

# The Channel Surfers: Dynamic Swapped-perspective Collaborative Game for Dissolving Interpersonal Boundaries

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## ABSTRACT

Games are often used as a way to study or support to communication and interaction between people. This project uses a collaborative game based on a dynamically swapped perspective as a way of inquiry to how players communicate, interact, and lead each other in an unfamiliar environment.

“Channel Surfing” is an activity for three, where identically dressed players, attempt to complete a simple task, not being able to see anything else but and inside of a box and a world from someone else’s point of view every 12 seconds.

Through analysis of over 40 playtests, we identified couple player created game mechanics allowing players to complete set tasks, while experiencing each other's point of view. Similar to the changing the point of view, players change the leadership organically and without previous agreements.

In this peculiar situation of anonymous gameplay, players not only dissolve boundaries between acquaintances and strangers, but also changes the way how players perceive oneself.

## INTRODUCTION

Games have long been used as an efficient way of supporting social interaction. Family board game nights or weekly bridge meet-ups among friends, help players satisfy their psychological need for relatedness and create shared experiences that draw them closer than before[4]. Collaborative games offer players a way how to have fun and help each other in difficult situations, but these games also train players’ social skills, especially their ability to work in a team [3].

“Channel Surfers” is a platform that give players a sense of sharing each other's bodies, and evolved to a study of collaboration, while experiencing a dynamic changing point of view of your co-player. ‘Channel Surfing’ is an activity for 3 players. Each player wears a helmet, equipped with a camera and a screen, and sees images from point of view of the others, and by that dependent on the view provided by their co-players and other senses (Fig. 1). Participants wear identical overalls, gloves, and shoe covers to disguise their identity. Players are asked to complete a series of simple tasks based on collaboration and communication.

We wanted to research how will a simple bodily interaction, like searching for some boxes, stacking them on top of one another, and navigating in space will be influenced by dynamically swapped perspective, and what will be its effect on the players and their behaviour.

Our contribution is a series of observations identifying game mechanics created by the players, as well as better understanding of how strangers and acquaintances collaborate, and take leadership within this context.



Figure 1. Photo of the Channel Surfer helmets.

## RELATED WORK

In similar work, dealing with view-swapping like The Machine to Be Another [1] or work of Hiroyuki Iizuka et. al.[6] the big part of the experience is based on synchronization of movements of two users. The Machine to Be Another applies the switched perspective as a tool for forming an emotional connection and empathy, whereas the other work studies a collaboration of the users based solely on visual stimuli. Our take on the dynamically swapped perspective, is based on synchronized movements or actions, and focuses on embodied interaction between the participants. “Channel Surfing” focuses not on the impact on the individual, but on the interaction between the participants.

## METHOD

We created a provotype[10] as a means of inquiry of how players interact or collaborate within a playful, collaborative activity, while experiencing a dynamically changing foreign point of view.

The provotype was presented at Playful Art Festival in 'sHertogenbosch, Netherlands[14], in June 2016, Pixelache Festival in Helsinki Finland[15] in September 2016, and Pixelache satellite event in Jyväskylä Finland[16] in October 2016.

We ran 46 play testings[2] with 138 random visitors consisting of people different nationalities, genders, groups of strangers and people who knew each other. (Fig. 2) All the sessions were filmed, and majority of them was followed by a semi-structured interview.



Figure 2. Participants putting suits and helmets on before a session can begin.

### PROJECT DESCRIPTION

Our provotype is a system of three wearable cardboard helmets, equipped with a wireless First Person View set transmitting images from one's camera, to another's display within the helmet.

The Arduino controllers enable every 12 seconds continuous and dynamic changing of three frequency channels that allow sending video from camera to different screens. In this case player A could see the world through the camera of player B, player B see the visual perspective of player A, so they can experience each other's perspective, but then perspectives are changed so player A can suddenly see through the camera of player C and so on (Fig. 3).



Figure 3. The diagram to the left shows how the dynamic swapping between the participants works. The photo shows the dynamic swapping first-person perspectives between players A-C.

In collaborative social play, players are encouraged to be equal and work together towards a shared goal engaged in the same activity[9]. We achieved this by putting the players into similar overalls and giving them gloves and shoe covers.

Each of the participants are asked to take a large cardboard box and together create a tower. Then repeat this activity with another set of boxes and in the end, navigate each other through the space in between the two towers.

### ANALYSIS

To understand what mechanics and play patterns that emerge when playing with the system, we analysed how participants communicate and interact within a session. Through the analysis of multiple sessions, we identified main themes that emerged during gameplay. In the following parts are described how they functioned.

#### Narration

Players usually start the session with describing their actions to their team: "I'm walking forward" or "I'm looking down", are not only informing players on the actions of their partner, but can also help them identify whose camera they are looking through. Knowing who is providing the image can help addressing possible requests and commands. Announcing the completion of a step by saying "I've got a box" allows the players to track progress of the game as well as stating a personal contribution to the group effort.

#### Requests and commands

Requests and commands are often used to direct a point of view seen by a player, as well as navigating another player to a specific place or object. They can also be more general like, "Let's do this!" or "Should we do it like that?" A large part of the activity is directing a player or their view. When searching for the box, players often command other players to look in a specific direction to give them an overview of the situation:

"Look to the left a little bit. OK, Perfect. Just to the left a bit more, and down a little bit. Perfect, now stay around this way".

When the box is visible, players often navigate each other by requesting or commanding a player to move. (Fig. 4)



**Figure 4. This photo shows how participants gives commands to each other. Player 'A' is telling 'B' where to go so the box can be picked up.**

### View-giving

Next emerged theme from the analysis is view-giving where a player consciously or unconsciously provides another player with one's point of view. Players are in control of each other's video stream. They can point their head and consciously or unconsciously transmit information to another player.

Conscious view-giving is visible in what participants called "scanning". (Fig. 5) The person, not aware of their surroundings, or what they are "looking" at, turns around, looks down, or steps back, giving the other players a chance to see.



**Figure 5. An example of a view-giving situation. Participant 'A' in 'scanning' the surroundings making it easier for participant 'B' and 'C' to navigate.**

The player consciously view-giving, can announce his or her action, to get the attention of other players and prepare them for the incoming information. The person consciously view-giving, can also do it unannounced, hoping that the person seeing their view will say what they see.

### Roles

Fluctuating roles often occur when participants are playing with the "Channel Surfer" set.

Participants are not told to select a leader of the team, a person independently takes the role based on the situation. When becoming a leader of a team, one must get accepted as the leader from the team members, otherwise a challenge on the leadership can occur[12].

Team roles do not have to be static, people may adapt into different roles during a team's life-cycle[7].

The participants automatically created their own strategies when the game began which must be accepted by the others:

"Can we all stop?", "Hey, let's try to coordinate. So ehm, I look down, ok?" or "Hey you, can you show me the box?"

When creating a strategy, it is often the participant who starts the negotiation that gets the role as the team leader. By starting out as the leader doesn't mean you will keep this role because roles often switch between the participants, depending on who is in a trouble during the game. This happens because the participants do not have the possibility of seeing their surroundings from their own view, they often have to give their team mates orders if they need help. The switching between who has the leading role during a game happens without a conflict and has a natural switching style that adjusts depending on the problems the team is trying to solve.

There are different ways of acting as a leader in a team. The leader's role during game play will mostly be seen in a democratic way where the participants will discuss how to solve the problems they meet, but can also be done in an autocratic way with commands[8].

### Self-identification

Participants could forget that they didn't have their own perspective. If their visual perception on display moved, we observed that their body movement would do the same. Some participants could easily recognize themselves, mostly by their height, others would use movement when they saw someone in their view for self-identification. Also, the hiding personalities of players helped to see everyone as a same person – just a body. The interpersonal boundaries of participants disappeared, physical contact such as touching or talking doesn't feel bad because the player's mind is embodied somewhere else[5].

"You sort of forget where you are if you're concentrating on the task of looking, making, asking somebody to look somewhere. She was there, He was there, so I thought I was there. I was kind of physically there but I was looking from there very intensively. It was the moment when I was losing location and action". (Peter)

### FINDINGS

One of the first findings in this project was that people would, rather smoothly, organise themselves despite limited

rules or instructions. When the system is switched on, players vocalise what they see and share information between each other to better understand the unfamiliar situation. Players are rapidly learning how the setup works and how they can use it to complete the tasks

Rocha[11] identifies two patterns for collaborative game design relating to goals: shared goals and synergies between goals. Both patterns are visible when “Channel Surfing”, as each of the players has a box to find, and as a team assemble a tower out of their boxes, by which the end goal requires both individual effort and collaboration of all participating.

When a stranger felt left out, the situation forced him or her to communicate and ask for help from the team. When a passive player was empowered with the best point of view of the other desperate player, s/he was engaged into social interaction, encouraged into a supportive role, and started to help. Even when a passive player was just giving view, s/he was still part of the activity. They would not be able to collaborate without his or her help.

Our investigation of high performing teams showed that it depends on accepting a communication strategy and on the dynamic change of team roles, where an emerged informal leader takes responsibility for the teamwork that leads to supporting each other. Based on the conducted interviews, the player’s level of acquaintanceship matter in the experience, and in some instances players preferred to play with strangers[13].

## CONCLUSION

The provotype encourages the participants to communicate their actions from the beginning of a session which leads to the players’ collaboration. A big part of a session is navigating co-players by requests and commands. This helps directing another player’s point of view and helps to navigate others towards a specific place or object. Players also help each others by providing a view-giving. Dynamic change of team roles together with emerged an informal leader allows players to agree on shared communication strategy. The provotype enables to dissolve players’ interpersonal boundaries so they easier collaborate, enabling them to learn how their co-players react to different situations and learn how they communicate and work in a team. Despite limited rules and instructions, the game mechanics, partially created by the participants, follows those frequently used collaborative game design.

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