

Provoking Sociability

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ABSTRACT

In this study, we explore the potential usefulness of disturbing, uncomfortable systems, demonstrating that provocative technology can have a positive effect on social relationships. We designed and evaluated an agent-based system that collects user information by asking seemingly benign questions, and then uses it to spread false, strange gossip throughout an office space. We show that provocative interaction on-line can improve off-line sociability.

Author Keywords

Design noir, emotion, negative affect, CMC, sociability.

ACM Classification Keywords

H5.0. Information interfaces and presentation (e.g., HCI): General.

INTRODUCTION

For obvious reasons, HCI design has primarily focused on the goal of creating systems that are comfortable and pleasing for human users. The recent push into emotion in HCI, likewise, has focused on enhancing positive affect and reducing negative affect. Nevertheless, some researchers are questioning the focus on the positive and pleasing, suggesting that this leaves out important dimensions of human experience that HCI needs to take into account or perhaps even support [1, 2, 3, 6].

One of the most influential arguments for this new focus stems from Dunne and Raby's formulation of design noir

[3]. They suggest that electronic product design has been focused too exclusively on sanitized versions of human life and behavior and argue for the inclusion of "darker," more genuine human needs in the design of technology. As they elaborate, "an occasional glance through almost any newspaper reveals a view of everyday life where complex emotions, desires and needs are played out through the misuse and abuse of electronic products and systems." [3, p. 6] Yet, "the range of emotions offered through most electronic products is pathetically narrow." [3, p. 45].

While the critical concerns of design noir may seem far from the everyday work of HCI professionals, we believe they may usefully inform everyday system design, particularly when the goal of design is less task-focused and more oriented toward social relationships. Aoki and Woodruff [1], for example, have argued that computer-mediated communication (CMC) design should support superficially negative aspects of social relationships, such as the ability to dissimulate about why one is non-responsive, precisely because these attributes are essential to healthily functioning relationships. Similarly, if the goal is to get people talking, then a system that is provocative, unexpected, disturbing, or difficult to make sense of may sometimes be more effective than a system that is transparent to use. This is particularly the case if the system seems initially to be something familiar; when it becomes apparent that a system that users thought was straightforward is doing something strange, it becomes defamiliarized and may provoke reflection and discussion [9].

Our goal in this work is to demonstrate the pragmatic value of designing provocative applications that reference disturbing human needs, which we will refer to in this paper as "digital deviance." Specifically, we describe our experiences with a system to support the development of off-line social ties in an office space through interaction with an on-line character, Loki, who has unusual ideas of appropriate communication topics and gossips about others in the shared office space. Interaction with the character

on-line is designed to provoke off-line interaction, as participants attempt to ascertain the truth of what the character is saying and to make sense of Loki's behavior. We recognize that such a system represents a significant departure from usability- and task-oriented approaches to increasing sociability and to that end, the key question we aimed to answer with this work is: Is it possible to design a digitally deviant system that produces a desirable outcome – namely, increased socialization among a group of co-workers?

SYSTEM DESIGN

In this section we elaborate design decisions and overall system functionality for our gossiping agent program, Loki.

Gossip

In designing Loki, we approached the issue of sociability by considering how sociability occurs naturally in work environments. The concept of “water-cooler gossip” struck us as particularly representative of the type of socialization that goes on in an office space. Despite its common negative reputation, the psychological literature reveals that gossip is an important part of social grooming and community formation, primarily through three functions: conveying information, influencing, and entertaining [4, 9]. In addition to conveying information, it appends a value to that information about members of the community through the expression of one's opinion or feelings about the information [5]. Criticism and negative evaluations only account for 5% of gossip; the rest is relating ‘who is doing what with whom,’ sharing personal social experiences [5], and relating social rules [4]. In general gossip helps us build relationships through bonding, learning social skills and sharing values.

While many chat programs are used for gossiping, the addition of a gossiping agent in this application ensured that this program must be used for gossip. Our hope was that by making gossip explicit Loki would catalyze the positive social effects of gossip that have been documented in the psychology literature. Isbister demonstrated a similar concept in her work on a computer character to aid Japanese and American students in getting to know each other [8]. Isbister showed that computer characters that bring up socially appropriate topics (e.g. asking students to tell about their hobbies) are substantially less effective than ones that bring up socially inappropriate topics (e.g. asking users how much money they earn or whether they believe in abortion). This was because when the character behaved in an inappropriate way, students immediately had something interesting to talk about – namely, the character's inappropriate behavior.

Implementation

Loki's back story is revealed in pieces through interaction with the system. He is a blue space alien with an inappropriate fondness for clunky black shoes. He is a co-worker at the corporation, having been sent to earth on a poorly specified mission to study human interaction. He is

mostly confused about human behavior. He lives at the local community college, where he frequently runs into trouble because of his poor understanding of appropriate human interaction. His conversation topics are chosen to demonstrate strange taste but not actually be deeply offensive.

Upon entering the system, Loki greets the user with a short contextualizing story detailing a recent mishap and an ice-breaker question. The ice-breaker question is purposefully open-ended and prompts the user to interact with the agent. Responses to these questions are used by Loki to determine how much he likes the user. The longer the user's response (in number of words) to the open-ended question, the higher the “likeability” score the user receives. “Likeability” scores are used to gauge the type of gossip a user receives about his/her coworkers – the higher the score, the ‘spicier’ the gossip Loki tells the user. Thus, there is an incentive for users to engage with the system. When they give long responses, they get spicy gossip, and when they give short responses they get mild gossip.

After answering the first question, the user is prompted to answer a second question of a more direct and specific nature. The second question seeks one word or short answers that are used (initially unbeknownst to the user) to generate gossip about the user.

Once the user answers the second question he or she is rewarded with a piece of gossip about another user. The gossip generation is very rudimentary – a simple word insertion – and often results in awkward or even nonsensical gossip sentences. After very few interactions with Loki it quickly becomes clear that he does not fully understand what he is saying and that his gossip is not true, although it does bear a vague, very indirect relationship to what is happening in the office. This design choice was made for two reasons. First, we felt that this simple gossip is adequate for our purposes of testing the feasibility of a digitally deviant system since the strange things that Loki says are not intended to inform, rather they were to become conversation triggers as users discussed Loki's commentary with other co-located users. Second, it protects the privacy of the office participants to some extent by reporting their answers in a substantially different context. We attempted to manage users' expectations of Loki's natural language abilities by making them explicitly part of his personality – Loki himself comments on his difficulty in reporting on what other people have said.

USER STUDY

Participants

Ten participants recruited from a research group at a large technology corporation completed the study. All were physically co-located. There were 7 males and 3 females with an age range of 22 to 49, mean of 28.6 years. It was a racially diverse group with 5 Caucasians, 2 Pacific Islanders, 2 Asians, and 1 African American. Their backgrounds were primarily in engineering (computer,

mechanical, electrical, or systems), human factors/HCI, or computer science. The group was relatively new (19 months old); members had been in the group a mean of 10.15 months (1.5 - 19 months) and at the corporation for a mean of 2.3 years (1.5 months – 8yrs. 9mo).

Procedure

Upon agreeing to participate in the study, users were given a packet including a consent form and a pre-study questionnaire that asked basic demographic questions as well as questions about social relationships in the group such as who they regularly talk to and who they do not know. Additionally, participants were given instructions for installing the Loki system software. Participants were asked to install the software on the computer they used at work and then to login and activate their accounts. After activation, users were permitted to use the system as much or as little as they liked. There was no minimum usage requirement. We did not explicitly alert participants to the gossiping nature of Loki nor the inaccurate nature of Loki's conversational abilities at the beginning of the study.

The study ran for a period of two weeks, during which usage logs were kept for each user. Upon completion, a post-study questionnaire was distributed. The post-study questionnaire had 21 questions and was more in depth than the pre-study questionnaire. The first set of questions asked how the user thought Loki worked and what its purpose was. The second set of questions asked the user to reflect on their experience and explain how they felt about Loki. The third set of questions was concerned with any perceived changes in socialization by the user. Finally, it asked the user his/her impression of using Loki at work in the future.

RESULTS

Nine of ten participants returned their post-test questionnaires. Based on their answers, we found three classes of response to the Loki experience. The **interactors** (5 of 9 users) enjoyed the system and reported increased social interaction because of it. The **amused** (2 of 9) did not report increased social interaction, but also enjoyed the system. The **annoyed** (2 of 9) did not enjoy the system and did not interact with others about it.

Stimulating interaction

Overall, the interactors saw Loki as successful at its intended goal: "I ended up having several conversations about things that people had told Loki, or rather what Loki had told me, which was often not what the person had said to Loki." We had hoped that Loki would encourage people who did not know each other to talk to one another, but this was only reported in the case of one user. The effect of Loki on the interactors appeared to be, instead, that people talked more intensively to people they already knew. One user reported, "it made me have conversations about topics that we don't usually cover at work."

The annoyed reported no interactions triggered by Loki. One commented that the things it discussed "seemed

irrelevant, like the kind of chat I avoid around the office." The other was confused by the system, did not know what to make of it, and therefore stopped using it. The amused, too, said that Loki did not change their interactions, although they found the system humorous on its own.

Interpreting the system

Generally, participants described the functionality of the system very much along the lines of our intentions, e.g. "[t]o give people a reason to communicate with each other" or "[t]o stimulate conversation in the workplace." Three of the users described the system functionality correctly, e.g. "I think that Loki asked the user a question and grabbed the answer. This answer was integrated into a sentence that was somewhat relevant to the original question. Often Loki told people things that the user did not say." The remaining participants could not explain how the system worked.

Only one user did not realize Loki was passing on information told to him until late in his interactions. Unsurprisingly, this raised some concerns: "I was a bit surprised. It made me think back to what some of my previous responses were." The other users reported being aware and unconcerned that Loki was spreading information. We hoped this awareness would help prevent people from accidentally spreading embarrassing, personal information through the system. Four users indeed mentioned that they modulated what they told Loki in response: "I didn't mind. I paid more caution to what I told Loki," "I didn't necessarily tell the truth, but I didn't have a problem with it passing on what I told it," "I tailored my responses accordingly;" while the others said simply that they were unconcerned. For the users who liked Loki, the gossip was a motivator to interact; two mentioned that they would like it to spread more gossip: "I would like to hear more comments about other people."

One of the amused users knew that information was being passed, but did not realize that the information might not be true. When s/he became aware of this possibility, this did raise concern: "[that Loki was passing on information] didn't matter that much, unless they were lies which was hard to tell since no one really approached me about what I told Loki.... If he is telling lies then... it may be spreading a bad opinion about someone." None of the other users mentioned such concerns. When Loki's falsehoods were mentioned by others, they were seen as positive: "It was funny once I realized that it was making up portions of it," or "It was jumbled and often incorrect. This made it pretty funny." One user suggested that we be careful of how far we push away from the original meaning: "I would like it to stray less from the person's response. I think it modified the response a little too much. Once we found out that it may completely reverse the intent of a user's response, some users just said anything, since you had no idea what Loki was going to say about it."

To provoke or to annoy

There is a fine line between provocation and irritation, and we took pains to stay on the right side of it with Loki. Overall, 7 of 9 users in the study enjoyed interacting with Loki. The interactors in particular wished that their interactions with Loki had lasted longer than two weeks. Two would have liked it to last 3 weeks to a month because, as one user put it, “two weeks is not enough time I feel with my busy schedule to get a good feel for Loki.” The other 3 would have liked to use Loki indefinitely (if a bug that caused Loki to repeat the same question multiple times were fixed), saying it was interesting and fun. The amused also said they would be happy to use Loki longer, though one said this was intended primarily to be helpful to the researchers.

The interactors also thought Loki was generally good for their workgroup: “It injected a bit of humor into our lives, and got us talking about things that we hadn’t talked about previously;” “it broke up the mundane office gab to something new and funny.” The amused users, on the other hand, saw it as good simply because it was entertaining. Nevertheless, two of the interactors did not think it should be installed on all machines at work; one thought it would distract too much from work, while the other said that not everyone would appreciate the sense of humor. Finally, Loki was unpopular with some users. The annoyed users lost patience with Loki before the end of the study, and saw no value in it for the workgroup at all.

DISCUSSION

Based on user feedback, we consider this study a successful demonstration that deviant technology can produce socially desirable outcomes. Half of the participants experienced increased socialization; and of those who did not, half still enjoyed the system. To that end, we believe that this study lends support to the Design Noir philosophy.

Furthermore, we believe Loki was a success as a critical technology. While the Loki system resides on an office network and user interactions with the system are virtual, the system is intended to encourage face to face interaction among already-connected, co-located work groups. Moreover, Loki is a computer application that both relies upon, and enhances face to face interaction. That is, Loki can only operate successfully in spaces where social networks have already been established, but once it operates in such a network, the network ties may strengthen and increase. In that way, Loki is an example of a technology that moves beyond the face to face “gold standard.” Hollan and Stornetta [7] suggest that new communication technologies ought not to strive to achieve face to face realism because that is neither an achievable nor desirable goal, but instead designers should strive to create technologies that enable communication that is not possible face to face. The Loki system, which encourages interaction through deviance, leverages existing communications to enable new types of communication, moving beyond face to face.

CONCLUSION

In this study, we demonstrated that deviance can be a useful tool for encouraging social interaction and provided evidence that deviant systems can be enjoyable and useful for users. We hope this study inspires others to consider a new genre of research that aims to address a broad range of human emotions rather than a narrow and comfortable subset that is so often considered in the design of HCI systems.

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