out that 1) people can have multiple identities, and 2) pseudonyms are an authentic expression of identity, even if not used in other contexts [1]. Our results indicate that people may use these pseudonymous interactions in order to seek out emotional support in online communities, and become active members because they feel safer in an environment where they are not judged by others, while still being able to maintain a constant identity within the site.

We found that relatedness—the sense of belonging—was extremely important in keeping users engaged on the site. Our interviews suggested that only those people who feel a social connection to the site persisted. This also had negative effects, however, such that some people who felt they were not a part of a subgroup were reminded of cliques in high school and felt like they were an outsider. This was particularly salient for individuals who were more interested in factual content than emotional content.

Reduced Cues Afford Intimacy

One major difference between interactions in online communities, versus the broader category of social media, is the use of so-called "Real Identity". Sparse cues afforded by text-only environments could lead to the identity play identified by Turkle, but could also lead to misbehavior like flaming and trolling that was often associated with the process of "deindviduation" [38]. In other words, the theories of the time were based in a "cues filtered out" mode, where text-only environments led to mostly negative emotional outcomes between people interacting in online communities.

However, newer theories of how the features of online communities can support interpersonal interaction show that, over time, emotional support can be improved by technology mediation. Walther [42, 43] proposed the "hyperpersonal model" to explain how reduced cues could support online interpersonal intimacy. In his framework, text-based online communities allow people to control their "cues given off", unlike in other environments. For example, people in online environments can create a pseudonym that is able to express negative emotions or non-normative beliefs that might lead to sanctions in other contexts.

Finally, reduced cues available to people in online communities may be simpler for appropriation by those participants. We found that people in Everything2 would repurpose features of the site intended for content production to signal emotional support, including ascribing meaning to simple one-click positive feedback. This was very consistent with other research on how people find meaning in the recipient of simple feedback mechanisms through paralinguistic digital affordances such as Likes on Facebook [45] and provided a qualitative explanation for why feedback in early stages of community participation would explain long-term engagement in online communities [34]. Sites that allow for re-use of features might enable users to engage in more creativity in offering social support to each other.

Increased Cues Afford Intimacy

In what seems like a paradox, we found that increased cues also afford intimacy, but only for those who had already established some baseline level of respect and/or closeness. The strong communities formed in Everything2 were not necessarily confined to cyberspace. We found that people were also extending their online bonds to offline meetings, which in turn strengthened their online relationships. This could extend our understanding of the hyperpersonal model in that in initial phases of the relationship, reduced cues could support intimacy, but once the relationship is formed, then the "richer" cues may serve to solidify the bond.

Recommendations for Practice

In many online communities, design practice is centered around the efficient delivery and production of tasks. While this task-based focus likely does meet the needs of some participants, tools that allow users to go "off-topic" and offer emotional support to one another may be another important consideration for designers of user generated content communities. In particular, the analysis above shows that features that promote social grooming can help foster feelings of social support and thus a person's commitment to the community.

Having a range of affordances that have different "weights" in terms of how much effort it takes to engage in that behavior, can provide users with more versatility. For example, simple behaviors that require a mere click—in Everything2 this was voting, but it could be Liking on Facebook or Favoriting on Twitter—provide a relatively low barrier to signaling interest and support, as supported in other work on social media [8].

Pseudonymity may be optimal to guarantee the initial anonymity but allow the potential for more intimate connection through the constant identity. However, Resnick [28] describes the use of pseudonyms as a benefit in online environments, but warns that when pseudonyms are too easy to abandon or create, they may lead to more negative behavior [7]. He describes how tools like reputation systems can lead to commitment to a pseudonym, without removing the benefits of identity-control enabled by these features. This may be useful in the context of communities that want to facilitate emotional support among its users at a more systematic level.

Limitations

It is important to interpret these results in the context of this particular user-generated content community, as things may be very different in other contexts. In the case of need fulfillment of relatedness, Everything2 was ideal in that there were many features built into the site that facilitated interaction among users. The communication features in Everything2 are also diverse in terms of instantaneousness (instant messaging vs. in-system emailing) and effort (voting vs. sending a message). The interactivity of the community could have been what contributed most to users' feeling of relatedness. However, it could also be that the content of the site, which despite it being described as an open encyclopedia, focused more on personal and subjective content rather than factual content, also contributed to the feeling of relatedness. Factual content can be dry whereas personal content is expressive and conveys more about the writer; not just by the content itself but the writing style and use of vocabulary.

It is unclear whether or not these are features that could be incorporated into communities with other types of content. Many participants talked about how they appreciated the quality of content on Everything2; however, since most of the content is creative, it was uncertain how much emotional attachment to the community would contribute to the quality of content were it more factually oriented.

Another limitation of our study is that when participants talked about how their wellbeing improved through usage of the site, there are confounding factors that make it difficult to attribute the positive outcomes to a specific factor. While we presume that social interactions played a large part in enhancing psychological wellbeing, this is primarily based on the participants' self-reports. The act of expressive writing has been shown in prior research to have therapeutic effects; it could be that the writing, or a combination of writing and socializing, contributed to better wellbeing. To determine true causality, one would have to take a more structured, experimental approach. In addition, these interviews were conducted with established members of the community, whose use had persisted over time. This leads to two potential limitations. First, recall of early motivations and experiences are likely shaped by current impressions of the site. Second, experiences of this group likely were different from people who left the site after negative initial interactions.

CONCLUSION

Interviews with long-term users suggested that initially, positive feedback played a large part in why they continued to stay on the site because it made them feel good about themselves. This was consistent with prior research [6,44]. However, in discussing why they continued to stay on the site, interviewees talked about how the site became a social experience, and how they were gratified not by the metric-driven aggregate feedback of the site's rating system, but one-to-one social experience shared with other users.

In summary, we found that people who used the site as a way to escape from, or release negative emotions, were able to increase their psychological wellbeing through positive feedback, which mostly happened during the early stage of participation, but later positive feelings were built through social connections.

Systems like those described above are often designed for information sharing; rarely do they have explicit designs that promote emotional support. However, people may be using unintended affordances of online technologies – like reduced cues in text environments in the form of upvotes and downvotes – to get emotional support.

Our work contributes to design as we know more deeply about how psychological factors influence people's involvement in the community, as well as what psychological factors were important for maintaining users over a long period of time. For newer users, giving them more autonomy may increase their engagement with content. However, at the end of the day, feeling emotionally connected with other people was the only motivation that was positively associated with long-term usage.

In the context of this particular community, the "novelty" of sharing or getting new content did not seem to be what motivated long-term users. This suggested that to retain long-term users, user-generated content community administrators should consider incorporating features that facilitate interpersonal connections rather than mere repositories of information, because the people who "stick around" were not really there to share knowledge. In fact, information was the wing-man that lured people to site, but it was not the factor that made them stay. As Patrick said, "I came there and got involved because of writing, but in the end of it, I stayed because of the people."

ACKNOWLEDGMENTS

This work was partially supported by NSF grant IIS-HCC-0812429.

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