Designing Social Interaction Support Systems with Shyness in Mind

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ABSTRACT

Introversive personalities have often been noted as a problem or disability of the minority, which should be overcome on one's own. However, surveys have shown that nearly half of the society are introverts even in cultures believed to be extroversive. This suggests the possibility of more participation and contribution from the introverts if the social space is properly designed. As an initial exploration to this design space, we report here a field study where we held a conference banquet with a seating arrangement system developed with introversive participants in mind.

Author Keywords

Shyness, social interaction design; conference support systems; seating arrangement.

ACM Classification Keywords

H.5.3. Information interfaces and presentation (e.g., HCI): Group and Organization Interfaces.

INTRODUCTION

Having an outgoing personality is commonly admired as a royal road to happy, successful life. On the other hand, passivity, shyness, hesitation, and all mental characteristics alike that bring people away from social activities, has been considered as a problem or a disability to be overcome. To make things worse, introversive personalities tend to be seen as lack of effort (unlike physical disabilities), making it difficult to expect generous social support.

Against the common belief that introverts are the small minority, it has been reported that nearly half of the people are introverts, not just in cultures which is often described as introversive such as Japan, but also in individualistic cultures [3, 5, 10]. Reasonable explanations to this misperception is that not a few introverts avoid social

opportunities or otherwise come to act like extroverts, therefore we cannot feel their presence in daily life.

We believe that this is a sign of a large room for improvement regarding the social interaction design. If social activities are designed to require less effort from the introverts, the community can expect more introverts participating and contributing, potentially leading to greater output as a whole.

Academic conferences are not the exception to this story; conferences tend to be overcrowded making interaction difficult and tend to leave it up to individual effort. Having a wide variety of participants from first time students to big names is a potential source of stronger hesitation. While attempts exist to technologically enhance face-to-face social interaction in conferences, they mostly focus on the efficiency finding the right person or topic [1, 4], and considerations on the diverse personality of the participants seems to be insufficient.

In this paper, we report the field study which took place at an academic conference banquet where we developed a seating arrangement system with shyness of the participants in mind.

RELATED WORK

Systems have been made to enhance the interaction at academic conferences. McCarthy et al. developed a system to augment the space with information of participants and reported the experience of the system at CSCW conference [4]. Attempts have been made to automatically collect and share where each participants are at in the conference site, using RFID tags [1, 7]. We anticipated that having information about other participants is not enough for initiating new social interactions especially when we think of the introverts holding the majority.

Anonymity has been considered to be one of the key factor to reduce introversive behavior especially for online communication systems [8]. Nishida et al. have proposed an alternative to the anonymity based approach by bring in a historical communication practice named "round-robin signature" to an online chat system, where name of supporters to a post are aligned in a circle to conceal who initiated the post [6]. Preserving anonymity is not as easy in offline communication, which we were one of our concerns in designing the system.

FIELD STUDY

The field study took place at an annual academic conference in Japan. The conference had more than 20 years history of deploying experimental systems to enhance the onsite experience; for example, various chat systems have been implemented as a discussion backchannel during the presentation sessions [6, 9]. Surprisingly, it was the first attempt to build and test a system for dinner time banquets, but it should be reminded that most of the participants were expecting new experiences.

During the three days long conference, there are two banquets at the first two nights. Because the franker "night session" follows after each banquet and continues over midnight, meeting with new people at the banquet has been considered to be important, but not as easy, having fixed subgroups where people already know each other very well making it difficult for the newcomers to join afterwards.

As a starting point, the conference chair provided us an initial design of the system as follows. First participants anonymously input to the system, who you want to talk to at the banquet. After the wishes are collected, the system decides the seats to satisfy as many wish as possible, and announce the result as a seating chart. Participants find and take a seat using the seating chart and enjoy the banquet.

Assumed Personality and Concerns of Participants

Despite the positive attitude toward using new systems, introversive behavior were often observed among the participants. Not a few participants, especially the younger ones and the newcomers to the community, seemed to have troubles in building new relationship. For example, what typically happens at the banquet was that participants taking a long time wandering around to find someone they already know and take a seat together.

While the initial design can help these introverts, we anticipated the following concerns. First, we took care not to make a system look like "a fun thing for the extroverts", because introverts can be afraid of events including party-like fun things. On the other hand, we also had to take care not to make the system look like "something for the introverts". Extroverts will not use such system because they simply don't need them, and introverts will also not use the system because it will make them look like introverts, wasting their effort to pretend to look like extroverts in public. We also anticipated that anonymous collection of the wishes may not be anonymous enough for the introverts. In the initial design, collected wishes can easily be guessed by looking at the resulting seats arranged: if someone next to you is not the one you wished to talk to, it is likely that they wanted to talk to you. Introverts can think like this when using the system, thus hesitate to input their real wishes to the system.

We believe that making a system with introverts in mind is importantly different from making a system for the introverts. In this case, our design focused on providing system benefits to both introverts and extroverts, and also to

provide secure anonymity where guessing the wishes from the seating chart is difficult enough.

Design of the Banquet Seating Arrangement System

With the above concerns in mind, we implemented a web application to collect the seating wishes from conference participants and generate seating charts for the events.

Figure 1 shows the screen shot of the application where conference participants could input their wishes for the banquet seating. At the top, we briefly described the purpose and steps to use the system, which is followed by user interfaces for different types of input: (a) people wish, (b) topic wish, and (c) refusal. Each input form is accompanied by advices in which case the input should be used and hints of how the system reacts to the input.
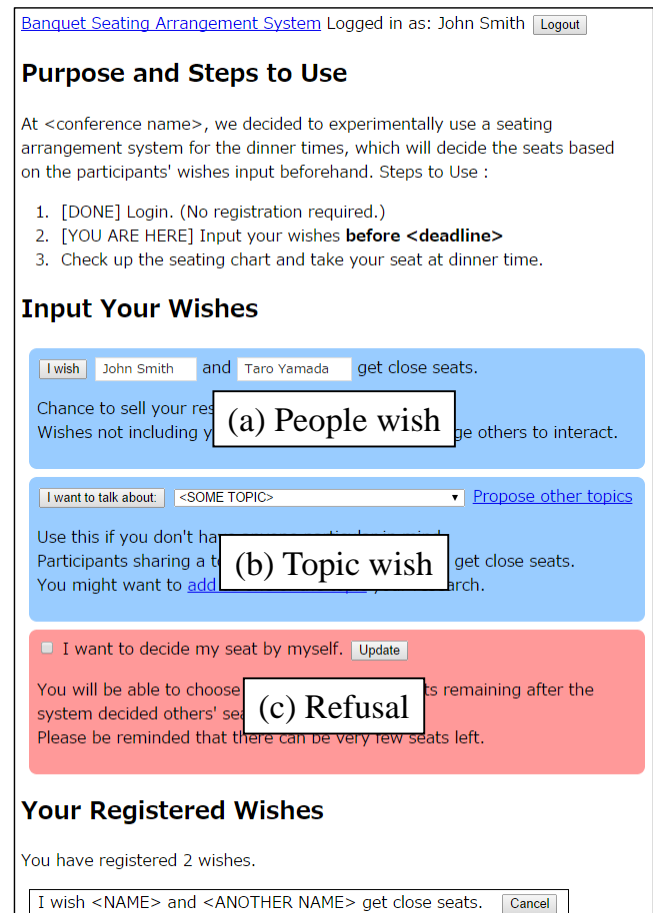

Figure 1: Screenshot of the web application (translated to English from the original language).
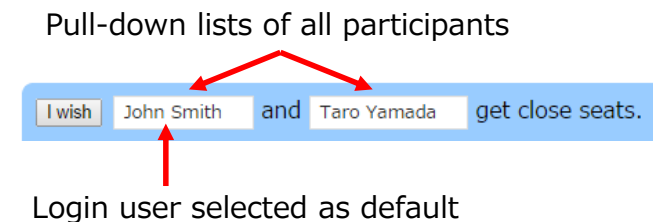

Figure 2: Close look of the people wish input UI.

Two types of wishes were implemented: people wish and topic wish. People wishes bring together the pair of people who are wished to be together and topic wishes bring together people wanting to talk about a same topic.

For the people wish, the user chooses a pair of participants with the pull-down lists in the form of: I wish <participant A> and <participant B> get close seats (Figure 2). We had reasons to choose this form instead of the simpler: I want a close seat to <participant>. First, it allows participants to encourage others to interact, which can be a reason to use the system for extroverts. For example, supervisors can encourage their students to interact with someone important. Second, it becomes more difficult to guess the input wishes from the output seating. Login user is selected as default <participant A>, to make self-wishes easy to input.

Topic wish comes in a simple form with one pull-down list: I want to talk about <some topic>. Having a second type of wish is supposed to make guessing even more difficult to increase anonymity. Topic wish is also helpful for newcomers who have no idea who they might want to talk with. Participants could freely add new topics to this list.

Participants were allowed to refuse the seating arrangement system and choose their own seats which was described as "I want to decide my seat by myself".

Seating charts
The system decides the seating arrangement based on the wishes collected from the participants and create seating charts as shown in Figure 3. The chart shows the members of each table with a table number. Topics is shown along with the members when it is wished by multiple members assigned to the same table.
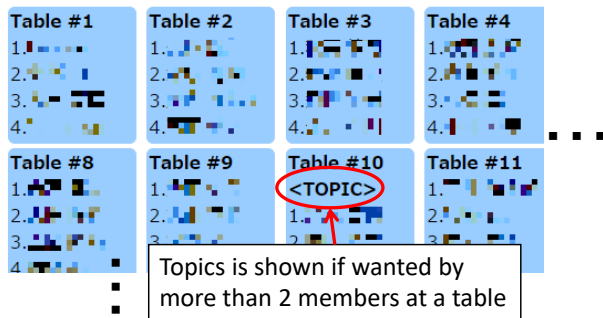

Figure 3: Seating chart.

Experience at the Conference
We used the system to decide the seating arrangement at a real conference banquets. Data collected for analysis was the input wishes to the web application and the answers to the questionnaire collected on the last day. Other than the data collected, we had a number of free reactions throughout the conference. We also had a slot to make a presentation about the system, just before the second night banquet, where we had an opportunity to discuss the system in public after the participants experienced the first night banquet using the system.

Input Wishes
93 out of 182 conference participants (51.1%) registered at least one wish to the system. Of the 267 wishes in total, 165 (61.8%) was people wishes and 102 (38.2%) were topic wishes. Only 5 participants chose the refusal option.

74 participants (79.6% of who had input wishes) had at least one wish satisfied. 62/165 (37.6%) of the people wishes and 64/102 (62.7%) of the topic wishes were satisfied. People wishes were more difficult to satisfy compared to topic wishes because there were very popular participants who was wished by many participants and also there were a few participants who input very many people wishes.

27 topics were proposed in total as shown in Table 1. Most of them were typical topics for an academic conference such as technology or career related topics. We also observed a number of topics about social interaction. It seems that having a system to encourage social interaction encouraged participants to think and talk about social interaction.

Types of Topics	Examples
Technology (35)	Strange devices (11), Programming (7)
Career (22)	Job hunting (10), Research in a company (5)
The conference (12)	Overview the conference history (3)
Social interaction (12)	I want to talk with new people. (8) I want to socialize, but I'm afraid to. (4)
Research (11)	Alternative research output format (4)
Other (10)	Cats (5)

Table 1: Types of proposed topics. Number in parentheses shows the number of people who wished the topic.

Feedback from Participants
We collected 48 answers to the questionnaire, 31 from participants who input wishes to the system and 17 from participants who did not. Participants who used the system seemed to be more eager to provide feedbacks.

Figure 4 shows the answers to the question which asked the system impression. Majority answered that wishing is easier if guessing is designed to be more difficult, supporting our initial concerns. Participants supported our system by agreeing to questions asking that it was better to have the system than free seating, for both the first and second night banquets; however, "no opinion" was the majority answer, suggesting the difficulty to clearly feel the benefit of having the system.

Figure 5 shows the answers to questions asking future trials. Most of the participants agreed to have seating arrangement system again in future conferences, but the majority requested improvements. We also asked the participants if they want one of the banquets to be free seating. While there were participants wishing to have the seating arrangement system all the time, one third of the participants answered that they would like to have a free seating banquet.
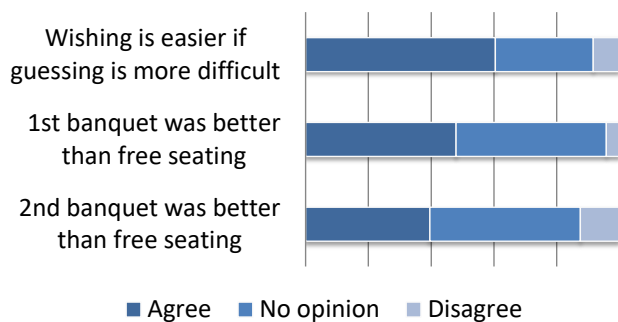
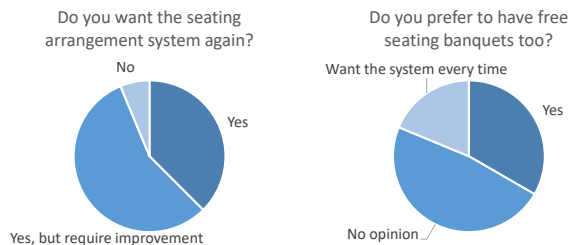Figure 4: Answers to question asking system impression.

Figure 5: Answers to questions asking future trials.

Discussion

Rooms for improvements remained to make participants really feel that it was better to have the system. It may be possible to better satisfy the participants by maximizing the number of participants who had at least one wish satisfied, instead of maximizing the number of wishes satisfied.

While the system seemed to be supported by the community, questions remain due to lack of data collection. It is still unclear that which aspect of the banquet was preferred than free seating banquet. It is possible that participants felt more satisfied just because they were asked their preferences. Some participants might have been satisfied similarly by randomly assigned seating. To answer these questions, we need to know which participants are introverts/extroverts. For this purpose, we plan to use Gosling et al.'s Ten-Item Personality Inventory (TIPI) or its variations. We also have to make clear the real concerns of introverts before such social opportunities. We plan to conduct interviews considering the different personalities (introvert/extroverts) and other categories (faculty/student, male/female, wish satisfied or not, etc.) in future study.

CONCLUSION

In this paper, we reported our first step to design social interaction support systems with introverts and their shyness in mind. The banquet seating arrangement system we designed was well received by the community, but a number of questions remained which aspect of the system really helped the introverts. It is our future work to make clear what kind of concerns can be solved by what kind of design through the next series of study in real field.

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