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Taking a Romantic Adventure Together: Explore the Design of Virtual Travelling for Couples in Long-Distance Relationships

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ABSTRACT

This research explores the design possibility to create an online adventure for couples in long-distance relationships. Three missions – intensive eye contact, future planning, and cooperative work – were designed and realized on a virtual space on *gather.town*. Two couples participated in the user test. The result shows two different practices of couples to solve a joint problem and potential and concerns when designing adventurous experiences to enhance couples' joint activities.

Keywords: Long distance relationships, Online interaction, Experience design, Joint action, Virtual travelling

INTRODUCTION

Metaverse, one of the most popular terms since October 2011 (google trends research, 2022), can be generally understood as a social space in a virtual environment (Brown, 2021; Ball, 2021). While this idea seems new, its principle concept can be traced back to Xerox PARC's *Media Space* (Stults, 1986) in the 80er or Ontario Telepresence Project in the 90er (e.g., Buxton, 1997). The essential attempt in these projects (including Metaverse) is to explore the potential social activities via the internet. While the elder approaches are translated into modern social media such as Facebook, Instagram, or LINE, Zuckerberg's call for completely virtual lives grabs the audience's attention because of the crucial communication barrier caused by COVID-19.

At the end of 2019, COVID-19 broke out. For epidemic prevention, people are expected or demanded to stay, work, and do everything possible at home as much as possible. As a result, various tools or platforms for online interaction are developed and used to serve diverse social requirements, such as *google meet*, *Zoom*, *gather.town*, or *Hubs*. Some platforms like *gather.town* or *Hubs* allow personalizing virtual spaces and programing little interaction mechanisms, which inspires us to create a virtual space for couples in long-distance relationships (LDRs).

While plenty of design research have been conducted to explore design possibilities of long-distance interaction and study the mediated intimacy

(Greenberg & Neustaedter, 2013); (Hassenzahl, Heidecker, Eckoldt, et al., 2012), we are interested in creating a joint traveling experience for couples in LDRs with the help of *gather.town* platform. In the following, we make a short review of related works, present our design, result of the field tests with two LDR couples, and conclusion at the end.

LDR AND JOINT ACTIVITIES

The lack of joint life experience is one of the significant factors challenging LDRs' maintenance (Aylor, 2003). In fact, couples' relational bond without joint lives is more committed than maintained (Pistole et al., 2010). Besides, couples in LDRs also lose channels for their mutual caregiving and care-seeking practices (Pistole, 2010). Finally, to maintain their relatedness and cope with insecure feelings, LDR couples need to adopt different strategies in their daily lives (Rempel et al., 1985). The most common strategy is to make regular phone calls or video calls. Other strategies may also be binge-watching and playing online games together or planning some future activities when they meet each other again.

Having joint activities is also a potential strategy to maintain LDRs. Studies show that, through fulfilling a mission or a task together, couples can boost the deep intimacy (He, 2013). In more novel or even thrilling events, joint experience enhances relational satisfaction by mutual caregiving and the experienced secure feelings (Cortes et al., 2020). Among the existing technology-mediated interactions, (Hassenzahl, Heidecker, & Eckoldt, 2012) summarized the six design strategies: awareness, expressivity, physicalness, gift-giving, joint action, and memory (reminiscing), while joint action as design strategy suggests devices to allow a joint goal and cooperation.

Joint action can have diverse forms. A more long-term and routine-based activity is, for example, taking care of a pet together. For example, (Chien & Hassenzahl, 2017) prototyped a feeding machine with a magic bowl and attempted to help LDR couples pet-caring over a distance. In (Chien et al., 2016)'s study of their *Furfur*, they identified LDR couple's mutual supportive behavior in caring for a robotic pet together. Mueller et al.'s (2007) headsets proposed interactive long-distance jogging practices. The users get aware of the physical status of the remote partners via the music played from the earphones.

A short-term and task-based activity can be solving problems or celebrating together. For example, (Kirk et al., 2016) designed interactive devices for performing mini celebrating activities together over a distance. In the game task, R. Pan et al. proposed that distant couples each obtain ten puzzles, moving them in their hands on a table, and trying to complete puzzles on the screen (Matkin et al., 2017). Mueller (2003) proposed a set of long-distance kicking sports games so that two people in different places can complete the task.

This paper proposes an online traveling experience designed for couples in LDRs. In the following, we introduce our three concepts built on *gather.town* and the results and analyses conducted in a qualitative manner.

Table 1. Three types of events that long-distance couples can try.

Concept	*Seeing-you Seeing-me*	*Drawing Our Future*	*Follow Me*
Strategy	emotional exchange	plan joint activities in the future together	overcome obstacles together
Goal	promote eye contact, gaze at each other, romantic interaction	commitment, reflection, joint practicing	joint task, teamwork & cooperation, communication skill

DESIGN CONCEPTS

Gather.town is a web-based platform for 2D online space. It allows geographic stroll, video conferencing when engaging with other online users, self-made maps, and some interactive mechanisms, such as creating NPCs. From a previous survey with couples in LDR, we conceptualized three "missions" in a joint online journey. These three missions represent three strategies for coping with different issues in LDR (see Table 1, explained in the following). The three missions are translated into different rooms with tasks and placed in the maze on *gather.town*. The couples have to accomplish the missions together to escape the room and go to the following location.

A. *Seeing-you Seeing-me*

The lack of physical intimacy in LDRs inspires us to create some moments of intensive eye contact. At the entrance of *gather.town* map, a small introduction is given for beginners (Fig. 1-left), the couples will enter a space for the first task. In this room, the long-distance couples are asked to look at each other via video stream, carefully observe their facial features, and draw the partners' faces on a virtual whiteboard (featured by *Eraser*) in the room.

B. *Drawing Our Future*

For LDR couples, whether they shall have a "joint future" is the significant commitment to maintaining a relational bond. However, this idea largely depends on whether they are managing it properly. After the couples leave the first room and take a walk on the map, they will enter the second special area. There is a bulletin board (featured by *Google Jamboard*) with some instructions. Couples are asked to discuss with each other and pin their future goals – from close to far-future – onto it.

C. *Follow Me*

After the two tasks, the couple will travel to the third level. A labyrinth with dense fog lies in front of them. Two entrances are waiting for each one of them. When they move into their own path, they notice that the labyrinth has mirrored two parts. One is walking on the part with guidelines showing on the ground; the other one is walking in fog without seeing where s/he is (Fig. 1-right). The one walking on the clear ground has to guide her/his partner to move in the fog. Any wrong move will transmit the player back to the start point. Later in the labyrinth, the fogged and clear grounds change. Now, the one who was guided by the other has to make guidance.

Figure 1: The maze and missions on *gather.town*.

D. *The End*

At the end of their journey, the couple can look at their achievements as a small reward for their adventure.

PROCESS

Two long-distance heterosexual couples (four participants aged 23 to 28, students) were invited to travel together on our map. They were first interviewed about their relational situation and then joined the map online. The first author played the role of NPC on the map, observed the participated couples, and recorded their interaction. After the travel, they were interviewed again and asked to fulfill the questionnaire to evaluate their experience. The complete experiment took about 2 hours. In the end, the participants were given a small gift for gratitude.

The questionnaire included an overall evaluation and four scales, which are PANAS (Watson et al., 1988; 20 items), Memorable Tourism Experiences Scale (MTE Scale; Chandralal & Valenzuela, 2015), Needs Fulfilment Scale (FFS; Sheldon et al., 2001; Hassenzahl et al., 2010) and Game Experience Flow Scale (GEF Scale version 4; Fang et al., 2013). Four scales make up the questionnaire of this study. PANAS tests participants' emotional profiles with ten positive emotions and ten negative emotions. The original MTE Scale has ten constructs. Among them, three do not fit an online adventure. The rest seven are self-beneficial experience, novel experience, affective emotions, perceived significance, social interaction with people, serendipitous and surprising experience, and fulfillment of personal travel interests. We select a nine-constructs Needs Fulfilment scale, including autonomy, relatedness, security, stimulation, self-esteem, physicalness, competence, popularity, and meaningfulness. GEF Scale has six parts: challenge & skill balance, clear goals, concentration on task at hand, paradox of control, immersion, and autotelic experience.

RESULT

An Overview

The profile of FFS (Figure 2) shows a generally higher score on relatedness, indicating a joint experience during the experiment. On the analogy of travel, the MTE Scale shows a consistent result: Both members of couple 1
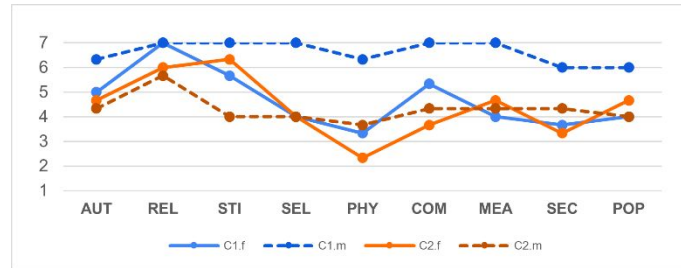
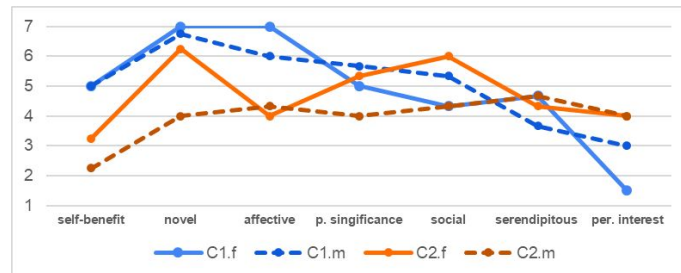**Figure 2:** Result of the Needs Fulfilment Scale.

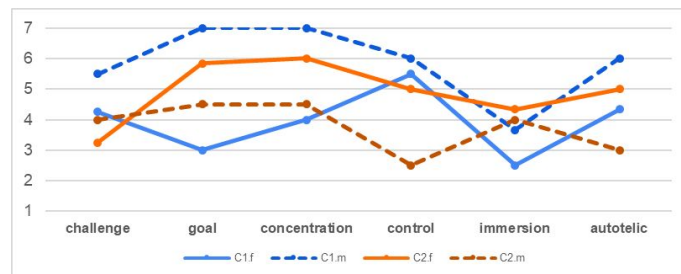**Figure 3:** Result of the Memorable Tourism Experience Scale.

Figure 4: Result of Game Experience Flow Scale.

C1.f and C1.m consider the experience as more emotional and novel, while C2.m reported a low score on affective emotions (Figure 3). Besides, traveling in a virtual world lacks an orientation to the meaning of the location. As a result, the scores on self-benefit experience and personal interests are low, except C2.m. On the analogy of games and comparing to other scales, participants reported a relatively higher score in the dimension of concentration and goal (Figure 4).

The Three Missions

C1 was very engaged in the face-drawing task. They showed curiosity about their look under their partners' hands. C1.f, "I was thinking that he must have drawn me poorly – he is screwed." C1.m replied, "That's because of the mouse. It doesn't work fine." C1.f, "anyway, I like this task more than the other." In fact, C1.m made a quite delicate drawing – with different colors
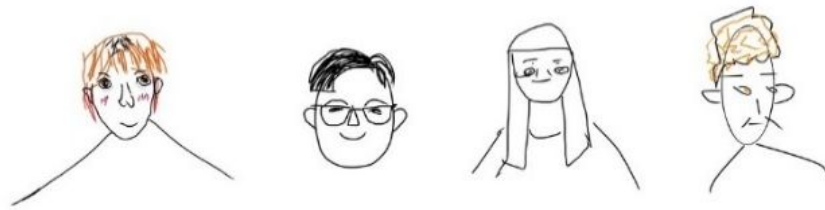
Figure 5: Portrait of a long-distance couple for a partner.

Figure 6: Composed future plans in the second mission.

in his work (Figure 5-left). C2.m was a little absent-minded in the drawing mission. He said, "I was only thinking about how to finish."

In the second mission, C1 was also more engaged than C2. A well-motivated discussion about their future can be identified (Figure 6). "It reminds me of our former discussion. Many things we have committed for a long time are not done yet. Now, we remember our goals and would like to achieve them" (C1.f). In a later talk with the couple, C1.f told us that "we would think back to our discussion in the experiment, and then we checked our joint goals in life which we have not achieved for a long time […] we think that we should hurry up and finish them." C1.f also took this task as an opportunity to make wishes, which bothered the partner a little. "Someone just kept making wishes and disrupted the discussion" (C1.m). On the contrary, C2 reported a low motivation in this task. C1.m, "we never plan. We are more freestyle. At that task, we just made some ideas and put them there."

In the labyrinth of fog, C1.m found that the mechanism generates some interaction. However, "by just telling her to turn right or left was not very inspiring – something missing" (C1.m). C1.f was depressed when she could not accomplish the task by following her partner's guide. They made a minor dispute during the interview. In this mission, C2 showed more interest. "For me, walking in the labyrinth was more interesting. Although it requires some cooperation, the mission was easy to me" (C2.f). C2.m, who was not motivated in the previous two missions, was also engaged in the third one. "It was a kind of cooperation […] and required mutual understanding" (C2.m). We inquired about their gameplay experience and found that they are experienced players, which leads to a more positive evaluation of the third mission. C2.m, "it was closer to the games that I have played before."
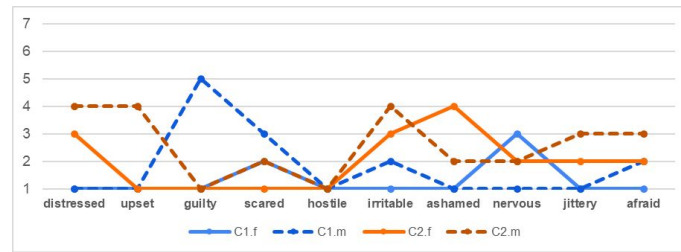
Figure 7: Result of negative affection in PANAS.

Joint Action: Side by Side vs. Walk-Behind

While the first mission aims to enhance non-verbal interaction (eye contact) and the second verbal communication, the third mission has a more complex construct. We can identify two different practices from C1 and C2. C2 are both experienced game players. C2.f, "When walking in the labyrinth, cooperation with each other is highly needed. The games we used to play were all for single-players, but now we are trying to fight together." C2.m could quickly identify the mechanism of the labyrinth, "there is a separation in the middle, the two other areas are the opposite. To work together, we need much tacit understanding." As a result, the labyrinth was too easy for them. The perceived challenge was scored low (Figure 4).

As for C1, C1.m played some computer games and found a walk-through strategy. However, C1.f, as an inexperienced game player, was in trouble. As a result, she played in a highly dependent way. "In the game, because he is very good at playing games, he led me in the game" (C1.f). C1.m found a shortcut (a bug in our design) and tried to guide C1.f to follow his trick. However, while C1.m's guidance could not lead his partner to get out of the trouble, the C1.f's trust became dissatisfaction. An interesting communication in the interview: C1.m, "I just tried several times and could go through it […] you just have to make several tries, and then you will get the idea." C1.f, "but the point is that our cooperation was expected in this mission! […] You may be right, but we have to inform each other about how our cooperation should go on or, at least, discuss how our situations were." C1.m, "but I didn't know how to explain the situation. It was difficult to describe. When you talked about your situation, I could not understand." C1.f, "well, fine!" The broken cooperation is reflected in their reported PANAS. C1.m has a high score on the guilty – for being unable to help his partner.

DISCUSSION & CONCLUSION

This study proposes an online trip designed for LDR couples and serves as an initial exploration of design possibilities. We identified some characters in participants' experiences. However, the result should be understood as potential considerations for future design but not generalizable theory.

In the experiment, our couples experienced joint activities they had not done before, such as playing games online, drawing each other, reviewing their joint future, and breaking through obstacles. While we designed the

experience on a virtual map, the overall experience was more like a game or task rather than a journey. "A game has a planned route, while a journey is freer without limitation" (C1.f). C2.m, "the experiment was like a task to perform or a problem to solve, which was quite goal-oriented." C1.m, "maybe combining the tasks with google maps is a good idea. It would become an adventure or journey." A combination of a virtual space with real world would be our future mission.

Drawing each other's faces to promote intimacy worked well as a warm-up for couples to start a joint journey. In this process, the couples made kind chats and looked at each other carefully through the video screen. We observed a relaxing and fun-making interaction. Although they expressed concerns that their partners' portraits would be done unlovely, the final works were just a droll to make both parties laugh.

Planning the future together packaged in a joint online task requires couples' motivation to initiate. From our observation, couples started with aimless chats and gradually went through a Q&A pattern. We noticed that planning for the future could be misinterpreted as making promises, in which an expression of personal wish become powerful and potentially dangerous.

To the enhanced interaction possibilities for LDR, we see different practices and strategies in the participants' experience. Since all physical performance can only be done independently, discussion and decision-making can only achieve their mutuality. The virtual map created a condition of alienation, where couples were demanded to communicate and understand each other's needs and ideas. In the experiment, the two couples could listen to their partners patiently most of the time, while they sometimes encountered poor communication. However, after more intense communication, they also coordinate their goals. Besides, different coordination is possible. Couples could stand side by side and play their role equivalently with mutual trust, or they could also align themselves in a dependent relationship and play the leader's and follower's roles.

Overall, we saw the potential of a virtual space for an intimate adventure. While an amusing adventure seldom exists in real life, this study demonstrates an alternative. We also show that mutual support and relational reflection need to be considered in the design of their journey experience.

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