Exploring Anonymity in Cooperative Board Games

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ABSTRACT
This study was done as a part of a larger research project where the interest was on exploring *if and how* gameplay design could give informative principles to the design of educational activities. The researchers conducted a series of studies trying to map game mechanics that had the special quality of being inclusive, i.e., playable by a diverse group of players.

This specific study focused on designing a cooperative board game with the goal of implementing anonymity as a game mechanic. Inspired by the gameplay design patterns methodology (Björk & Holopainen 2005a; 2005b; Holopainen & Björk 2008), mechanics from existing cooperative board games were extracted and analyzed in order to inform the design process. The results from prototyping and play testing indicated that it is possible to implement anonymous actions in cooperative board games and that this mechanic made rather unique forms of gameplay possible. These design patterns can be further developed in order to address inclusive educational practices.

Keywords
Inclusive education, board games, design based research, game mechanics, gameplay design patterns

INTRODUCTION
In 1994 UNESCO held a conference in Salamanca, Spain, addressing issues regarding children's equal rights to education. Three hundred participants representing 92 governments and 25 international organizations came to the worldwide consensus that educational systems should be designed to acknowledge the wide diversity of children's abilities and needs, and that this was best achieved by promoting *inclusive* education. Inclusive education has been described as the attempt to overcome the difficulties that prevent some children's participation in ordinary schools. It is an attempt to create educational environments for all, regardless of disability, race, gender, social class or sexuality (Booth & Ainscow 1998). In the Salamanca statement it is said that: "Regular schools with this inclusive orientation are the most effective means of combating discriminatory attitudes, creating welcoming communities, building an inclusive society and achieving education for all" (World Conference on Special Needs Education Access and Quality 1994, p. ix).

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To create an educational system for all children is a commendable ambition but at the same time an enormous challenge for the teaching profession. How do you create educational activities that acknowledge a diversity of capabilities, needs and cultural differences? To have individual activities within the same spatial place can hardly be seen as facilitating inclusive education. Such strategies recreate social divisions on the micro-level of the classroom. In order to achieve true inclusiveness, children need to participate in collaborative activities. One way that was suggested in the research project *Boundary Crossing Games*, funded by the Swedish Knowledge Foundation, was to learn from other activities that seem to have the quality of being inclusive. This paper reports a design study that investigated what kind of gameplay that a specific game mechanic, *anonymous actions*, had when implemented in a cooperative board game.

THE PROJECT BOUNDARY CROSSING GAMES

The idea in the research project was to investigate what kind of game mechanics and design patterns (Björk & Holopainen 2005a; 2005b; Holopainen & Björk 2008) that facilitated a game to be inclusive. *The game design pattern collection* (Björk 2011a) is a detailed description of different game characteristics. These design patterns make it possible to analyze and see how different rules interact or counteract and how certain design choices affect the game experience.

By extracting patterns that facilitate inclusive gameplay, it would be possible to produce knowledge that could be used in order to design inclusive educational activities. Gameplay in both digital and non-digital games, such as card games and board games, were studied. Especially interesting in this context was to investigate what kind of game mechanics that were prominent in games labeled as "family games." A game that is supposed to capture the interest and be playable by the diverse members of a family is likely to have inclusive mechanisms. The project also looked carefully at online games since it has been reported that players with diverse backgrounds are enforced to collaborate and learn how to overcome obstacles in the game environment. In online games, the identity that the player has outside of the game world is of less importance (Hollins & Robbins 2009; Shaw 2011; Toro-Troconis & Mellström 2010).

LEARNING FROM THE WORLD OF BOARD GAMES

The survey study

One study approached the world of board games and was designed to utilize the knowledge of experienced board game players. Ten games were chosen from the community Board Game Geek (BGG). BGG is the world's largest online board gaming resource and community. One of their features is that they list the popularity of games based on gamers' votes. In order to find suitable games to investigate, the following procedure was deployed. The two highest rated family games, *Stone Age* (Brunnhofer, 2008) and *Pandemic* (Leacock, 2008), were chosen. Since the project focused on game mechanics, we complemented with the two highest rated games in two age groups, games considered to be played by six- and eight-year-old players. "Family games" is a vague category and, from the list, it was obvious that some games had rules that would be great for a diverse group of players, but were not considered as family games due to their themes. The two highest rated games that according to BGG could be played by a 6-year-old players were *Pitch Car* (du Poël, 1995) and *Blokus* (Tavitian, 2000). The two highest rated games that could be played by an 8-year-old player were *Dominion* (Vaccarino, 2008) and *Memoir '44* (Borg, 2004). We then added the games *Ticket to Ride* (Moon,

2004), *Carcassonne* (Wrede, 2009) and *Small World* (Keyaerts, 2009) that were high on all three lists and are considered as classics. Finally we selected *Puerto Rico* (Seyfarth, 2002); this game was not on any of the lists but is rated number two of all games and considered as one of the best board games ever. Each of these games' surveys was developed and distributed to different board game communities in Sweden.

Each survey asked the informants to grade how inclusive they felt the game rules of a specific game was in relation to: young (7-year-old) players, elderly players, players that had limited knowledge of the language of the game and the other players, players with a minor intellectual disability (Down's syndrome) and inexperienced players. The questions were designed to be answered on a four-graded scale where 1 was not inclusive at all and 4 very inclusive. The informants were asked to grade how inclusive they thought a game was in terms of both participating and chance of winning. Each game thus got an average score in how expert board gamers judged their mechanics to be inclusive or not in relation to different kinds of players.

The top inclusive games in terms of a player's ability to participate differed rather little among the different groups. *Pitch Car* and *Blokus* were the two top games in relation to all kinds of players and had generally a very high score (between 3.4 and 3.9). An exception was the group inexperienced players; *Ticket to Ride* was sided with *Pitch Car* with a score of 3.8. *Puerto Rico* was either a family game or considered as being playable by younger children and was found at the bottom of all ratings together with *Dominion* and *Memoir '44*.

Pitch Car is a dexterity game relying on the player's ability to finger-flick pucks around a track. The question in *Pitch Car* is not to see and choose among a number of actions; it is to execute an action as skillfully as possible. *Blokus* is an abstract strategy game with Tetris-shaped pieces that the players try to get rid of by placing them on the game board. There are very simple rules how to conduct a legal move. One's game pieces have to touch each other's corners but can't touch each other's sides (typically "a minute to learn, a lifetime to master" kind of design).

The expert board gamers' view about the different players' chances of winning was rather similar to how they rated the players' ability to participate. Yet here there was one exception that was informative. While *Pitch Car* was rated as the game that all different kinds of players would be able to win, it was closely followed by *Blokus, Ticket to Ride* and *Carcassonne*. The cooperative board game *Pandemic* was rated as number two for the young players, the elderly players and for players with a minor intellectual disability. This can be explained by the fact that winning in *Pandemic* is a cooperative effort. The individual player's actions will not be the only thing that affects the game state. Players can also help each other with suggestions on how to act without any strategic considerations about what kind of information they share with each other.

If an activity is supposed to be educational, it is a good thing that those who participate have a chance of succeeding with their tasks. While the game mechanics of a game like *Carcassonne* might be very simple, one can easily join in without knowing the complex strategies and scoring rules, but the chance of a less skilled player to win is low. At the same time if focus only lies on all players' equal opportunity for success, then games of chance would be optimal from an inclusive perspective. The problem is that chance is not a very fruitful mechanism from an educational perspective. Here, cooperative games

might have interesting features that could reveal ways of designing activities that are both educational and inclusive.

Focus groups on cooperative board games

The researchers decided to further investigate cooperative board games as a model for educational and inclusive activities. The researchers participated in play testing with two focus groups. The other participants in the groups were mixed with experienced players (one male expert board gamer and one male gamer familiar with the most popular board games), inexperienced players (a female player with very little gaming experience), children (a 9-year-old boy), and teens (15- and 18-year-old girls). The idea was to investigate and map the phenomenon of cooperative board games in order to gain a deeper understanding of their mechanics. The focus groups played the following cooperative board games: *Lord of the Rings* (Knizia, 2000), *Pandemic* (Leacock, 2008), *Forbidden Island* (Leacock, 2010), *Ghost Stories* (Bauza, 2008), *Castle Panic* (De Witt, 2009), *Space Alert* (Chvátil, 2008), *Shadows over Camelot* (Laget, Cathala & Delval, 2005), *A Touch of Evil* (Hill, 2008), *Arkham Horror* (Launius & Wilson, 2008), *Battlestar Galactica* (Konieczka, 2008), *Terra* (Faidutti, 2003), *Space Hulk: Death Angel* (Konieczka, 2008), *Dungeons & Dragons: Castle Ravenloft* (Slaviczek, Mearls & Lee, 2010), *Lord of the Rings: the Card Game* (French, 2011) and *Yggdrasil* (Lefebvre & Rabellino, 2011). The selection of cooperative games was based on information at BGG. The researchers tried to play as many different cooperative board games as possible and focused on games with high ratings. Some titles like *Red November* (Faidutti & Gontier, 2008) and *Defenders of the Realm* (Launius, 2010) were left out since they were out of print.

The games were play tested at least once in one of the focus groups, sometimes in different constellations of players. After each session a semi-structured group interview was conducted with the players. These interviews focused on how the players had experienced the gameplay. *Space Alert*, being a rather complex game, was played in a different constellation with mainly board game experts. These focus groups sessions led to some insights reported in the next session.

THE DYNAMICS OF COOPERATIVE BOARD GAMES

In cooperative board games the main idea is that players shall collaborate in order to beat the game system. Typically these games have rules for how the "board" progress towards the conditions for losing the game. The players need to prevent the "board" from reaching these conditions while taking actions towards the winning conditions. In some cooperative board games players are given different abilities that they need to utilize effectively in order to win the game. Often strategies that make use of the players' variable abilities are effective. Thus functional roles (Björk 2011c) in board games stimulate collaboration among the players.

Play testing these different games showed that cooperative board and card games can have rather different characteristics in how they facilitate dynamics between players. Gutschera (2009) points out that the dynamics of a game are tied to the number of players in a game and how the players are organized. Gutschera (2009, pp. 2-4) separates between the following forms of games:

- Zero-player games
- One-player games
    - "Pure" one-player games
    - One human, simulated opponent
- Two-player games
- Two-sided team games
- One-sided team games
- Multiplayer games
- Massively multiplayer games

Each and every one of these game types has their specific characteristics. *Two-sided team games* and *One-sided team games* are team analogs to *Two-player* and *One-player games*. As Gutschera argues that *Two-sided team games* have more in common with *Two-player games* than with *Multiplayer games.* If a game has three or more players, which compete against each other, there will be some elements in the game that are unique to multiplayer games. For instance things like player elimination, coalitions and king making, i.e., a player that has no chance of winning, can take actions that determine who of the other players that wins (cf. Gutschera 2009, p. 4). According to Gutschera a unique feature of team games is that they do have inter-team dynamics, which is how a single player contributes to the goal of the team.

Multiplayer games tend to fall into two subcategories, *Races* and *Brawls*.

> "*Races* are built by gluing together a number of copies of a one-player game, one for each player. Each player is pursuing her own victory condition. /…/ *Brawls* are built by taking a two-player game and adding more players — think, for example, of adding more players to chess. /…/ Typically, the winner of a race is determined by some sort of scaled performance: a point score, time, or distance. /…/ Typically, the winner of a brawl is determined by some variant of 'last man standing": the players knock each other out of contention" (Gutschera 2009, p. 5).

It would be easy to say that cooperative board games by nature are what Gutschera labels *one-sided team games*, but the analyses of the different games played in the focus group study showed something else. Even though cooperative games are about having the players working together, many popular cooperative games have introduced variations to this genre. Some cooperative games share features with both two-sided games as well as multi-sided games. At least three different types of dynamics, which facilitate different forms of gameplay, can be found among cooperative games. I here refer to these as: *Cooperative one-sided team games*, *Cooperative games with a "tragedy of the commons mechanic"* and *Cooperative games with a traitor mechanic.*

Cooperative one-sided team games

Some cooperative games are "pure" one-sided team games where all players work together towards a mutual goal. *Pandemic, Arkham Horror* and *Forbidden Island* are all examples of this. Some games in the genre have rules for both competitive and cooperative play. For instance in the game *A Touch of Evil*, players decide if they want to see who can be the first to kill a villain (Vampire, Werewolf, etc.), terrorizing a remote village or they can join forces and together defeat an upgraded version of the villain. The competitive version then is, using Gutschera's framework, a multiplayer race with many single player games side by side. Some pure one-sided team games also have a single-

player option allowing one player to try to defeat the game system alone. Examples are the games *Ghost Stories* and *Space Hulk: Death Angel,* which are pure one-sided team games that can be played by one player.

Play testing these kinds of games in the focus groups revealed that an unwanted side effect could occur during game play. Cooperative games are meant to stimulate planning and discussion about how to tackle the situations that occur. The problem is that players then can give each other advice. Experienced players can easily fall into a role of directing the actions of the less experienced players, becoming "gameplay directors." To rely on the "gameplay director" is then a way for other players to be relieved of responsibility for their actions and less accountable for the outcome. If the other players lose too much of their agency to the gameplay director[s], they become indifferent to the game. The game then stops being a cooperative game and is more played in its single player option.

During a session of *Pandemic* in a focus group, some of the more experienced players became really involved in the game. This engagement meant that they tended to direct the actions of a player with less experience of board games. One player even found himself moving the less experienced player's game piece. In the interview afterwards, the inexperienced player, Rebecca, stated:

> Rebecca: I thought it was hard in the beginning. It all went so fast. And since you are so strong in the game I felt like no one listened to me. You just went "hey, let's go."
>
> Marcus (experienced player): Strong as..?
>
> Rebecca: Like you got some patterns right away that I didn't understand. It was like no one listened to me, you immediately took over.

Some games have communication rules that try to handle gameplay directing, like not being allowed to show or tell exactly what cards you have in your hand or like in *Shadows over Camelot* only being allowed to discuss strategies if you role play. These rules were very hard to follow in the focus groups and players tended to fall into everyday conversation and showed each other cards. *Space Alert* has time pressure, which in a sense handles game directing. Players are forced to choose actions themselves. It seems that time pressure also can enhance the game directing effect.

Cooperative games with a "tragedy of the commons mechanic"

Another variant of cooperative games is games using "the tragedy of the commons" mechanic like *Terra* and *Castle Panic*. In these games the players have individual goals but the systems are built to fall apart if the players put too much emphasis on achieving individual goals. Thus these games try to enforce collaboration, often with an educational purpose of illustrating the importance of sustainable use of resources (cf. Booth-Sweeney & Meadows 1995). Play testing these games revealed that the individual goals overruled these games' collaborative nature. Instead of handling the most urgent threat, players took actions in order to optimize their own score, which is exactly the idea with these games. In *Castle Panic* players are said to share the win, but the player who defeats most monsters becomes "the master slayer." This meant that the games came to share characteristics with multiplayer games. Just as Gutschera (2009) claims problems like *king making*, i.e., players who have no chance of winning can affect the outcome of the

game, emerged. For instance players did not trade good cards to the current leader of the game.

There was less of game play directing in these games. Even though discussions about what was best for the common good occurred, no one was held accountable for not listening to the advice of others. Players trying to direct the gameplay of others were also accused of acting in their own interests.

Games using a "tragedy of the commons" mechanic have been used in educational settings. The aim of using them here has then been to illustrate how a system "falls apart" when someone cannot see beyond personal short-term goals. It is difficult to see how this mechanic could be used to enforce some other forms of cooperative and inclusive activities.

Cooperative games with a traitor mechanic

Some board games, like *Battlestar Galactica* and *Shadows over Camelot*, try to avoid this effect by using a "traitor" mechanic. In these games one or more of the players are supposed to secretly work with the game board and ruin the other players' chances of victory. Typically the traitor is revealed sometime during gameplay. When this happens the traitor gets a somewhat different role and can affect the gameplay in new ways. Until the traitor is revealed s/he is supposed to secretly work against the other players. Thus this mechanic leads to a kind of gameplay where players are suspicious about the motives behind other players' actions. *Shadows over Camelot* has rules where it is uncertain if a traitor is present or not. Yet this uncertainty is enough in order to make players paranoid. This means that the cooperative dimension in these games suffers. Once a traitor is revealed, these games turn more into two-sided team games (Gutschera 2009) with asymmetrical goals, i.e., different winning conditions for the different teams (cf. Björk & Holopainen 2005).

The traitor mechanic also solves the problem of game directing. Just as with the "tragedy of the commons" mechanic, the motives of anyone suggesting a specific strategy can be questioned. But it does this at the cost of the games' cooperative nature. Thus it is hard to see how this mechanic could have anything to offer an inclusive educational activity.

The design challenge

This analysis of some popular cooperative board games showed that far from all games that are said to be cooperative are one-sided team games. Instead, they have mechanics that make them share features with two-sided games and multiplayer games. Since the aim of the research project was to see if we could use insights from the game world in order to create inclusive educational activities, *Pandemic* seemed to have mechanics that made it possible for a diverse team to be successful with a complex task. At the same time this kind of cooperative game had the problem of game directing, a side effect that was counterproductive in relation to the goal of creating an inclusive experience. A closer look at existing strategies that solved this problem, "tragedy of the commons" and "traitor" mechanic, revealed that even though these design patterns created interesting and fun gameplay they also ruined the cooperative nature of the experience.

From these insights a first design challenge was proposed. Is it possible to create game mechanics that keep the "pure" cooperative nature of a one-sided team game and at the same time avoid the game directing side effect?

Observations from the world of online gaming have suggested that anonymity is a factor that gives these kinds of games a "natural" inclusive quality. Attributes that in other settings could be stigmatizing are kept outside the online game activity (Linderoth & Säljö 2008). Offline identities are protected which makes online games socially "safe" (Steinkuehler & Williams 2006). Anonymity has also been suggested to have an educational potential since students can overcome fears, express themselves more honestly, and take social risks (Ryan 2008).

The project researchers also made some of their own observations on online games. These showed that in online games such as *Left 4 Dead 2* (Valve, 2009) and *DC Universe Online* (SOE Austin, 2011) the fact that players could choose to be rather anonymous seemed to relieve the pressure of performing well. Maybe one could design a cooperative face-to-face activity that had this characteristic of being anonymous?

The design challenge was reformulated. The hypothesis was that if the players did not know who made specific game actions in the game then this would decrease the pressure of being evaluated and thus fall back on the instructions of a gameplay director. It was also assumed that it would be harder for a gameplay director to take over since s/he could not address specific players. Thus the design challenge posed the question:

Is it possible to design a pure one-sided cooperative team game where the players' actions in the game are anonymous? Such a mechanic could then in a further step be built into an educational activity.

DESIGNING A COOPERATIVE GAME WITH ANONYMOUS ACTIONS

The core mechanic

The mere idea of people being present in the same room engaged in a cooperative activity, yet being anonymous seems like a contradiction. A face-to-face structure does not allow secrecy about who is participating. What is possible to achieve is secrecy about which player has made what action. A game that has such a mechanic is *Battlestar Galactica*. During so-called skill checks, the players must together play cards with a value that exceeds the value of a challenge. These cards are played facedown and two random cards are drawn from a deck are also played face down. Then one player shuffles all cards before looking at them and sorting them. Cards belonging to the wrong category are subtracted from the players' value on the skill check. This means that a traitor can secretly sneak in cards that increase the probability of a skill check being a failure. Thus no one knows who played what card.

This "play cards facedown before resolving" rule from *Battlestar Galactica* inspired the basic design of a game where players could act anonymously. A core mechanic was designed as a starting point.

Since cooperation is enforced by functional roles, it was desired that the players had varied abilities in the game. The idea was that a player should be assigned a secret character that only s/he knew that s/he was playing. The core mechanic should be based on having two different categories of cards, *Action cards* and *Support cards*. These cards should have the same backside. The turn should shift among the characters. The player who was assigned the character in turn should be allowed to play an *Action card* facedown. The rest of the players simultaneously should play *Support cards* face down. The cards should then be shuffled before being revealed and resolved. Thus, the players

could only know that a specific "character" had taken a particular action. They would remain ignorant as to which player was behind the action.

With this basic mechanic as a starting point, a full playable cooperative board game was designed.

The Game – Casino Heist

The theme

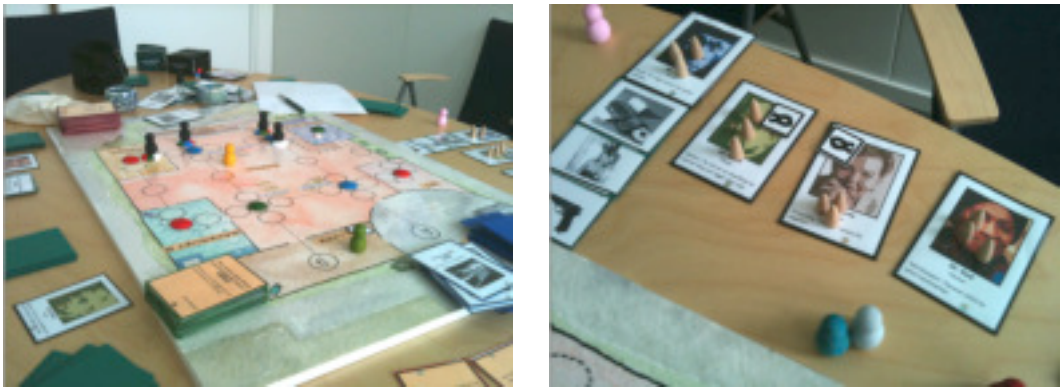
Since this design study aimed at exploring the possibilities of a specific kind of game and seeing if anonymous cooperation was even possible, it was not necessary at this stage to have an educational theme. Instead a theme that logically fit the rules was pursued. The researchers came up with the idea of using the fictional heist as a theme. The clever heist conducted by a team of colorful characters is a recurrent theme in fiction. It would also make sense that these characters only used codenames during their operation, not knowing the true identity of their cronies. The rules for not knowing the player behind the character would fit this theme. Inspired by movies such as *The Sting* (Hill, 2005 [1973]), *The Thomas Crown Affair* (McTiernan, 2000), *The Inside Man* (Grazer, 2006), *Mission: Impossible* (De Palma, 1996) and the movies in the *Ocean's 3-film collection* (Soderbergh, 2011), the theme was designed around a heist at a casino. The aim of the game that got the working title *Casino Heist* (Linderoth, 2011) is for a team of 4-6 characters to get into a vault at a casino, dig an escape tunnel from the casino basement to the sewers, grab as much loot as possible and escape before the casino is locked down. During this deed the team needs to distract guards and neutralize the casino's security. Otherwise the "alertness level" of the security will rise and finally the casino will be locked down and the players still in the casino will get caught.

Components

The game has the following components:

A game board depicting a casino overview with seven rooms: a vault, a basement, two security rooms, a restroom, a storage room and a large room with casino games. The board also has an overlay grid that directs the movements of casino guards.

Six different decks: a deck of action cards, a deck of support cards, a deck of "alertness" cards, a deck of tunnel cards, a deck of vault cards and an accusation deck.

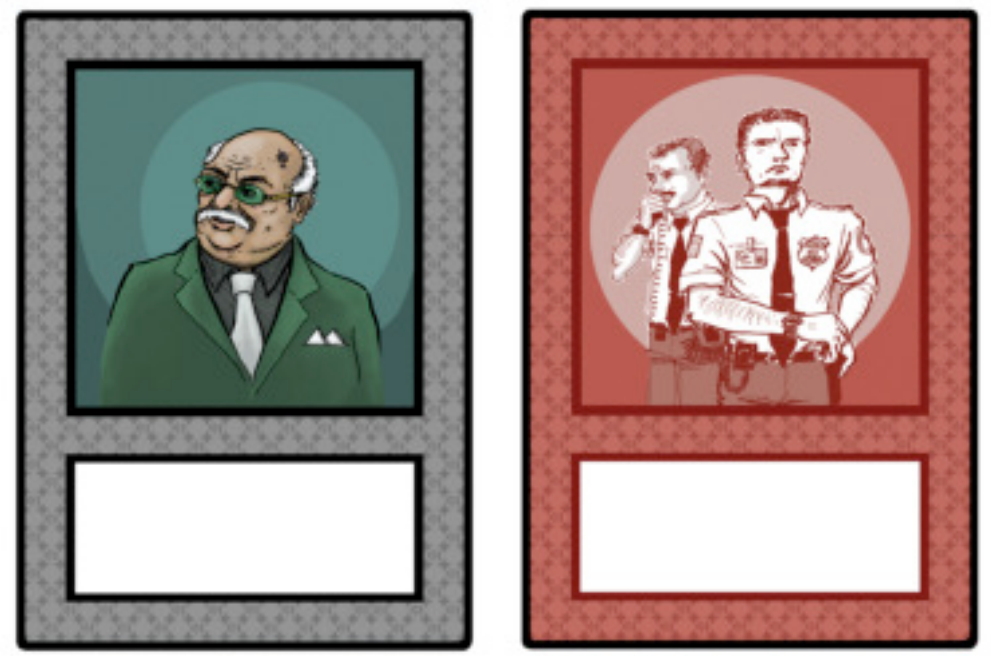


The second prototype of the game, Swedish version

Character cards, two for each character depicting the different members in the heist team.

Different tokens and markers: character tokens, guard tokens, tokens for neutralized security, tokens indicating a character's stress level, disguise markers, markers for knocked out guards, and switch tokens of three different colors.

Two cloth bags for randomizing switch tokens and guard tokens.



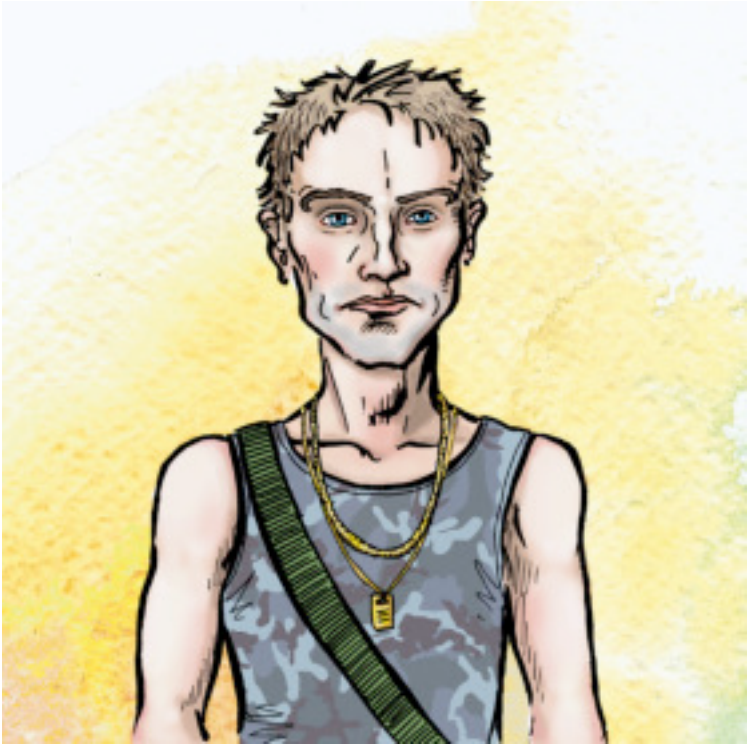
Cards from the final version of the game, artwork by Jenny Berggrund

Basic Rules – Overview

The goal of the game is for the players to take actions so that they open the vault and dig a tunnel out of the casino without too much "alertness." The players' progress towards opening the vault and finishing the tunnel is represented by decks that players draw cards from. At the bottom of the deck cards are seeded (see the game design pattern *stack seeding* (Björk 2011b) that indicate success. Alertness works in the same way but here cards are drawn as an unwanted side effect from the player's actions. Thus the idea is to draw as many cards from the vault and tunnel stacks as fast as possible while drawing as few cards as possible from the alertness stack.

Players take actions in two different ways. When it is a certain player's turn, s/he can play an action card. All action cards represent places on the game board. The character token is moved to the indicated place. For each place there are different predetermined outcomes. For example, if a character moves into the vault the players draw a vault card, if a player moves into a security room the security cameras and alarms controlled from that room are neutralized for a while and tokens are placed on security cameras indicating that characters can be in these rooms without having to draw a card from the alertness deck. Players also take actions when it is another player's turn by playing support cards.

These cards help the active player by neutralizing specific cameras, warns them so they exit rooms where security is going up or guards are approaching and provides the active player with gear or temporary power-ups.



Captain Yellow- the acrobat, one of the playable characters in Casino Heist. Artwork Jenny Berggrund

Between turns guards move on the grid on the game board. The movement of these guards is determined by the relation between a color code on the base of the guard token and colored switch tokens on the game board. One action that players can do is to change the switch token and thus distract guards so they do not enter a room where a character currently is.

When a character is in a situation where security is active, a camera is filming them or they encounter a guard, they must draw cards from the alertness deck. In some situations they also receive a *stress token* determining their stress level. This level is utterly important since it determines if an accusation occurs (see below).

The game has a number of sub-mechanisms. For instance different characters have different special abilities that give them functional roles. *Captain Yellow: The Acrobat* can for instance always avoid cameras while *Mister Pink: The Con Artist* can face guards without causing alertness.

The outcome of the game is not determined by an absolute win–lose condition. Instead a score is calculated based on the amount of loot the players got out with. From this score one subtracts points depending on how many team members that got caught and how many guards that were knocked down. If the full team gets caught, one can say that the players lost the game.

Keeping anonymity

Initial play testing of the core mechanic showed that simply stating "the rules say that you must be anonymous" did not really enforce the players to keep their identity in the game secret. In order for this to really work, it had to be built into the game so that revealing oneself would have some sort of consequence in the game. This was done with the rules for *stress*. In some situations characters in the game get stress tokens placed on their character card. Once a character has a stress level above four (higher for some characters due to special abilities), an accusation must occur. This is meant to represent the tension among the heist team members and how they can sell each other out in order to save their own skin.

When an accusation occurs the players use the accusation deck. Each player gets a card representing one of the characters in the game and as many cards as there are players with a question mark.

When all players have a hand of cards, they give one card from their hand to each of the other players and discard the rest of the cards in their hand (face down). During this event the player whose character had a stress level of four and caused the accusation shall "accuse" another player by handing a character card to one player, the character s/he thinks the other player is playing. The accuser also gives a question mark card to the rest of the players. Simultaneously all other players give each other cards with question marks. The accused player then states if s/he is falsely or correctly accused. If a false accusation occurs, the accuser must reveal her- or himself and is then eliminated as an active player for the rest of the game. The character is discarded and the player can from now on only sit in and play support cards. If the accusation is correct, the accused player must reveal her- or himself and is eliminated in the same way.

Following these rules means that an accusation can occur without the player with a high stress level being revealed or that a falsely accused player is revealed. Thus secrecy and anonymity can be sustained during the rest of the game.

This game mechanic was designed mainly to enforce players to keep secrecy at all costs. The risk they take if they are careless and reveal themselves is that they later in the game will be eliminated as active characters and from then on only sit in as support. The idea was that these rules should very seldom come in effect; they should mainly be there as a potential event where the mere risk of an accusation occurring would be enough for players to keep their identity secret.

It is important to notice that this mechanic differs from the secrecy kept in a game with traitor mechanics. There is nothing to gain by accusing another player; it is always a loss for the team if someone gets eliminated.

Play testing

The game was play tested in two phases with different goals. The first play-testing phase focused on the games' playability. Issues of concern were length of the game, balancing the level of difficulty and reducing complexity. The progression in the game is handled with decks of cards. Thus much of the iterations done during the first play-testing phase were about rebuilding these decks. Making the core mechanics based on cards helped both balancing the games' difficulty and adjusting the playing time. Some issues of complexity were handled parallel to balancing the game. For instance the cost in "alertness cards" that a player had to draw when causing alertness was standardized to

one. Previously different kinds of events had meant that players drew different amounts of cards. Since this made the game a bit easier, the size of the alertness deck was decreased.

The second play-testing phase was done for research purposes and aimed at investigating what kinds of gameplay emerged from the experimental game design. The game was play tested in the two different focus groups as well as in a third group comprised only of expert board gamers. The results from these sessions are reported below.

RESULTS

Anonymous actions possible

The perhaps most crucial finding during play testing was that the core mechanic worked as intended. The players were able to play through full games and still be uncertain about who of the other players controlled a certain character in the game. In a sense this gameplay worked better than expected. The researchers had foreseen that the players would actively try to discover the identity of other players, but that did not happen. Revealing the cards and learning what had "happened" created a lot of engagement. The players became focused on seeing how the turn affected the game state. Here the gameplay showed similarities with the game *Space Alert* where the outcome of the players' actions are revealed after the phase when they have any agency of affecting what happens. This gameplay pattern, revealing outcome first when players have no agency of affecting the game state, seems to create a kind of positive tension where the players have expectations. Since the outcome of one player's card is affected by what cards the other players have played, uncertainty of outcome is kept until all cards are resolved.

It is also noteworthy that even though a player sometimes suspected who played a certain character, they were never 100% certain. This insecurity was enough in order to keep up the anonymous atmosphere in the game and avoid game directing. Even though you are 99% sure that someone is a certain character, you do not start directing them or blaming them for stupid actions.

Successful turns created a team spirit

Sometimes the combination of the cards played and the order they were resolved gave an unexpectedly good outcome for the players. These successful turns created a strong "team spirit" around the game table. Players "high fived" each other, spontaneously gave positive response cries and comments like: "Awesome!", "Yeees, he was pulled out of there" and "We did it!" They also commented on how successful the turn had happened to be with statements such as: "That was a perfect operation."

When asked about the team spirit that had emerged during gameplay, the expert board gamers saw a connection to the mechanic of "anonymous actions." They said that since the success of a turn could not be ascribed to a specific player, the sense of a collective achievement was enhanced. A player in one of the focus groups compared *Casino Heist* to *Pandemic.* He argued that a turn in *Pandemic* sometimes could be extremely successful due to actions other players have taken previously. Still you tend to give credit to the active player. In that sense *Casino Heist* gave a stronger feeling of being a team member.

Mistakes disappeared in the flow of interaction

The test players made a couple of mistakes during the game sessions. Most common was that a player forgot to play a card in the right category, i.e., the active player played a

support card instead of an action card. Since anonymity has to be kept, the player that made such a mistake cannot simply pick up his card and play another. The rules say instead that one randomize two of the cards to be discarded. Instead of a regular turn, the players only get a turn with some support cards played. The team thus suffers for the mistakes of one player. Still, this was not a big issue when it occurred. The players followed the rules and went on to the next turn. One player with a great deal of game experience who had made a mistake said: "Making a mistake like that in any other game and you would have been mocked by the other players for the rest of the session. Here it just disappeared. The next turn everything was forgotten."

Sequences of role playing – triggering narratives

The game seemed to encourage a kind of role playing. The players constructed short narratives about what had happened during a turn. For instance if a guard was entering the vault, one player entered the vault and one of the support cards warned the players in the vault to get back to the Casino, the players could go "Mr. Green is ice-cold and keeps on working on the vault even though the guards are approaching, just in time he is warned like, get out of there [said in character], just in time." The players projected their experiences from heist movies on events occurring so the combination of cards made up a short narrative that was thematically logical.

Cooperation?

The researchers had predicted that the players would try to plan their moves, but doing this by using more abstract arguments. Like saying "It would be good if someone could hack the security in the basement so we can press on with building the tunnel." To a certain degree this happened a couple of times during the play testing sessions; someone suggested what the currently active player would do. Yet discussions were rare. Each player instead tried to contribute but the game design pattern that Björk and Holopainen labels *stimulated planning* (2005a, pp. 384–386) did not occur. This is otherwise a frequently occurring effect in cooperative board games. This is especially true in games like *Pandemic* and *Forbidden Island*, where the players can foresee what kind of crisis the game presents for them. Anonymous actions were probably a mechanic that overruled stimulated planning. The players thought it was too much of a risk to discuss strategies since it was too easy to reveal who you are in such a discussion. Instead a kind of silent cooperation can be said to occur, everyone trying to do their best with their hand of cards in relation to how they read the game situation. This also meant trying to predict what the active player would do.

DISCUSSION

This paper has investigated what kind of gameplay that a specific game mechanic, *anonymous actions*, had when implemented in a cooperative board game. The results showed that maintaining anonymity and at the same time cooperating towards a common goal is a possible form of face-to-face interaction. This form of interaction might have characteristics that are beneficial when trying to create inclusive educational activities. It can be discussed to what degree the activity shared features with what we generally consider to be collaboration. Features like discussing, planning, explaining, dividing tasks, etc. were not as present as in other cooperative games. If these cooperative games can be judged educational, the question is a matter of what kind of educational goals the game aims to teach. If collaborative learning about some subject can occur with the kind of sparse discussion that seems to happen when using the pattern *anonymous actions,* is related to the nature of the subject. Any form of problem solving activity where the

options are limited in such a way that they can be represented by a hand of cards might be possible to simulate.

Yet the activity created a strong sense of being in a group that accomplished something together and was very forgiving towards individual mistakes. This shows that, if not for other things, cooperative board games with anonymous actions can be used for the sake of inclusiveness. Gaining the kind of "team spirit" that *Casino Heist* facilitated in a diverse group might be an educational experience on it's own. To help pupils and students on different levels to get a sense of accomplishing something together might, to quote the Salamanca statement, be: "effective means of combating discriminatory attitudes" (World Conference on Special Needs Education: Access and Quality 1994, p. ix).

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