

Contest(ed) Norms: The Negotiation of Norms in a Closed Virtual Environment

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ABSTRACT

The critical role of behavioral norms in regulating human conduct and promoting social collaboration are well documented in CSCW literature. However, little has been written about the role that technology can play in the evolution of such behavioral norms in peoples' workplaces. We present an in-depth analysis of how technology fostered norms development among new, temporary hires in a corporation. We explain how they used a Web site, initially aimed at information sharing, to evolve a set of norms to which they collectively subscribed. Additionally we discuss the important role competition for incentives played in sparking their norms discussions.

Categories and Subject Descriptors

H.4 [Information Systems Applications]: Communications Applications — *bulletin boards, information browsers*. H.5 [Information Interfaces and Presentation]: Group and Organization Interfaces — *asynchronous interaction, collaborative computing, evaluation and methodology, organizational design, Web-based interaction*. J.4 [Social and Behavioral Sciences]: Sociology. K.4 [Computers and Society]: Organizational Impacts: *computer-supported cooperative work, employment*.

General Terms

Design, Human Factors.

Keywords

Behavioral norms, participation, closed virtual environments, etiquette cycles, remedial episodes.

1. INTRODUCTION

At the most basic level, norms tell members of a group what they can and what they cannot do [9, 20]. These are the so-called prescriptive and proscriptive uses of norms. Because they imply associated sanctions against violators, norms enable members of a group to form expectations about the behavior of others and thereby contribute to the regulation of behavior in a social or work setting [9, 15, 20]. As such, norms enable the myriad social and production activities that underlie successful cooperative work, including social bonding and coordination. Both the activities and processes are important to CSCW [18, 27].

A critical characteristic of norms is that they emerge from within a group; they can not be imposed from the outside [7, 15, 17]. An important implication is that participants in virtual environments¹ must be given mechanisms to evolve the norms they will adhere to. Incidents of deviant behavior may indicate that participants do not adhere to a shared set of norms [7, 9]. Kim discusses the process of norms refinement as the etiquette cycle [15]. It includes a very important third component that provides mechanisms to enable the enforcement of prevailing norms. Episodes of disruptive behavior are critical incidents that can either lead to further disruption, and culminate in the destruction of the social environment [16, 21] or they can precipitate discussions about the rules that the participants would be willing to be governed by [21, 28]. This paper presents a case study of the latter.

Our focus is on the evolution of norms in the workplace and the use of technology to facilitate it. We studied a group of new, temporary employees (summer interns) with access to a virtual environment that supported their transition from student to intern and during their internships. This case study has three characteristics that make it a particularly valuable investigation for understanding the emergence of norms in a work setting. First, our data traces the behavior of the participants starting at the same level of experience in the virtual environment. Second, since the virtual environment supported temporary employees, it had a planned ending. Thus, the analysis of usage covers the entire life-span of the association of the participants. Third, the introduction of an incentive system based around participation on the site served to focus the attention of the interns on an issue that affected all of them deeply. As such, it further motivated them to engage with each other around the serious issue of group norms.

This study focuses on the appropriation of a persistent discussion venue for the purposes of very complex, highly charged negotiation among the interns. Both the social situation of use and the particular design choices we made contributed towards creating a situation where the interns could make use of an essentially public technology (open to their management) for difficult and highly charged discussions. This case study thus extends the uses of virtual environments in the workplace to include the social negotiation around complex issues.

The presentation of the results is divided into three parts. The first part examines the posting behavior leading up to and including the *failure event* that serves as the trigger for an evolving discussion of emergent norms by the interns. The second part examines the *reproach*, the *account* offered by the object of the reproach and the

¹ We use the less known term *virtual environment* instead of the more common term *online communities* to avoid the controversy surrounding the implications of the word *communities*. Our intent is to denote participants in an electronic space gathered for the purpose of information exchange and sociality.

evaluation of the account by the other participants. These four stages together comprise the remedial episode construct as discussed by McLaughlin and colleagues [21, 28]. In contrast to their observations on the Usenet of many short, apparently unconnected instances, we uncovered a single, remedial episode comprised of many posts that extended over a one-month period. The analysis revealed the discussion of two intertwined norms, which took place against the backdrop of slowly developing working relationships among the interns [10]. Finally, the third part focuses on participation. While the first two parts focus on analyses of posting behavior, the third examines the reading of posts and voting as additional forms of participation [23, 25]. The results indicate that the norms discussion and negotiation involved more than the posters and was of interest to a larger group of interns.

2. RELATED WORK

We investigate three issues in the literature related to the general issue of social control. The dependence on norms is an informal form of social control, whereas rules and laws are examples of more formal methods [30]. The first issue concerns who defines the norms of behavior - the participants themselves or outside forces? The second asks whether the mechanisms that are used to enforce the agreed upon norms should be individual or social in nature? Third, should these methods of social control enter into a virtual environment through technical or social means?

Bruckman, Curtis, Figallo and Laurel [2] focused attention on the internal versus external source of norms in a panel discussion in 1994. While there is now widespread agreement that the content of social controls must be developed by participants in virtual environments [7, 15], there are practical issues that may prevent this in some cases. Often, it is a race against time for norms to develop before disagreements destroy the virtual environment [16]. This is because participants are increasingly drawn from environments with different expectations about appropriate conduct [16, 21]. In such cases, until norms can emerge, it is important to make use of general formulations that are broadly applicable in a venue (e.g., (e.g., “mandatory course” documents for new users of Usenet) [16] and then to enable the rules to be revised by the participants [15].

Many virtual environments provide their participants with tools they can use to individually address the misbehavior of others. For example, in environments such as MUDs and MOOs, individuals can use commands to “gag” or “refuse” others who they felt were harassing them and thus prevent the offensive remarks from appearing on their screens. Of course, the offender’s remarks would continue to appear on the screens of other participants unless they used similar measures [16, 21]. A more serious concern is raised by Sproull and Faraj [29] who note that by failing to deal with participants as members of a social entity, these types of individual measures reinforce the view of such spaces as information rather than social spaces. Further, they are concerned that such tools “... benefit the individual who may use it, but it may be socially dysfunctional for the group” because they preclude the education of the group and allow individuals to shirk social responsibility [29].

Methods of moderation are a favored technical means of introducing social controls into an environment. Originally people made use of “top-down” moderation where posts would be read by an administrator before they were made available to others. However, this solution does not scale well and many examples exist where the method had to be abandoned [e.g., 22]. A common alternative is a hybrid system where an administrator selects representatives from among the participants who share the responsibility for social control (e.g., the original system in LambdaMOO [22]). Peer-rating systems where participants rate the contributions of their peers

has also been used in conjunction with tools to filter out messages below some user-set threshold [5]. Both of these approaches take time to emerge. Alternatively, one can simply use a non-technical approach such as social cues encoded in the environments that provide powerful signals about appropriate behavior to participants [13] (see chapter 2 of [30] for the intellectual origins of this idea).

Whatever method is used to establish social order, “invisible” norms or posted rules, disagreement about what constitutes appropriate conduct occur. McLaughlin and colleagues [21, 28] developed the construct of *remedial episodes* as way to analyze conduct around disagreement in Usenet newsgroups. We use this construct to analyze the “misbehavior” and to shed light on the process by which the interns surface their disagreement and present different viewpoints on the issue underlying their disagreement. The first component of the remedial episode is the *failure event* which is the remark that sparks the disagreement. One or more participants follow this with a *reproach* that may be explicit or implicit depending on individual and group dynamics characteristics. A *response* from the “offender” may or may not occur. The remedial episodes in the McLaughlin et al.’s sample [28] included a public *response* from the “offender” in only 25% of the cases. In the final component of the remedial episode, the reproacher provides an *evaluation of the account* offered by the “offender”, that is, either accepts or rejects the account.

3. PORTKEY DESIGN

3.1 The Goals of the Portkey Site

The development of a closed virtual environment for the interns, known as Portkey, had both a service and a research goal. The service goal was to support 340 undergraduate and graduate students in their transition to and during their 12-week internship. The research goal was to examine the types of interactions an online space would facilitate among new employees who begin their association as strangers.

Through twelve one-hour pre-design interviews with the previous year’s interns, we determined that the new interns needed a venue where they could exchange idiosyncratic information and personal experiences and learn from each other. They needed information about the basics of surviving in their new environment such as learning to navigate their new employer’s processes, getting housing, using transportation, finding places to get food and learning about the area’s cultural and recreational offerings. The previous year’s intern Web site had provided valuable information on these topics, but had done so from an “official” (i.e., management and human resources) point of view. What the interns wanted was to be able to hear about these topics from their peers’ point of view. Preece [24] reported that members of empathic virtual environments expressed similar feelings, turning to others with similar conditions to learn what the experience “was really like” and looking to doctors for the “facts”.

3.2 Interns’ Work Environment

Interns typically worked on a project with permanent staff members, but not with other interns. Yet, the interns’ membership in the category of recent temporary employees created certain interdependencies among them. First, as new temporary employees transitioning from a context as a student to an intern, interns experience similar circumstances and problems. Second, fellow interns are a potential source of information on general professional topics because of their membership in many of the same communities of interest (e.g., Java programming). Third, peers can provide a less intimidating alternative than a person in authority because, as new employees, they are sensitive about exposing an area of ignorance [19]. Consequently, interns have many reasons to

draw upon each other as knowledge resources and networking resources as they transitioned and assimilated into their new work environment. Unlike the many informal, face-to-face opportunities provided by the institution through several social and professional gatherings during the course of the summer, a virtual environment like Portkey would facilitate their access to the knowledge and networking resources and would provide the means to engage the entire population of summer interns.

3.3 Technology

The basic design of Portkey was a Web site geared around information sharing in an environment that promoted cooperation and facilitated the development of relationships. Extensive research in cooperative work has studied the tension between individual and collective goals and highlighted several design principles related to accountability and mutual responsibility (e.g., summarized in [11]). We considered two of these design principles in the design of Portkey: a) the importance of a persistent, recognizable and verifiable identity and b) the importance of individuals meeting again in the future. These principles were operationalized as the need to promote the visibility of people and their activities and the need to foster interaction among interns.

To support the former requirement, the site was accessible from the Internet, but only to registered interns and their management. Each participant was identified and recognized by their real name and other publicly identifiable information. All contributions to the discussion fora were linked by name and reference to their Portkey profile page. This profile page contained, at minimum, their full name, school affiliation and organizational placement during their internship. As previous research has established, identified contributions promote accountability and personal responsibility in an individual's actions [e.g., 8, 14].

To support the second requirement of being able to foster interaction among interns, we followed the examples of prior systems and incorporated a persistent discussion board [e.g., 8, 14, 24]. We created several threaded discussion fora on topics that our pre-design interview informants had identified as being of special interest to interns. We started several fora on topics such as finding housing, arranging for transportation, and transitioning smoothly to intern life. Then, we seeded them with contributions that we solicited from the previous year's interns.

3.4 A Social Manipulation

An incentive system, in the form of a monthly contest for \$1000 worth of the company's products, was added to Portkey. It was designed to encourage participation from the interns through such contributions as filling out their profiles more completely (personal picture, project description, interests) and making more than three contributions to the discussion fora. The decision to incent participation served both the research and service interests. At the simplest level, more contributions provided more opportunities for the interns to be helpful to others and provided a greater chance that they would engage with each other on a variety of levels that were of interest to us as social scientists.

Incentives are a pervasive aspect of workplace situations where they are basic corporate tools used to motivate and shape the behavior of employees (for example, performance bonuses, promotions, giving visibility to particular employees). While in pervasive use, incentives are also controversial [4, 12]. While an examination of this issue is beyond the scope of this paper, it is important to note two issues that are particularly germane to the present case study. First, one common by-product of incentives is that they stimulate competition among employees. This has led many organizations to consider group rather than individual incen-

tives as an alternative [4]. Second, while employers often use extrinsic incentives (e.g., a pay raise or a bonus), intrinsic incentives (e.g., public recognition for a job well done) which address the employee's inner motivation for doing a job can be more effective [12].

While the extrinsic, individual incentive we applied in Portkey could lead to conflict, we reasoned that the particular circumstances of a closed site in a corporate setting would mitigate some of its disruptive forces. After all, many employers view internship programs as a recruitment opportunity, during which the management has an extended opportunity to evaluate an individual for permanent employment. The demand characteristics created by the intern situation were reinforced in the online space by such cues as the identification of the intern's management structure on their profile page, a welcome message from the employer's leadership team, and periodic contributions from permanent researchers to the various discussion fora. A long line of social research [e.g., 13, 30] argues that cues such as these in a physical environment enable participants to infer the behavioral norms appropriate to a particular setting.

Importantly, an incentive aimed at the entire population of interns may engage individuals to confront issues that affect their relationship with others. While an individual response is required from each person, that response is shaped by the social context and must be formulated with respect to it. Our data indicates that the incentive instigated at least part of the norms discussion by the interns.

3.5 Communication of Guidelines for Behavior

In addition to the implicit standards for expected behavior on the site, we also explicitly communicated behavioral expectations in two ways. First, we created an "About this Site" Web page that discussed appropriate behavior in general terms such as respect for others and responsibility for one's personal actions. This page was linked to information about the employer's publicly held standards of respect for the individual. Second, we modelled appropriate behavior by seeding the discussion fora with posts from interns who were returning for a second summer of work. Many of these posts disclosed the personal experience of the author. A meta-read of these posts would have given the interns a sense of the types of posts that would be considered appropriate on the site.

We decided against using any form of explicit moderation on the site for two reasons. First, external moderation would work against our desire for the participants to develop the appropriate behavioral guidelines through group interaction [15]. Second, since our online space was short-lived by design, there was not enough time for peer leadership to emerge.

4. NORMS STUDY

Our discussion of the evolution of norms among the interns is based on three sources of data. The first is the content and form of posts made by the interns over a 15-week period from May 14 - Aug 19 (weeks 20 to 34)². The second is log records of Portkey's Web-page requests between May 14 - Aug 19. The third is comments from three group interviews (8 each) with interns over the course of the summer. The groups consisted of a) a randomly selected set of Portkey users, b) read-only Portkey interns, and c) high Portkey intern posters.

We used the remedial episodes construct [21, 28] as an analysis tool to dissect the interns' heated discussion, to surface the two

² The site operated from May 4 until October 31, 2001. However, our analysis data is focussed on the 15-week period when most of the interns were around.

sets of norms discussion that existed, and to structure our discussion of the posts related to the interns' discussion of norms.

Our data tells the story of the evolution of two intertwined norms within the population of summer interns. The norms aim to govern, first, what constitutes an appropriate post on the site and, second, what are appropriate actions in service of attempting to win the monthly contest. We will refer to the former as the *form-and-content norm* and the latter as the *competition norm*. We will trace the evolution of these two norms' discussions largely through the posts by interns³ to Portkey's General Discussion forum. We will supplement our results presentation with comments made by interns in the group interviews as well as log data that documents the interns other activities on the site, namely reading and voting behaviors. The log data provides a broader view of participation in the norms discussion.

The next two sections present the results organized into two phases. The first phase chronicles initial changes in behavior with respect to the norms governing the form and content of posts. It is punctuated by the occurrence of the first of two critical incidents that indicate the existence of disagreement about what constitutes appropriate behavior on the site. The second phase covers the discussion that surfaces a more deeply hidden contention about what constitutes appropriate behavior with respect to the contest and shows the progress the interns made towards addressing the issue at a group level. The two phases taken as a whole are an illustration of one of the tenets in the social psychological discussions of norms; namely, norms are often taken for granted and become evident only when they are violated [7, 15].

5. PHASE 1 RESULTS

Usage of the Portkey site was widespread among the interns. In the period between May 14 - Aug 19 (weeks 20 to 34), a total of 284 interns out of the 340 Summer 2001 interns logged onto the Web site. Of these 284 interns, 124 of them posted to and read from Peertalk, 132 of them only read Peertalk, while 28 others simply examined areas other than Peertalk. 124 of the 284 (44%) interns made the 1473 posts. 25 of the total 1498 (2%) Portkey posts were made by 14 permanent researchers. A total of 398 permanent researchers had access to Portkey but they accounted for only 4% of the Portkey Web-page requests. Only 155 permanent researchers logged onto the Web site during the 15-week period of our analysis.

A summary of the results of this first phase is the two key findings observed in this phase. The first finding is the data from the first six weeks that shows significant evolution in what constitutes appropriate form and content behavior (i.e., *form-and-content norm*). The early intern discussion involves information exchange and is characterized as polite, but often broadcast in nature rather than addressed to a specific individual. The early posts were more formal in nature and the interns rarely exposed much of their individuality. Over the course of the summer, the interns readily expressed their personality in their posts. As such, the interns did exchange idiosyncratic, experiential, and social information as we intended. Portkey, in essence, became more a space for sociality; a hybrid of a chat room and a discussion space.

The second finding is the revelation and the development of a disagreement, ostensibly about form and content of posts, about six weeks into the 15-week period. The disagreement surfaced after a period of considerable unremarked upon evolution in form and content of the posts when two interns started a discussion that they

³ The posts are reproduced exactly, and thus include spelling and other mistakes that appear in the original.

represented as being about the form and content of posts. A polarization among those who defended the standard of the often ephemeral, chatroom-like conversation and those who supported more substantive exchanges on topics soon became evident. Details of the incident suggest that the form and content characterization was simply a socially acceptable gloss on a difficult to raise disagreement about what constituted appropriate behavior towards winning the monthly contest (i.e., *competition norm*). While the discussion in this phase hints of the issue of competition amongst the interns for the contest prize, the competition norm only surfaced and got discussed in the second phase.

5.1 Evolution in Form and Content

5.1.1 Focus on Information Exchange

The large majority of posts made during the first six weeks of the site's existence involved information exchange, revolving around getting housing, identifying transportation options, money management issues and access to amenities and activities in the interns' new physical environment [6].

Most of the posts followed a question-and-answer format, with only a handful that could be described as unsolicited announcements. Since the interns had staggered start dates (most arrived within a month of the launch of Portkey), their different levels of experience as interns ensured a steady stream of answers to the numerous questions that others posed. An examination of the ratio of the number of threads versus the number of messages revealed that the thread length began exceeding two by the fifth week; indicating that on average, questions were receiving responses. Early on, many of the answers were being provided by the 20% of interns who had returned for a second internship. Two of the returning interns participated in the first group interview and noted that they "... felt a responsibility to help" and also that they were "...glad to help..." because they "... knew what it was like..." to be a first-year intern.

Many of the posts, both questions and answers, contained personal anecdotes. The posts during this period shared one important characteristic with conversations: They were expressed in a form that invited a reply and thus suggested a turn-taking structure [26]. Questions explicitly request a reply, whereas personal anecdotes invite the other to reciprocate with their relevant experience. The following is a typical example of the type of exchanges observed in the first few weeks after the launch of the site. Note also that E1's post picks up on an earlier question she had posed but had not been completely addressed by a previous response.

>> Person E1

>> Date Posted: 05-25-2001 4:07PM

but I still have some concerns. First, I have a friend visiting me once or twice a week at the weekends. Do I need a permit for him? It is only a few days in a months.

>> Person E2

>> Date Posted: 05-25-2001 6:07PM

You can not park on the street in <City Name> at night between 2am and 6am. You will get a ticket. Last year it was \$5 per ticket. What you can do is to look for the Municipal Parking. Go to their office during office hours and buy a parking permit. I had the evening parking permit last year and with the student discount, it was about \$60 for 3 months.

5.1.2 Beyond Information

Increasingly, some interns started breaking away from information exchange and began to expand into sociality. This is what one might expect because the interns had addressed many of their most pressing "survival" issues by this point. Also, they were beginning to get to know each other, often supplementing face-to-face meetings with information gleaned from the profiles on Portkey [6]. Posts seeking social connections expressed around a particular

activity were beginning to be more common. Some of these received responses in the discussion forum, while others explicitly requested responses through email or telephone communication.

>> Person E4

>> Date Posted: 05-23-2001 7:52 AM

If anyone here surfs (real surfing not internet), I'll be making trips to <Place 1>, <Place 2> and <Place 3> shore just about every week or two. I should be able to hook you up w/ a board, but you'll have to brave the cold 'cause I don't have an extra suit.

Within the first month, people were also beginning to take the tenuous first steps toward using the site as a place to have fun. The initial forays into humor occurred in response to posts, rather than being unsolicited contributions as they would become later in the summer. It is worth noting, though, that these were sometimes flagged with hedges such as "I hope I haven't offended anyone" or an emoticon, to create a context for their interpretation. Hedges, which flag the utterance as being provisional, indicate to one's conversational partners that one is not fully committed to the utterance and that they may modify it [1]. As such, it suggests that these interns were not yet comfortable with how others might react to them since they were "pushing the boundaries" of the established norms. This also accords with the widely observed goal of avoiding conflict in the early stages of development of relationships [10].

The expanded range of topics the interns discussed (social as well as informational) and the tone (personal and playful as well as more formal) is an expected expression of the fact that individuals were becoming more comfortable and familiar through their interactions with each other on Portkey and the various institution-organized social functions [10].

In spite of these advances on dimensions that indicate progress in the development of relationships among co-workers [10], there seemed to be clear boundaries to the kind of posts the interns were willing to make in the Portkey fora. One striking example of this concerned the failure of a forum entitled "Ask a researcher a question" that we had intended as a venue for the interns to address questions to a larger group of permanent researchers than the typically small number they encountered on a daily basis through their project work. While they had many questions that the larger audience could answer (e.g., how to develop a prolific research career, how to contribute to the employer's success), they were afraid to appear foolish or naive by asking these questions in this venue. They felt more comfortable posing these questions to their mentors (i.e., permanent researchers assigned to guide them during their internship) with whom they had developed some credibility and thus could feel freer to show some lack of knowledge. They were also afraid of being misunderstood and were unwilling to chance this in public. This indicates that they were still very cognizant of being in a public forum where their actions could be observed.

5.2 Disagreement about Form and Content

The first indication of a disagreement about the norms for posting occurred six weeks after the launch of Portkey. It was signaled by responses to a post alerting other interns of a possible confusion about the location of some experiments.

>> Person P3

>> Date Posted 7-01-2001 8:52 PM

There are about 3 different people at <Location 2> and a few at <Location 1> conducting experiments. If you sign up to participate make sure you know what location it is at. People have signed up for the wrong location and missed appointments.

>> Person P4

>> Date Posted 7-11-2001 3:06 PM

Thanks for the heads up.

P4's indexical remark, a brief comment intended as a social gesture that does not advance the conversation, was reiterated in the same thread a week later by another intern, P1.

>> Person P1

>> Date Posted 7-18-2001 9:47 AM

yeah, thanks

Two interns, including P4 who made the original reply, took exception with P1's indexical remark. This constituted the *failure event* wherein P1's short remark constitutes the *critical incident* and the post by P4 constitutes the *reproach* [21, 28]. The incident sparked a month-long discussion about the *form-and-content* norm and the *competition* norm.

>> Person P4

>> Date Posted 7-18-2001 2:52 PM

Will you all be doing that again?

Two hours later, P5 articulated more fully the complaint that P4 appeared to be making. As McLaughlin and colleagues note [21, 28], initial reproaches are often followed by others that may either reinforce or scold the reproacher.

>> Person P5

>> Date Posted 7-18-2001 4:48 PM

yeah...

will u be doing it again,
when its nice, do it twice!!!

P1's *response* to the reproach came two weeks later and was closely followed by the *evaluation* of the response by P11, who did not accept it as valid. These two posts articulated the disagreement to be about the form and content that each considered appropriate for a post. P1 argued for chatroom behavior, whereas P11 was in favor of standards common in Usenet settings where "bandwidth", both digital and human, is considered at a premium [16, 21]. Note that P1 mentions the incentive, which suggests that the competition norm was also at issue.

>> Person P1

>> Date Posted 7-31-2001 1:42 PM

I think that this site was a place to socialize, and many of us are starting to know each other by names, encouraging us to meet personally. Isn't this the aim? ... We are about 200 interns, and many of us like internet chatting, as well as communicating through forums. Portkey is a fun place. Even if there were no prize, trust me that there would be the usual 5 or 6 people spending a lot of time posting, meeting other people and having fun.

>> Person P11

>> Date Posted 7-31-2001 4:09 PM

If I wanted free-form back-and-forth conversation, I would follow <P9>'s suggestion and go find a chat room somewhere [set one up here, maybe?] Discussion lists are for constructed thought, funny, un-funny, reverent, irreverent whatever. Otherwise the system becomes no better than the unsolicited deluge of e-mail we had to cope with last summer.

Several other interns quickly joined in the discussion at this point, making it clear that these were strongly held convictions that finally surfaced around the conflict with P1's posting. As is often the case in these situations, "the silent social contract" that one intern thought everyone was abiding by was actually a very shallow one at best [7, 15]. It is quite apparent that the interns were able to operate affably in the online space despite different points of view until they encountered a situation that posed too strong of a test. At this point, their differences were surfaced and it required that the interns seek some form of resolution [3]. In this case, the interns tried to negotiate a set of norms that would apply to them as a group.

5.2.1 A Sub-text about the Competition Norm

One could argue that the remarks of both P4 and P1 fall in the category of indexical remarks; neither advancing the conversation and each simply acknowledging the new information contributed

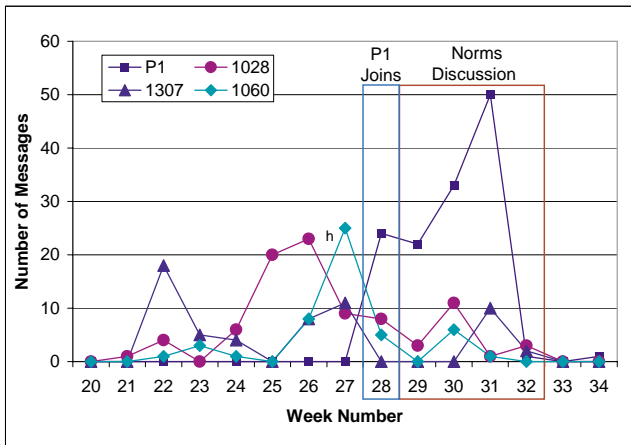


Figure 1: Number of posts per week for top posters. Note the May 14 to Aug 19 corresponds to weeks 20 to 34, inclusive.

by P3. Is the fact that P1 was reiterating P4’s indexical comment reason enough for P4 to feel justified in criticizing P1 and for P5, and later others, to side with her?

We examined the interns’ posts to see if they also invited opposite responses to a seemingly identical behavior. The data revealed a huge disparity in the number of posts by the two interns. Whereas P4 was averaging 3.6 posts per week, P1 was averaging 16.5 messages per week. More importantly, P1 was clearly an outlier in comparison to the group average of 1.3 posts per week (standard deviation = 2.4) by the posting interns. P1 was, as he later labeled himself, the “ever present poster.” Not only was he the highest Portkey poster with 133 messages, he posted in 17 of the 21 fora, and 80 of the 801 threads involving interns. He ranked first in each of these three posting dispersion measures.

Figure 1 shows P1’s weekly posting behavior starting from his arrival in calendar week 28 (July 9) compared to the three other highest posters. After his first full week, he equalled the number of posts of the other high posters who built up to that number over a number of weeks. Furthermore, he kept increasing the number of his posts, eventually doubling the number by the second highest weekly poster. Unlike the other posters who may have had one or at most two high posting weeks, P1 was consistently a posting leader; clearly making himself very visible and easily detectable. We learned in the third group interview involving high Portkey posters, several weeks later, that some of the other interns had taken note of P1’s prolific output and had concluded he had been making a blatant and unfair attempt to win July’s contest. The reproaches by P4 and P5 thus signaled the beginning of the discussion of the competition norm.

Figure 2 shows the average number of ballots held by interns who were eligible to participate in each of the monthly contests. It indicates that the July average, when the *failure event* occurred, had doubled to more than 13 ballots from the May average of approximately 6.5 ballots. After the public disagreement in July, the average returned to approximately 6 ballots in August. This indicates that the interns’ behavior with respect to the contest was held in check for the first two months, but was loosened in the third month. The ensuing discussion indicates that the interns wanted to talk about this in a venue where all could participate.

To summarize, there was significant progress in the evolution of the *form-and-content norm* discussion during the first seven weeks that constituted phase 1. Near the end of this phase, we observe that the interns do raise, although covertly, the issue regarding the *competition norm*. While not openly addressed, the indirect refer-

ences signalled the existence of a conflict about something they considered important⁴. The ensuing discussion is examined in Phase 2.

6. PHASE 2 RESULTS

The second phase examines the discussion that took place in the “final” five weeks of the operation of the Portkey site. In this phase, the interns surface the difficult issue of competition amongst them for the prize offered as a participation incentive. While this phase develops the ongoing evolution of the *form-and-content* norm discussion, it is focussed largely on the *competition* norm. We reveal how the *competition norm* surfaces and how the interns deal with this once it came to the forefront.

We begin our presentation slightly out of phase by detailing a thread that intervened between the original reproach and P1’s response two weeks later that had been negatively evaluated by P11. This thread, an ironic treatment of one of their employer’s software products, constituted another attempt to reproach P1 for his earlier “content-free” post. The two-week lag until P1 finally responds was filled with several humorous attempts by a growing ensemble of interns to elicit a response from P1. P1 response comes only after one of the interns eventually confronted him directly with a post marking his 100th post and suggesting he turn his energies to his project. This post brought the *competition* norm discussion to the forefront in what had publicly been a *form-and-content* norm discussion. Once P1 acknowledged his conduct and offered an explanation (a *response* in the *remedial episode* construct), the discussion changed from a personal attack to a discussion of the influence of the incentive on all of the Portkey participants and then to a discussion that the interns attempted to resolve the *competition* norm.

6.1 Humorous Attempts at a Reproach

The first humorous attempt at a reproach was initiated by three interns who happened to participate in our third group interview (high posters). We learned through the interview that they had hatched a plan to demonstrate to P1 that “valueless” posts would dissipate the value of Portkey. Rather than confront him directly, they decided to do it indirectly by modelling what they considered to be useless posts in a new humorous thread that they entitled *<Product name> Rules*.

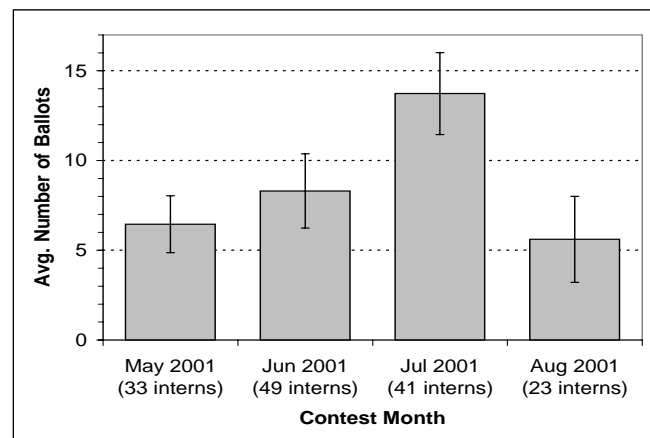


Figure 2: Average number of contest ballots per contestants along with one standard error bars for each of the four months in which the contest ran. A total of 78 interns qualified for the contest in the 4 months.

⁴ The monthly prize represented a significant percentage of the average intern’s monthly wage.

>> Person P6

>> Date Posted 7-20-2001 10:31 AM

Hey everyone, I couldn't resist posting about what just happens to be the greatest program ever!! <Product Name> is the best!! I thought I knew the power of email, calendars and the like, but <Product name> has shattered all my assumptions and taken me to a new level of communication.

The other two plotters added similar posts to establish the thread, but it soon spread to involve 15 additional posters. The thread ended up being among the most popular on the site, garnering many tongue-in-cheek replies as well as an occasional serious one. Unfortunately, from the standpoint of the originators, P1, the target of their modelling approach, was one of the people who got involved in a serious issue (product cost per seat) that was brought up in the course of the humorous remarks. Not only did he apparently not understand their intent, but he took the opportunity to make an additional six (17% of the total) posts in the thread.

This thread was important on three counts. First, it was a breakthrough in extending the range of behaviors that the interns allowed a appropriate form and content on the site. It firmly established the site as a place to have fun and "blow off a little steam in between serious coding." Second, the interns were becoming less inhibited under their employer's watchful eyes. This is demonstrated by their criticism, albeit in a humorous manner, of one of their employer's top selling products⁵. Third, they were still unwilling to openly confront the conflict with their peers. Gabarro [10] discusses this as one of the dimensions on which change is observed as workers develop closer relationships in the workplace.

6.2 A Second Critical Incident

The second critical incident began with an ode to a bar called the Thirsty Turtle. It was the occasion for a second remedial episode that started around a question from P1 about the nature of the establishment.

>> Person P1

>> Date Posted 7-30-2001 3:58 PM

is this a pub? or a club or something like that?

In response, an established critic of P1's posting behavior spelled out the reply "both" over four separate posts. P1 reproached the poster with the following remark. P2, P1's office mate, added a post that clearly reinforces the suggestion that competition for the contest was on the interns' minds.

>> Person P1

>> Date Posted 7-30-2001 6:07 PM

Are you desperately trying to put in posts?

>> Person P2

>> Date Posted 7-30-2001 ??? PM

you will not catch <P1>

A member of the group⁶ of interns who had coalesced around reproaches of P1, took the next step in this extended remedial episode by starting a new thread to recognize interns who make high quality. The thread was entitled *Vote for your favorite Portkey poster/discussion*.

>> Person P7

>> Date Posted 7-30-2001 5:43 PM

Forget the <Name> contest - finally, here is a forum to recognize those people who provide posts of quality to Portkey (not necessarily quantity). If you've found someone's posts to be helpful and of relevant substance ... then let everyone know!

⁵ It is likely, although we do not have direct evidence, that some of the relaxation in the interns's stance with respect to their employer was driven by observations of the often critical behavior of the permanent researchers.

⁶ According to McGrath, the widespread criteria for "group" involve interaction and mutual awareness.

This thread generated only 2 responses, however, as the reader might have come to expect, one of them was by P1 who nominated a popular thread entitled *Top things to do in <City Name>*.

In another response, P1's lab-mate (P2) started a thread entitled *Vote for your favorite Portkey useless poster/discussion*. When this thread degenerated into name calling and jeering, the originator of the "favorite Portkey poster/discussion" thread tried to get the participants to focus on the real issue which was a reproach against P1 for his unabashed attempt to win the contest.

>> Person P7

>> Date Posted 8-01-2001 11:35 AM

Come on guys, this was the underlying intent of my original thread. This and <the thread> posting ethics. I was really hoping that a certain someone who has endeared himself to the Portkey community would be the first to be nominated. But kudos to those who stated outright what i could only hint to :-).

With his comment, this intern states clearly the difficulty the group of disgruntled interns had been having in directly confronting P1 about his behavior. The restraint these interns showed for two weeks after the original critical incident occurred is remarkable in comparison to the swift reproaches reported in Usenet settings [16, 21, 28] and underlies the differences between the closed environment in the workplace and the open environment on the Internet.

6.3 A Direct Reproach of P1

A direct confrontation of the situation was made shortly afterwards by another intern from the group of reproachers in a thread entitled *Congratulations, <P1>!* Even this direct reproach is accompanied by a self-conscious attempt to soften the accusation.

>> Person P8

>> Date Posted 7-31-2001 10:13 AM

You've made it to a whopping **100 posts**⁷. You are now eligible to start working! ;-) Wow, this forum is getting out of hand...

Eventually P1 responds to the mounting reproaches that have been aimed at him for over two weeks. His response is mediated by his lab-mate, P2, who had earlier encouraged P1's behavior.

>> Person P2

>> Date Posted 7-31-2001 10:50 AM

Hey <P1> you need a project ASAP!! :-)

>> Person P1

>> Date Posted 7-31-2001 11:40 AM

Yeah! Thanx. I have had some problems lately with my supervisor being sick, and work has been a bit slow in arriving, so I just spend my days in portkey...I am the ever present poster.

6.4 Group Discussion of Competition Norms

After a few more interns added reproaches about P1's large number of posts, the attention of the interns turned to a discussion of the effect of the contest on the group and the need for the participants to evolve a norm that all would abide by. One of the original complainants began a discussion thread entitled *ethics for posting?!* with a post that addressed norms, the effect of the contest and his anger at what he called the "end-of-the-month get-your-post-in-for-the-draw phenomenon". The thread generated 50 responses from 13 interns over the next four days. P1 continued to post frequently, contributing 11 of the responses. The lead post was:

>> Person P9

>> Date Posted 7-31-2001 11:13 AM

I think the Portkey forum has grown large enough for people to start self-imposing some sort of restraint on their postings. Alternatively, maybe the forum should itself come up with a code that every poster would be urged to stick to.

⁷ P1's 100th post represents 7.1% of the total posts to-date (1415 posts). He achieved this in 3 weeks to the day that he started as an intern.

Another poster succinctly summarized the change that had taken place in the recent weeks.

>> **Person P10**

>> Date Posted 7-31-2001 11:54 AM

The majority of posters have abided by the silent social contract that you are supposed to post signal instead of noise, but it only takes one selfish individual to break the contract and all hell breaks loose. Even social pressures such as satire (which I have tried to direct at certain posters, whom I need not name) and outright jeering will not discourage someone who has his/her eye on the prize.

A number of other posters openly confronted P1 for his posting behavior, accusing him of selfishness and challenging him to give up his chance for the prize. He, in turn, did not deny his intentions to win the prize, but joined others in arguing that the contest was the root of the difficulty.

6.5 Towards Resolving the Conflict

The discussion that ensued was varied in tone, at times logical and well-argued, often impassioned and at times childish in its expression of frustration. Eventually the discussion turned away from a particular focus on P1 and generalized to what standards the entire user population should adopt.

At first, the interns wanted the resolution to be imposed from outside [3]. As the disagreement was beginning to surface in early July, some of the interns passed a message to us through two interns who worked on the project with us that we “*have to do something*” as administrators of the site. Our decision to maintain our role as “sentinels” rather than moderators was debated in a number of the posts, with the interns being divided on which role they wanted us to play. When we did not step in, various interns adopted a different strategy and began to work towards with their peers on the site [3]. After much debate and anger in the thread name *ethics for posting?*, an intern made a suggestion for a different algorithm for contest eligibility.

>> **Person P12**

>> Date Posted 7-31-2001 7:43 PM

Lets borrow some tricks from game theory. Make the top 10 (in the number of posts) people not available for the prize, and the others still randomly choose based on their ballots.

This lead to a lot of debate about the rules for contest eligibility and even for the contest prize. After a week of such debate, we violated our decision to not get involved and offered them a voting mechanism which they could use to make some changes. In the first vote 49 out of 69 people voted to change the contest. In the second vote, interns voted on three contest change options.

Our decision was not taken lightly. We realized that our intervention would put an end to our ability to collect unbiased data from the site. However, most interns were nearing the ends of their internships and we wanted to give them some closure on the controversies they had been embroiled in for the previous month.

6.6 Reflection on What Transpired

While the *competition norm* dominated the final three weeks of site usage, discussion about the *form-and-content norm* also continued. While some interns criticized the occurrence of the playful threads that were meant to model P1’s behavior, more interns defended them. Overall, there seemed to be a recognition that the change had been important and positive.

>> **Person P14**

>> Date Posted 8-01-2001 4:09 PM

< P6’s> post was I think the first true nonsensical one. It as revolutionary and, dare I say, brilliant. Without posts like these can change ever occur? I don’t think portkey will ever be the same, and for that I am grateful.

6.7 Participation in the Norms Discussions

To understand the breadth of participation in the norms discussions, we first need a baseline of participation on the site. 284 of the 340 eligible interns logged in and used the site at least once. Of these, 256 read and/or posted to the discussion fora (Peertalk), while 28 others only examined areas other than Peertalk (e.g., Profiles, static information).

Figure 3 shows the breakdown of the various forms of participation. Column 1 shows the total number of interns who were eligible in the four contests. Column 2 shows the number of interns participating in Peertalk postings during the 15 weeks in which we examined usage on the site. The bottom three sections of column 2 show the number of interns involved in posting in various parts of Peertalk. The bottom-most section corresponds to 21 interns involved in the norms discussions while the middle-two section represents the number of interns involved in postings in other fora. The top section of column 1 shows that 132 of the 256 interns read-only and did not post in the 15 weeks of the site.

The third column shows a total of 147 interns who participated in reading and/or posting in the discussion fora during the one-month period when the norms’ discussions took place. This total breaks down into 93 interns who read-only, 33 interns who posted to threads other than those that contained the norms discussion, and the 21 interns that lead the norms discussions.

Whether those who only read but do not post in a discussion forum should be considered participants has been actively debated in the literature [16, 21, 23, 25]. Our support of those who argue that reading is a form of participation [23, 25] is bolstered by the fact that interns who read but did not post contributed 18 of 67 and 5 of 31 votes to the two polls to decide the fate of the contest for the month of August. The data is shown in columns 4 (poll #1) and column 5 (poll #2) of Figure 3. The data shows that those who continued to post but remained uninvolved in the norms discussions (the two middle sections of columns 2 and 3) also voted in significant numbers in the two polls.

To summarize, the discussion in this phase finally brings into the open, the *competition norm* that had been covertly intertwined in the initial discussion concerning the form-and-content norm. It surfaces only after P1 responds to P8’s post marking P1’s 100th post and after several humorous but unsuccessful attempts by a growing ensemble of interns to elicit a response from P1. Once P1 finally

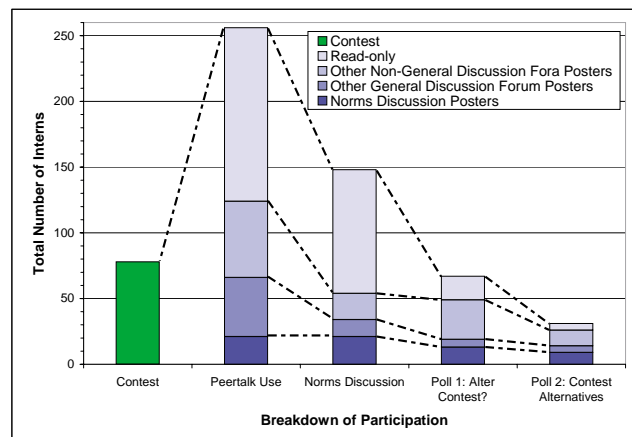


Figure 3: Breakdown of forms of participation. Number of interns eligible for contest in the four months (column 1). Posting and/or reading on the site (column 2) and in the norms discussion (column 3) and voting to alter the contest (column 4) and among contest alternatives (column 5).

offered a *response* in the *remedial episode* construct, the discussion changed from a personal attack to various discussions including an attempt by the interns to resolve the *competition* norm. They used two commonly observed approaches to conflict resolution [3], first calling on an outside party to resolve the conflict and eventually addressing the issue internally through a general discussion with their peers. The discussion of the two norms eventually involved 21 interns, with many more participating by reading the posts and voting on two attempts at a resolution about the contest itself. However, the discussion neither reached a suitable resolution nor did the interns discuss how they would enforce norms violation in the future.

7. DISCUSSION

This case study examines the form and content of the posts created by interns over a 15-week period on a Web site developed with four main design elements. The elements include a) technical components that made interns visible, including various links to user profiles and activities of the participants on Portkey Web site, b) a persistent discussion board, c) an incentive system for contributions in the form of a monthly contest, and d) no explicit moderation and governance mechanisms for vetting and filtering posts made in the Portkey discussion fora.

We showed how the interns were able to use Portkey in two interesting ways. First, as intended by the design, interns were able to exchange idiosyncratic, experiential, and social information over the 15 weeks. Second and our main focus, using the remedial episode construct [21, 28] as an analytic tool, we reveal and highlight how a group of 21 interns attempted to engage each other in several difficult but important discussions about the norms governing a) the form and content of Portkey posts (i.e., *form-and-content norm*) and b) the appropriate actions used to win the monthly contest (i.e., *competition norm*).

The conflicts that catalyzed the discussion came about as a result of visibility of the interns' activities to all on Portkey, the contest that clearly motivated some to game the system, and the lack of a moderation and governance mechanism. The latter, in particular, meant that interns were neither able to individually control the actions of the norm-breaker nor were they able, as a group, to sanction the norm-breaker. Given that they had no other virtual environments to go to, they had to engage each other in discussion. The fact that this was a workplace site was important in maintaining the conflict within an acceptable level.

The manner in which the Portkey case unfolded on a venue that was public to the management is worthy of note. The initial polite, then sometimes hilarious, sometimes raucous, and other times angry posts that the interns made was only possible because they were able to appropriate the technology. Eventually they became less inhibited by "being watched" by their management structure. Their activities also demonstrated that they were able to extend the use of a virtual environment in the workplace beyond information sharing and social support, as has been observed in communities of interest. They were able to go beyond general awareness and beyond informal interaction to undertake discussion that involved very divisive issues.

While the interns did not reach a complete resolution about their norms discussion, they did make substantial progress. Unfortunately, due to both the time limit and the charged nature of the discussions, the interns never reached a point where they had an opportunity to discuss how they would enforce norms violation. Such a discussion would have been crucial follow-on to the norms discussion because norms without governance would be simply hollow. The discussion would be important as well in deciding

what social, technical, or combination of both approaches would be used.

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