

Dealing with Newcomers

Robert Kraut, Moira Burke & John Riedl

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The challenges of dealing with newcomers

In the face of inevitable turnover, every online community must incorporate successive generations of newcomers to survive. Without replacing members who leave, a community will eventually wither away. Newcomers can also be a source of innovation, new ideas and work procedures or other resources that the group needs. However, attracting newcomers and incorporating them into an existing community can be a difficult endeavor. Newcomers have not yet developed the commitment to the group felt by old-timers. As a result, they are very sensitive to the public image a community has and to their own early experiences in it. They may not join or are likely to leave in the face of even minor adversity. They have less motivation to be helpful to the group or to display good organizational citizenship characteristic of many old-timers (Organ & Ryan, 1995). In addition, for reasons of either ignorance or maliciousness, they may behave in ways that can be harmful to the group. They do not yet know the norms guiding behavior in the group and in their ignorance, may act in ways that offend other group members or otherwise undercut the smooth functioning of the group. For example, when participating in Wikipedia, the open-source encyclopedia, new editors may fail to follow the policy of writing with a neutral point of view, or they may add content that has already been determined by a consensus of more experienced editors to belong in another article. Because they lack experience, when newcomers try to participate, they imperil the work that other community members have already performed. For example, they may introduce bugs in an open-source development project, cause the (virtual) death of fellow group members in an online role-playing game, or ask redundant questions in discussion groups. Finally, their mere presence can increase diversity in the group, at least until they learn the group's norms, and may in itself be off-putting to more experienced members of the community, who prefer the people and routines they were familiar with.

When dealing with newcomers, online communities must solve five basic problems.

1. **Recruitment:** First, communities need to advertise to recruit members and to ensure a supply of newcomers for replenishment and growth.
2. **Selection:** Second, the community needs to select only potential members who fit well. This may occur through self-selection, where potential members who are a good fit find the community attractive and those who not a good fit find it unattractive. Or it may occur through screening, where the community screens out some potential members, selecting the others.
3. **Retention:** Third, both theory and experience suggest that newcomers' ties to the community are especially fragile. As a result, the community needs to engage in tactics that keep potentially valuable newcomers around until they can develop more robust ties to the community or learn how the group operates.
4. **Socialization:** Fourth, the group needs to socialize the newcomers, teaching them how to behave in ways appropriate to the group. We discuss many techniques for socializing members of an online community and encouraging them to behave appropriately in chapter 5 on regulating behavior. In the current chapter we focus on socialization strategies that are of particular relevance to newcomers.
5. **Protection:** Finally, throughout its interactions with prospective members, visitors and newcomers in their early interactions, the community needs to protect itself from the potentially damaging actions of those who either have little knowledge of appropriate group behavior or little motivation to follow community norms.

These problems vary in importance across different communities, although every community faces them to some degree. Some communities may have an abundant supply of people clamoring for membership, and hence want to restrict growth; for these communities, word of mouth may be sufficient for recruiting. Communities like open source software development communities may have strict standards for members, but other communities may want almost any warm body who shows up. But even these seemingly open communities would like to reject spammers, trolls or others whose primary goal is to disrupt the community.

These problems reflect two perspectives — that of the newcomers and that of the online community and its existing members. The recruiting process, for example, consists both of the activities that potential members might perform in investigating different communities and weighting alternatives and the activities that communities and their members might perform in soliciting new recruits and interacting with them. In this chapter we consider the perspective of the newcomer only in so far as it has implications for how the online community needs to be designed to accommodate them. For example, as we discuss below, newcomers are happier in a community and contribute more effectively if they have a complete and accurate impression about the nature of the community before they join it. To collect the information they need to form this

impression, they may lurk in the community, silently observing, or may try to participate, to gauge the community's reaction to them. Even though prior research demonstrates that newcomers are happier, stay longer and perform more effectively if they actively seek information about organizations before joining them (Bauer, et al., 2007), this chapter does not address the pro-active moves that newcomers should make in order to gain an accurate view of the community because it is not under the control of a site designer or manager. Instead, the chapter concentrates on how the community should be designed to provide the information newcomers need to make a decision about joining and to respond to the common moves that newcomers use when forming impressions of the community. For example, prospective members should gain a more accurate view of the community if communities publish FAQ (frequently asked question) pages to make policies visible and allow outsiders access to archives of conversation among members, enabling them to judge the nature of the interactions. However, some communities may decide not to make these resources available to outsiders. For example, the managers of cancer support groups hosted at the Association of Cancer Online Resources (acor.org) believe that the privacy needs of current members outweigh the investigatory needs of prospective members. Therefore, outsiders must register to become a member of a support group before they can see any of the interactions that have occurred in them. The catch, of course, is that most outsiders cannot determine if they want to become a member unless they can sample the goods.

Researchers in both online and offline settings have identified an analogous set of stages that newcomers take on the path to becoming committed members of a group or community. Levine and Moreland (1994), in discussing offline groups, use the terms investigation, socialization and maintenance to describe the set of activities that newcomers and groups engage in as they become increasingly committed to each other. Individuals and groups go through an investigatory phase, in which newcomers gather information about the group to predict whether it will fit their needs, while groups use recruiting and selection processes to identify prospective members who would fit well with the group. During the earliest stages of the socialization period, just after a person has joined the community, the central challenge for the community is to keep the newcomer around. The relationship between the newcomer and community during this early socialization phase is especially fragile, and even small problems may drive newcomers out. However, as the newcomer becomes more committed to the community, helping newcomers learn the norms of the community and how to behave becomes increasingly important. In describing the progressive commitment of newcomers to online communities, Preece and Shneiderman (2009) propose a 'reader-to-leader' funnel, in which some newcomers move from being readers, to contributors to collaborators and finally leaders. Their transition from reader to contributor is analogous to Moreland and Levine's description of the transition of potential members from outsiders to organizational members as they move through the investigatory to the socialization phase, and is the focus of this chapter.

Problem 1: Recruiting newcomers

In the face of turnover in their membership, online communities will inevitably die without a constant supply of newcomers. Recently leaders of Wikipedia have been bemoaning their dilemma, that after years of exponential growth the rate of new contributors joining Wikipedia does not compensate for the number of experienced editors who drop out¹. Thus it is important to consider the processes by which online communities advertise their existence and recruit newcomers. These processes determine whether the community will have enough members to accomplish its goals. In addition, the processes of recruitment may have direct consequences for later problems that the community must solve, such as selection, retention and commitment. Although there are many differences between online communities and conventional organizations with employees, especially in terms of the formality of the recruiting and acceptance process, the research on employee recruiting is relevant and we use this material heavily in the following discussion. We follow the research tradition on employee recruiting and consider recruiting to be “those organizational activities that (1) influence the number and/or types of applicants who apply for a position [i.e., membership in an online community] and/or (2) affect whether a ... [membership] offer is accepted” (Breugh & Starke, 2000, p. 4).

Many online communities do little active recruiting for new members. This lack of attention to recruiting characterizes most Usenet groups and the open source software development projects represented in SourceForge. One can ignore active recruiting if potential members’ random browsing of the web and word of mouth endorsements from current members provide a sufficient supply of recruits to replace losses and meet the community’s needs for growth. Active recruitment, however, will be necessary if *laissez faire* approaches are insufficient. Online communities differ on both the degree and methods they use for recruiting, even among those that actively recruit new members. Blizzard, the publisher of the multiplayer game World of Warcraft, uses a full gamut of TV, print and online advertising to recruit new players. In addition to impersonal advertising, Blizzard also uses interpersonal recruiting, such as its ‘recruit-a-friend’ promotion, which provides perks to both the recruiter and the recruit when an existing subscriber invites a friend to activate a 10-day trial account². Within the game itself, some guilds seek new members by posting advertisements to sites like the guild recruiting forums within the game or third-party sites like <http://www.lookingforguild.net/> while many others recruit guild members from among friends and family (Williams et al., 2006).

Design claim 1: Compared to *laissez faire* approaches, in which prospective members seek out or stumble upon a community, active recruiting will lead to the community having access to a larger pool of prospective members.

Recruiting messages, whether formal or informal, are a specific type of persuasive

¹ http://strategy.wikimedia.org/wiki/Attracting_and_retaining_participants

² http://us.blizzard.com/support/article.xml?locale=en_US&articleId=20588

communication. Research on attitudes, attitude change and the influence of both interpersonal and mass communication is voluminous. Although we consider persuasion at several points in this book, including both here and in the chapters on encouraging contributions and starting communities, a complete review is beyond our scope. Instead we sample some highlights in this book and refer the reader to relevant reviews for more detail on persuasion in general (Chaiken, Wood, & Eagly, 1996; Cialdini & Goldstein, 2004; McGuire, Lindzey, & Aronson, 1985; Petty & Wegener, 1998).

Interpersonal recruiting.

A long research tradition starting with Katz and Lazarsfeld (E. Katz, 1957; E. L. Katz, P., 1955) and Coleman (1957) indicates that interpersonal appeals, in which the persuasion attempt comes directly from other people, especially those whom the target knows, are more effective at influencing attitudes and adoption than are impersonal appeals from the mass media. It follows that interpersonal recruiting is more effective than mass communication. Latane's social impact model of social influence holds that social influence is proportional to the immediacy, strength and number of influence sources that a target is exposed to (Latane, 1981). The immediacy of the source is proportional to physical or psychological distance imposed by the communication modality. We are more influenced by people who are close by and by those who communicate with us in person than by those farther away or who communicate through some technology-mediation. For example, in political get-out-the-vote campaigns, face-to-face contacts with potential

voters, which can cost \$20US per contact, are more cost effective than robo-calls and email solicitations, that cost pennies per contact (Green, Gerber, & Nickerson, 2008). The strength of the source includes its status, credibility and the strength of the interpersonal tie between the source and target. We discuss the strength of a source later in our discussion of viral marketing.

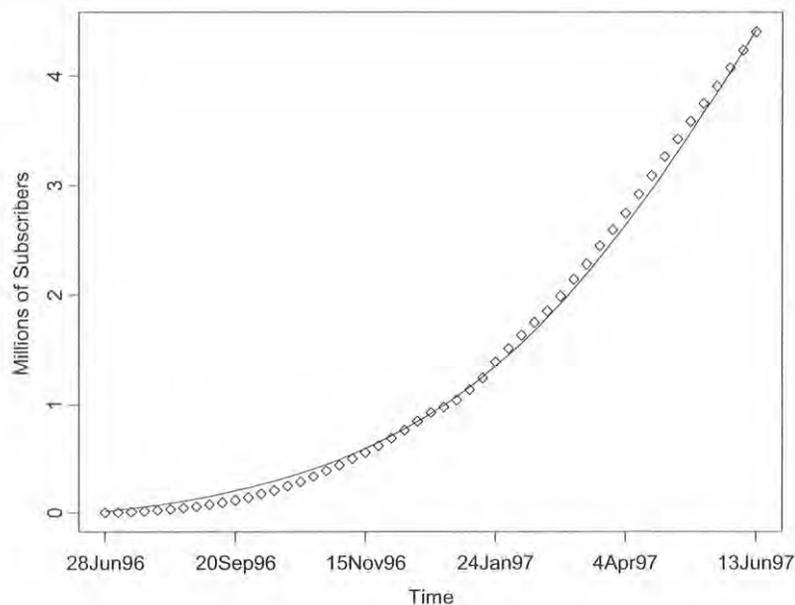


Figure 1. Comparing the cumulative number of Hotmail subscribers in millions (diamonds) at each weekly period with the predictions from the Bass diffusion model (solid line). From Montgomery, 2001

The literature on the diffusion of innovation has long recognized the role of interpersonal

communication as a primary mechanism by which earlier adopters of a new product or service induce those who have not yet used it to try out and eventually start using it regularly¹. The Bass model is one of the most widely used and accurate statistical models for predicting product diffusion, the rate with which new adopters will start using new products and services and the numbers using it at any given time (V. Mahajan, Muller, & Wind, 2000; V. Mahajan, Muller, E., & Bass, F., 1990) (Bass, 1969). The Bass model holds that the number of new adopters at any time is based on four parameters: (1) an estimate of the number of people who might potentially adopt, perhaps estimated from the adoption of rival products or from surveys; (2) the number of people who have adopted to that point; (3) the parameter (α), representing the constant proportion of potential adopters who convert because of advertising; and (4) the parameter (β), representing the constant proportion of potential adopters who convert because of word of mouth influence from people who have already adopted. Most empirical research using the Bass model shows that β , the impact of word of mouth, is substantially higher than α , the impact of advertising. For example, Montgomery used the Bass model to estimate the rate of increase in Hotmail subscribers from June 1996 to June 1997 (Montgomery, 2001). As seen in Figure 1, the model is quite accurate, in that the predicted values closely track the actual growth in subscribers. In this model, β , the word of mouth parameter, is 6.7 times as powerful as α , the advertising parameter. Across a wide range of durable goods and services, one quantitative review of the literature estimated the word of mouth effect was ten times larger than the advertising one (Sultan, Farley, & Lehmann, 1990)

Design Claim 2: Word of mouth recruiting is substantially more powerful than impersonal advertising.

The Bass model shows that many people adopt new products and service because of word of mouth influences from existing users. Communities can strategically use word of mouth recruiting to gain new members. Viral marketing or personalized word of mouth are examples of targeting, in which existing community members reach out to potential members whom they identify as likely candidates. Churches, theaters, doctors and car mechanics all attempt to use word of mouth marketing from current patrons to recruit new ones. Recently the car manufacture Hyundai formalized this recruiting strategy by reframing their manufacturer's rebate to purchasers as a payment to talk up their new purchases to family, friends and neighbors.

Some of the best sources of new members for a community come from the social network links of people who are already members of the community. Many social networking

Basic Account: Upgrade

LinkedIn Home Profile Contacts Groups Jobs Inbox (42) More...

Add Connections Colleagues Classmates People You May Know

Get more value out of LinkedIn by inviting your trusted friends and colleagues to connect.

Enter Email Addresses

Enter email addresses of people to invite and connect. Separate each address by a comma.

Send Invitations

Add friends or colleagues to your network?

TIP Add people to your network often? Try the [Outlook Toolbar](#)

First Name	Last Name	Email
John	Doe	John_Doe@gmail.com
<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>

Send Invitation(s)

Figure 2. LinkedIn.com invitation screens

sites, like Facebook and LinkedIn, solicit new members by encouraging existing members to send invitations automatically to others in their email address books. (See Figure 2.) Many smaller online groups, including guilds in World of Warcraft and projects in Wikipedia, recruit new members informally through their connections with existing members. However, it is possible for companies to go overboard with the technique of encouraging referrals from existing members. The social networking site tagged.com received thousands of complaints for 'contact scraping,' when, according to the company's founder, a software glitch accidentally sent invitations to people on members' email list without the list owners' permission or knowledge (Tugend, 2009).

One of the most successful examples of this sort of viral marketing is Facebook “apps”, which often are designed so that with a single click a user can invite his friends to join him in using the app. B.J. Fogg of Stanford taught a class in which students were encouraged to build Facebook apps that used principles from psychology to draw in new members virally. The result: in just 10 weeks the students had attracted an aggregate of 16 million users to their apps. The user is motivated to talk his friends into using the app. Fogg and Eckles (2007) explain that these approaches leverage users’ credibility with their friends in a way that is more powerful than any message directly from your community. This sort of recruiting is most effective in environments in which bringing in a user’s friends makes the community more valuable to him. For instance, one Facebook app lets a user see the places his friends have traveled to, which is fun and engaging and valuable if the user wants advice on travel in the future.

Design Claim 3: Recruiting new members from the social networks of current members increases the numbers who will join.

Even if it’s difficult to talk users into recruiting their friends directly, one can make it easy for them to indirectly increase their friends’ awareness of the community. For example, The New York Times makes it easy to share an article with friends via email.



Figure 3, Use of an ‘E-mail this’ link to increase familiarity with a brand.

The Times benefits both by the increased visibility along a persuasive social network, but also by collecting the data: they list the “Top Emailed” articles of the day on their front page. Similarly, CostcoPhotoCenter, a free photo sharing web site, makes it easy for a user to share photos with friends and relatives. To use CostcoPhotoCenter, the friends and relatives have to create a (free) account – after which it is easy for them to share their own photos. (Or to buy copies from Costco of the photos they see, but that’s a different motivation.) As with the Times and Costco, this sharing will be through channels outside of a community – such as email – but may bring members into the community over time.

Design Claim 4: Making it easy for users to share content from a community site with their friends (e.g., via easy email, twitter, facebook, etc .links), will increase the visibility of the community among the users’ friends and thereby their likelihood of joining.

While using viral marketing, in which current members recruit future ones, can increase the numbers joining a site, some current members are more powerful conduits for new members than others. Malcom Gladwell in his book *The Tipping Point* (2002) described how marketers work to get key influencers to use their products, because they know that many other consumers will follow their lead. Researchers have been studying ways to automatically discover these influencers by analyzing the graph structure of the social

network with computer algorithms. For instance, Domingos and Richardson (2001) showed that by analyzing the way opinions appear to flow along a social network one can choose users who would be the best people to market a product to. These users were the ones who would most influence other users in the social network to use the product. Kempe et al. (2003) showed that under more general models for disseminating information through a social network a simple algorithm that maximized marginal gain at each step could do a very good job of choosing a good set of users to market to.

Design Claim 5: Identifying the most influential members of a community and encouraging them to recruit others in their social networks is more effective than soliciting referrals from members at random.

Conventional, impersonal advertising.

Even though word-of-mouth recruitment is very effective, impersonal advertising also works (Assmus, Farley, & Lehmann, 1984). These impersonal persuasion techniques can influence targets' beliefs, affect and behavior towards a stimulus, such as a consumer product, a health intervention, political candidate or an online community (Roberts & Maccoby, 1985). However, the direct effects of impersonal advertising are weaker than many advertisers would like and Orwellian critiques fear (see Klapper, 1960). According to a recent review of almost 500 field experiments of advertising effectiveness, for many mature brands the total amount of advertising a firm engages in (i.e., its "weight") is not critical in influencing sales (Tellis, 2004). "More than half the time, increases in weight alone do not lead to an increase in sales. ... [N]either do decreases in weight lead to sales decline, at least in the short term. (p 79)." There are two main reasons why impersonal advertising has weaker effects than its practitioners hope for — confirmatory biases, such as selective exposure, interpretation and retention, miscomprehension of advertising messages and competing advertising from other communities (Nickerson, 1998). Studies of selective exposure show that people are more likely to be exposed to beliefs that they already agree with, in part because they affiliate with people who are similar to themselves. People also differentially interpret persuasive messages based on their prior beliefs. For example, among people who watch presidential debates, viewers strongly believe that the candidate whom they initially supported won the debate (Munro et al., 2002). However, these debates can increase viewers' knowledge of the issues and the ones they consider important in a candidate, and despite viewers' biases, can influence vote preference, especially for elections where voters have not yet formed strong political beliefs (Benoit, Hansen, & Verser, 2003). Extrapolating from this literature, advertising may be a more effective recruiting technique for a new community, when information about the community and confidence in it is low, than for an established one. For example, advertising can be more effective for the introduction of a new role-playing game than for a new release of the highly popular World of Warcraft (Tellis, 2004, chapter 2).

Design Claim 6: Impersonal advertising can effectively increase the number of people joining an online community, especially among potential members with little prior knowledge of the community.

As discussed in more detail in chapter 6 on eliciting contributions, the best ways to construct a persuasive message depend on the degree of psychological engagement that potential recruits have in evaluating the messages. When the potential recruits are actively seeking a community to join, such as newly diagnosed cancer patients choosing an online support group, they are likely to use effortful, “systematic processing” of the quality of the information they are exposed to, the consistency of the arguments and the credibility of the sources. In many other cases, however, people are not actively seeking a group or are seeking one

more casually. In such cases, people tend to form opinions based on what psychologists call “heuristic processing”. They don’t think deeply and evaluate carefully the information they are exposed to. Instead

they use many cognitive short cuts or heuristics to form their opinions. The difference in processing affects the kind of information that will be most effective at attracting new members.

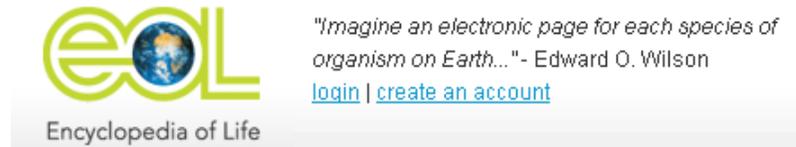


Figure 4. Credible endorsement for the Encyclopedia of life at <http://www.eol.org>

One common cognitive heuristic people follow is that if they perceive that a stimulus is good on one dimension, they assume that will also be good on other, unrelated dimensions (Thorndike, 1920). Thus, with heuristic processing, people are likely to be influenced by superficial features. Researchers have indeed found that superficial features such as an attractive, professional site design enhance people’s credibility evaluations of the sites (B. J. Fogg et al., 2003) and usage of them (Van der Heijden, 2003).

On the other hand, with systematic processing, people are likely to be influenced by factual information, such as membership size, statistics about activity, or samples of activity. For example, cancer patients evaluating alternative support communities to join may carefully read messages posted to the group, see whether medical professionals are posting and compare the advice they see in the group with the advice they are getting from their own physician. With systematic processing, people are also likely to assess the credibility of sites. For example, cancer patients may check to see whether the group is linked to a credible national organization like the American Cancer Society. Experiments by Stewart show that web links between one’s site and credible other sites increases visitors’ trust of the site and their willingness to purchase from it (Stewart, 2003).

These ideas about systematic versus heuristic processing also play out in the types of endorsements designers seek for their communities. As discussed further in Chapter 6, the source of a persuasive attempt influences its success. People are more likely to be influenced by credible sources with relevant expertise and this has more effect when people are engaged in systematic processing of the messages. Therefore, source credibility is especially important for serious sites, which potential members are likely to care about and be engaged in. For example, the eminent biologist E. O. Wilson used his acceptance speech at the 2007 TED award to pitch participation in the community

creating the *Encyclopedia of Life*¹ and endorses it on the encyclopedia's home page (see Figure 4).. As a world famous biologist, Wilson's endorsement is likely to be more influential than an endorsement from a less reputable source.

For heuristic processing, celebrity endorsement can aid recruitment, even if the person's celebrity is unrelated to the community's topic or purpose. . Many companies use celebrity endorsements as part of their advertising strategies, believing that the celebrities' attractiveness, likability and perceived trustworthiness will spill over to the product or cause they endorse. They are correct, in that celebrity endorsements result in more favorable product evaluations and can have a substantial positive impact on financial returns for the companies that use them (Agrawal & Kamakura, 1995; Erdogan, 1999) The game publisher Blizzard has used celebrities to pitch World of Warcraft, including William Shatner, who played Captain Kirk on the original Star Trek TV series, with the tag line, "I'm William Shatner, and I'm a shaman" and the rap singer, Mr. T, with the tag line "'I'm Mr. T, and this is my Night Elf Mohawk" (See Figure 5.)



Figure 5. Blizzard advertisement with celebrity William Shatner pitching the game World of Warcraft.

Even serious communities can benefit from persuasive messages that appeal to heuristic processing, for two reasons. First, sometimes deep information is hard to convey. For example, it may be a lot easier for a cancer community to highlight the warm smiles of its members (see Figure 6) than to convincingly demonstrate that people who participate feel that they get emotional support from the site. Second, when there are lots of alternatives for people to choose from, they may use heuristic processing to choose a smaller number that they will process more systematically.

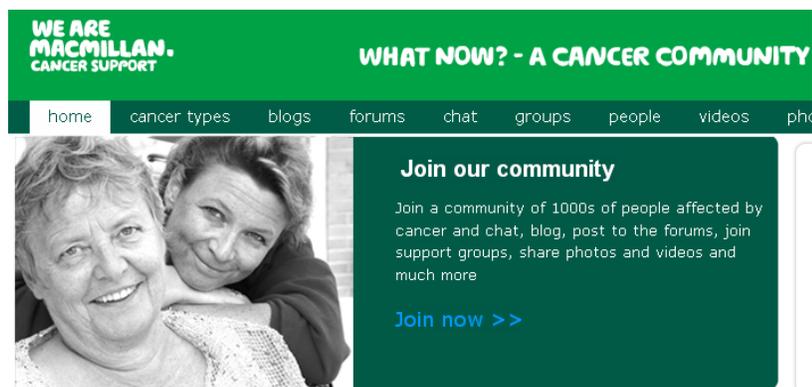


Figure 6. Recruiting for the MacMillan Cancer Support Network (<http://www.whatnow.org.uk/>)

¹ http://www.ted.com/talks/e_o_wilson_on_saving_life_on_earth.html

Design Claim 7: Recruiting materials that present reasons to join and endorsements by credible sources and sites will attract people who are actively searching for and evaluating communities.

Design claim 8: Recruiting materials that present attractive surface features and endorsements by celebrities will attract people who are casually assessing communities.

If people see signs that other people are active on a site, then they are more likely to join than if they think the site is barren. In Chapter 2, on starting online communities, we explore how activity levels may be interpreted as signals of a community's future trajectory, enabling newcomers to make a rational cost-benefit analysis of whether it is worthwhile for them to join now. However, seeing activity on the site may also simply invoke the social proof heuristic (Cialdini & Goldstein, 2004), that it is a good idea to do what others are doing, without careful calculation of benefits and costs.

Police Recruiting - Join the Team

To Protect With Courage, To Serve With Compassion

Explore the links below to learn about becoming a police officer with the Minneapolis Police Department.

Sworn Positions

- [Recruit Police Officer](#)
- [Lateral Entry Police Officer](#)

Non-Sworn Positions

- [Community Service Officer](#)
- [Police Intern](#)



United for Iran

A global day of action in solidarity with the people of Iran

HOME ABOUT THE GLOBAL DAY OF ACTION MEDIA PARTICIPATING CITIES

On July 25, stand in solidarity with the Iranian people >

We need YOU!

Posted by iranfreedomnow on July 1, 2009

Figure 7. More (left) and less (right) effective recruiting pitches, based on social proof

The social proof heuristic can be triggered by minor changes in wording in persuasive messages urging people to join a site. For example, an experiment by Goldstein and his colleagues showed that changing the wording of hotel notices asking guests to reuse their towels (“Help save the environment ... by reusing your towels during your stay.”) to one emphasizing social proof (“Join your fellow guests in helping to save the environment.”) increased towel reuse by 44% (Goldstein, Griskevicius, & Cialdini, 2007). Applying this logic to the domain of recruiting for an online community, invitations with a message that implies ‘Join the crowd’ are likely to be much more effective than those that say ‘We need you’. (See Figure 7).

Design claim 9: Emphasizing the number of people already participating in a community will motivate more people to join than will emphasizing the community need.

The familiarity heuristic is another powerful one. People tend to like people, things and ideas they are familiar with (Zajonc, 1968). It is for this reason, in part, that name recognition does wonders in both consumer products and politics, incumbents are overwhelmingly reelected in congressional and local elections (Mann & Wolfinger, 1980) and movie stars are regularly elected to offices for

Share



Figure 8. Widgets for sharing an object on the web

which they have little experience or qualifications. The implication is that managers of online communities should simply get the name of their community in front of the relevant population, to increase their liking of the community and therefore likelihood of joining. The placement of email and tagging links on many sites helps make the site familiar to others, increasing their liking for the brand and their willingness to become members. (See Figure 10).

Design claim 10: Placing the name of a community in front of people often will activate the familiarity heuristic, their liking of the community and thus their willingness to try it.

Problem 2: Selecting the right newcomers

Insuring a good fit between the newcomers and the community is a major challenge. A substantial amount of empirical research shows that good things happen when newcomers to a group or organization perceive themselves as having a good fit to it on dimensions such as interests, attitudes and values that they and the group share or the knowledge, skill and motivations they possess and that the organization desires (Chapman, Uggerslev, Carroll, Piasentin, & Jones, 2005; Kristof-Brown, Zimmerman, & Johnson, 2005; Kristof, 1996). When potential recruits see that they share a good fit with a group or organization, they are more likely to be attracted to it, pursue membership in it, join it if given a chance, and be satisfied with their membership and remain in the group or organization longer if they do join.

While most of the research on the benefits of fit has been done in the context of job candidates and employees in conventional organizations, the same phenomenon also applies in the context of voluntary organizations, which are similar in many ways to online communities. Volunteers to organizations like BigBrothers/Big Sisters or the American Red Cross vary in their motivations. Some participate out of altruism or because they share the organization's goals. Others participate for the social experiences they get when working with similar others, to learn new skills or to exercise skills and abilities that might otherwise go unpracticed, to obtain credentials or experiences relevant to a new career or to make themselves feel good. When they participate in volunteer activities that match their motivations, they are more satisfied with their volunteerism and are more likely to volunteer again (Clary et al., 1998). In addition, volunteer organizations can take advantage of this variability in volunteers' motivation by varying the wording in their advertising to attract those with appropriate motives. For example, brochures that highlight the way in which volunteering helps one explore career options, develop a strong resume and network to make career contacts were especially likely to appeal to recruits with career-related motivations (Clary, et al., 1998).

Raid-oriented

<Premonition> WotLK Cleared! Recruiting hardcore players!!

We are Premonition --- a mature Alliance PvE raiding

Socially-oriented

<Damage Networks> - LF Warlock, SPriest, HPriest, Ele Shaman, Paladin

... Damage Networks is currently looking to add a

guild ... We are recruiting hard core, geared players for WotLK. ... We have completed Malygos 25 man/10 man, Sartharion 25 man/10 man, and Naxxramas 25 man/10 man. ...

Here's some key information about the guild and our expectations.

1. Raiding schedule is Sunday-Thursday 8:00pm -11:30pm PST (server time). You are REQUIRED to attend 4/5 raids each week.
2. We have vent and EPGP.
3. *Most* gear will be EPGP based, but there will be some pieces that will go to the class/spec it will suit the most to help progression of the guild. Very few pieces will be decided in this manner but the best interests of the guild and its progression will be considered first and always. ...
4. We're very serious about having the most optimal raid composition and most potential while raiding. To maintain that we'll require you to have:
 - a. PvE spec when you come to raids.
 - b. You will show up on time and ready and you will have consumables to last the entire raid.
 - ...
 - g. You will know encounters having read strategies, watched videos, read forums before we engage those encounters.

few more people to our family. We're a PvE/PvP guild that spends way too much time on ventrilo, and not nearly enough time raiding. As a guild, we've been around for a long time (completing MC and BWL in their primes, and landing a top 20 US Kel'Thuzad kill). We're not going anywhere. Damage Networks began as a porn site, then an NS team, and now it's a wow squad. So if you're interested in more than just a raiding guild, we're probably right for you.

What are we looking for? Players are expected to hold at least 75% raid attendance. Drama bombs, Loot %%#!*s, ego-maniacs, self-centered retards, incessant whiners, immature babies and idiots in general should not apply (we have plenty of those already; they give us "flavor"). ...

Figure 9. Sample World of Warcraft recruiting announcements at www.lookingforguild.net (downloaded 12/31/2008)

The problem of selecting applicants for membership is common to all groups, but it may be especially problematic in online communities because of the relative anonymity of the interaction in them and the ease of creating new identities online. For example, one of Wikipedia's administrators who had presented himself as a professor with degrees in theology and canon law was forced to resign when a magazine revealed that he had no advanced degrees. He "used texts such as 'Catholicism for Dummies' to help him correct articles on the penitential rite or transubstantiation"¹.

Consider the two messages in Figure 9 recruiting new members for guilds in the multi-player game World of Warcraft. The announcement on the left describes a testosterone-driven, raiding guild seeking "hard core" player. It demands both time and particular types of equipment from its members. In contrast, the guild on the right is more laid back and socially oriented. It seems to be seeking players with appropriate personalities and social skills (no drama bombs, whiners or those who get angry over loot distribution).

Imagine the problems that would flare if the raid-oriented Premonition guild ended up with a laid-back chatterer, or the socially-oriented Damage Networks recruited a hardcore

¹ <http://www.nysun.com/article/49955>

warrior. Our own research shows that new recruits to World of Warcraft guilds who prefer the style of play the guild values remain in their guild substantially longer than players for whom there is a style-of-play mismatch (B. Choi, Kraut, & Fichman, Under review).

A better fit between new members and the community also promises benefits for the community. For example, in World of Warcraft, players may apply to become a member of a guild with the intention of staying only a short time, merely to “level-up” (i.e., gain experience points) before moving to a superior guild (Ducheneaut, Yee, Nickell, & Moore, 2007). However, it is not in the guild’s interest to recruit players who have intentions to leave as soon as they have accumulated the more experience, skills or gear. Similarly, in an open-source software development community, some newcomers may be highly skilled software developers with deep knowledge of the application domain, some may be novice developers or ignorant of the domain, having little knowledge or skill to bring to the project, and others may have the malicious intent of introducing bugs or Trojan horses. In an online support group for abused women, valuable members might be the survivors who have experience, wisdom, and support to offer to others or women who are themselves currently the victims of abuse, while spectators or stalking husbands are highly undesirable. Even seemingly open communities may want to discriminate between valuable and less valuable members. For example, the democraticunderground.com, a news and discussion site for the exchange of progressive political ideas, wants to encourage membership from Democrats and “other progressives who will work with us to achieve our shared goals,” but wants to discourage Republicans and right-wing trolls who join to bait legitimate members. In eBay, legitimate sellers would like to weed out scammers who sell used goods as new, or copies as originals, or those who collude to inflate bids¹.

Overall, then, insuring that new recruits fit the style and values of an online community will lead them to stay longer, be more satisfied with their membership and will lead to more benefits for existing members. Different recruiting and selection methods will lead to different degrees of player-community fit. It’s relatively easy to identify hard core players valued by *Premonition* by examining players’ online resume (e.g., the weapons they have accumulated) and by playing with them a little while. In contrast, guilds can more easily identify the personality configurations valued by *Damage Networks* by using referrals from existing members and by playing with the new recruits during longer probationary periods. The general lesson is that the amount and type of information and interaction between a community and newcomers needed for selecting people who fit well depends upon the ease of revealing or assessing attributes of both the recruits and the community.

Below, we consider two general approaches to selecting new recruits who fit well with the style, values, and needs of the community. The first is self-selection, making it so that only potential recruits who are a good fit will choose to join. The second is screening, making it so only potential recruits who are a good fit will be allowed to join.

¹ <http://www.truetex.com/ebayfraud.htm>, http://reviews.ebay.com/Scam-Watch-The-Most-Popular-Scams-on-Ebay_W0QQugidZ10000000000025238

Self-selection

When conventional organizations provide recruits accurate and complete information about the organization, prospective members can form accurate expectations about it, which influence their decisions to seek employment, to join if employment is offered and to have realistic expectations once they become organizational members. In the context of conventional organizations, this accurate information often is conveyed in the form of realistic job previews, in which recruiters and other members of the organization present both favorable and unfavorable job-related information to job candidates (Rynes, 1991). Realistic job previews are associated with recruits' lower expectations about the nature of the job, lower levels of attrition from the recruitment process, and lower turnover, if recruits are offered a job. Although the effects are small, they are reliably larger if the realistic preview is delivered verbally than via a written document or video (Phillips, 1998). Realistic job previews seem to have beneficial effects on recruiting success through two separable routes. First, they selectively attract people who have characteristics, including motives, skills and attitudes that better fit the existing community. Second, they lower expectations that newcomers have when they actually join the community, reducing the chances that the reality newcomers experience once they become organizational members will clash with unrealistic idealizations.

Online communities can use the methods typical of conventional organizations to give off realistic information about the community — websites, online recruiting brochures and other documents, videos, direct contact with recruiters or other formal representatives of the community, and informal contact with community members. For example, when soliciting new members, World of Warcraft guilds often post recruiting statements, with information about their mission and style of play, at forums such as www.lookingforguild.net or similar recruiting sites. Others post videos of their exploits on youtube.com, www.warcraftmovies.com and other media sharing sites. One famous clip is the saga of the Onyxia Wipe¹, with over four million views on youtube and other sites, in which a guild leader shouts at, commands and curses his guild as they try and are all killed trying to kill the Onyxia monster.

Although these realistic previews can be effective, they are rare compared to the use of frequently asked questions (FAQs) in many online communities, in which the community posts a mission statement or goals, but not realistic previews of life inside (see <http://www.faqs.org/> for an index to many FAQs for Usenet newsgroups and Websites). For example, the FAQ for a stop smoking support group lists a policy of bans on commercial posts, but provides little information about the frequency of this practice.² While comparatively few online communities explicitly create realistic membership previews for recruiting purposes, the archival nature of the Internet means that complete records of prior interactions among community members are available for newcomers to examine and in this way get an unedited, realistic view of life in the community.

Even though online communities can use the same recruiting mechanisms as

¹ <http://www.youtube.com/watch?v=HtvIYRrgZ04>

² <http://www.faqs.org/faqs/support/stop-smoking/compost/part1/>

conventional organizations, they have the potentially unique advantage that much of the communication and production work in the community is archived automatically. While in a conventional organization a new recruit must rely on the organization's explicit descriptions via brochure and similar sources or rely upon word of mouth from current and former organizational members, with an online community they can see the interactions on which these impressions are based. Investigation is a major reason that newcomers silently read posts (i.e., "lurk") before posting (Jenny Preece, Nonnecke, & Andrews, 2004); they are trying to get sufficient information about the group to know whether they should join or not. They see how members treat each other on various online forums and can see how team members work together in creating Wikipedia articles by examining the histories and talk pages associated with each article.

However, not all communities provide public archives. In the online cancer support group ACOR.org, readers cannot search or browse archived messages without a subscription. Though subscribing is free, prospective subscribers are vetted by the list owners, which delays the newcomer's opportunity to evaluate the group and his or her expected fit. Furthermore, the archives are hidden from search engines. Though this protects the privacy of existing members, it also reduces the likelihood that desirable members will find the group.

Compared to lurking, newcomers' direct interaction with the group provides more useful and personally relevant information to allow them to estimate the benefits they will receive if they join. This investigatory phase is an especially fragile one for newcomers. During this early period, when they first encounter a group, they have little commitment to it and often little data to make judgments about whether to invest effort in finding out more or to explore alternatives. As a result, small amounts of either positive or negative evidence about how the group behaves and how it treats members may have an especially large impact on whether they leave for good or return again.

Design claim 11: Providing potential new members an accurate and complete picture of what the members' experience will be once they join will increase the fit of those who join.

Another way that community designers can encourage self-selection of potential members who fit the community well is to require an action that those who are a better fit will be more willing to undertake. This action could simply be an entry fee. For example, MetaFilter charges \$5 for new members (See Figure TKTK). If normal members get more than \$5 of benefit from joining, while trolls, spammers, and other disrupters get less than \$5 of benefit, then the entry fee can cause the undesirables to self-select out of participation. MetaFilter also requires new users to wait a week before posting a new question. Presumably, those users who are willing to wait a week and remember to come back will post questions that are more valuable to other members.

Design claim 12: Forcing potential new members to pay or wait will cause only people who value the community more likely to join.

One Caveat

Due to a few opportunistic members that ignored guidelines in the past, there is a one-week waiting period after signup, before you are allowed to post a new question to Ask MetaFilter or a new post to MetaFilter. You can post comments to MetaFilter and MetaTalk, and answers to Ask MetaFilter right away though.

How signups work

Due to the bursting size of the community, its use of resources, and the cost of running the servers, all new users have a one-time \$5 charge, to help defray these costs. If you sign up an account to pimp your product, act like an ass, or generally just do things that break the **guidelines** you will be booted and there will be no refunds.

Figure TKTK: MetaFilter's delay and payment entry fee policies that encourage useful self-selection. From <http://www.metafilter.com/newuser.mefi>, May 24, 2010

Alternatively, the required action could be to undertake some task. If the task is inherently interesting to people who are a good fit for the community, but not for others, then it will lead to the desired self-selection. We refer to such tasks, which are less onerous for people who are a good fit for the community, as *separating* tasks. In many communities, reading and rating or editing material written by other members might be effective separating tasks.

Design claim 13: Forcing potential new members to undertake “separating” tasks will make those who find the tasks less onerous more likely to join.

One other interesting point to note about tasks that induce self-selection is that, for those who do undertake the tasks, they may lead to enhanced commitment to the community. Chapter TKTK on commitment explores cognitive dissonance theory and other theories that predict impacts of entry barriers that cause newcomers to suffer a little before joining.

Screening

We now consider ways that the community can act to screen out those who are not a good fit. This requires both accurate signals about who is a good fit, and a mechanism of exclusion. The latter is relatively straightforward in communities that require membership for access. Only those passing the screen are allowed to read the group's contents or are given some other level of access privilege.

We have discussed previously how lurking may provide newcomers information about their fit to the group. However, because the group is also evaluating whether the newcomer would be a good fit, it needs the newcomer to do more than simply lurk.

Encouraging interaction between newcomers and old-timers can provide some information that the group can use to evaluate newcomers.

Acquiring accurate signals about who is a good fit can be problematic. First, it may be cumbersome for the potential members to emit relevant signals. Second, if the signals will be used for screening, recruits who would not pass the screen may be motivated to lie. They may try to mimic the signals of those who are a good fit, and it can be hard for the community to tell which signals are truthful. For example, some new recruits to a World of Warcraft guild may honestly describe themselves as extroverted and friendly and seeking a relaxed style of play. However, guild masters or recruiters have little way to distinguish recruits who will be difficult to get along with from those who are easy to get along with. Economists often refer to these cases as signaling problems.

The challenge for designers, then, is to create signals that are hard to mimic. The first approach is to assign diagnostic tasks. The most basic diagnostic task is the CAPTCHA, intended to provide a signal that the visitor is human. It is an acronym for “Completely Automated Public Turing test to tell Computers and Humans Apart.” We describe this in more detail in Chapter XXX on regulating behavior in online communities. These tests are difficult for machines to accomplish but easy for humans, and are often used to separate people who sign up for services offering free email accounts or server space from scripts automatically creating hundreds of accounts. A CAPTCHA is automated test, such as the challenge to recognize a distorted word presented against a cluttered background. Craigslist requires posters of classified ads to enter their email address and then respond to an invitation sent to that address before their ad goes public. The goal is similar to the goal for CAPTCHAs, to prevent bots and other software agents from gaining membership in the community. At some cost, motivated attackers can pass either of these tests. For example, computer programs can automatically respond to emails, and attackers have been able to circumvent CAPTCHAs by employing people at low wages to solve them (Bajaj, 2010).

To distinguish among humans, a diagnostic task may come after initial entry but before full privileges are granted. In many communities, the people who eventually go on to become leaders are distinguishable from peripheral participants in their first interactions in the group (K Panciera, Halfaker, & Terveen, 2009; Katherine Panciera, Priedhorsky, Erickson, & Terveen, 2010). Open-source software development projects often rely upon candidates' participation in technical discussions and contributions of bug patches and software enhancements to make such assessments. Potential members must first demonstrate their competence and commitment to the group by offering bug fixes or small enhancements before they are given "committer" status, permission to commit (save) their own changes to the software database (Ducheneaut, 2005; Krogh, Spaeth, Lakhani., & Hippel, 2003). In the FreeNet project, only 8.4% of individuals who participated in the technical discussions were ever given committer status and considered developers in the project. Without committer status, programmers must pass their modifications to more trusted members of the group who then vet the software and decide whether to merge it with the existing code base. Mere talk without code, such as describing one's offline technical accomplishments, asking for tasks to work on, or

proposing modifications did not lead to committer status; potential members had to pass substantive contribution barriers to become full members.

In the online game World of Warcraft, the diagnostic task may be to accumulate experience points, weapons, or steeds used for transportation. Guild masters and others recruiting players for guilds can screen based on these visible acquisitions. They are signals of past performance as well as being tools which the candidate can use to carry out quests, if they become members.

In one online depression forum the diagnostic task is to write knowledgeably about one's symptoms and treatment. To weed out spectators, established members of one online depression forum have an unspoken practice of engaging newcomers in discussion about their symptoms and treatment (Fussell, personal communication). Producing these medical terms is likely to be easier for people who are clinically depressed than for those who aren't.

Design claim 14: Requiring potential members to complete a diagnostic task will screen out some undesirable members.

Another type of signal-based screening is the credential check: Sermo.com, a discussion forum for physicians to discuss medical decisions, asks potential members for their names and the zip code of their primary practice, which it then cross-checks against a national physician database, to ensure that its membership includes only physicians (see Figure TKTK). Pornographic websites that ask prospective members to provide a credit card number or license do so to try to differentiate adults from minors (or give the illusion of doing so), because adults are more likely to have a credit car or driver's license

The image shows the Sermo.com 'Create Account' page. At the top left is the Sermo logo. To the right is a progress bar with two steps: 'Step 1 of 2: Create Account' (highlighted) and 'Step 2 of 2: Verify your identity'. Below the logo is the heading 'Create Account' and a sub-heading 'Please complete our simple 1-minute registration process. To join Sermo, you must be an MD or DO practicing in the US.' The registration form has four input fields: 'First Name', 'M.I.', 'Last Name', and 'Credentials'. The 'Credentials' field has two radio buttons: 'MD' (selected) and 'DO'.

Figure 10. Account creation for Sermo.com

than minors.

Design claim 15: Requiring potential members to provide external diagnostic credentials will screen out some undesirable members.

Some communities judge new members by depending upon referrals from existing members. Many exclusive BitTorrent tracker sites (groups that provide private BitTorrent seeds) require existing members to vouch for new members. Bad behavior on the part of a new member (such as downloading much more than they upload) can result in sanctions both to the new member and to the sponsor. This approach to selecting new member is effective because referees have detailed and long-term information about both the newcomers and the group to which they being invited and are motivated to present the information accurately to both parties. For example, when friends have played World of Warcraft (WoW) together, they can provide detailed information about each others' skills and strategy of play when making a referral to a guild. The usefulness of references from group members, however, depends upon the type of information to which the referrer has access. By interacting with the candidate in non-group settings, the referee might know about a candidate's sociability and conscientiousness, for example, but not whether the candidate has specific skills the group needs. Our own research shows that referrals are especially helpful in selecting newcomers to WoW guilds when the group is a low-keyed social guild but not when it is a high-power, goal-oriented gaming guild. In addition, referees have their own reputations to protect and this generally deters them from bringing an inappropriate member into a group of which they are part (Fernandez & Weinberg, 1997).

Some online groups institutionalize referrals by accepting new members only through invitations from existing ones, and limiting the invitations each existing member gets. Invitations to Google's exclusive Gmail Beta were so highly coveted that some users put them up for bid on eBay (http://www.news.com/2100-1023_3-5203162.html), and Google's Wave roll-out is using a similar invitation procedure. A number of Flickr photo groups have requirements that users' photos have awards or have been marked as favorites by some number of other users.

Design claim 16: Requiring potential members to provide referrals from existing will screen out some undesirable members.

As with CAPTCHAs, other signals are rarely perfect separators of desirable from undesirable new members. At some cost, an undesirable member can usually mimic the signal. To gain commit privileges in an open source community or experience points in a gaming environment, a rich dilettante could hire someone else to do the work that the community assesses. To pass the diagnostic test in the online depression forum, anyone could conduct an online search to discover the names of antidepressants. Even credentials and referrals can often be faked, with a sufficient investment of time and money.

Conversely, even those who are desirable members may find it costly to provide signals that will pass a screening test. For example, people who are not yet connected with existing members, but who are a good fit to the community, will be excluded by a referral screen. If a health support community for a rare disease required referrals from existing members, it would negate one of the most valuable features of online support groups, the ability to connect people across distance who would not otherwise be able to meet. In those communities, it would make more sense to rely on an outside credential such as a referral from a participating hospital or treatment organization, or a diagnostic interview

or task.

To the extent that people can invest in acquiring signals, a screening mechanisms based on signals becomes a self-selection mechanism. The designer's challenge is to find signals that are much less costly for the desirable members to emit than for the undesirable members. As with self-selection mechanisms, most screening systems are likely to be imperfect, letting in some undesirable members and excluding some desirable members.

Problem 3: Keeping newcomers around

For newcomers to gain benefits from an online group and to eventually become committed members who take on core responsibilities, they must stick around long enough to learn the ropes, form relationships with other group members, and begin to identify with the group as a whole. However, the research on online communities also shows that these groups experience a substantial amount of turnover and that this turnover is especially high among newcomers. For example, 68% of newcomers to Usenet groups were never seen after their first post; in contrast, those who have participated even once in the past are much more likely to return (Arguello et al., 2006). Fifty-four percent of developers who registered to participate in the Perl open-source development project never returned after posting a single message (Ducheneaut, 2005). Sixty percent of registered editors in Wikipedia never make another edit after their first 24 hours (K Panciera, et al., 2009). Forty-six percent of the members of guilds in the massive multiple-player game, World of Warcraft, leave their group within one month, generally migrating to other groups rather than abandoning the game itself (Williams, et al., 2006).

Entry barriers and initiation rituals. In general, barriers and initiation rituals that cause newcomers to suffer a little before joining a group should increase their eventual commitment. The theory of cognitive dissonance holds that if people have two ideas that are psychologically inconsistent, they experience the negative drive state of cognitive dissonance and try to find a way to reconcile the ideas, generally by changing one or both to make them consonant (Festinger, 1957). This theory explains why people like groups more if they have to endure a severe initiation process to join them than if they undergo a milder initiation (Elliot Aronson & Mills, 1959; Gerard & Mathewson, 1966). According to Aronson, people come to like things for which they suffered, because this is the only way they can reconcile their views of themselves as intelligent people with the actions they have performed (E. Aronson, 1997).

Initiation rituals imposed by online communication can range from non-existent to quite severe. At one extreme, Usenet discussion groups impose no initiation at all. Newcomers can read and post without any formal barrier. Wikipedia explicitly encourages gentle treatment of new editors, with its "Don't bite the newcomer" policy [1]. At the other extreme are communities like Fark.com, a website for posting and commenting on weird news headlines and stories. Newcomers who make mistakes that violate the norms of the community can be publicly criticized or humiliated. As described in their FAQ, "message

boards on sites like Fark are forever plagued with morons posting "First Post" anytime a link is posted. Fark automatically turns the words "first post" into the word "boobies" and resets the timestamp on the message to some time in the future" so that the post actually appears to a late one. Newcomer trying to introduce themselves occasionally fall victim to this, and post a message that ends up saying something like: "This is my Boobies on Fark".

Game-playing groups like World of Warcraft and OSS projects require newcomers to go through a long period of initiation before they can become members. Some guilds, for example, require the newcomer to play with the group for a month or longer before the newcomer is allowed to become a regular member. In open-source software projects, it is common practice for newcomers to offer "gifts" of code before they are granted membership (von Krogh et al., 2003). While these activities provide data by which existing group members can evaluate the newcomers and may weed out the least motivated, the activities are also effortful actions that probably increase the newcomers' loyalty to the group.

However, given the ease with which people can leave an online community (as opposed to a military academy), a severe initiation process or entry barrier is likely to drive away potentially valuable contributors at the same time it increases the commitment of those who surmount the entry barrier. Therefore online community designers should not instigate these types of initiations unless there is a surplus of prospective members, or unless the increased quality in membership is important. However, the newcomers who survive the initiation should have stronger loyalties than those who were invited in without initiation. As we discuss in more detail in Chapter XXX on commitment, Drenner and her colleagues (2008)2008) demonstrated that forcing new members to work hard for their members had both of these effects – driving away some potential members while at the same time increase the commitment of those who expended this effort.

Design claim 17: Entry barriers for newcomers may cause those who join to be more committed to the group and contribute more to it.

Initial positive interactions work to retain new members. Newcomers to Usenet groups are more likely to come back for subsequent visits if others reply to them (Arguello, et al., 2006). These effects are stronger if the people conversing with the newcomer are themselves old-timers who have been visible in the discussion in the recent past. The effects are also stronger if the responses use more welcoming and inclusive language, such as emoticon and first-person plural ("we") pronouns, often used to indicate solidarity between a speaker and audience, rather than second-person ("you") pronouns, which often indicate a divide between a speaker and the people being addressed. In an analogous study, Burke and her colleagues showed that new Facebook members were likely to post more photographs if others commented on the initial ones they added (2009). Lampe and Johnston (2005) found that new Slashdot members whose first comment received a rating from other members posted a second comment more quickly than new members whose comments weren't rated. They also found that even newcomers who received negative ratings on their first comments came back faster; they hypothesized that these newcomers returned quickly to improve their records, or that they

intentionally wrote inflammatory content which they post more often

Our analysis of initial interactions between newcomers and old-timers in Wikipedia projects shows a similar pattern. Wikiprojects are groups of editors who work together on articles within a domain, like military history, sports or medicine. New members to a project who receive more communication from existing editors during the month that they join subsequently edit more on project pages (and in Wikipedia in general) and stay active in the project for a longer period. Again, the effects vary with the nature of the communication they receive. Personalized messages, such as comments about the newcomers' background or requests to work on a particular tasks, lead to more powerful effects than generic ones, in which the newcomer receives a standardized message such a welcome-to-the-project template.

Wikipedia explicitly encourages gentle treatment of new editors, with its "Don't bite the newcomer" policy ¹. Newcomers whose first edits were reverted (a reversion occurs when a document is restored to its previous version, negating someone's edits) are especially likely to leave the community (Halfaker, May 5, 2010; Zhang & Zhu, 2006). Edits by newcomers are disproportionately reverted (K Panciera, et al., 2009); to lessen the negative impact, Wikipedia editors are encouraged to "assume good faith" by the editor they are reverting, and carefully explain their rationale for the reversion so as not to deter a potential contributor. There are many pages documenting the social framework that accompanies the reversion tools—including guidelines to "reword rather than revert" and to "revert only when necessary".

Design claim 18: When newcomers have friendly interactions with existing community members soon after joining a community, they will be more likely to stay and contribute more.

¹ http://en.wikipedia.org/wiki/Wikipedia:Please_do_not_bite_the_newcomers

Discussion forums often include a prominent "Introduction" thread, where newcomers are encouraged (or required) to post brief biographies. Newcomers to PGHDance.com, a forum for Pittsburgh swing dancers, go to the "Hi, I'm ..." thread to describe their level of dance experience, day job, and other cities where they've danced. The forum is a hybrid community, in which many members socialize in person at local dances; however, that socialization is often hindered by loud music and a norm of silence while dancing. Thus, PGHDance allows members to get to know each other off the dance floor, and provides a more neutral platform where dance skill is less salient. Veteran forum members greet the newcomers and offer to dance with them at local events. Similarly, WrongPlanet.net, a community for individuals with autism and other developmental disabilities hosts a "Getting to know you" section, where newcomers describe their hobbies and diagnoses. These introduction threads serve two purposes: First, they allow the newcomers to move beyond the lurking stage and provide enough information to invite interaction with other members, and second, the threads allow newcomers a safe space to practice using the posting tools. As much research in social psychology shows, when people self-disclose others reciprocate and reveal information in exchange. This mutual self-disclosure often leads to the strengthening of the relationship between the pair. People like those to self-disclose to them more. In addition, they like the people to whom they self-disclose (Collins & Miller, 1994).

Facebook uses a highly distributed welcoming mechanism. It has a feature that encourages old time members to send requests to people in their friends list to reach out to newcomers by adding them as friends (See **Figure 13**).

Design claim 19: Encouraging newcomers to reveal themselves publicly in profiles or 'introduction threads' gives existing group members a basis for conversation with newcomers than therefore should increase interaction between old timers and newcomers.

One way to accomplish initial positive interaction is to assign welcoming responsibilities to designated old-timers. The host guide for one of the earliest online communities, The WELL (Whole Earth 'Lectronic Link) explains that hosts are responsible for welcoming newcomers. "Nobody likes to go into a conference for the first time, post a response, then



Figure 11. Facebook's feature encouraging friends to welcome newcomers

have it sit there without ever being acknowledged. Learning to welcome, inspire and incorporate new visitors into the conversation is perhaps the most important talent a host can acquire. At the very least, as host, you will want to keep an eye out for postings by folks who have never responded in your conference before, and acknowledge their participation (Hoag, 1996).”

Wikipedia has a “Welcoming Committee¹,” whose main activity is to greet new editors, known as red users, because they have not yet made a personal page for themselves and thus their usernames appear in red. Welcoming committee members skim Wikipedia's account creation log and lists of contributions by newcomers, select friendly text from a set of welcoming templates, and post the text to the user's talk page, creating the page if necessary. Welcoming committee members encourage anonymous contributors, identified by their IP addresses, to register, post links to tutorials, and offer to answer questions.

Design claim 20. Assigning the responsibilities of having friendly interactions with newcomers to particular community members increases the frequency of these interactions.

The previous examples from Wikipedia and The Well are prescriptive in a positive way, assigning some people the responsibilities for welcoming newcomers and giving the welcomers some tools to make the task easier. Another way to encourage newcomers is to discourage the hostility that is often the result of the interactions between old-timer members of a group and newcomers. As the FAQ for the Mozilla.org project notes. “Be kind to newcomers. Newcomers may be annoying. They ask the wrong questions, including ones that seem obvious (or whose answers seem easy to find). But lots of valued contributors started out this way, and treating newcomers kindly makes them more likely to turn into the valuable community members we all know and love (and cut some slack when they mess up).²” Similarly, policies for experienced users answering questions in the forum for Ubuntu, a graphical user interface for the Linux operating system, discourage experienced users from being rude to newcomers. “Be considerate to the person asking the question. We were all a green user at one point.. ... If you wish to remind a user to use search tools or other resources when they have asked a question you feel is basic or common, please be very polite. Any replies for help that contain language disrespectful towards the user asking the question, i.e. “STFU” [Shut the fuck up] or “RTFM” [Read the fucking manual] are unacceptable and will not be tolerated.³” Wikipedia's DBTN (Don't Bite the Newcomer) policy cautions old-timers that “New contributors are prospective 'members' and are therefore



¹ http://en.wikipedia.org/wiki/Wikipedia:Welcoming_comm *Figure 12. Wikipedia's do not bite the newcomers policy*

² <http://www.mozilla.org/community/etiquette.html>

³ <http://ubuntuforums.org/index.php?page=policy>

our most valuable resource. We must treat newcomers with kindness and patience — nothing scares potentially valuable contributors away faster than hostility or elitism." (See Figure 14.)

Design claim 21: Explicitly discouraging hostility towards newcomers who make mistakes can promote friendly initial interactions between newcomers and old-timers.

Problem 4: Teaching the newcomers the ropes

Different communities have standards and norms that shape and constrain the behavior of their members. Some of these norms are broad and open to different interpretations. In Wikipedia, for example, a series of guidelines and policies remind members to adopt a neutral point of view in the articles they write¹ and that they should not use their personal talk pages to discuss personal topics and promote relationships with other Wikipedians². Others are more narrowly targeted, such as the Wikipedia copyright policy³ or formatting guidelines⁴. Although many of the norms and behavioral standards are explicitly described in Wikipedia, in many other online communities norms that prescribe how members should behavior are implicit and must be learned by observation.

As described in more detail in Chapter xx on regulating behavior, violation of the behavioral norms can be harmful to existing groups for a variety of reasons. While we treat the general topic of norms in online communities in more detail in that chapter, the current chapter deals with issues that especially concern newcomers.

Organizational socialization theory identifies six dimensions that differentiate the techniques that organizations use to help newcomers get adjusted to the organization and learn their place in it (Van Maanen & Schein, 1979). This research distinguishes institutionalized socialization practices, with formal training being its hallmark, from more individualized socialization, based on on-the-job training. Figure 15 provides an overview of these socialization tactics. Jones (1986) created a self-report scale measuring these tactics, which has been extensively used in empirical research examining antecedents and consequences of socialization of newcomers in organizations. At the institutionalized end of these continua, newcomers are segregated from contact with old-timers, are all given the same experiences, experienced together as a cohort, are told the sequence of stages they will go through as they progress through the organization and the time they will put in at each stage, and get training from experienced role models. In addition, the organization gives them positive feedback, encouraging them to build on their distinctive personal characteristics in the process of trying to fit into the organization. Students going through their PhD training, given strong mentorship and clear expectations about requirements are at the institutionalized end of these dimensions. In contrast, at the individualized end of the continua, newcomers received personalized, on-the-job training, are not given clear guidelines for their progress through the

¹ http://en.wikipedia.org/wiki/Wikipedia:Neutral_point_of_view

² http://en.wikipedia.org/wiki/Wikipedia:What_Wikipedia_is_not

³ <http://en.wikipedia.org/wiki/Wikipedia:Copyrights>

⁴ http://en.wikipedia.org/wiki/Wikipedia:Manual_of_Style

Institutionalized	Individualized
Collective: Newcomers go through a common set of experiences designed to produce standardized responses to situations	Individual: Each newcomer receives unique training in isolation from others.
Formal: Newcomers are segregated from other organizational members and put through experiences tailored to newcomers.	Informal: Newcomers receive on-the-job training to learn their roles.
Sequential: Newcomers are given a clear sequence of experiences or stages they will go through	Random: The sequence of stages isn't communicated in advance.
Fixed: Newcomers are given a fixed timetable about when they will move through stages	Variable: The timing of role transitions is variable.
Serial: Newcomers observe and get training from experienced role models, who give newcomers a clear view of the experiences they will encounter in the organization	Disjunctive: Newcomers must develop their own definition of the situation and do not have more senior people to observe.
Investiture ^a : Newcomer receive positive feedback confirming their prior identity	Divestiture ^a : Newcomers receive negative feedback expressing organizational disapproval of their prior identity.

Figure 13. Six dimension of organizational socialization tactics (Adopted from van Maanen & Schein, 1979; Jones, 1986)

^a Note that Jones (1986) and many researchers who followed reverse the conventional meaning of divestiture and investiture when they put investiture in the left column and divestiture in the right. Conventional English would label hazing and other divestiture tactics as depersonalizing, and they are often practiced by “total institutions” such as militaries, prisons, and religious orders. Jones (1986) and later authors group divestiture with the right column’s other “individualized” tactics because they have all been found to have similar effects (Bauer, Bodner, Erdogan, Truxillo, & Tucker, 2007).

organization, and the organization ignores or even attempts to scrape away their prior identities in trying to mold the newcomer to the current organization.

The original theory hypothesized that these tactics would be used in very different contexts (e.g., that collective tactics would be used in jobs where newcomers needed to learn technical skills, while individual socialization would be used where already existing

organizational members were being prepared for promotions), and would have different consequences (e.g., collective socialization would lead to newcomers adopting existing social roles, while individualistic socialization would encourage role innovation). However, subsequent research has developed a simpler picture of the effects of using these socialization tactics. Bauer et al.'s meta-analysis (2007) summarized 70 separate studies of newcomer socialization to organizations, most in which measures of organizations' use of these socialization tactics shortly after newcomers joined were correlated with newcomers' subsequent adjustment, commitment and performance in the organizations (see also Saks, Uggerslev, & Fassina, 2007).

The main results are summarized in Figure 16. Both active information-seeking by newcomers and the use of a more institutional style of socialization by the organization is associated with more successful outcomes: newcomers do their jobs better, are more satisfied with their jobs, become more committed to the organization, and leave the organization less. The research suggests these effects of the organizations' use of institutionalized socialization tactics as well as newcomers' active information seeking have their effects by increasing newcomers understanding how they should behave in the

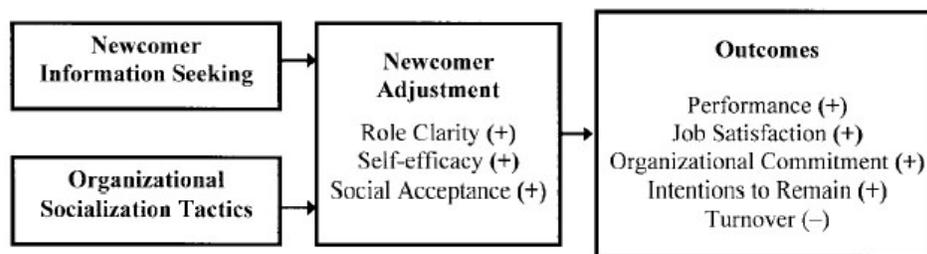


Figure 14. Antecedents and outcomes of newcomer adjustment during organizational socialization. From Bauer et al (2007).

organization (role clarity), their beliefs that they could do what was asked of them (self-efficacy) and their beliefs that others in the organization accepted them (social acceptance).

Although the evidence is strong that institutionalized socialization tactics are effective in developing commitment and appropriate behavior in conventional organizations, they are not common in online communities. Socialization processes in most online communities are informal and individualistic. For example, in Usenet groups, lurking newcomers have no opportunities for formal mentorship, because their presence is unknown to old-timers. The task-oriented groups in Wikipedia, known as WikiProjects, rarely use institutional socialization tactics to socialize new members who join them (B. R. Choi, Alexander, Kraut, & Levine, 2010). For example, they rarely assign the new member a mentor or provide clear guidance about how to behave in the project (B. R. Choi, et al., 2010).

Also consider Ducheneaut's description of the socialization of newcomers to the Python open-source software development community (2004). Even in this production-oriented environment, with defined workflows and sharp distinctions among the social roles participating in the project, socialization is still informal, with learning the ropes based

primarily on based on trial and error. For example, although there is a progression of participation in this community, with newcomers first participating in technical discussion and then submitting bug fixes before obtaining committer status, this progression of roles is not documented. When one new developer who was slowly making his way toward the core of the community attempted to introduce a new module to the standard library used in this project, he did not know the organizational routines he needed to engage in to make his contribution. A core member of the community eventually stepped in to offer advice (i.e., provided mentorship), but mentoring was not a regular socialization tactic in this community.

Rarely do online communities socialize and train newcomers as a group in isolation from other members, provide mentors to give guidance or give them a clear timetable about how to progress in the community. Consider the community that develops the popular Firefox web browsers. While the Mozilla foundation maintains an extensive set of forums for communication among developers, except for FAQ-style documents we were unable to find forums or other resources for training new comers or socializing them to the project. Newcomers who want to join this project must struggle to make sense of how to contribute on their own. Instead, online communities generally adopt individualized socialization tactics or none at all. The primary exception to this generalization is that many communities provide standardized FAQs and help documents to familiarize newcomers with how the community operates, which can be thought of as a variant of collective socialization. For example, the Distributed Proofreaders' project has an extensive set of frequently asked questions with answers for newcomers on what the project involves, how to get involved and how to handle common problems in proofing and formatting documents.¹

The more institutionalized socialization tactics used in conventional organizations can be applied online, and some online communities do provide elements of institutionalized socialization, although this is rare. For example, World of Warcraft (WoW) offers formal and sequential socialization. When new players start the game, they are placed in an area that is isolated from more experienced players. Although they have the opportunity to interact with other new players, they also can interact with non-playing characters (NPCs or scripts) that give newcomers tasks through which they gain both experience points and knowledge of basic methods for acting in the world (e.g., navigating, attacking monsters, and collecting loot). The rules of the game lay out clear progressions and role transitions (e.g., players gain new powers at specified levels, for example, acquiring a mount for rapid transportations at level 40). World of Warcraft does not, however, encourage new players to become socialized in groups, as socialization theory suggests would be helpful, even though groups are central to World of Warcraft. Indeed, as of this writing, players using the 10-day free trial to sample the game are



*Figure 15. Hattrick.org'
Manager's license*

¹ <http://www.pgdp.net/c/faq/ProoferFAQ.php>

prevented from participating in groups.

The multiplayer, fantasy European football (i.e., soccer) site hattrick.org is another informative exception, providing both formal and collective socialization tactics. Each player in this game is the manager of a soccer team, competing against other managers. The players must make decisions in areas such as acquiring, training and trading players, game tactics, building stadiums or handling finances. To encourage newcomers to read the full manual, new managers participate in the Hattrick Manager License Challenge (aka Hattrick University), where they earn in-game money for studying the rules and answering challenge questions during their first weeks in the community. If they successfully answer all 24 challenge questions, they graduate and receive a manager's license (See Figure 17). To encourage the development of cohorts of players, new players initially play in leagues composed of other new players; if players win their division, they are promoted to the next level division the following season.

Design claim 22: By using formal, sequential and collective socialization tactics, new members are likely to become more committed to the community, learn how to behave in it and contribute more.

Some communities have successfully deployed mentorship practices, both formal and informal. Everything2 is an edited web publication where members write essays about almost anything. The Everything2 Mentor System matches new users with experienced mentors who share interests and a time zone, who agree to log into the site at least once a day and who are willing to answer the new members' questions and critique their work. New sellers at eBay benefit from Trading Assistants, experienced and active eBay sellers with at least 97% positive feedback. Trading Assistants assess whether an item is saleable, plan starting prices and shipping methods for items, and communicate directly with bidders. Newcomers benefit from the Trading Assistants' high reputation scores, proficiency with seller tools, and familiarity with listing policies and best practices. Newcomers search a directory for assistants who are geographically close and have expertise in their particular areas, such as estate liquidation or motor vehicles. Trading Assistants themselves have training tutorials, guides to best practices and promotion, and a discussion board. Help from Trading Assistants is not limited to newcomers; any busy seller can outsource items to others in this way. However, unlike voluntary mentorship in other communities, eBay's Trading Assistants negotiate fees with new sellers for their services¹.

Similarly, one of the benefits to being a member of a World of Warcraft guild is explicit help by higher-level guild members. Higher level guild members are expected to help their junior colleagues overcome difficult quests or kill monsters more rapidly. The higher-level players coach the lower-level players, explaining which quests are most valuable, and demonstrating the way to defeat the more difficult challenges. Of course, sometimes the mentoring backfires: once the lower-level player becomes more powerful he sometimes leaves to join a more powerful guild.

¹ <http://pages.ebay.com/tahub/index.html>

Design claim 23: When old-timers provide newcomers formal mentorship the newcomers will become more committed to the community, learn how to behave in it and contribute more.

Problem 5: Protecting the group from newcomers

Although newcomers are essential to the survival of online communities, they also pose real threats. Because newcomers have no history in the community, existing group members do not know how much to trust them. There is risk if one allows a new member of a guild in World of Warcraft to participate in a high-stakes raid, a new seller on eBay to sell an expensive item, or a new member of the Apache project to commit code.

Because newcomers have not yet developed commitment to the group and have not yet learned how the group operates, it is rational for established group members to actively distrust them. Because new members don't yet identify with the group, they are less likely to have the best interests of the group at heart in deciding courses of action. In addition, because they are relatively unsophisticated in how the group operates, they may not have the skill or knowledge to operate in the group's best interest, even if they cared to. For example, in Wikipedia, newcomers (including those who have not registered and those who have not yet edited extensively) are more likely to vandalize pages or offer changes that other, more experienced Wikipedians will later delete (Adler & Alfaro, 2007). As a result of this lack of history and potential lack of goodwill and relevant skills, groups need to protect themselves against possible damage that newcomers can cause. Empirical evidence suggests that established members do distrust newcomers. For example, Resnick et al. (2006) showed experimentally that buyers pay less for comparable items on eBay when purchasing from newcomers (i.e., those with no prior transactions) than from old-timers, distrusting them because of their lack of history.

Even if newcomers are not actively behaving inappropriately, the mere fact that they are different from the old timers may change the environment to make the community less desirable for old timers. Indeed, merely believing that some group members are old-timers and others are newcomers leads to strong in-group/out-group biases within a group (Moreland, 1985). An influx of new members to social networking sites may change the culture for old-timers, as when MySpace transitioned from a promotion platform for small bands to a crowded venue for teenagers to post mp3s. Similarly, as new members joined Systems, an unmoderated email list for women in computer science, both the increase in message volume and the very different concerns held by old-timers and newcomers caused hundreds of senior members to leave (Spertus, Jeffries, & Sie, 2001).

So far, we have suggested that newcomers be socialized through friendly initial interactions with old-timers, and that old-timers be explicitly discouraged from being hostile to newcomers who make mistakes. . Yet this is not to say that newcomers should receive *carte blanche* access to the group and its resources. Resources include both people—other members' attention and support—and any artifacts the group produces, such as wikis, collective movie ratings, or software. Should newcomers be isolated to prevent annoying other members and damaging community artifacts, or should they be

allowed to ask questions, scribble on others' walls, delete code or join raiding parties right away? It depends on the kind of community and its goals.

The question of whether to quickly attempt to integrate newcomers with the existing community depends on several factors, including whether the community produces a group artifact with interdependent parts and the consequences of newcomers' mistakes on themselves and other members. The more likely it is that the presence of newcomers and their inappropriate behavior can damage the current community or its products and the harder it is to repair this damage, the more the community should isolate newcomers until they become more committed and knowledgeable about the community. Many common protection mechanisms serve multiple purposes, not only preventing damage, but also discouraging newcomers who would be a bad fit and socializing those who are a good fit.

Chapter **TKTK**, on regulating behavior, discusses ways to protect a community from any misbehaving participant, not just newcomers. Here we focus on two methods, sandboxes and progressive access controls, that are especially relevant to the socialization process for newcomers.

Sandboxes are safe, isolated areas for exploration and skill development. They achieve dual goals of protection and training. Sandboxes take many forms, from text boxes for practicing wiki syntax to virtual land parcels for practicing construction or simple scripting, as in the virtual world Second Life (see Figure 18). Content created in sandboxes is removed regularly, protecting the community from clutter. All Wikipedia

editors have a personal sandbox by default, as well as access to communal sandboxes (See Figure 19). Typical policies, such as formatting guidelines or notifying other users before making large changes, do not apply to the sandbox, although civility and copyright policies still apply. Sandbox content is automatically cleaned every 12 hours, although other users tend to overwrite content much faster.

Design claim 24: Sandboxes both speed up the learning process for newcomers and reduce the harm to the community they might otherwise cause.



Figure 16. Sandbox in Second Life
(<http://wiki.secondlife.com/wiki/Sandbox>)

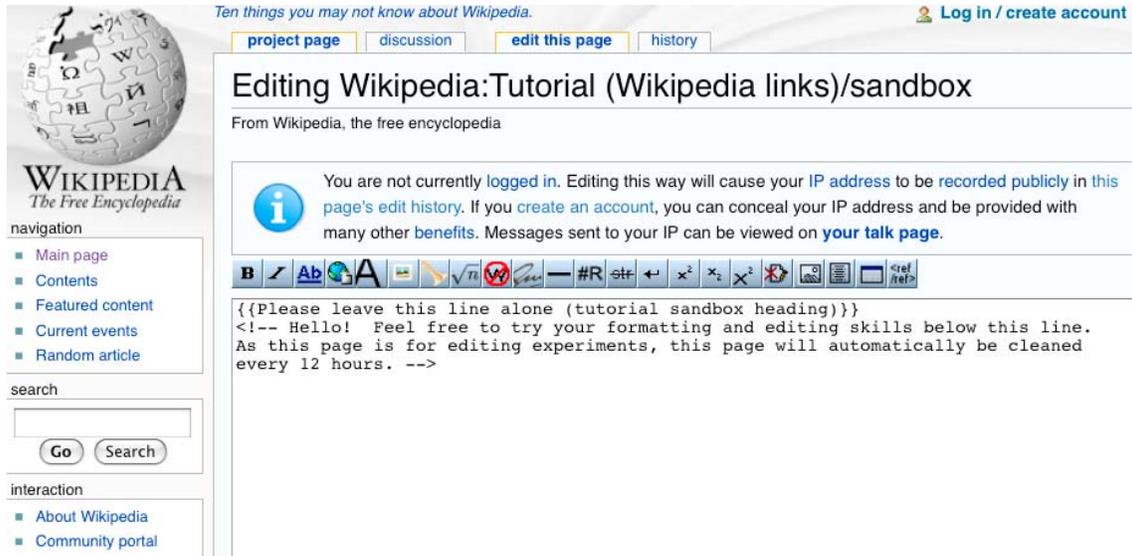


Figure 17. Wikipedia Sandbox for practicing wiki formatting

Another common protection mechanism is progressive access control, allowing newcomers to participate in less critical tasks initially, and gradually allowing them to take on more central tasks. This progression may simply be a suggestion in the training documents or FAQs, or it may be enforced by technical constraints that prevent newcomers from performing risky actions until they have demonstrated competence with simpler ones. Lave and Wenger (1991) proposed the theory of legitimate peripheral participation, by which newcomers become more experienced members through small but productive actions in the community. They describe apprenticeships for midwives, tailors, and butchers, in which the new members of the occupation not only acquire occupational knowledge, but also take part in social practices and learn to understand the community's activities, artifacts, and language. By technically constraining newcomers to learn through small, peripheral, but helpful tasks, progressive access control serves as both a protection mechanism and socialization tool.

For example, Distributed Proofreaders, a community of volunteers proofreading digitized public domain books, restricts unregistered users to proofing "Smooth Reading" pages, which are nearly error-free. These pages have been reviewed in previous rounds and need light checks by people reading for pleasure, rather than readers trained in the formal procedures used by experienced checkers. A missed typo in one of these pages will have little consequence for the community, and will likely be caught by another smooth reader. Newly registered users are also restricted to editing "Beginners Only" pages, and cannot move to more advanced pages until demonstrating mastery of community editing standards. "Beginners Only" edits also trigger special reviews by second-level mentors, who email friendly feedback, sensitive to the tenuous relationship a novice editor may have to the community. One such review reads: *"I have reviewed page 294 that you proofed for this project. It looks like you've made a good start! For example, you joined the hyphenated words, and you 'clothed' the em-dash at the end of a line. Nice job!"*

Design Claim 25: Progressive access controls reduce the harm a newcomer can do to a community while learning the ropes.

Summary

As in other chapters, we conclude with a table of the design alternatives considered in this chapter, and an index to the design claims that discuss their implications. The chapter examined the challenges of renewing online communities with newcomers. It identified five separate sub-challenges, recruitment, selection, retention, and socialization of newcomers, while protecting the community from them while they are learning the ropes. We conclude by inverting that focus. We reflect on the design space of alternatives and the ways that alternative designs affect the ability to meet those challenges.

Some design alternatives involve communication about the community outside the community. These are especially important to the recruitment of potential new members. Active rather than passive recruiting, and targeting communication to those who are a good fit to the community, will bring in more recruits. Relying on word of mouth and recruiting from social networks, in part by enabling sharing of content with friends outside the community, will both be more persuasive at attracting people to consider the community, and generate leads who are a better fit for the community.

The content and activities of the community will have an impact on potential newcomers, once they have been recruited to consider it. Newcomers who have friendly interactions with oldtimers, and who reveal information about themselves will be more likely to stick around. On the other hand, newcomers whose contributions are removed or reverted without explanation are less likely to be retained. Collective socialization tactics, where newcomers form a cohort and learn about the community together, can also contribute to retaining newcomers. Sandboxes can give newcomers a safe way to explore and try out the software features without fear of damaging the community.

There is a large scope for design choices that assign special roles to people who interact with newcomers, and policies for how they will be treated. Specified roles for a welcomer and a mentor, with associated privileges that help in accomplishing those roles, can help with retention and socialization. Explicit policies that discourage hostility towards newcomers can both reduce the amount of that hostility, and make newcomers who do experience it feel that it is unrepresentative of the community, thus aiding retention.

Those roles that have limited privileges can be enforced through access control mechanisms. Allowing non-members to see archives of communication within the community can help them evaluate whether they want to be members. A variety of barriers can prevent progression to the next stage of privileges. For example, people may have to pay, wait, complete a diagnostic task, or provide external credentials or referrals in order to enter the community. These entry barriers are effective at selecting the right people to the extent that it is easy for those who are a good fit for the community to surmount the barriers and difficult for those who are not a good fit. A sequence of stages

for entry, each involving specified socialization activities, can also help build commitment in the retention phase. Access restrictions, and the progressive removal of them, can also help with protection.

As in other chapters, we find that there are a variety of ways that designers can meet the challenges of without making changes to the structure or technological features of a community, just by changing the contextual information that provides a frame through which members and potential members understand what they are doing. Endorsements of the community by a celebrity or a credible source can help recruit potential members. Visibly presenting attractive features of the site, such as the physical attractiveness of members, can also help. Highlighting that many other people have joined can serve as social proof that the community is attractive. Providing an accurate picture of the community's purpose and activities can help the right people self-select for membership. These framing actions are often the least costly to implement, and thus should be the first to be considered. Sometimes, they will be enough. When they are not, designers will need to consider more structural options.

Type	Design Alternative	Claim #
External Communication		
	Active recruiting	Design claim 1
	Word of mouth vs. impersonal recruiting	Design Claim 2, Design Claim 6
	Recruiting from social networks of existing members	Design Claim 3
	Making it easy for users to share content from a community site with their friends	Design Claim 4
	Disseminating information through well-connected members	Design Claim 5
Content, Tasks, and Activities		
	newcomers have friendly interactions with existing community members soon after joining a community	Design claim 18
	Encouraging newcomers to reveal themselves publicly in profiles or 'introduction threads'	Design claim 19
	Collective socialization tactics	Design claim 22
	Sandboxes	Design claim 24
Roles, Rules, Policies, and Procedures		
	Assigning the responsibilities of having friendly interactions with newcomers to particular community members	Design claim 20
	Explicitly discouraging hostility towards	Design claim 21

	newcomers who make mistakes	
	old-timers provide newcomers formal mentorship	Design claim 23
Access Controls		
	Forcing potential new members to pay or wait	Design claim 12
	Forcing potential new members to undertake “separating” tasks	Design claim 13
	Requiring potential members to complete a diagnostic task	Design claim 14
	Requiring potential members to provide external diagnostic credentials	Design claim 15
	Requiring potential members to provide referrals	Design claim 16
	Entry barriers for newcomers	Design claim 17
	formal, sequential socialization tactics	Design claim 22
	Progressive access controls	Design Claim 25
Framing		
	Presenting reasons to join and endorsements by credible sources and sites	Design Claim 7
	Presenting attractive surface features and endorsements by celebrities	Design claim 8
	Emphasizing the number of people already participating in a community	Design claim 9
	Placing the name of a community in front of people often	Design claim 10
	Providing potential new members an accurate and complete picture of what the members’ experience will be once they join	Design claim 11

References

- Adler, B. T., & Alfaro, L. d. (2007). A content-driven reputation system for wikipedia *Proceedings of the 16th international conference on World Wide Web* (pp. 261-270). New York: ACM Press.
- Agrawal, J., & Kamakura, W. (1995). The economic worth of celebrity endorsers: An event study analysis. *The Journal of Marketing*, 59(3), 56-62.
- Arguello, J., Butler, B. S., Joyce, L., Kraut, R. E., Ling, K. S., Rosé, C., et al. (2006). Talk to me: Foundations for successful individual-group interactions in online communities *CHI 2006: Proceedings of the ACM Conference on Human-Factors in Computing Systems* (pp. 959 - 968). New York: ACM Press.
- Aronson, E. (1997). Back to the Future: Retrospective Review of Leon Festinger's" A Theory of Cognitive Dissonance". *The American Journal of Psychology*, 110(1), 127-137.
- Aronson, E., & Mills, J. (1959). The effect of severity of initiation on liking for a group. *Journal of Abnormal & Social Psychology*, 59, 177-181.
- Assmus, G., Farley, J., & Lehmann, D. (1984). How advertising affects sales: Meta-analysis of econometric results. *Journal of Marketing Research*, 65-74.
- Bajaj, V. (2010, April 25). Spammers pay others to answer security tests. *New York Times*, p. B6.
- Bass, F. M. (1969). A new product growth model for consumer durables. *Management Science*, 15(5), 215-227.
- Bauer, T. N., Bodner, T., Erdogan, B., Truxillo, D. M., & Tucker, J. S. (2007). Newcomer Adjustment During Organizational Socialization: A Meta-Analytic Review of Antecedents, Outcomes, and Methods. *Journal of Applied Psychology*, 92(3), 707-721.
- Benoit, W., Hansen, G., & Verser, R. (2003). A meta-analysis of the effects of viewing US presidential debates. *Communication Monographs*, 70(4), 335-350.
- Breaugh, J., & Starke, M. (2000). Research on Employee Recruitment: So Many Studies, So Many Remaining Questions. *Journal of Management*, 26(3), 405.
- Burke, M., Marlow, C., & Lento, T. (2009). Feed me: motivating newcomer contribution in social network sites *CHI 2009: Conference on Human Factors in Computing Systems* (pp. 945-954). New York: ACM Press.
- Chaiken, S., Wood, W., & Eagly, A. H. (1996). Principles of persuasion. In E. T. Higgins & A. W. Kruglanski (Eds.), *Social psychology: Handbook of basic principles* (pp. 702-742). New York: Guilford Press.
- Chapman, D., Uggerslev, K., Carroll, S., Piasentin, K., & Jones, D. (2005). Applicant Attraction to Organizations and Job Choice: A Meta-Analytic Review of the Correlates of Recruiting Outcomes. *Journal of Applied Psychology*, 90(5), 928-944.
- Choi, B., Kraut, R. E., & Fichman, M. (Under review). Matching People and Groups: An Exploratory Study of Recruitment and Selection in Online Games *ACM Conference on Human Factors in Computing Systems*. New York: ACM Press.
- Choi, B. R., Alexander, K., Kraut, R. E., & Levine, J. M. (2010). Socialization Tactics in

- Wikipedia and Their Effects *CSCW'10: Proceedings of the ACM Conference on Computer-Supported Cooperative Work* (pp. 107-116). New York: ACM Press.
- Cialdini, R. B., & Goldstein, N. J. (2004). Social influence: Compliance and Conformity. *Annual Review of Psychology*, 55(1), 591-621.
- Clary, E., Snyder, M., Ridge, R., Copeland, J., Stukas, A., Haugen, J., et al. (1998). Understanding and Assessing the Motivations of Volunteers: A Functional Approach. *Journal of Personality and Social Psychology*, 74, 1516-1530.
- Coleman, J., Katz, E., & Menzel, H. (1957). The diffusion of an innovation among physicians. *Sociometry*, 20(4), 253-270.
- Collins, N., & Miller, L. (1994). Self-disclosure and liking: A meta-analytic review. *Psychological Bulletin*, 116(3), 457-475.
- Domingos, P., & Richardson, M. (2001). *Mining the network value of customers*.
- Drenner, S., Sen, S., & Terveen, L. (2008). Crafting the initial user experience to achieve community goals *Proceedings of the 2008 ACM conference on Recommender systems* (pp. 187-194): ACM New York, NY, USA.
- Ducheneaut, N. (2005). Socialization in an Open Source Software Community: A Socio-Technical Analysis. *Computer Supported Cooperative Work*, 14(4), 323 - 368
- Ducheneaut, N., Yee, N., Nickell, E., & Moore, R. J. (2007). The life and death of online gaming communities: a look at guilds in world of warcraft *Proceedings of the SIGCHI conference on Human factors in Computing Systems* (pp. 839-4848). New York, NY: ACM Press.
- Erdogan, Z. (1999). Celebrity endorsement: a literature review. *Journal of Marketing Management*, 15(4), 291-314.
- Fernandez, R., & Weinberg, N. (1997). Sifting and sorting: Personal contacts and hiring in a retail bank. *American Sociological Review*, 62(6), 883-902.
- Festinger, L. (1957). *A theory of cognitive dissonance*: Stanford University Press.
- Fogg, B., & Eckles, D. (2007). The Behavior Chain for Online Participation: How Successful Web Services Structure Persuasion. *LECTURE NOTES IN COMPUTER SCIENCE*, 4744, 199.
- Fogg, B. J., Soohoo, C., Danielson, D. R., Marable, L., Stanford, J., & Tauber, E. R. (2003). *How do users evaluate the credibility of Web sites?: a study with over 2,500 participants*. Paper presented at the Proceedings of the 2003 conference on Designing for user experiences.
- Gerard, H. B., & Mathewson, G. C. (1966). The effect of severity of initiation on liking for a group: A replication. *Journal of Experimental Social Psychology*, 2(3), 278-287.
- Gladwell, M. (2002). *The tipping point: How little things can make a big difference*: Back Bay Books.
- Goldstein, N., Griskevicius, V., & Cialdini, R. (2007). Invoking social norms: A social psychology perspective on improving hotels' linen-reuse programs. *Cornell Hotel and Restaurant Administration Quarterly*, 48(2), 145.
- Green, D., Gerber, A., & Nickerson, D. (2008). Getting out the vote in local elections: Results from six door-to-door canvassing experiments. *The Journal of Politics*, 65(04), 1083-1096.
- Halfaker, A. (May 5, 2010). Personal communication: Effects of reverts. Pittsburgh PA.
- Hoag, D. (1996, January). The Well Host Manual. 4.4. Retrieved August 11, 2003, from

- <http://www.well.com/~confteam/hostmanual/>
- Jones, G. R. (1986). Socialization tactics, self-efficacy, and newcomers' adjustments to organizations. *The Academy of Management Journal*, 29(2), 262-279.
- Katz, E. (1957). The two-step flow of communication: An up-to-date report on an hypothesis. *Public Opinion Quarterly*, 12(1), 61-78.
- Katz, E. L., P. (1955). *Personal influence: The part played by people in the flow of mass communication*. New York: The Free Press.
- Kempe, D., Kleinberg, J., & Tardos, É. (2003). *Maximizing the spread of influence through a social network*.
- Klapper, J. (1960). *The effects of mass communication*: Free Press, Glencoe, Ill.
- Kristof-Brown, A. L., Zimmerman, R. D., & Johnson, E. C. (2005). Consequences of Individuals' Fit at Work: A Meta-Analysis of Person-Job, Person-Organization, Person-Group, and Person-Supervisor Fit. *Personnel Psychology*, 58(2), 281-320.
- Kristof, A. L. (1996). Person-organization fit: An integrative review of its conceptualizations, measurement, and implications. *Personnel Psychology*, 49(1), 1-49.
- Krogh, G. v., Spaeth, S., Lakhani, K. R., & Hippel, E. v. (2003). Community, Joining, and Specialization in Open Source Software Innovation: A Case Study. *Research Policy*, 32(7), 1217-1241.
- Lampe, C., & Johnston, E. (2005). Follow the (Slash) dot: Effects of Feedback on New Members in an Online Community Group'05: *Proceedings of the 2005 international ACM SIGGROUP Conference on Supporting group work* (pp. 11-20). New York, NY: ACM Press
- Latane, B. (1981). The psychology of social impact. *American Psychologist*, 36, 343-356.
- Lave, J., & Wenger, E. (1991). *Situated learning: Legitimate peripheral participation*. New York: Cambridge University Press.
- Levine, J. M., & Moreland, R. L. (1994). Group socialization: Theory and research. In W. Strocher & M. Hewstone (Eds.), *European Review of Social Psychology* (Vol. 5). New York: John Wiley & Sons.
- Mahajan, V., Muller, E., & Wind, Y. (2000). New-product diffusion models: From theory to practice. In V. Mahajan, E. Muller & Y. Wind (Eds.), *New-product diffusion models*. Boston: Kluwer Academic Publishers.
- Mahajan, V., Muller, E., & Bass, F. (1990). New product diffusion models in marketing: A review and directions for research. *Journal of Marketing*, 54, 1-26.
- Mann, T., & Wolfinger, R. (1980). Candidates and parties in congressional elections. *The American Political Science Review*, 617-632.
- McGuire, W., Lindzey, G., & Aronson, E. (1985). Attitudes and attitude change. *Handbook of social psychology: Special fields and applications*, 2, 233-346.
- Montgomery, A. (2001). Applying quantitative marketing techniques to the Internet. *Interfaces*, 3(2), 90-108.
- Moreland, R. (1985). Social categorization and the assimilation of "new" group members. *Journal of Personality and Social Psychology*, 48(5), 1173-1190.
- Munro, G., Ditto, P., Lockhart, L., Fagerlin, A., Gready, M., & Peterson, E. (2002). Biased assimilation of sociopolitical arguments: Evaluating the 1996 US presidential debate. *Basic and Applied Social Psychology*, 24(1), 15-26.
- Nickerson, R. (1998). Confirmation bias: A ubiquitous phenomenon in many guises.

- Review of General Psychology*, 2, 175-220.
- Organ, D. W., & Ryan, K. (1995). A meta-analytic review of attitudinal and dispositional predictors of organizational citizenship behavior. *Personnel Psychology*, 48(4), 775-802.
- Panciera, K., Halfaker, A., & Terveen, L. (2009). Wikipedians are born, not made: A study of power editors on Wikipedia *Proceedings of the ACM 2009 international conference on supporting group work table of contents* (pp. 51-60). New York: ACM Press.
- Panciera, K., Priedhorsky, R., Erickson, T., & Terveen, L. (2010). Lurking? cyclopaths?: a quantitative lifecycle analysis of user behavior in a geowiki *CHI '10: Proceedings of the ACM on human factors in computing systems* (pp. 1917-1926). New York: ACM Press.
- Petty, R., & Wegener, D. (1998). Attitude change: Multiple roles for persuasion variables. *The handbook of social psychology*, 1, 323–390.
- Phillips, J. (1998). Effects of realistic job previews on multiple organizational outcomes: A meta-analysis. *Academy of Management Journal*, 41(6), 673-690.
- Preece, J., Nonnecke, B., & Andrews, D. (2004). The top five reasons for lurking: improving community experiences for everyone. *Computers in Human Behavior*, 20(1), 201–223.
- Preece, J., & Shneiderman, B. (2009). The Reader-to-Leader Framework: Motivating technology-mediated social participation. *AIS Transactions on Human-Computer Interaction*, 1(1), 13-32.
- Resnick, P., Zeckhauser, R., Swanson, J., & Lockwood, K. (2006). The value of reputation on eBay: A controlled experiment. *Experimental Economics*, 9(2), 79-101.
- Roberts, D., & Maccoby, N. (1985). Effects of mass communication. In G. Lindzey & E. Aronson (Eds.), *Handbook of social psychology* (Vol. 2, pp. 539-598). New York: Random House.
- Rynes, S. (1991). Recruitment, Job Choice, and Post-hire Consequences: A Call for New Research Directions. In M. D. Dunnette (Ed.), *Handbook of industrial and organizational psychology* (2nd ed., pp. 399–444). Palo Alto, CA: Consulting Psychologists Press.
- Saks, A. M., Uggerslev, K. L., & Fassina, N. E. (2007). Socialization tactics and newcomer adjustment: A meta-analytic review and test of a model. *Journal of Vocational Behavior*, 70, 413-446.
- Spertus, E., Jeffries, R., & Sie, K. (2001). *Scaling Online Communities with Javamlm*. Paper presented at the Fifteenth Systems Administration Conference (LISA), USENIX San Diego, CA. .
- Stewart, K. (2003). Trust transfer on the world wide web. *Organization Science*, 5-17.
- Sultan, F., Farley, J., & Lehmann, D. (1990). A meta-analysis of applications of diffusion models. *Journal of Marketing Research*, 27(1), 70-77.
- Tellis, G. (2004). *Effective advertising: Understanding when, how, and why advertising works*: Sage Pubns.
- Thorndike, E. (1920). A constant error in psychological ratings. *Journal of Applied Psychology*, 4(1), 25–29.
- Tugend, A. (2009). Typing In an E-Mail Address, and Giving Up Your Friends' as Well

- New York Times*. Retrieved from
http://www.nytimes.com/2009/06/20/technology/internet/20shortcuts.html?_r=1&scp=1&sq=tagged.com&st=Search
- Van der Heijden, H. (2003). Factors influencing the usage of websites: the case of a generic portal in The Netherlands. *Information & Management*, 40(6), 541-549.
- Van Maanen, J., & Schein, E. H. (1979). Toward a theory of organizational socialization. *Research in Organizational Behavior*, 1, 209–264.
- Williams, D., Ducheneaut, N., Xiong, L., Zhang, Y., Yee, N., & Nickell, E. (2006). From tree house to barracks: The social life of guilds in World of Warcraft. *Games and Culture*, 1(4), 338-361
- Zajonc, R. B. (1968). Attitudinal effects of mere exposure. *Journal of Personality & Social Psychology*, 9(2, PT. 2), 1-27.
- Zhang, X. M., & Zhu, F. (2006). *Intrinsic Motivation of Open Content Contributions: The Case of Wikipedia*. Paper presented at the Workshop on Information Systems and Economics (WISE), Chicago, IL.