Familiars: Social gaming with PASION

Ben Kirman and Duncan Rowland

Lincoln Social Computing Research Centre

Department of Computing and Informatics
University of Lincoln,
Brayford Pool, Lincoln, LN6 7TS, UK
[bkirman|drowland]@lincoln.ac.uk

ABSTRACT

The PASION (Psychologically Augmented Social Interaction Over Networks) project is designed to research social presence technologies and their effect on individual and group behaviour within mediated collaborative environments. A mobile multiplayer social game called Familiars is being designed, where the success and rank of a player within the game is directly linked to the qualities of the player's in-game social network. By examining the structures of the game-wide social network generated through playing the game, the aim is to identify patterns in the interactions which can be used to direct further studies and build future versions of the game that will enhance the game experience, bringing more of the face-to-face social value to technologically mediated games and hence mediated collaborations in general.

ACM Classification Keywords

Games K.8, Computer Supported Co-operative Work H.5.3

Keywords

Social Games, PASION, Group Emotion, Social Presence.

1. INTRODUCTION

Games and play allow an abstraction of reality that is simpler and more controllable than the veridical world. The aim of PASION is to create a game world that will allow the scientific scrutiny of mediated communications in a way that is simplified yet still scientifically valid [2]. The quality of social interaction through multiplayer games is currently highly impoverished in comparison to other forms of social play. With the explosion in popularity of multiplayer online and mobile games there is an opportunity to enhance the grade of social interactions and develop a new style of "socially aware" game where the social behaviour of the players affects the game itself.

The PASION project is funded by the EC to research social presence technologies and their effect on group behaviour within multiplayer games and collaborative working environments. The first steps were to design a mobile multiplayer social game (called "Familiars"), where the success and rank of a player within the game is directly linked to the quality and quantity of social interactions to which that player has contributed. Originally inspired by the capabilities of the Hitchers framework [6] (and the Gopher game [4]) the game is designed to encourage social play through mediated co-operative behaviour. Players create "Familiars" as their animal helpers. These are small creatures whose goal it is to accomplish the task given to them by the player who made them. They move from device to device completing tasks with the help of the players that they meet. The tasks are generally designed to require the co-operation of several players to complete, and so the Familiars must engage many players to help accomplish their goal. A variety of measures (both objective and subjective) will be taken regarding the various interactions players have during gameplay. From these a rank will be generated for each player based on the social network they have built.

By examining the structures of this game-wide social network, the aim is to identify patterns in the interactions [9] which can be used to direct our studies in PASION's other work packages (including questions relating to basic research and collaborative working) and inform the design of future versions of the game, and so that the emerging genera of socially mediated networked game can be explored. Using sensors and analysis techniques developed through partners in the project, the expectation is that correlatives to individual and group, emotional and social states will be used to enhance the game experience and bring more face-to-face social value to mediated games.

2. FAMILIARS

"Familiars" is the first iteration of a multi-player social game designed for the PASION project. The essence of the game is such that the social interactions that occur between players of the game are fundamentally linked to their success. The following is the description as it may appear

on the "back-of-the-box":

> "Familiars" are small invisible and friendly creatures that are all around us wherever we go. You can talk to a familiar using your computer or mobile phone, chat, swap gossip and even share photographs. Sometimes a familiar has a task that it is trying to complete - you can pick it up and help it out. The task could be anything: "I'm collection a story, could you contribute the next chapter?", "I want to visit players in 5 different cities" or even "I want to find my way around the world". When you work with other people to complete your task, you gain "Social Credit" which affects your rank in the game. You can also gain Social Credit by chatting with other players using the mobile chat service, and for meeting new friends in the game.
>
> If you are feeling creative you can play the game on your PC and create imaginative tasks for familiars to do, and create new familiars with their own pictures that you have created. You can also log in and look at a familiar's blog, to see what they have been up to, where they have been and who else they have met along the way. Familiars are social creatures and like to know how you are feeling - they will ask you from time to time and sometimes will ask you about other people. Answering truthfully will earn you Social Credit, and may even affect the behaviour of the familiar in the future. Familiars is all about making new friends and having fun together, in fact the players who have the most friends and have the most fun are the ones that are ranked the highest!

The game is inspired by the Hitchers framework [6] and the Gophers game [4], which originated this kind of mobile task-driven agent game. Advantages of these games are that they are simple to comprehend, make good use of the capabilities of the underlying infrastructure are engaging and promote social interaction between players (since the tasks will usually involve multiple players interacting with the same agent). In these games, players have complete freedom to give the agents any tasks they can think of. Gophers introduced the idea of rewarding players for participation through the scoring mechanism - however, since it is so difficult to procedurally give rewards for completing tasks which have been created with such freedom, players participate in "Jury Service" and give completed tasks scores based on the perceived complexity of the task and the relative value of contributions of the players that helped in its completion. The player who initially created the completed task gets more points based on the judged difficulty of the task, and the contributing players get points based on the difficulty and their judged input.

2.1 Academic Goals
The goal in the creation of Familiars is to create an artificial reality where studies of human interaction can be conducted - it is a first attempt at a socially aware game, where player success is directly related to their social standing within the player community. By observing the interactions of the players with the game and with each other it should be possible to identify patterns not only relating to how the players use the game but how they behave socially *around* the game (i.e. those interactions within the game that don't serve to further their position but are important in the social context of the game [1]). Connected to this is the requirement to track the "mood" (or at least, physiological indicators) of players and expose these as important elements within the game. A player's emotional state (both real and apparent), other player's perceptions of it, and the interactions between them will all be monitored.

The game is designed to be played fluidly, with little impact on player's daily routines [8]. The game is under continual revision based on finding from user tests. As partners within the PASION project provide new technologies to measure the psychophysical states of the players or analyse the social networks they will be integrated into the game. With continued updates and testing it is hoped to observe some novel social interactions around the game that are unusual for the multiplayer video game format.

2.2 Player Goals
From the perspective of the players, the aim of the game is to rise in social status among the community. There are a set of global "High Score Tables" that shows the players' rankings filtered to show absolute standing within the game and standings within the smaller social groups that emerge from the game. Despite the goal of the game being to rise in social status, the players are not expected to work tirelessly towards that goal - the purpose of any game is enjoyment and of course different players will find enjoyment in different parts of the game. The appeal of Familiars is that it caters to quite a wide range of different play styles. Using Caillois' popular classification of play [3], that the freedom offered by the task creation in Familiars is very much *Paidic* in nature - in creating inventive and challenging tasks players are anticipated to find the same joy as they do with 3D modelling in *Second Life* (secondlife.com) or in interior design in *Ultima Online* (www.uo.com). In contrast, completing the tasks is mostly *Ludic* as players try to complete tasks as best as they can to maximise their score.

2.3 Social Status
Familiars builds on the play mechanics initial investigated in Gophers and significantly extends the social aspect of the game. Instead of success being measured simply by points accrued, status in the game is a reflection of the size and structure of a player's social network within the game.

A player who has completed many complicated tasks individually or with a small group of friends will generally score lower than a player who has completed only a few tasks, but those tasks involved many other players.
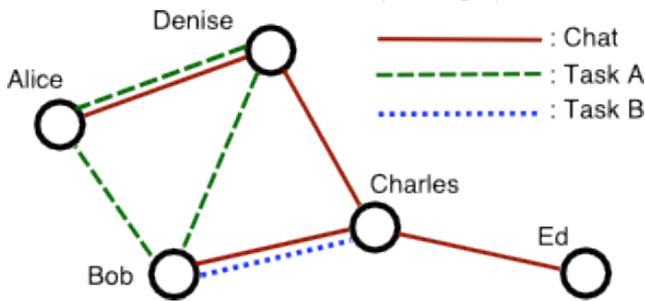

Figure 1. Example Social Network in Familiars

Figure 1 shows a simplified example social network that might occur during the game. Two tasks, A and B, have been completed by multiple players, and all the players have engaged in text chat with one or many of the others. Both simple socialisation and active participation in the game increase the players' status in the game. In this example, Edward is clearly the lowest socially ranked player since he has not been involved in the completion of a task, he has only been involved in chat sessions, and only with Charles. Either Bob or Charles belongs at the top of the social ladder. Bob has contributed towards completing two tasks and engaged in one chat. In contrast, Charles has contributed towards only one task, yet has had chat sessions with three different players. Who is ranked higher will depend on the relative values assigned to the different kinds of social interactions.

2.4 Social Capital

The kind of reputation based ranking system used in Familiars is not new - it is an abstract expression of the players' "Social Capital" [7] within the closed system of the game. While Social Capital is more conceptual in real life and difficult to measure in a quantitative manner, the social values of the players' in-game interactions are awarded using a peer-review system. This is similar to the notion of a "Whuffie", a word coined by science fiction author Cory Doctorow to describe a highly visible numerical score that represents the absolute value of a person's reputation and standing within their community [5].

> "Whuffie recaptured the true essence of money: in the old days, if you were broke but respected, you wouldn't starve; contrariwise, if you were rich and hated, no sum could buy you security and peace."

Other existing reputation systems are those used on trading websites such as eBay or the karma system on Slashdot where users who have made positive contributions to community discussions are rewarded with a louder voice. Future comments are then ranked higher and appear more visible in discussions. The important distinction from real

Social Capital is that in all systems, including Whuffie, the total value of social credit a player has is viewable at all times by any other person. This makes the system transparent and immune to dishonesty and misrepresentation, as abused by confidence scams in the real world where money is stolen from ordinary people by others who are misrepresenting their social status by, for example, pretending to be members of the clergy or high powered businessmen.

2.5 Earning Social Credit

The value of "Whuffie" accrued due to the various interactions in Familiars is not constant and will usually be balanced against the complexity of the tasks and other factors. For example back in figure 1, Task A, which involved three players might have been judged by peer-review to be simpler than Task B, which only involved two. So despite the social interactions being greater in number through Task A, the interactions in Task B were judged to be more valuable, and so score higher. Value is also reduced over time and repetition, so many chat sessions with a single other player will be worth less and less each time. This should encourage players to mix more with others and prevent groups of players conspiring to cheat by repeating simple interactions with one another repeatedly.

Over time a player will participate in a great number of interactions. This may favour players that have been playing longer and makes it difficult for new people to be competitive in the social ranking. To counter this the value of older interactions decays over time - players only retain their status within the game by continued contribution and cannot rest on past achievements for too long.

2.6 Reputation and Wealth

It is very important to distinguish between the collection of social credit or "Whuffie" and any currency or points system that may also be used in the game. The purpose of generating social credit is to simply advance one's social standing within the game. Any other economical system within the game should not interfere with this process at all (i.e. players should not be able to trade or loan social credit from one another and it must be impossible to increase your social credit by simply being wealthy in currency). For this reason, every player regardless of wealth or time in the game must have the same opportunities to generate social credit, for example through chat or task completion). The only exception to this is in the meta-game. Players who have large groups of friends within and around the game may find it easier to generate social credit by virtue of being popular. This may be considered to fit within the ideals of the game since in order to have gained this advantage they must logically already have a good reputation.

2.7 Supportive Technology

Familiars is designed to be cross-platform, initially for use on highly mobile devices such as cellphones, medium mobility devices such as tablet PCs and PDAs, and on low mobility platforms such as PCs. Different devices have different capabilities, and these will be taken advantage of as appropriate. For example cellphones will be able to provide location data based on Cell Mast IDs, but PDAs may be able to offer precise GPS data if in the right conditions.

Partners within the PASION project are working to provide sensors and other devices for tracking the mood of the players using both high and low mobility devices. This includes facial recognition, eye movement, galvanic skin response and posture. Since the project is at an early stage the availability of these devices could not be relied on for use in Familiars. The next steps for Familiars are to integrate this technology as it becomes available and study how the players mood is linked to the quality of their social interactions. This may eventually allow the partial automation of the judgement process.

2.8 Mood Reporting

While reliable mood sensors are not available yet, a self-reporting mechanism for mood will be included in Familiars. Players involved in direct communication through the fluid person-to-person chat system will be asked to judge their own and each other's mood after the interaction is complete. For each player the system will compare the mood they self-reported and the mood the other participant judged they had. The closer the two selections the more social credit they will earn in the game. This reflects the interaction having been more valuable since they have been able to deduce the other participant's mood correctly. Note this is irrespective of the mood chosen – e.g. players will not be rewarded more for being happy than for being distressed. This self-reporting system may be open to abuse from conspiratorial players so the data gathered must be treated with suspicion.

While mood sensing equipment is being developed by PASION partners, it is clear it will not be possible to equip all devices with every invention (and philosophically there is no guarantee that physiological state can ever be truly said to predict state of consciousness). A good example is the eye tracking software - it will be unreliable on mobile devices since the amount of ambient light may change and alter the shape of the player's pupils, which may be misinterpreted by the software. However for clients in controlled environments it may be very useful.

Based on user tests, the "mood" of the players during interactions will be integrated into the rewards system in Familiars. Exactly how this integration will work is under discussion - is it better to reward consistency in mood or reward variations? Should people get rewards for changing the mood of others?

3. CONCLUSION

A central goal of PASION is to produce technical developments in shared, computer-mediated environments that will enable the analysis of individual and group behaviours. Improving the quality of social interactions in a mediated game is not only of interest to the gaming community. *Play* can be seen as the proving ground for much that is important in human social development. Therefore the results may find more general applicability within a variety of social environments. In business, for example, where workers may have their communications mediated to enable more productive interactions.

In the area of social gaming, PASION's goal is to explore the design space of mobile games in which the social and behavioural state of group processes can be communicated or manipulated as part of the game. To aid in this exploration, a theory regarding the effects of social presence on player interactions is being developed. Familiars is the initial prototype for this new genera of game. Large-scale user studies of this prototype are planned through which it is hoped to get a clearer picture of the possibilities of socially aware mobile gaming and in particular how they may be useful in improving the quality of mediated communication within groups.

4. ACKNOWLEDGEMENTS

5. REFERENCES

1. Bell, M., Chalmers, M., et al. Interweaving mobile games with everyday life, *ACMCHI* 2006

2. Brugnoli, M. C., Rowland, D. et al. Gaming and Social Interaction in Mediated Environments: the PASION Project, *eChallenges 2006*

3. Caillois, R. Man, Play and Games, *University of Illinois Press*, 2001 edition

4. Casey, S. and Rowland, D. Gophers: Socially Oriented Pervasive Gaming, *GDTW2006*

5. Doctorow, C. Down and Out in the Magic Kingdom, *Tor Books,* 2003

6. Drozd , S., Benford, S., et al . Hitchers: Designing for Cellular Positioning, *UBICOMP 2006*

7. Lin, Nan. Building a Network Theory of Social Capital. *Connections 22(1):28-51.,* 1999

8. Reeves, S., Benford, S., et al. Designing the Spectator Experience, *CHI 2005*

9. Wasserman, S. & Faust, K. Social Networks Analysis: Methods and Applications, *Cambridge Uni. Press,* 1994