DESIGNING FOR COUCH CO-OP

11 game design guidelines promoting player cooperation

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ABSTRACT

Co-located multiplayer games have shown to have a positive effect on game enjoyment as well as a positive effect on players' subsequent pro-social behavior. While there is a lack of scientific research on the subject, the game developer community has generated experience based knowledge on how to best achieve effective cooperation. A meta-analysis of 50 recommendations from actors in the game industry resulted in 11 generalized game design guidelines promoting player cooperation. It is argued that the results both can aid the process of designing good cooperative games as well as aid researchers in identifying relevant games for experiments. It is proposed that future research investigate other fields where cooperation is important.

KEYWORDS: Game design, Video games, Local multiplayer, Cooperation

1 INTRODUCTION

1.1 Playing digital games together

One of the most important function of games is that it enables social interaction (Schell, 2014). Today, despite the rise and popularity of single player digital games, social interaction is still regarded one of the main motivations for why people play video games (Kumar and Herger, 2013). Apart from enabling people to socialize, studies suggest that games that facilitate co-located multiplayer are considered more fun, as well as improve players perceived competence in the game, compared to non-local (e.g. online) multiplayer or single player modes of the same game (Gajadhar et al., 2008; Schmierbach et al., 2012).

1.2 The effects of playing digital games together

Local multiplayer games encourage people to meet up and socialize. If the game in addition features cooperative gameplay (as opposed to competitive), it can have a positive effect on players' subsequent pro-social behavior (Breuer et al., 2017; Ewoldsen et al., 2012; Greitemeyer and Cox, 2013; Velez, 2015). Greitemeyer & Mügge (2014) suggests that games have the potential to impact players' real-world behavior both in a short term and long term time perspective. Considering that video games have grown to become a rather prominent part of modern childhood in light of Greitemeyer and Mügge's point, game designers potentially have a significant role in the nurture of children and youth.

1.3 How we play digital games together

The literature usually divides multiplayer games into six different configurations: competitive, cooperative, and team based games, each of them divided into co-located and online multiplayer. Currently games offering competitive and team-based online multiplayer seem to be the most popular in terms of number of daily users ("Steam," n.d.).

1.4 Goal with this paper

This paper aims to identify current best practices in local co-op video game design. In light of current research, learning how to better facilitate for this configuration could potentially yield more fun, more rewarding and even more socially responsible games.

The intended result is a set of design guidelines, providing game designers as well as researchers with the tools to create or identify effective and enjoyable co-op experiences.

1.5 Method

Game design as a field of scientific research remains quite immature. It is hard to find universal design principles tailored for cooperative game design. However, actors in the game developer industry have experience in the field, and they have shared some recommendations on what they think is important for a successful co-op game.

By identifying current recommendations and conducting a meta-analysis of them, general best practices, or guidelines, regarding the design of local co-op games, could be discovered.

Because team-based and cooperative games (both online and local) inherently contain cooperative elements, recommendations on designing for any of these configurations might be of relevance to the others. While the focus of this paper remains on local co-op, the terms “cooperative” and “co-op”, when not specified as local, will henceforth cover both online and local cooperative games as well as online and local team-based games.

In search of game design practices for cooperative gameplay both scientific literature and publicly available statements from the professional game developer industry have been examined. Scopus, Google Scholar and the Game Developer Conference archives have been searched for keywords such as ‘Game design’, ‘guidelines’, ‘rules’, ‘cooperation’, ‘collaboration’ and ‘cooperative gameplay’ In the period from August 2017 to November 2017.

Not all sources have presented their co-op design recommendations on list form. In these cases, the author has interpreted the source and compiled the content to a list of recommendations.

2 RESULTS

2.1 Koven’s recommendations

Koven claims that in order for a multiplayer game to be enjoyable, players must share the intention of playing the game well together. According to him, this agreement is much more important for enjoyment than which game is actually played (Koven, 2013).

Koven stresses the importance of this shared intention of playing well together in his book “The Well-Played Game” (Koven, 2013), and goes through some means on how to arrive at such a game.

Koven’s recommendations
To maintain a well-played game, players should be allowed…
To explicitly share the intention of playing well together.
To express loss of willingness to play.
To change the rules when all players agree it is desirable.
To play with handicaps to adjust the challenge to fit the individual player.
To quit with honor.

Table 1: Koven’s recommendations

2.2 Schell’s recommendations

In “The art of Game Design: A Book of Lenses” (Schell, 2014), Jesse Schell presents several practical game design recommendations. In the chapter “Other players”, Schell explains why players seek to play cooperative games with each other. In the chapter “Communities”, he presents tips on how to form strong communities, some of which are relevant for forming strong cooperative groups.

Schell’s recommendations
Allow players to part take in actions and employ strategies that are impossible for only one person.
Give players the sensation of group problem solving and being part of a successful team.
Make the game interesting to watch for spectators.
Put a shared conflict at the heart of the community (in this case the group of players).

Schell's recommendations
Allow players to self-express through play style or avatar customization.
Force players to depend on each other.
Support three different levels of skill: *Newbie* - His challenge is to learn the game; *Player* - His challenge is to master the game; *Elder* - He has completely mastered the game. Provide elders with a more difficult game, governance privileges, content creation, guild management or a chance to teach.

Table 2: Jesse Schell's recommendations

2.3 Amy Jo Kim's recommendations

In a talk at the 2013 Game Developers Conference, Amy Jo Kim presented 7 recommendations on how to best design for cooperative gameplay (Kim, 2013):

Kim's recommendations	
Do	Don't
Players versus system or team versus team competition	Individual rankings and player versus player
Shared non-zero goals (all players win or lose collectively)	Individual zero-sum goals (winner takes it all)
Give players inter-dependent roles	Offer a single activity with one role
Let players perform cooperative social gestures (share, heal, acknowledge…)	Let player perform zero-sum social gestures (steal, defeat, taunt…)
Give players shared resources	Allow personal hoarding
Non-zero stats and team highlights	Individual leaderboards
Allow users to generate content	

Table 3: Amy Jo Kim's recommendations

2.4 Ruddy games' recommendations

In their monthly podcast «Pretentious Game Ideas», the game company Ruddy Games share their subjective opinions and insights about game design. The episodes "Co-op games" (Anderson et al., n.d.) and "Engineering social" (Anderson et al., n.d.) aims to highlight good mechanics and call out common pitfalls of co-op and social game design.

Ruddy Games' recommendations
Encourage communication between players
Allow players to make choices together
Avoid quarterbacking[1]
Allow players to take on extremely specialized roles
Allow players to change roles during or between rounds
Cater for different skill levels by allowing macro play (e.g. laying a team strategy or governing an army) as well as micro play (e.g. moving across a field or acting as a soldier)
Consider facilitating for a greeting culture, like the rituals before and after a football match
Let players complement each other
Include consumables that reward others

Table 4: Ruddy game's recommendations

2.5 Damion Schubert's recommendations

Schubert celebrates cooperative gaming in his article "No "I" in Team - The increasing importance of cooperative multiplayer", describing what he thinks is great about cooperative gameplay, and thoughts on how to accomplish it (Schubert, 2011).

Schubert's recommendations
Let experienced players show mastery of the game, while still allowing less experienced players to contribute
Make players lose or win collectively
Allow players to congratulate or console each other.
Avoid quarterbacking
Allow players to reward each other
Embrace that people are part of the content in multiplayer games

Table 5: Schubert's recommendations

[1] When a player dictates exactly what another (often less experienced) player should do in order to complete a task, or simply takes over the task.

2.6 Burch & Wiseman's recommendations

Ashley Burch and Rosalind Wiseman have a different angle towards cooperative games than mere enjoyment. In a talk during the 2014 Game Developers Conference they address the fact that young boys have rich emotional lives, but that repressive stereotype of masculinity constrains their emotional repertoire, breeding frustration and hateful communities. Wiseman and Burch propose that cooperative gameplay mechanics can contribute to alleviate this trend (Wiseman and Burch, 2014).

Burch & Wiseman's recommendations
Portray cooperative social interactions through avatar animations in game or in cutscenes
Give buffs for cooperative behavior
Restrict player interactions to foster cooperativeness (e.g. disable gunfire when aiming at a team mate)
Incentivize co-op behavior
Make co-op mechanics additive to the gameplay (e.g. get a bonus for cooperative play), not restrictive (e.g. require cooperative play to enter an area)[2]
Allow enjoyment for different skill-levels

Table 6: Burch and Wiseman's recommendations

2.7 Voida and Greenberg's recommendations

According to a study on co-located group console gaming (Voida and Greenberg, 2009), games designed to "provide a meeting place for groups of diverse gamers should undertake some combination of the following":

Voida & Greenberg's recommendations
Allow gamers to rotate in and out of gameplay easily
Make use of input devices with intuitive mapping (button-based input devices were less well-liked by the gamers in this study than gestural and physical input devices)
Provide modes of gameplay to allow player with different skill levels to play with or against each other
Explore modes of gameplay that alter the game in significant ways for different groups of players so that the owner of the console or the game does not always have an advantage
Provide modes of play that downplay competition between players (e.g., fostering non-serious competition or competition between the gaming group as a whole and the computer)
Appeal to gamers with different gaming preferences within a single game (e.g., by offering compelling gameplay for a gamer who is typically drawn to strategy games while also appealing to other gamers who may be drawn to games with more challenging puzzles or immersive stories)
Foster audience participation or an otherwise enjoyable audience experience
Explore ways of extending the social experience of group console gaming into the larger ecology of shared media

Table 7: Voida and Greenbergs recommendations

[2] This recommendation was primarily aimed towards single player or online competitive games implementing co-op features.

Role of actor	Motive of play	Role of counteractor
To overtake	Race	To stay ahead
To catch, tackle, tag	Chase	To outdistance, dodge or elude
To overcome a barrier, enter a guarded area, overpower a defense; to injure psychologically or otherwise	Attack	To defend an area or a person, to ward off, to be on guard
To take person or symbol	Capture	To avoid being taken
To tease, taunt, lure; to mistake or unsuccessfully attack	Harassment	To see through, to move suddenly and punish an attacker, to bide time
To find by chance or clue (object or person)	Search	To hide, to cover or mislead, to feign
To spring prisoner; to be savior	Rescue	To be jailer, to guard against escape
To tempt another forbidden action	Seduction	To resist, to have self-control

Table 8: Social play roles (Herron, 1971)

2.8 Salen and Zimmerman's recommendations

In the chapter "Games as Social Play" in "Rules of Play", Katie Salen and Eric Zimmerman bring up the importance of social play roles in gameplay, as well as the fact that a game in some way usually will relate to the outside world.

They elaborate on these two aspects of social play, respectively, by presenting a model of social play roles (Table 8) describing social relations between players derived from common game mechanics (Herron, 1971), and by referring to Richard Garfield's essay "Metagames" (Garfield, 2000) and urging game designers to consider the context in which their games are played.

Salen & Zimmerman's recommendations
Consider the different social play roles the players will inhabit during a game, and whether the game could: • Allow more than one player to take on an actor or counteractor role (e.g. the asymmetrical distribution of hiders and seekers in hide and seek) • Allow a player to assume different roles during a single game (e.g. the alternation of chaser and chased in tag) • Allow players to inhabit more than one role at a time • Allow non-human agents to assume roles as actors or counteractors
Design for the metagame – the relationship of the game to elements outside of the game – by considering the following: • What does a player bring to a game? • What does a player take from a game? • What happens between games? • What happens during a game?

Table 9: Salen and Zimmerman's recommendations

3 ANALYSIS

The 50 collected recommendations were sorted into clusters to form a basis for a set of generalized design guidelines.

The sorting process yielded 11 clusters. The sorting was not only based on literal similarity between recommendations, but also on similarities between their intentions or theme.

Each recommendation was assigned to only one cluster. The formulation of each guideline is derived from its underlying recommendations, and may therefore appear broader than some of its source recommendations. Each guideline is presented with a summary of the source material it is based on.

Table 10 shows which recommendations make up each guideline. They are sorted so that the guideline based on the largest cluster is at the top. Table 11 shows a simplified overview of recommendation distribution.

Guideline	Koven (5)	Schell (7)	Jo Kim (7)	Ruddy Games (9)	Schubert (6)	Burch & Wiseman (6)	Voida & Greenberg (8)	Salen & Zimmerman (2)
Encourage communication and team work (8)	Shared intention of playing well together	Sensation of group problem solving	Spotlights and highlights; shared resources	Encourage communication; Let players make choices together		Restrict player interaction		
Allow taking on specialized and inter-dependent roles (7)		Forced dependency; perform tasks impossible to do alone	Inter dependency	Take on specialized roles; changing roles; Avoid quarterbacking	Avoid quarterbacking			
Design for a range of skill levels (7)	Allow playing with handicaps	Design for the three levels of skill		Allow micro as well as macro play	Design for different skill levels	Design for different skill levels	Design for different skill levels; make use of intuitive mapping	
Elicit pro-social interactions (6)			Co-op social gestures	Greeting culture; complement each other	Reward each other; congratulate/console each other	Portray supportive behavior		Consider the social relationships between players
Downplay inter-group competition (5)		Put a conflict at the center of the group	System competition; non-zero goals		Collective win/loss		Downplay intergroup competition	
Incentivize cooperative behavior (4)				Consumables rewarding others		Incentivize co-op; additive co-op gameplay; give buffs for co-op behavior		
Provide different game modes or rule settings (3)	Allow changing of rules						Alternative gameplay modes; appeal to different gamers' preferences	
Make it easy to rotate in and out of gameplay (3)	Express loss of willingness to play; quit with honor						Easily rotate in and out	
Design for the meta-game (3)			Allow user-generated content				Extend the social experience	Design for the meta-game
Allow players to self-express (2)		Allow self-expression			Embrace players as content			
Foster an enjoyable experience for the audience (2)		Spectator friendly					Audience enjoyment or participation	

Table 10: 11 guidelines based on 50 recommendations from 8 sources. (n) = number of recommendation in row/column

Guideline	Koven	Schell	Jo Kim	Ruddy Games	Schubert	Burch & Wiseman	Voida & Greenberg	Salen & Zimmerman
Encourage communication and team work	x	x	xx	xx		x		
Allow taking on specialized and inter-dependent roles		xx	x	xxx	x			
Design for a range of skill levels	x	x		x	x	x	xx	
Elicit pro-social interactions			x	xx	xx	x		x
Downplay inter-group competition		x	xx		x		x	
Incentivize cooperative behavior				x		xxx		
Provide different game modes or rule settings	x						xx	
Make it easy to rotate in and out of gameplay	xx						x	
Design for the meta-game			x				x	x
Allow players to self-express		x			x			
Foster an enjoyable experience for the audience		x					x	

Table 11: 11 generalized recommendations based on 50 recommendations from 8 sources (simplified)

3.1 11 guidelines for local co-op game design

3.1.1 Encourage communication and team work

Players should feel as being part of a successful team. Allow players to make choices together and complement each other. Consider highlighting moments of great team work or individual feats rather than keeping individual scores. Consider providing players with a pool of shared resources.

3.1.2 Allow taking on specialized and inter-dependent roles

Players should be dependent of each other. Do not allow one player to do all the work. Consider giving players complementary abilities, or make them manage sets of tasks impossible to manage as one player alone.

3.1.3 Design for a range of skill levels

Players with different skills in the game should be able to enjoy it. Consider designing for at least two levels of skill by allowing players to perform tasks of varying motoric or strategic difficulty. Skilled players could be allowed to play with handicaps. Also consider using input devices with intuitive mapping, either by limiting the number of input buttons and joysticks or employing other means of interaction.

3.1.4 Elicit pro-social player interaction

Players should trust each other. Allow players to perform positive social interactions such as greet, share with, and heal each other[3]. Consider restricting player actions to allow only supportive behavior.

3.1.5 Downplay inter-group competition

The group should work towards a common goal. Avoid individual rankings. Make the group win or lose collectively by competing against the game system or another team.

3.1.6 Incentivize cooperative behavior

Make co-op mechanics additive to the gameplay, not restrictive. Consider rewarding cooperative behavior or provide players with consumables that rewards other players.

3.1.7 Provide different game modes or rule settings

Players should not be put off by a challenge with the wrong difficulty. Consider providing players with different game modes and the option to adjust rules and win-conditions

3.1.8 Make it easy to rotate in and out of gameplay

Players should be able to express when they are not willing to play anymore. Allow players to "quit with honor". The host should not have to continuously monitor the collective willingness to play.

3.1.9 Design for the meta-game

Keep in mind the social context in which your game will be played. Consider what happens between and during games, and whether to extend the game experience across several media.

3.1.10 Allow players to self-express

Self-expression makes players feel proud, important and connected. Consider how players are allowed to self-express through means such as styles of play or avatar customization.

3.1.11 Foster an enjoyable experience for the audience

Sometimes, not everyone can join the game. Make sure the game is entertaining to spectate. Consider allowing the audience to participate in the game.

[3] List of pro-social player interactions: Giving, sharing, contributing, helping, healing, inviting, greeting, trading, sharing, commenting and liking (Kim, 2013)

4 DISCUSSION

4.1 Status of current research

Currently, research on cooperative games seems to largely focus on finding how cooperative game play impacts player behavior (Breuer et al., 2017; Ewoldsen et al., 2012; Greitemeyer and Cox, 2013; Greitemeyer and Mügge, 2014; Velez, 2015) or correlations between cooperative gameplay and enjoyment (Gajadhar et al., 2008; Ravaja et al., 2006; Schmierbach et al., 2012). Few studies have been found that present specific design recommendations on how to best design for cooperative game play, although Voida & Greenberg (2009) do present a set of specific game design recommendations for local multiplayer.

Actors in the game developer community tend to suggest more practical recommendations or topics of consideration with regards to co-op game design. Their advice, however, is anecdotal and based on experience, not necessarily on scientific theory. Current research on topics such as team building, leadership, military training and communication skills could be relevant also to co-op game design.

This paper conducted a meta-analysis of current industry recommendations to arrive at a set of generalized best practice design guidelines. The result of this analysis could be considered a first step in the effort of zeroing in on the most effective measures game designers can employ to ensure true local cooperation in their games.

4.2 About the results

The 11 guidelines give a certain insight to the current state of co-op game design. They are however not mutually exclusive, and some of the guidelines are arguably covered by the others.

Some sources encourage the reader to consider aspects of the game design instead of giving an explicit “Do this, don’t do that” recommendation. Rules of Play (Salen and Zimmerman, 2003) is for example full of notions and considerations, but without many Explicit recommendations. While a consideration in and of itself is highly valuable for a game designer, this paper sought to identify current best practices, and thus the focus was mainly on collecting explicit recommendations.

With regards to the guidelines concerning 3.1.1 (Encourage communication and team work) and 3.1.2 (Allow taking on specialized and inter-dependent roles), there is research suggesting that certain players are more likely to engage in behavioral helping, e.g. assisting other players through actions with their in-game avatar, while others are more likely to engage in verbal helping, e.g. telling other players what to do next. When implementing mechanics requiring players to help each other, designers should consider the findings from Velez and Ewoldsen (2013) stating that “players being motivated to take on a specialized role in a team are likely to engage in behavioral helping, whereas players with altruistic personality traits are likely to engage in verbal helping”. By being aware of their game’s mechanics as well as why the player base is motivated to play their game, designers could facilitate for helping behaviors in ways that will most likely be used and appreciated.

When using Sutton-Smith’s model of social play roles (Table 8) to assist the design of cooperative games, the actor or the counteractor should arguably always be non-human or another team. If not, one could quickly end up with in-group competition, which is detrimental to cooperation, as reflected by guideline 3.1.5 (Downplay inter-group competition).

Even though this paper has emphasized that designing for local co-op could be beneficial for both player’s social life and behavior towards other people, these goals must not get in the way of an enjoyable game experience. As Ashley Burch stated in her 2014 GDC talk: “We don’t need to stop the presses and make emotional competence

simulators […], make fun games, but make fun games in a responsible way." (Wiseman and Burch, 2014). While designers may wish to do good through their games, the attempt is useless if the game is not well received. For that to happen, it must be enjoyable, one way or another.

4.3 Limitations of this study

The clustering process was conducted by the author alone. Author bias may very well apply for the interpretation of some of the sources where recommendations were not explicitly presented as such. In these cases, certain recommendations may have been missed or even misinterpreted.

Time constraints made it difficult to explore all relevant sources directly (not only indirectly through google searches). There are probably more recommendations to be found on sites such as Gamasutra and Gamestudies, and in the vast world of podcasts and YouTube-channels as well.

4.4 Recommendations for further research

While the findings in this paper do seem to zero in on current best practices for local co-op game design, they would benefit from further validation, either by interviewing game developers, gamers, or by analyzing mechanics of both successful local co-op games and local co-op games with known defects. Many of the sources, such as Schell (2014), Kim (2013) and Ruddy Games (Anderson et al., n.d., n.d.), present examples of games which harmonize with their recommendations.

Knowledge of effective co-op game design may prove helpful for future scientific experiments designed to discover the effects of cooperative games. Today, a game may state that it has a cooperative mode, though it may suffer from elements such a focus on individual scores, or that it is too easy for one player to do all the work. Knowledge of best practices and common pitfalls could help researchers to choose or create games where players engage with each other in a truly cooperative manner, ensuring the most relevant results. It is therefore recommended to further investigate which practices yield the most effective co-op gameplay.

This study has focused solely on cooperation in a gaming context. It is recommended that future research on cooperation in games also look towards other fields where cooperation plays an integral role, such as sports, work settings, search and rescue and the military.

5 CONCLUSION

The game developer community proved to present quite directly applicable game design recommendations while the scientific field showed a lack of research on this particular field. Game designers and future research could look to the results from this paper to get an overview of current best practices for co-op game design.

Due to the current interest of understanding the effects of cooperative games on player behavior, and the technical and social complexity of a gaming context, it is important to understand what makes up a truly cooperative game to ensure as relevant results as possible. Because of this, and the limitations of this study, future research should investigate further which game mechanics should and should not be in a game in order for it to achieve true co-op between its players.

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