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Lo-Fi Matchmaking: A Study of Social Pairing for Backpackers

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Abstract. There is a new world emerging around mobile social networks and the technologies used to facilitate and mediate them. It is technically feasible for mobile social software such as pairing or 'matchmaking' systems to introduce people to others and assist information exchange. However, little is known about the social structure of many mobile communities or why they would want pairing systems. When these systems are built, it is not clear what the social response by those communities will be or what the systems will be like to use in practice. While engaged in other work determining requirements for a mobile travel assistant we saw a potentially useful application for a pairing system to facilitate the exchange of travel information between backpackers. To explore this area, we designed two studies involving usage of a low-fidelity role prototype of a social pairing system for backpackers. Graphs of the resulting social pairings showed backpackers who were hubs in the network of travel information. It also demonstrated the effect of travel direction on information utility. Backpackers rated the utility of different pairing types, and provided feedback on the social implications of being paired based on travel histories. Practical usage of the social network pairing activity and the implications of broader societal usage are discussed.

1. Introduction

Social software is being developed which links people together as they move based on their pre-existing relationships, personal attributes, proximity and other variables. Many of these systems focus on traditional markets such as dating, and many do not have sufficient users to realize the full impact of proximity-based services. There is an opportunity to explore different design concepts and other types of social interaction that could benefit from pairing services. It is also useful to experiment with prototyping tools that are more flexible than existing SMS, MMS and Bluetooth standards, which could help form requirements for future social software and protocol offerings.

We are currently engaged in a number of projects developing requirements for a mobile travel assistant for backpackers. This work shows that some form of social software functionality is likely to be useful to backpackers as they travel. As a result we thought it opportune to investigate how explicitly pairing backpackers based on travel itineraries would work in practice. For example, if one backpacker is travelling

North and another is travelling South, then they would benefit from meeting in the middle and exchanging information about where they had just been. Several studies [1, 2] were conducted investigating mobile information sharing and social network formation amongst backpackers engaged in a typical tourist activity. A social network pairing activity was run in conjunction with these studies and is the subject of this paper.

The paper is structured as follows. The literature review discusses backpackers, social networks and mobile social software. Then the social network pairing activity is presented, followed by study results, and resulting user and product requirements. Practical considerations and potential pitfalls for using this method and other user-centred approaches in this domain are presented, and potential solutions offered.

2. Literature Review

Mobile device technologies are merging with the academic discipline of social network theory to produce a new product area called mobile social software. A brief history and a discussion of recent product offerings are below, followed by an overview of backpackers..

2.1. Social Networks

Social network theory uses methods of depicting and analysing networks of people to help understand and communicate the ways in which they are connected [3]. It draws on graph theory and sociology to understand group or community behaviour and make social connections tangible. Software support for social network visualization (e.g. Netdraw, Pajek) has made analysis more rapid and increased visualization quality [4]. Social network research has recently been popularized by sociologists investigating the impact of new networking technologies on community social relations [5]. In the area of computer supported cooperative work (CSCW), social network research has often used e-mail or other online communications to discover relationships between people and group behaviour [6, 7]. Research into tourist guides has also incorporated limited community tagging features [8]. Industry has recently merged social network theory with web site design and produced hundreds of networking services addressing dating, business, leisure, photos, pets and other common interests 1.

2.2. MoSoSo

Some social networking services enable interactions between people via mobile devices. This subset of social networking is called mobile social software (MoSoSo).

[1] See listing at: http://socialsoftware.weblogsinc.com/entry/9817137581524458/

Mobile devices operate in a diverse number of social environments and the services that can be created via this mechanism are still being explored by designers, users and the media [9]. A hoax in 2004 claimed that there was an active community of people using Bluetooth short-range wireless technology to arrange sexual encounters, and dubbed the phenomenon "toothing" (or bluetoothing)[2]. Regardless of the factuality of the original report, Bluetooth does often permit exchange of messages between strangers. The Nokia Sensor[3] project has standardized many of the original intentions of toothing into an official product and protocol. Many products (e.g. Cellphedia, Crunkie, DodgeBall, Playtxt) are offering similar messaging services based around location, social network data and personal profiles. Some research has explored pairing systems for use in low-mobility situations such as conferences [10]. This study utilized high-fidelity prototypes and consequently received user feedback about interface issues and usability problems.

When they are introduced, mobile social software products merge with rich pre-existing social systems. Thus it is beneficial to use knowledge of the social reality to guide new technology designs. However, social network researchers indicate that moving and dynamic social networks are not yet well understood, and modelling them remains a challenge [11]. Not only is understanding them difficult, but the practical utility, market perception, and social ramifications of using these systems remain unknown.

Given the lack of research into how MoSoSo should be structured and the availability of a highly mobile community with practical needs, we decided to explore the requirements for a social pairing system for use by backpackers.

2.3. Backpackers

Backpackers have been described as "travellers who exhibit a preference for budget accommodation; an emphasis on meeting other people (locals and travellers); an independently organized and flexible travel schedule; longer rather than brief holidays; and an emphasis on informal and participatory recreation activities." [12] Backpackers in Australia primarily flow in a bi-directional North-South current along the East coast [12]. They often take spontaneous side-trips or pause to rest with others in popular locations. Backpackers often wish to organize group activities, but have few collaboration methods available. They regularly explore unfamiliar locations quickly, but have only basic resources to inform them about those places. Despite the desired collaboration, only limited communication is possible between them as they move. Many opportunities exist for the design of mobile devices to assist their travel.

Brown and Chalmers explore the design of mobile technology to support tourists' activities [13]. They focus on independent travellers, noting that backpackers form the majority of this population. They use ethnographic fieldwork to identify problems faced by tourists including: what to do (and how to do it), when to do it, way-finding, and sharing activities with others at home. They describe how tourists solve these problems—sharing visits with others, using guidebooks and maps, and engaging in

[2] http://www.wired.com/news/culture/0,1284,62687,00.html
[3] http://www.nokia.com/sensor/

pre- and post-visit activities—and they outline opportunities for mobile technologies to enhance these solutions. Among other things, they propose tourists use technology to share information on attractions and destinations, emphasising the importance of interaction between tourists for both information-sharing and social purposes. In this paper we explore the value of and means for facilitating this interaction.

3. Method

We conducted two workshops to investigate requirements for a social pairing system for backpackers. Both studies were similar in structure, but are presented separately to allow comparison and show iterative modifications to the research method. Rather than leap forward to developing functioning prototypes which run on existing technology platforms, with the associated problems already mentioned in terms of the type of information generated, we adopted an extremely low fidelity approach. Our approach to prototyping is akin to a 'contextual' walkthrough (c.f. contextual interviews [14]) or a *role prototype* [15].

3.1. Social Pairing - Study 1

A large backpacker hostel in the centre of a large Australian city assisted with recruiting volunteers for our studies. Out of the group of six backpackers recruited for the first study (see **Fig. 1**), four were female and two male. BP1 (Backpacker 1) and BP2 were married, from Ireland and Holland, and in their mid-thirties. They were travelling for 7 weeks with a moderate budget. BP3 & 6 were friends from England in their late teens. They had recently spent a month in New Zealand and were spending several weeks in Australia on money borrowed from parents and credit cards. BP4 & 5 were acquaintances from the day before. BP4 was from Holland and in her late teens, working while travelling, and on a very tight budget. BP5 was from Korea and in his early twenties and was travelling on a reasonable amount of savings.

While recruiting participants, hostel staff distributed a questionnaire concerning the participants' recent travel history, future travel plans and any travel-related questions they had. No attempt was made to restrict the participant demographic, other than to ensure they were travelling and not long-term residents. Backpackers typically stay two to three nights in Brisbane and most had arrived just prior to the study. Participants were compensated by receiving a combined boat cruise and trip to a local animal park for free.

Following their field trip to the animal park, the social pairing activity was conducted back at the hostel. It was intended to explore the utility of externally imposed social pairing systems for travel assistance. While the backpackers were away on the field trip, another researcher had paired backpackers in the group who had an affinity based on planned/visited locations. For example, BP5 had recently been surfing in Byron Bay and BP6 intended to travel there. Index cards were created for each participant, showing up to three people they should talk to and the compatible information they should talk about. Each backpacker was asked to spend

roughly 5 minutes talking to each of the people they had been paired with (see **Fig. 2**). Following the pairing conversations, a researcher led a discussion of the utility of the automatic pairings between group members. This was followed by a short discussion about trust of travel information and possible uses for an information sharing system between backpackers.

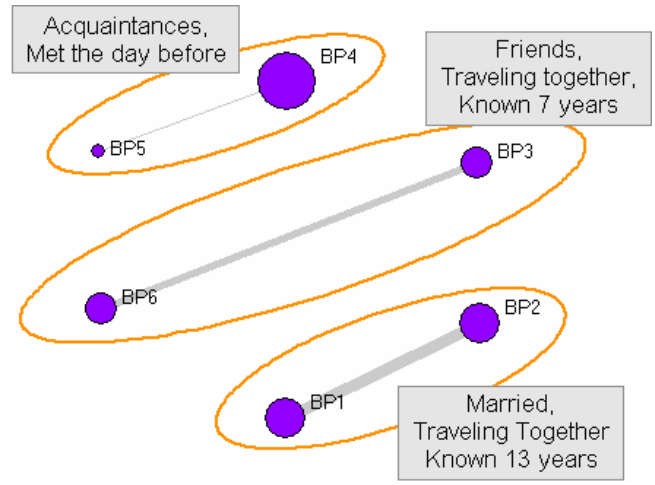

Fig. 1. Travel history of participants in Study 1. Line width indicates duration travelling with partners. Circle size indicates travel experience this trip for an individual.

Fig. 2. Participants rating and discussing topics.

To additionally explore how social networks change over time, backpackers were given a sealed envelope before leaving. It was requested that they wait a week to open it, and then complete and return the enclosed postcard (see **Fig. 3**). The postcard

asked if group members took part in activities with each other after the study and whether they contacted each other after leaving the city.

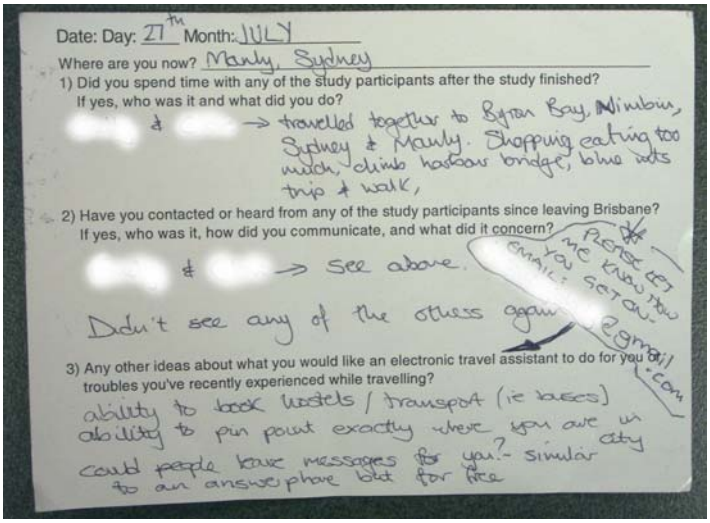

Fig. 3. A postcard returned a week after the study explaining longitudinal social tie development.

3.2. Social Pairing - Study 2

It was intended that six backpackers be involved in the second study; however due to a miscommunication with the hostel recruiters, and participant characteristics, the study ended up with seven participants (see **Fig. 4**). Three English females (BP5, 6 & 7; all under 21 years) were old friends from school and were travelling together for a few weeks. Two of them (BP5 & 6) had been travelling for 5 weeks, whereas the third (BP7) had been travelling for longer than the other two (5.5 months) and had just joined up with them. They had known each other for 8 years, were travelling South, and BP7 had recently been living in New Zealand. A Swedish male and female couple (BP3 & 4; both in their late twenties) had known each other for 5 years. They had been travelling together for 8 weeks and were also travelling South. Two English males (BP1 & 2; both under 21 years) had been friends for 11 years and were travelling North to Cairns. They had been travelling for 3 weeks.

The structure of the second iteration of the study was similar to the first. Pre-arranged cards were distributed to backpackers with suggested discussion items. However, due to difficulties tracking the results of individual conversations in the first study, a simple rating system was introduced for each conversation (see **Fig. 5**). Participants were asked to rate how useful the conversation was on a scale of 1-5 (not useful – very useful) after completing it. They also recorded whether they had already discussed it earlier in the day. This allowed checking to see if conversations were not useful because they had already occurred, and allowed a measure of how commonly

affinity information naturally arises during shared tourist activities. The [Future⇦⇨Future] pairings (cases where both backpackers intended to travel to the same location, see also **Table 1**), were de-emphasized in this iteration to focus on other types of pairings which backpackers thought were more useful.

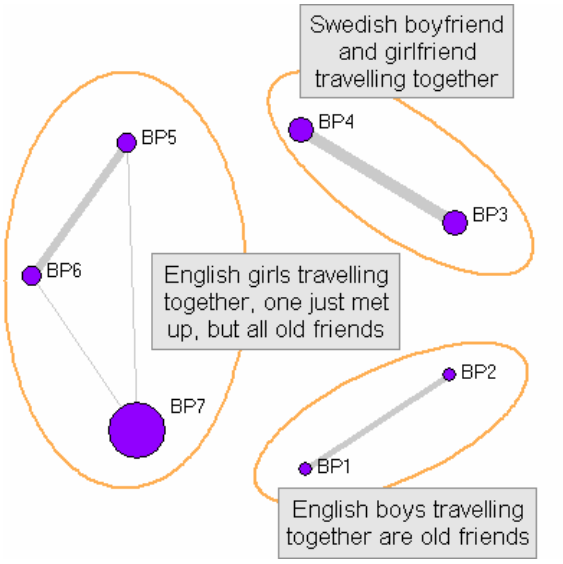

Fig. 4. Travel history of participants in Study 2. Line width indicates duration travelling with partners. Circle size indicates travel experience this trip for an individual.

Fig. 5. A pairing card given to a backpacker and completed during discussions with other backpackers they were paired with.

As with the first study, a group discussion followed the exercise. Backpackers used their cards to remember the conversations they had and explained their ratings along with other discussion topics. One of the observers was Marketing Manager for Lonely

Planet and additional discussion topics concerning guidebooks were introduced at his request. Following the study, the backpackers were again given postcards to complete and return a week later.

4. Results Of Artificially Pairing Backpackers

Both studies had similar findings which located pairing difficulties and determined patterns of successful matching. Changes in the second study allowed the opinions of backpackers to be tracked more effectively and focused on the types of pairing participants found useful. The results are shown consecutively below.

4.1. Social Pairing - Study 1

While working with the data from the participant questionnaires it became apparent that at least three types of pairings are potentially of interest in the context of travel conversations amongst backpackers (see **Table 1**):

Table 1. Potential social pairings between backpackers

A.	Past⇦⇨Past	Reliving old memories between people who have both been there or done that.
B.	Past⇨Future	Someone who has been to an intended destination giving advice to someone going there or doing that.
C.	Future⇦⇨Future	People who both have plans to go to the same place or do the same thing there.

Pairing A [Past⇦⇨Past] appears to be largely an entertainment association. Backpackers were able to discuss memorable things that had happened to them, but it didn't really help them in their future travels. Pair 1 asked about the past experiences of Pair 3 to determine if they had made the right decision in not visiting a location along a route. They confirmed that the location was not desirable and felt better about the decision. It is likely that sharing mutual past experiences increases initial bonding before longer-term relationships form. This could result in lasting friendships or finding compatible people to travel with.

Pairing B [Past⇨Future] is both very useful and potentially problematic because it is not reciprocal. Backpackers commonly offered advice based on past experience for the benefit of others. However, there is the potential for abuse if a well travelled person is used extensively for advice without receiving anything in return. There is, however, potential for indirect reciprocity [16], where a backpacker would receive advice from different backpackers to those they were giving it to. Experienced backpackers would still give more than they take, but they would get some information in return. It is possible that experienced travellers may not mind being used because they gain friendships and social status in return for the gift. This is likely to produce a fleeting form of social capital [17].

Pairing C [Future⇦⇨Future] does not involve much information exchange, but it does potentially enable backpackers to rendezvous in the future. Backpackers frequently have flexible schedules that allow them to join up with others if they wish. However, backpackers often already know if others they meet are going to the same place and may only have an interest in meeting up with certain people. This may not be as useful a pairing for these users.

Pairings between participants that were identified by researchers are shown in the chart (see **Fig. 6**). Some participants are hubs in the network (in particular see BP3 and BP5). BP3 has a large potential to share many experiences with others in the future, but does not give information away. BP5 has experience others want and is giving information away, but not receiving any in return.

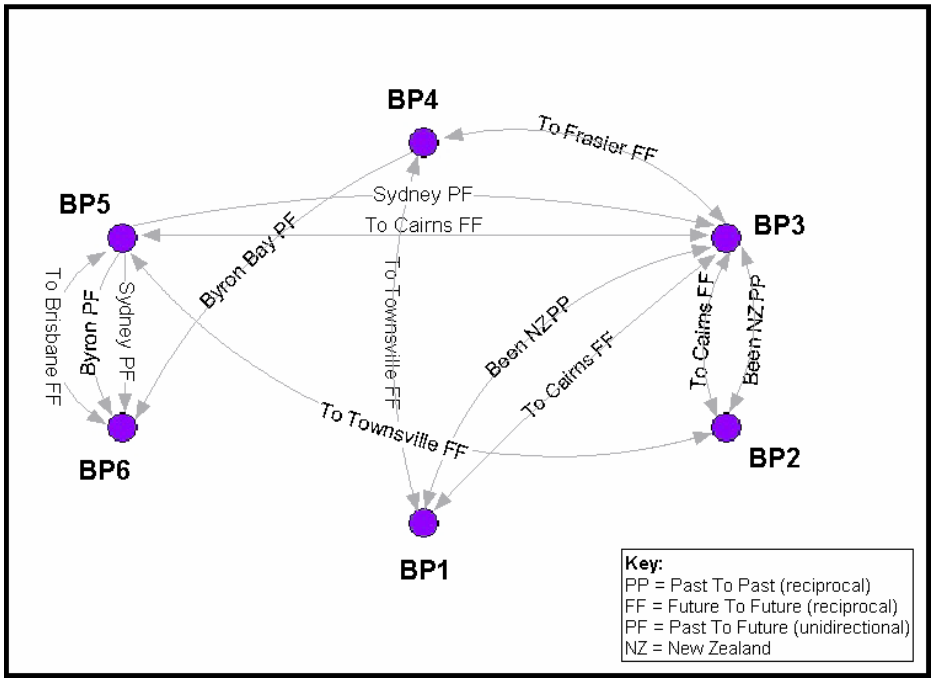

Fig. 6. Pairings selected for backpackers in MIS-1. Ties between travelling partners were not used in the study or shown above.

The lack of functional prototypes did not hinder participants' ability to discuss or use the automated pairing system. The use of simple paper cards and the activity itself allowed participants to focus on the underlying reasons they were using the system, instead of the interface to the system. Backpackers were reasonably negative about the utility of the pairings that we arranged for them. However, both observing pairing discussions and backpacker responses have provided information about how pairings should occur and where problems exist. Potential issues are as follows.

Some backpackers did not complete the whole questionnaire, resulting in less data. Also, some were travelling together, resulting in the same information for each person. The [Past⇦⇨Past] pairing worked well because backpackers could compare

travel experiences and relive interesting moments. This was entertaining, but perhaps not very helpful for future travel. Few [Past⇨Future] pairings were possible, partially for the above reasons and because the group was small. The few pairings of this type were reported to be successful. For instance BP4 had spent time surfing in small towns around Byron Bay and BP6 wanted to go surfing in the area and appreciated the advice (see **Fig. 6**). The [Future⇦⇨Future] pairings were the most common type arranged, and were a failure. Backpackers reported not having anything to talk about. We think this type of information could be useful for backpackers, but possibly not just after arriving in a city or while sitting in a research study. It also might be useful for occasional use when a backpacker meets someone particularly interesting or for people looking for travel partners. We concluded that the study should be run again, with increased detail of travel history, less emphasis on the [Future⇦⇨Future] pairings and more detailed tracking of opinions about individual pairings.

Three of the six postcards given to backpackers at the end of the study were returned between 7-20 days following the study. BP5 had gone to a club with BP4 following the study and contacted her by mobile phone to see how she was doing after leaving the city. BP3 & 1 hadn't contacted anyone other than their travelling partners. All three respondents were at different cities in Australia at the time of writing. Both of the travelling partners only submitted one card each and one single traveller (BP4) did not submit their card.

4.2. Social Pairing - Study 2

Analysis of the questionnaire data for the seven backpackers resulted in identification of 21 social pairings by researchers. Of these, 18 were actually discussed by participants due to time limitations or preference. 6 out of 18 of the pairings had already been discussed during the prior field trip, while the remaining 12 had not yet been discussed.

Both the previously discussed topics and the new topics had a wide range of ratings from useful to not useful. This indicates that being able to talk more about a topic that had already been discussed didn't change its perceived utility. BP1 & 2 were the only backpackers travelling South to North, while the other five were headed South. This resulted in a bottleneck for pairing, with BP1 & 2 as primary hubs in the network (see **Fig. 7**), since they had most of the travel information that others would want. Information flow in social networks is analogous to whirlpools and waterspouts in the ocean. BP6 & 7 are primarily information-pools; they take in a lot of advice but give little back, which is a classic social dilemma [18, 19]. BP1 & 2 are information-spouts; they receive some information, but push a lot of information out to other group members (see **Fig. 7**).

The twelve [Past⇨Future] pairings rated by participants received high usefulness ratings; they had an average of 3.75 and four of these were considered "highly useful". Three [Future⇦⇨Future] pairings were selected by experimenters and these again received very poor usefulness ratings from backpackers with an average of 1.3. The one [Past⇦⇨Past] pairing was rated a one (not-useful) and had a note scrawled next to it, "we had both been there already."

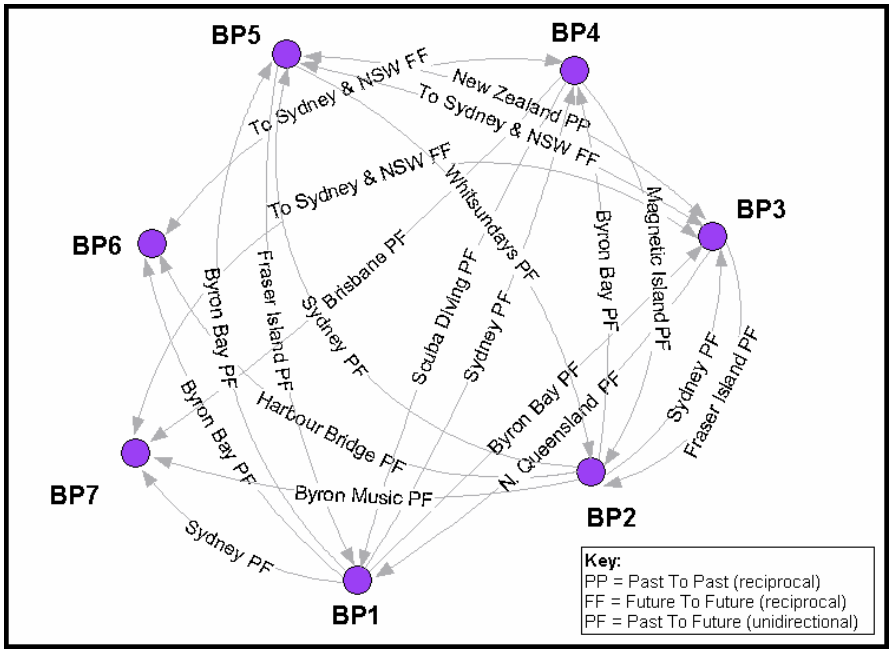

Fig. 7. Pairings selected for backpackers in MIS-2. Ties between travelling partners are not shown and not all ties made were discussed by backpackers.

Six bi-directional (reciprocal) [Past⇨Future] pairings were made (**Fig. 7**: BP1⇦⇨3, BP1⇦⇨5, BP1⇦⇨4, BP2⇦⇨3, BP2⇦⇨4, BP2⇦⇨5). This occurs where the uni-directional pairing happens both ways for different topics. For example, BP3 knew about tours on Fraser Island where BP2 was going, and BP2 knew about sightseeing in Sydney where BP3 was going. Of the 21 total pairings, 12 of the [Past⇨Future] pairings resulted in forming reciprocal relationships.

The construction of the social pairings was more complex to orchestrate than expected. It took two researchers who had been provided with a pairing process and supporting worksheets roughly two hours to complete. The seven backpackers had each listed five past locations, five future locations and five travel-related questions that they would like answers for. For the case of [Past⇨Future] pairings, any backpacker's five past locations could be associated with the other 60 future locations and travel questions of the other backpackers. This resulted in a theoretical upper bound of 300 bi-directional connections. There would be even more possibilities if directionality was considered, but an experimenter could easily spot connections in either direction. Practically speaking, many pairings were not close to being compatible, but still needed to be considered by the researcher. The pairing process first identified all past locations and allowed rapid scanning of matches from the future or question sections.

An added complication is that pairings contain cultural, geographical and semantic information. For instance, a researcher looking to make a pairing for a backpacker interested in scuba diving, would need to know which Australian coastal locations were near good dive sites. An additional variable was direction of travel. Backpackers

who travel North on the East coast of Australia are more likely to have compatible pairings with those travelling South, and vice-versa. Furthermore the researcher had to be aware of who was travelling together. Everyone in a travelling group would already know similar information and there would be little utility in discussing the topic. Consequently promoting pairing with strangers would be likely to increase diversity of corresponding travel information and expected utility of pairings.

Locating enough [Past⇨Future] and [Past⇦⇨Past] pairings was difficult and three [Future⇦⇨Future] pairings had to be chosen. In some cases, there were no clear connections to be made and researchers had to guess at possible connections. Strategies for this included making connections at a higher level (e.g. a state instead of a city) or guessing at possible locations for activities (e.g. dive sites). One researcher commented that doing the pairing felt like an algorithmic process and that it should be automated.

Five of the seven postcards were returned between 3-8 days following the activity. BP3 had briefly chatted with BP1 & 2 in the kitchen of the hostel following the study and with her travelling partner BP4. BP4 indicated the same discussions on his card. BP6 had talked with her travelling partners BP5 & 7. Coincidentally they had travelled the same route (Brisbane-Byron Bay-Sydney) as BP3 & 4, but a week apart. BP5 & 7s' cards confirmed BP6's account of the travels. The travelling pair BP1 & 2 did not return their cards and were travelling in the opposite direction.

5. Discussion

Running the social pairing activities led us to draw a number of conclusions about where they are useful, how they should be structured, and what implications our experiences had for user-centred design practice. These topics are discussed in the following sections.

5.1. Using Contextual Workshops To Simulate Pairing Systems

The pairing exercise is intended to probe the utility of automated matchmaking systems for mobile communities. We had the option of creating a high-fidelity prototype of a pairing system on mobile phones and testing it with backpackers. However, it would have introduced variables such as specific technologies used, ergonomics, and technical and usability problems. This would have changed the focus of backpacker input towards technology issues, which was not the focus of the investigation. Instead we used very low-fidelity methods.

Participants in the studies both used and enacted the low-fidelity prototype of the pairing system. In this case, the "system" was not computerised, nor did it have a physical interface. It was a conceptual design, which had certain rules for interaction with it (e.g. ask a travel question of your partner), and certain results as a consequence of using it (e.g. the advice received). When viewed from the perspective of ubiquitous computing, this is an interface-agnostic simulation. Participants spoke and used pieces of paper to interact with the system, which are so familiar as to be practically invisible

for them. This meant that the users naturally focused on the underlying social issues and the utility of the information they were getting, instead of interface interaction issues. This is useful when attempting to determine what a product should do, before determining how it should be constructed to enable users to reach those ends.

A related issue is where participants (probable future users) can most effectively be involved during a development process. In this study participants did not design a physical interface; furthermore, we would not request that they do so, as they are not trained designers. However, the participants were able to provide excellent qualitative feedback on the design that they used. For example, during the discussion period following the pairings, one backpacker made an illuminating remark. She said that using the pairing system "felt too formal". We as designers had built a logical pairing system with a fairly rigid structure without much thought as to what it would feel like to use. A backpacker trying a very simple version of our design had already found a serious design flaw relating to the social context in which it is used. In a similar fashion, all of the backpackers' participation was most useful for understanding user requirements for the system and evaluating design concepts. Thus, the backpackers beneficially participated in the larger design process (or development process) from within their own area of expertise: travel.

While designing the workshops, we were attempting to find a way to make them as in-situ as possible. The hostel was a typical environment, but we also wanted participants to be in a mobile context while they were considering the implications of mobility. It appeared impractical to actually hold the workshop while moving and the hostel represented a short pause in a larger pattern of regular movement. The activity itself also engaged backpackers in considering past and future movement and discussing this with others. Thus the design of the activity is perhaps not as contextually accurate as it could be, but is probably sufficient for the situation.

Most of the pairings made in the activity were based around location. This was primarily because of the correlation between past locations and travel knowledge, but it was also the primary focus of our questionnaires. Other types of pairings would be possible. For instance, activity pairings may be as important as location pairings. For example if Tzu-Yang and Karl both like scuba diving, then they may wish to compare notes on diving sites regardless of whether they have been, or intend to go to the same place.

Our studies did not address realistic conversational openings, or "breaking the ice" as it is more colloquially called. We simply requested that backpackers talk about a certain topic with others they had previously met. This is not representative of strangers needing an excuse to talk to someone without direction by an authority figure. It remains an area for future research to explore what pairings will actually convince people to chat with strangers, and in what circumstances. Physically locating paired strangers in different social environments is also an area of interest.

5.2. Toying With Travellers and Social Responsibility

The possible implications of wide-spread MoSoSo usage are significant. For example, consider a backpacker who gets recommendations on people (who to talk with, date, trust), places (which locations are safe, fun, cheap), things (which products are cheap, quality, effective) and broader social issues (political news, history,

culture). This information is provided by a trusted system, which represents a trusted social network of other travellers in a similar social situation. What impact will design changes to such a tourist recommendation system have on the behaviour of its users?

A recommendation promoting travel to a remote Asian country might corrupt native traditions when large numbers of tourists arrive. An effective service promoting dating might result in an increase in STD rates. These high-tech quandaries are similar to those which guidebook manufacturers have long faced in a low-tech medium. However, if these systems are designed in a centralized manner, then someone (most likely a business) will be playing god with their users. Moral and ethical behaviour will be greatly influenced by the system designers who will restrict and encourage those activities they wish to; this is already commonplace in web-based communities [20, 21]. Thus, a challenge for those using user-centred methods to develop MoSoSo systems is to find a way for the community to set their own standards for the technologies they have helped design.

A key design challenge for backpacker MoSoSo relates to the need for a reputation system. Social capital forms very quickly amongst backpackers and often dissipates just as rapidly [22]. Hostels gain reputations since they stay in the same location and retain the same name; however backpackers move on and rarely gain reputations among others for long. This means that good reputations disappear just as rapidly as bad ones and give little incentive for good behaviour (as defined by the larger community). It seems likely that a non-location-based reputation system would increase community awareness of model members. Resnick has discussed similar issues concerning impersonal sociotechnical capital [23].

The results section of Study 2 above also notes that there are design issues relating to distributing the responsibility of information exchange and dealing with information-pools. The backpacker social network has highly dynamic physical movement and information content.

To pose a hypothetical example: a backpacker travelling North⇨South might meet a group travelling South⇨North and be overwhelmed with questions, thus forming an information-spout in the network. One member of the South⇨North group may have only been travelling for a week and have very little to offer, forming an information-pool. However, this novice backpacker rapidly gains experience and information from others. In another week they may form an information-spout for other novice travellers. This results in the development of a social norm amongst a community with transitory membership. If a novice backpacker gets help from others when they are starting, they are likely to perpetuate this action to others. It is probable that this information-sharing system is already self-regulating in the offline medium; however it isn't clear how to transfer the natural physical and social boundaries regulating information flow into the online community space.

6. Conclusion

There is a new world emerging based around mobile social networks and the increasingly advanced technologies used to facilitate and mediate them. We have presented two studies of a low-fidelity prototype of a social pairing system for

backpackers. Graphs of the pairings showed backpackers who were hubs in the network of travel information and the clear effect of travel direction on information utility. Practical usage of the social network pairing activity and broader societal implications of pairing system usage are discussed. The studies show the importance of including users in early stages of requirements analysis and development.

6.1. Summary Of Requirements For Social Pairing Systems

The following requirements resulted from data analysis and experiences running the studies. It is likely that some of the requirements are peculiar to the needs of backpackers and may not be able to be generalized. However, it is likely that some requirements relate to common social norms and universal physical limitations which may be applicable in other situations. They have been developed from a small sample, but have been replicated and represent typical backpackers.

- Use pairings to help people achieve something. People are using the system for specific purposes. Theoretically accurate ties are not as important as those rated highly by those using the system.
- Support reciprocal [Past⇨Future] pairings where possible.
- Do not overload hubs. Some people will naturally have more useful information than others due to travel routes and duration of travel. Hubs will not be able to support all feasible ties to them unless automation is used.
- People may enjoy reliving mutual past travel experiences [Past⇦⇨Past]. Support users finding others whom they have shared past experiences with.
- Experienced travellers necessarily have more and better quality information to distribute. Social capital and reputation are currently gained for very short periods (a few days or less). Support methods of establishing lasting reputation between strangers so that appreciation expressed by one backpacker is not lost on others.
- [Future⇦⇨Future] pairings are not as useful to support unless users specifically desire to meet in the future.
- Include personality and behavioural traits in determining pairings. Informational affinities may not be rated as high by participants if they come from a person who doesn't value similar things or travel similarly.
- Expect short relationships most of the time. Returned postcards showed that few backpackers maintained contact with group members outside of their travelling groups for long.

6.2. Future Work

We are interested in running larger social pairing activities with higher-fidelity prototypes, exploring social pairing in mobile environments, developing community reputation systems and finding ways to break the ice for travellers..

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