

Selective commitment: Player choice and dedication to end states in games

This exegesis is submitted to Auckland University of Technology in fulfilment of the requirements for the degree of Master of Creative Technologies (MCT)

By Benjamin Chun Ting Lai

2015

School of Creative Technologies

Auckland University of Technology

Primary Supervisor: Ben Tuhoe Kenobi

Secondary Supervisor: Britta Pollmuller

Table of Contents

Table of Figures	3
Attestation of Authorship.....	4
Acknowledgements	5
Abstract:	6
Research Question	6
Introduction:.....	7
1 What is Choice and Commitment in a game	8
1.1 Value as a Preferred End State.....	8
1.2 Choice in Progression and Emergence Systems	9
1.3 Player Parameter and Dominant Strategies.....	9
1.4 Structuration and Commitment.....	10
1.5 Selective Commitment Definition	11
1.6 Qualitative Heuristics.....	12
2 Board Game Prototype 1.....	13
2.1 Prototype 1 Summary	13
2.2 Prototype 1 Interrogation	13
2.3 Obstruction, Progression and Player Imposed Rules	13
2.4 Linear Progression and Maintenance	15
3 Board Game Prototype 2.....	16
3.1 Prototype 2 Summary	16
3.2 Prototype 2 Interrogation	16
3.3 Agency and Consequences	16
4 Board Game Prototype 3.....	18
4.1 Prototype 3 Summary	18
4.2 Prototype 3 Interrogation	18
4.3 Identity, Presence and Consequences	18
5 Board Game Prototype 4.....	21
5.1 Prototype 4 Summary	21
5.2 Prototype 4 Interrogation	21
5.3 Agency and Progression	21
Research System Design.....	23
Value Shifting Feedback Loop System.....	23
Introduction of the Board Game: Lost Avatar	24
Analysis of Game Components	24
Research Results	28
Conclusion	29
References:.....	30
Appendix:.....	34
Lost Avatar Game Instructions	34

Table of Figures

Unless otherwise indicated, all images are the property of the designer.

Figure: 1. Lai, Chun Ting. (2015). Key Component: Selectable Preferred End State. (Diagram).

Figure: 2. Lai, Chun Ting. (2015). First prototype. (Photograph).

Figure: 3. Lai, Chun Ting. (2015). Key Component: Obstruction Difficulty. (Diagram).

Figure: 4. Lai, Chun Ting. (2015). Key Component: Choice of Actants. (Diagram).

Figure: 5. Lai, Chun Ting. (2015). Second prototype. (Photograph).

Figure: 6. Lai, Chun Ting. (2015). Key Component: Versatility. (Diagram).

Figure: 7. Lai, Chun Ting. (2015). Key Component: Consequential Actions. (Diagram).

Figure: 8. Lai, Chun Ting. (2015). Third prototype. (Photograph).

Figure: 9. Lai, Chun Ting. (2015). Key Component: Consequential Actions Result in Presence and Co-Presence. (Diagram).

Figure: 10. Lai, Chun Ting. (2015). Fourth prototype. (Photograph).

Figure: 11. Lai, Chun Ting. (2015). Key Component: Advantageous End States. (Diagram).

Figure: 12. Lai, Chun Ting. (2015). Value shifting Feedback Loop. (Diagram).

Figure: 13. Lai, Chun Ting. (2015). Game Tokens. (Photograph).

Figure: 14. Lai, Chun Ting. (2015). Knowledge Card. (Photograph).

Figure: 15. Lai, Chun Ting. (2015). Area Card. (Photograph).

Figure: 16. Lai, Chun Ting. (2015). Obstruction Piece. (Photograph).

Figure: 17. Lai, Chun Ting. (2015). Structure Card. (Photograph).

Figure: 18. Lai, Chun Ting. (2015). Structure Piece. (Photograph).

Figure: 19. Lai, Chun Ting. (2015). Red and White Dice. (Photograph).

Figure: 20. Lai, Chun Ting. (2015). Player Score Card. (Photograph).

Attestation of Authorship

I hereby declare that the submission is my own work and that to the best of my knowledge and belief, it contains no material previously published or written by any other person nor material which to a substantial extent has been accepted for the award of any other masters, degree or diploma of a university or other institution of higher learning, except where due acknowledgement is made in referencing.

Signature: Benjamin Chun Ting Lai

A handwritten signature in black ink, appearing to read 'Benjamin', written in a cursive style.

Date: 14 October 2015

Acknowledgements

Over my university years, I have been in a journey of self-discovery, and I have received much needed support from many great individuals that have motivated me to this point.

I would like to thank my supervisors Ben Kenobi and Britta Pollmuller for their patience as they listened to my queries and provided their guidance while I slowly pieced together my research.

Thank you to John Piper, Jason Kennedy, Frances Joseph, James Charlton, Justin Stewart, and all my past teachers and lecturers who have shared their wisdom and helped push my creativity.

Thank you to Jenna Gavin, Phil James, and Ezra Whittaker-Powley, and all my colleagues who have provided different perspectives that have helped develop my research, and as new friends.

Thank you to my parents Jason and Susanna and my family back at Hong Kong for their love and support, and my sister Jennifer Lai for sharing her insights and experience, keeping me grounded in my project.

Finally, thank you to Raymond Lo, William So, Ming-En Tu, Andrew Millar, Leo Mclay, Justin Soon, Nathan Huang, Shaun McGeorge, and all my friends who have supported and encouraged me in my school years to pursue the creative route, and sharing their friendship and strength throughout the years.

Abstract:

There are noticeably two types of player commitments in video games, one in which the player is forced into a linear progression towards certain values, or a dominant strategy that conducts the players values. But some games allow players to selectively choose their commitments, and the virtual game environment scarcely blocks players from progression their valued end state.

Using a qualitative heuristics methodology, this project developed several prototypes to identify seven key components and its necessary attributes that promotes selective commitment. A game system will be developed using these attributes that promotes commitments to be selective as opposed to forced as a possible solution space. The system will be tested in the form of a board game.

The board game will be interrogated to analyse the effectiveness of the system. The results found that players attached to particular value structures, but players can also switch to different values with the same level of effectance if they desire. This indicates that the system promotes and provides players the capability for selective commitments.

Research Question:

How do I develop a game system that promotes players to selectively commit towards a goal or value that they have chosen for themselves?

Introduction:

There are noticeably two types of player commitments within games. The game may force players into linear progression paths to commit towards specific values, or has dominant strategies that manipulates the players values, especially with games requiring extensive commitment. (Cohen, McClure, & Angela, 2007; Dormans, 2011; Hamari & Lehdonvirta, 2010; Hirsh, Mayeda, & McIver, 2012; Juul, 2002; Lopez, 2006; Mennecke, Triplett, Hassall, Conde, & Heer, 2011; Myres, 2003; Thrun, 1992; Tychsen & Hitchen, 2006).

But some games allow players to selectively choose their commitment. The virtual game environment rarely prevents the player from pursuing their chosen value. This is evident within the communities that form within Massively Multiplayer Online Role Playing Game's (MMORPG) where players persistently collaborate to accomplish in-game goals. (Barr, Noble, & Biddle, 2007; Cohen et al., 2007; Hamari, & Lehdonvirta, 2010; Martinez, 2011; Mennecke et al., 2011; Moon, Hossain, Sanders, & Garrity, 2013; Myres, 2003; Rollings & Morris, 2004; Thrun, 1992; Yee, 2007).

Commitment is defined in this paper as a long term dedication to a set of self imposed rules that progresses or maintains a preferred end state of value (Barr, Khaled, Biddle & James, 2006, Barr et al., 2007; Hamari et al., 2010; Martinez, 2011; Rokeach, 1973; Sullivan, Mateas, & Wardrip-Fruin, 2012; Yee, 2006).

This project only observes how identity is formed through player actions and encourage commitment, not how social interactions affect the player actions or choice of commitment.

But game mechanics such as dominant strategies may prevent players from commitment to desired values, especially if progression is blocked by the obstructions difficulty if specific values are not followed. (Cohen et al., 2007; Dormans, 2011; Thrun, 1992).

Predesigned character identities or back-stories may also manipulate the players value. instead players often contextualise their actions, forming their identity during play (Mennecke et al., 2011; Myres, 2003; Tychsen & Hitchen, 2006).

This project will devise a system supporting selective commitment as a possible solution space, then test this system in the form of a board game. This system does not outline how to form commitments, but encourage players to commit towards a value in the game that they select for themselves. However testing the full capability of this system will require a longer testing period than the duration of this project.

1 What is Choice and Commitment in a game

Video games are systems that can shift into multiple game states, such as a win or a fail state. The system enables players the capability of pursuing different valued end states.

Yee (2006) describes MMORPG's as online virtual environments that allow interactions between large crowds of players aiming for specific end states. Online games such as MMORPG's often incorporate elements such as narrative, the mastery of various actions and structured progression levels.

Understanding how player values motivate choices and commitment in existing game systems is required to create a definition of commitment. This definition will guide the creation of the first prototype.

1.1 Value as a Preferred End State

For players to choose to commit towards an objective, the objective must present players a desirable value. Juul (2010) defines games as "a rule-based formal system with a variable and quantifiable outcome, where different outcomes are assigned different values, the player exerts effort in order to influence the outcome, the player feels attached to the outcome, and the consequences of the activity are optional and negotiable". Juul highlights that values are outcomes that players act to achieve. The choice of actions convey what value the players seek.

This supports Rokeach (1973) definition of values as an "enduring belief that a specific mode of conduct or end-state of existence is personally or socially preferable to an opposite or converse mode of conduct or end-state of existence". Rokeach (1973) explains that players would expectedly choose the most profitable value. This suggests that a multitude of actions will support a multitude of values. And each value should be considered equal otherwise only the most profitable value would be chosen.

Lopez (2006) identifies how progression mechanics and rewards may lead to satisfying experiences and player commitment. The gradual introduction of gameplay mechanics slowly introduces elements of play and allows players to comprehend and evaluate the value of each mechanic or end state. Practical rewards consequentially introduces new content, increasing the players range of potential activities. Structured increases in difficulty allows players to hone and test their mastery of the game mechanics. However this project questions if progression necessitates the addition of content restrictions to implement player advancement towards their preferred end state during play.

Barr et al. (2006) suggests that values are the players means to distinguish and choose which actions to take. But actions is not the only factor when players choose their value. Salen & Zimmerman (2005) reveals that consequences of actions must have a distinguishable presence and permanence upon the virtual environment. Players must understand what actions and consequences that pursuing a value may accomplish to make a meaningful choice. Rollings & Morris (2004) explains that for choices to be meaningful, they must have equivalent value and players must have the sufficient understanding to select these various choices. But how could values be simultaneously equivalent but incomparable?

Hamari & Lehdonvirta (2010) provides an insight into understanding how game mechanics create value to end states from a marketing perspective. Segmentation divides players according to their valued end state, revealing particular actions that may benefit specific players and what actions they would ignore. Vertical differentiation results in the consequences of end states to be functionally comparable. This would create a value system, a hierarchy of values, that results in low priority consequences to become redundant (Barr et al., 2007). Finally horizontal differentiation results in incomparable valued end states that have unrelated consequences.

1.2 Choice in Progression and Emergence Systems

To understand what type of games can support multiple values, it is essential to comprehend what systems are used in current games.

Juul (2002) differentiates games based upon the end states that its system can tolerate. Emergence structured games support multiple end states resulting from a minimal amount of fixed game rules. However most emergent games do not value or react to all of its end states. Progression structured games have limited valued end states. Often specific end states must be met to progress in the game. This results with a game that can accurately predict player actions and trigger complimentary consequences for particular states.

Dorman (2011) describes progression as a system of locks and keys, keys as the necessary resource that locks require to reach a desired end state. He suggests a feedback loop supporting multiple valued end states that requires players to balance multiple tasks to acquire keys. However having multiple tasks increases its difficulty and does not suggest the advantageous or consequences of reaching the end state. But the system can predict players pursuing these keys if they desire the valued end state. Actions or resources could be considered as keys and locks observed as actants or targets. Without these keys, the players would be obstructed from reaching their valued end state.

This supports Salen & Zimmerman (2004) depicting that meaningful gameplay requires consequential player actions that progresses their goals. Often games have linear progression systems that players invest in supported by its rules and structures. Barr et al. (2007) defines play as conducting activity without a predetermined end state in mind, and progress as committing towards a desirable end state. Because goals are often absent in emergent systems, players would explore the values actions and consequences in the form of play before committing to a chosen values' progression method. However players often choose the most effortless progression path if the values' consequences are identical.

There are many factors that lead players to quit playing MMORPG's. Hirsh et al. (2012) noticed four reasons that players believed caused their boredom in the popular MMORPG World of Warcraft (2004). They criticised the games lack of end game content, easy difficulty and skill level, lack of social interactions, and repetitive gameplay.

A lack of end game content is most likely caused by players reaching their initial chosen value, resulting in players having to seek alternative values. Values instead should dynamically shift, requiring maintenance to uphold. Values should also be incomparable so players would not be coerced to specific values. The difficulty of maintaining their value should increase as the value progresses. Players must have time to experiment with different values and related actions before commitment to one. This will prevent players from rushing to choose their value. Players should form a game identity to associate and act in context of the values within themselves, other social actors and the games objects and locations, resulting in increased social interactions. Players must be capable by of agency by utilising different schemas and resources to adapt during disadvantageous game states, preventing repetitive gameplay.

1.3 Player Parameter and Dominant Strategies

How do players decide which value to pursue from multiple choices? Barr et al. (2007) proposes the value system where players prioritise conflicting values determined by its consequences. "correct" values have higher priority, while low priority values conflicting higher priority values are considered "wrong" approaches to the game. If the values' consequences lack priority, players must instead subjectively judge which values to priorities.

Cohen et al. (2007) investigates how players sought dominant strategies through exploring their values activities and consequences. Once discovered, players exploit the activity to progress their value. This often results in the majority of players pursuing the same value. Dominant strategies are

recalculated if the virtual environment changes such as different end states, if certain activities change in value, and if there are costs in shifting between activities.

Thruns (1992) soft max decision formula determines game dominant strategies by appraising the values consequences in a shifting game state. Players estimate the activities' benefits toward the value, then evaluate the value of these activities against each other to chose the best option.

This suggests that players evaluate values by differentiating its advantages. This evaluation establishes the players parameter. This serves as the baseline for the value to be viable. I believe that players also employ the values' obstructions to design their parameter. If players cannot overcome the values' obstructions, they must raise their parameter and explore alternative methods, otherwise players could exploit the method.

Yee (2006) indicates that designated roles such as race or classes in MMORPG's often require collaboration to accomplish difficult end states. However this often results in significantly valuing specific roles as the dominant strategy, resulting in the loss of value for other roles and end states. Ideally the value of all possible activities are rotationally viable, with specific activities suitable during different end state.

In terms of Dormans (2011) lock and key system, players could not adapt to disadvantageous end states if there are limited amount of actions or keys for each lock of value. The dominant strategy would be to pursue the most effortless or versatile lock to acquire. If there are no actions or keys to overcome obstructions, then the protected value could never progress or be committed to.

The first key component for commitment is the preferred end state. It must be selectable without requiring players to impose their own rules. Players would identify what actions against actants are necessary based upon their preferred end state. This also allows the game to recognise when end states are reached and react accordingly. The value of each end state must be horizontally differentiable. This is achieved by having incomparable actions and progression, preventing a dominant strategy.

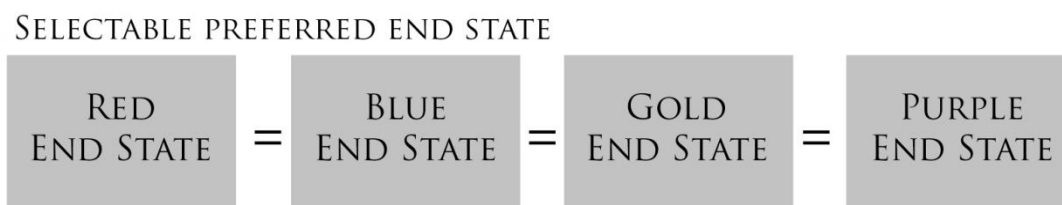


Figure: 1. Lai, Chun Ting. (2015). Key Component: Selectable Preferred End State. (Diagram).

1.4 Structuration and Commitment

If games do not have dominant strategies or unequal values, how would they choose which value to commit towards? A comprehension of how the games system provide players the ability to commit to their value is necessary.

Barr et al. (2007) employs an activity model to reveal commitment components. Players would act upon actants to acquire their valued end state, often requiring a resource or tool to act. Because value is limited and can only be expressed through various actions, a lack of resource would effectively restrict players from expressing and pursuing their value.

This is comparable to Giddens (1984) duality of structure. For players to pursue a value, they must practise a structure. A structure is comprised of schemas, predefined actions, and resources, the players acquired progression or resources. Both schema and resources are dependent on sustaining one another. If players do not pursue one, the structure collapses, resulting in the end of the values commitment.

Sewall Jr (1992) develops on Giddens (1984) description of agency as the ability for schemas and resources to be used in different variations resulting in unexpected structures or values. Unexpected

structure are reflective of emergence in games. Players with different values may pursue the same actions or progression if their structures slightly overlap. Values with overlapping structures are both capable of assisting or obstructing another.

I consider that agency is when players are allowed control over the shifting nature of schemas and resources. Players may change their schema method and progression but commit to the same value, most likely to take advantage of the current end state of the game. This would allow players to resolve changing parameters and overcome obstructions while committing towards their preferred end state. It would be unnecessary for players to seek alternative values.

Gee (2007) proposes a projective stance, in which players observe the game system as both the projector and canvas of values. Players may explore and discover the benefits of various values. Players may also divulge and paint different values onto the game world by utilising schemas and resources. Although the projective stance only presupposes predesigned characters and values, it may also include characters and values that players create during play. This is comparable to Sewall Jr (1992) interpretation of Giddens (1984) Structuration theory that agency is the players capability to manipulate their schema and resources according to the game state.

Gee (2007) terms "Authentic Professional" as "a commitment to being in the world in a certain way, with a certain style and operating by certain values". As the result of the projective stance existing within certain games.

However new players of a choice filled emergent based games lack the knowledge to choose and commit towards a value, especially if the projective stance dynamically shifts values during play. New players experience a liminal phase to formulate their game identity. They would wander this foreign virtual world in pursuit of understanding its initially ambiguous system and values. Martinez (2011) discovered within Second Life (2003) the liminal phases required to develop player identities. She finds that players will develop their avatar appearances, and familiarise themselves with their abilities as they seek what value to commit towards. Players often construct discernible characters during play. These identities that emerge during play are the products of exploration. They are similar to structures that guide players how to commit towards their value. Identities also guide how players would act towards actants of other values.

1.5 Selective Commitment Definition

It is evident that commitment begins with choosing a value or end state to pursue. During the players liminal phase, players would first explore what schema actions or resource progression suits their desired play method. The game system would project values that users experience to inform their choice. However the progression of values consistently shifts, preventing players from choosing a value based on a dominant strategy. An identity is formed as players discover what values or actants to pursue, respect or obstruct.

Once a value is chosen, players commit towards it by following the values structure, projecting their value onto the world. By utilising both schemas and resources, players with agency adapt to the shifting game states. Their actions consequentially shift the game state towards their value. Actions must not have any requirements for use as it obstructs players from commitment. This results in players becoming an authentic professional of their value.

In summary, commitment can be defined as the players dedication to progress or maintain a predesigned or emergent value. While values may guide the players actions with its structure, it may also form the boundary that restricts players into a specific pattern of progression.

For commitments to be selective, players must choose a value without any coercion by the system. This is essential as it will result in a virtual identity that guides players actions against actants of other values.

1.6 Qualitative Heuristics

This paper will utilise qualitative heuristics to discover what game systems require to support selective commitment. A system will be designed and interrogated based on the discovered key components in the form of a board game. The researcher will observe how this board game system supports participants enacting selective commitment from how these key components function.

Kleining & Witt (2000) explains that qualitative heuristics are a series of explorative experiments as practice based dialectical procedures. This paper will experiment with various prototypes that expand upon previous discoveries. Using these prototypes, this paper will attempt to identify specific patterns or attributes that components require to support selective commitment. The researcher and three other player participants will interrogate each board game to provide different perspectives from their subjective play methods. The researcher will interpret the data gathered from the participants play methods. The qualitative data gathered from these interrogations will assist in discovering the key components of selective commitments

Kleining & Witt (2000) discloses the four rules of qualitative heuristics methodology. The researcher will be flexible to emergent key components and attribute discoveries. The research topic will also flexible and the focus could change if necessary. During interrogations, different perspectives are necessary for revealing the prototypes potential and to avoid researcher bias. And the research will focus on finding similarities such as key components and its necessary attributes to be tested and confirm its legitimacy.

This paper focuses upon how players first explore their value choices through experimentation, then exploit the values structure to commit towards it. The paper will explore how the games system provide player agency to adjust their schemas and resources for the same value once committed, preventing players from *hopping* into different values when the current game state becomes disadvantageous.

The project will cyclically design and develop board game prototypes in a practice based research format. The board games are designed to uncover what components and its necessary attributes are required for games to enable selective commitment. A system will be designed based on the components found and will be used to guide the creation of the final board game.

2 Board Game Prototype 1

The thesis will provide a summary of the prototypes mechanics, interrogation results and how the discovered key component inspired the next prototype.

2.1 Prototype 1 Summary

The first board game prototype focused on character progression by utilising a skill development chart. The prototype follows similar concepts to computer games skill levels that determines successful actions. The players objective is to acquire story tokens by completing the quests written on cards in the game world.

Players begin by selecting their main actions and trait portraying their strengths and weaknesses. Story tokens are obtained by completing card events found in the game world or created by the player. This results in arbitrarily scattered predetermined events as players choose which quest to take. Players progress by acquiring environmental objects that would change their skill level. This encourages players to specific actions and identity to acquire story tokens.



Figure: 2. Lai, Chun Ting. (2015). First prototype. (Photograph).

2.2 Prototype 1 Interrogation

It was apparent that complex statistics in a board game lead to some confusion that reduced over time. This confusion obstructed players from visualising the narrative events from the interactive abstractions. This lead to the investigation of the obstruction and progressions role in commitments.

As players enjoyed collecting story tokens. Players focused on planning game strategies that optimised the game world with environmental objects that improved their actions. Players also used environmental objects that disadvantaged other player activities in different areas. This resulted in the game encouraging co-operation or competition between players depending on the players chosen actions. As choosing what environmental objects to add or remove was the only agency allowed for players, it is evident that the choice of actants was important for commitment.

2.3 Obstruction, Progression and Player Imposed Rules

Obstructions are an important component of any game as it encourages player activity and agency. However obstructions can incorrectly impede players from reaching their value at all, preventing players from progressing and committing towards their chosen value.

Lee, Yu, & Lin (2007) supports Hirsh et al. (2012) findings of what causes player boredom and diminish commitment. That players quit committing towards MMORPG's because the obstructions difficulty may prevent players from committing to their value. Besides external out of game obstructions that are not in the scope of this paper, a grasp of the obstructions role is necessary to understand how it may support commitment.

Obstructions could be seen as obstacles that reward players with resource or progression when overcome. If so how should resources be distributed while ensuring that the objective is maintenance instead of completion? Dormans (2011) utilises the concept of two feedback loops that affects the flow of resources. Positive feedback loops rewards players resources after overcoming obstructions, while negative feedback loops transfer resources towards failing player. As resources determine the players ability to achieve their value, having enough resources to overcome their obstructions is crucial for player agency.

Barr et al. (2007) proposes that the value of an end state is enhanced by the required progression necessary to overcome its correlated obstruction. Although this suggests that negative feedback loops are most effective to sustain agency for all players, successful players would hesitate to progress and commit further if it only benefits failing players. If progression or resource instead slightly overlaps it could benefit both failing and successful players. However obstructions must fit each values progression level to prevent commitments being blocked.

Obstruction are also the players self imposed rules for value commitments. Martinez (2011) observed that Second Life (2003) communities commits to a stringent behaviour agreement of values and imposed rules. Once players commits themselves towards a communities values, they are bound to act in accordance its structure, obstructing the players freedom. However players are still free to shift their game identity or value even after commitment, but they exchange the progression of their previous value to their new value.

Parker (2008) distinguishes different rules in games and indicates how imposed structures are present. Fixed rules are enforced by the games system such as the consequences of an action. Implied rules suggests valuable actions or values to pursuit but are not mandatory. Parker suggests expansive gameplay exists within implied rules. Expansive gameplay is when imposed rules emerge and are developed by players, creating new or increasing existing values.

Martinez (2011) found that players agree and abide by their created structures to maintain their valued end state. This results in restricting the players freedom and agency to defined boundaries, guiding player commitments to specific values while obstructing them from opposing structures.

Lee et al. (2007) has found that players cannot maintain their commitments if their obstructions are too difficult. Contrastingly Hirsh et al. (2012) found that low difficulty obstructions would also negatively affect commitment. As Barr et al. (2007) proposed that an end states value is enhanced by its obstructions difficulty, players will believe their accomplishments will lack value If achieving an end state is too simple a task. Because of this, Cohen et al. (2007) suggests that players may also discard dominant strategies for a greater sense of challenge if the outcome is evident.

Obstructions are a key component that must add value by providing difficulty. Obstructions should not impede players from pursuing their value. Obstructions must be balanced to control the speed of progression or maintenance. And the rewards from overcoming obstructions should slightly overlap and benefit both failing and successful players.

OBSTRUCTIONS DIFFICULTY SHIFTS THE SPEED OF PROGRESSION



Figure: 3. Lai, Chun Ting. (2015). Key Component: Obstruction Difficulty. (Diagram).

2.4 Linear Progression and Maintenance

Players pursue their commitments by progressing their value. However progression in games are often linear and will eventually be reach. There would be no reason for players to commit if they reach their chosen value. Yee (2006) describes that players value their accomplishments of increasingly difficult obstructions and the accumulation of rewards. MMORPG often utilises reinforcement schedules operant conditioning systems that gradually requires unreasonable commitment efforts to progress their value.

Players would demand higher progression growth as difficulty increases, and can quickly restrict players if obstructions are too difficult or progression is maximised and redundant. This may result in obstructions impeding progression growth. Lee et al. (2007) also found that a disparity between players progression levels would also segment player activity, resulting in a lack of player cooperation. While Lopez (2006) explains that structured difficulty caters to all skill levels and provides a sense of progression, it will eventually either reach an impossible difficulty level or progression will conclude. Instead players should have a choice of obstruction difficulty, where the difficulty of each actant is determined by the shared progression.

Woodford (n.d.) states that player agency are often responses towards difficult obstructions. Game identities guide player agency, how players respond to obstruction. But if the values of predesigned character roles contrast the players, they will not have the agency to pursue their value. The progression system would force players into acting the characters role or value. Emergence is only possible if the system is lenient towards player agency.

Myres (2003) found that narrative and back-story contextualises play and amplifies player engagement. Narrative guides player activity such as game quests and assists in designing coherent themes and objects within the game. However he criticises that back-stories does little to guide player activity and are not essential for play. Instead the valued end states and its structures would subdue any values that a back-story may impose. Allowing players agency to choose their own activity or obstructions would help them choose their own values and develop their game identity.

Hirsh et al. (2012) found that a lack of end game content resulted in players lacking values to pursue once their reached maximum progression. Because of the linear nature of progression systems often found in MMORPG games, new content updates must have greater value than previous content. Once completed the value of new content becomes redundant as there is no reason to repeat the content, leaving players with no value to pursue. To alleviate this the players valued end state must be continuously updated or difficult to accomplish. However this often results in frustrated players as they either cannot complete the content or complete it and have nothing to do. I question if progression should be linear, achieving one valued end state after another. Linear progression contrasts what Martinez (2011) had observed in Second Life (2003) commitments, in which instead maintenance of their valued end state is as important as progression. Progression therefore should be both the increase and maintenance of valued end states across multiple but limited amount of content or actants.

Actants are a key component that obstructs and provides the difficulty of value progression. For progression to sustain commitment instead of linear finite path. Player must be able to choose various but limited amount of actants, personally choosing their own progression path. These actants would consistently shift in value. Players progress by shifting the actants towards their value and maintaining the actants value.

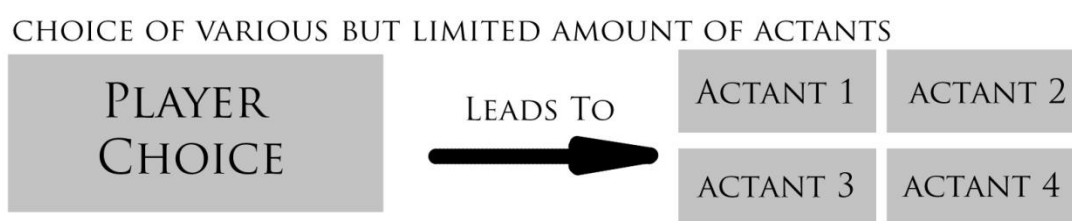


Figure: 4. Lai, Chun Ting. (2015). Key Component: Choice of Actants. (Diagram).

3 Board Game Prototype 2

3.1 Prototype 2 Summary

To further explore choice and difficulty, the second board game substituted the skill development chart with dice rolls to reduce the amount of statistics required. The game merges the attack and event cards into one card named actions. To encourage game identity formation, character characteristics and goals were introduced to direct players into selecting specific action cards. This may encourage the pursuit of obtaining new valuable cards and story tokens.



Figure: 5. Lai, Chun Ting. (2015). Second prototype. (Photograph).

3.2 Prototype 2 Interrogation

Players once again enjoyed collecting story tokens. Players also enjoyed visualising their game identities based upon their chosen character elements and goals. However players quickly dismissed this as they did not find any benefit from following these character elements. This indicated that a response or consequence from player actions will benefit commitment.

Players shifted their attention towards the action cards but their scripted quests were also puzzling. Players would instead reinterpret the action cards descriptions and developed unique emergent narratives instead. How players enjoyed reinterpreting their action instead of picking character elements hints that agency of actions benefits commitment.

3.3 Agency and Consequences

How do player actions show that their values were enforced? And should the players or the system determine the consequences of the players actions.

Sullivan et al. (2012) differentiates between tabletop and computer role playing game quests, Player actions and consequences are determined by the game master in tabletop games, a player that oversees the games events similar to a games system. For players to have meaningful choices, game masters must guide player actions towards valuable end states. Game masters must also allow players with their available actions to pursue their valued end state. Game masters often adjust the game based on player actions to provide a feeling of agency.

Contrastingly consequences in computer games are controlled by the games system. Due to the mechanical nature of computer games, players are restricted to specific predesigned actions and consequences. The computer games system rarely performs permanent or unique consequences as it cannot predict emergent actions.

Tychsen & Hitchen (2006) clarifies different levels of consequences into three groups. The effects of non-permanent consequences quickly end. Limited permanence consequences have a longer duration but will also dissipate over time. And the end state of permanent consequences never change. Non-permanent and permanent consequences both restrict commitment as the current end state is either too fleeting or unchanging. Player will find it either impossible to maintain or progress their valued end state respectively. However limited permanence allows the need for players to both increase and maintain their valued end state from other states.

Sullivan et al. (2012) believes that quests are ideally playable, where players are given meaningful actions and consequently direct players towards valuable end states. Instead actions within MMORPG quests are often restrictive, only having combat based actions to progress a predetermined end state. These quests often provides back-stories that attempts to provide meaning or motivation towards repetitive activities.

Tychsen & Hitchen (2006) identifies that current MMORPG's focuses on internal consequences that affects the character instead of the virtual environment. They criticises that consequences should be external to have narrative meaning. They also evaluate that consequences can be measured by its magnitude, how significantly it impacts other players. A high magnitude consequence may significantly modify the difficulty of obstructions by removing or adding resources.

I believe that consequences instead should have limited permanence in which player actions may shift the games end state progression. Consequences should transfer the progression of one value into another. If values progression overlap, similar actions would progress the players own valued end states. This will ensure that player agency is maintained.

Hirsh et al. (2012) found that repetitive actions causes player boredom in the MMORPG World of Warcraft (2004). This reaffirms Sullivan et al. (2012) statement that having playable activities that provides agency is necessary for commitment. Tychsen & Hitchen (2006) cautions that permanently removing end states as a consequence will result in other players being unable to experience the same value as the game progresses. For selective commitment to persist, a game must ensure that any end states are accessible at all times.

Agency is a key component that requires versatile player actions. Players must be capable of adapting to the current end state by utilising various actions for the same consequences.

VESATILITY ACCORDING TO CURRENT END STATE



Figure: 6. Lai, Chun Ting. (2015). Key Component: Versatility. (Diagram).

For players to commit to a value, the players actions must be identifiable and meaningful. Actions is one of the key components for commitment. The players action if successful must lead to known consequence and end state. Consequnces must have limited permenance and overlap between values.

CONSEQUENTIAL ACTIONS



Figure: 7. Lai, Chun Ting. (2015). Key Component: Consequential Actions. (Diagram).

4 Board Game Prototype 3

4.1 Prototype 3 Summary

Continuing from exploring player agency, the next board game attempts to understand the relationship between actions and values.

Player actions must be created by matching objects and actions cards with their respective colours. Object cards are also assigned different numerical effectiveness. Because of this only certain combinations and effectiveness of action and object card can be the valued end state.

Instead of collecting story tokens, this prototype utilises an event creation system. The valued end state is to match several groups of three objects with matching colours, then protecting these groups from the opponents actions. The more groups of three objects the players protect, the more cards that players can manipulate using the white dice each turn.

Players could either take objects, give objects or draw more objects each turn. The amount of objects that players can manipulate depends on the white dice and the amount of events players have protected.



Figure: 8. Lai, Chun Ting. (2015). Third prototype. (Photograph).

4.2 Prototype 3 Interrogation

Although players can choose which actions and object cards to combine to create different events of value, players found that the numerical effectiveness and restricted combinations obstructed them from choosing what value to pursue. This showed how crucial selectable values are to commitment where players choose any actions or value without requiring specific prerequisites. Players instead formed their value depending on what actions or objects are conveniently in their possession.

Contrasting the previous prototype, players developed their identity based on the objects they possessed instead of their actions. Players enjoyed creating stories and identities based on the objects that they possessed. This led to further exploration on the role of identity formation and how it benefits commitment.

4.3 Identity, Presence and Consequences

Players must choose a value for commitment. The chosen value will determine what structure and actions are required to progress. These actions will be observed and interpreted by other players and shape their virtual identity. But how could a virtual identity benefit value commitments?

Van Looy, Courtois, De Vocht, & De Marez (2012) distinguishes three different types of identification in MMORPG's. Avatar identification, Group Identification, and Game Identification. Avatar identification is when players are immersed or embody their avatar by shifting their self-perception. Group identification is when players affiliate with other groups or communities within

the game. Game identification is the players' relationship such as commitment with the game's values and components. They discover that avatar, group, and game identification correlate to Yee's (2007) immersion, social and achievement motivational components respectively. This means that player motivation is linked with having a sense of identity within the game.

Taylor (2002) depicts the player avatar as the digital representation of their body used to interact with the game world. Avatar identity is expressed by the avatars' design and choice of actions. He explains that immersion is triggered through avatar interactions, achieving a feeling of embodied presence within the game world. He discusses the importance of interacting with other players to achieve embodied co-presence.

This correlates with Tychsen & Hitchen (2006) idea that external consequences are necessary for emergent stories to appear. Time and place appears static in current MMORPG's because player actions often lack external consequences. Players can only seek values that are internal within their avatars such as level progression. Mennecke et al. (2011) explains that player avatars mediate player communication and intentions. The game world provides context to the avatars' actions, what they are projecting their value towards. Players must feel that their actions of their avatar express their external valued consequences. This will result with improved immersion and motivation towards their committed value.

Lee et al. (2007) found that avatars in MMORPG's have fragile presence and co-presence if they lack the capability to create external consequences. The co-presence of other players vanishes when they are absent. Mennecke et al. (2011) describes that co-presence is when players are aware that other players share their game world. Taylor (2002) supports that players experience co-presence from the presence of another visual avatar or their past activities. This encourages players into embodying and projecting their values towards the game world. Players that pursue projecting their valued end state supports co-presence, supporting commitment.

Mennecke et al. (2011) defines embodied social presence as the combination of both presence and co-presence within the game world. Embodied social presence will increase player engagement, motivation and ultimately commitment. For a game to incorporate embodied social presence, the player avatar will be predesigned with enough agency in their actions to commit to their value. The game world's actants must support these valued end states that player actions project. Actants would illustrate co-presence as the valued end states that players had projected. This may allow actants to help guide new players how to choose and commit to the actants' current end state.

Group identification is also important for commitment. The interactions between group members encourage activity and the pursuit of values, supporting co-presence as devotion towards the value develops. I believe players would categorise what values they like or dislike based on group interactions. This will guide what values that players would support or obstruct from other players.

Tychsen & Hitchen (2006) differentiates between fabula and story. The fabula is the player's personal experience. A story is a predesigned fabula specifically arranged to compel players towards a directed experience. Stories often compel players to initiate specific events as a character with a predesigned identity in a particular order. Story-based quests or structured progression in games obstructs players from developing their personal fabula.

Tychsen & Hitchen (2006) and Myres (2003) consider that players often contextualise their actions during extended play. Because of this Mennecke et al. (2011) suggest that embodied social presence may not necessarily require graphical representation such as themes, back-story, or even an avatar. Players could achieve the sense of presence and co-presence from their action and resultant consequences from the game world.

Immersion is experienced by agency of the player's actions and consequences, resulting with an embodied presence. Embodied co-presence is developed through the observation of players projecting their value with their actions. Players will speculate other players' intentions from their avatars' actions. However their effectiveness depends on their own knowledge of the game world's activities and values. This knowledge develops alongside the player's personal fabula as they explore

the actions, actants and values of the game . This ultimately results in the formation of the players virtual identity.

Identity and fabula is a key component for commitment and must be allowed to form instead of it being directed by predesigned characters or narrative. A players identity is developed as other players interpret and react to their actions and consequences. This provides players a sense of presence and co-presence with other social agents and the actants of the game world.

CONSEQUENTIAL ACTIONS RESULTS IN PRESENCE AND CO-PRESENCE



Figure: 9. Lai, Chun Ting. (2015). Key Component: Consequential Actions Result in Presence and Co-Presence. (Diagram).

5 Board Game Prototype 4

5.1 Prototype 4 Summary

Further exploring identity and character formation. The next board game focuses on actions encouraging emergent narratives which shape their game identities. Players would accumulate wealth cards, progress skill levels and influence in the game. The game is purposefully lenient with its rules. The amount of object elements used and how the players explain their actions determines if they are successful.

The win condition is to create and narrate an event using a large amount of object elements. Events have varying levels of difficulty that demands more object elements as the levels increase. Game identities are developed as players narrate and reinterpret the past and new events created. Players must also take control over areas of the game world to create events. Players negotiate over how areas are divided and promotes social interactions.



Figure: 10. Lai, Chun Ting. (2015). Fourth prototype. (Photograph).

5.2 Prototype 4 Interrogation

At the start of the game, players decided to establish a basic game identity based upon their existing interests. Through social interactions and interpreting the pictures on object elements, players developed character identities with goals and back-story by contextualising their actions. Players also predetermined future events and consensually agreed to realise them.

The player actions validity was determined by how interesting and convincing the story and actions that players narrated were using their object elements. Players mentioned that their characters personality was formed from their game action choices and that their decision making was based off their game identity. Players also associated specific game objects with their character identity.

Players enjoyed interacting within the game environment and gathering object elements. Although object elements are functionally identical, players attached character values towards specific object elements and made it their goal to acquire them. However these values are emergent and could not be enforced by a computer game system. This lead to the exploration of what advantages that predetermined values should provide.

5.3 Agency and Progression

Committing towards a value requires player agency against obstructions over extended durations. Although actions will lead to its consequential value, values would need to provide advantages or benefits to motivate players to exert the required effort.

Sewall Jr (1992) interprets Giddens (1984) structuration theory, explaining that structures are principals with sets of practices for a specific value which enables player agency. This identifies two potential motivators for value commitments, valued structures that game systems manage and procedural practices that realise player values if followed. But what benefits do players seek in their value commitment?

Progression game systems have predesigned values and embeds players with the intention of pursuing it. This system provides motivation and knowledge to progress. However players of the same value may prefer different practises to progress and commit towards. Because the actions and progress between values overlap, players would want to choose what actions that progress. The players may even progress actions that conflict with their value to obstruct other players. Agency is most prevalent in emergent based games, where the games systems actions interact dynamically with variable values. However this freedom to choose what actions are preferable to their value is limited by the systems affordance.

Woodfords (n.d) found that player agency "requires intention on behalf of the player, motivation for the act (such as longer term goal), knowledge that the act was committed, the ability to make an informed decision and some non-trivial act on behalf of the player." This contrasts Sullivan et al. (2012) description of agency. They explain that agency is players understanding their actions changes the games end states that the system is capable of supporting. Lee et al. (2007) research supports this as they point out that repetitive gameplay elements causes players to stop committing to their MMORPG.

Although systems with versatile action have the capacity for agency, it does not sufficiently motivate agency by itself. Tychsen & Hitchen (2006) has criticised that current MMORPGS's lack meaningful consequences. They believes that consequences, the ability to change the state of the virtual environment, is important in the creation of stories. This supports Sullivan et al. (2012) belief that quests in MMORPG's are not playable. There is no meaningful consequence or unique benefit between different quests or end states. He differentiates quests into task based quests and rule based quests. Task based quests are akin to computer role play games quests that are not playable, while goal based quests are similar to lenient game masters in tabletop role playing games and are playable.

Moon et al. (2013) believes that commitment requires players to "embrace ownership of the game by enhancing their ability to control their game character and to develop an online social identity." They identify that control and autonomy is required for psychological ownership, and can be achieved when players feel that their actions are controlling their effectiveness.

Rothbaum, Weisz, & Snyder (1982) distinguishes between two types of control. Primary control are practices that consequentially result in their valued end states. While secondary control is the players agency, shifting their practices to take advantage of the current end state to reclaim primary control. This suggests that each end state must be advantageous to each player value to achieve overall player commitment.

Consequences must be valuable and is a key component for player commitment. Players must know that the consequences of their actions leads to an advantageous end state. Players will progress and take advantage of different practices resulting in player agency to progress or maintain the valued end state.

ADVANTAGEOUS END STATES



Figure: 11. Lai, Chun Ting. (2015). Key Component: Advantageous End States. (Diagram).

Research System Design

As identified above, there are seven key components that require certain attributes to be met for a game to facilitate selective commitment. To create a board game that may support selective commitment, the project will design and utilise a value shifting system that attempts to combine these key components.

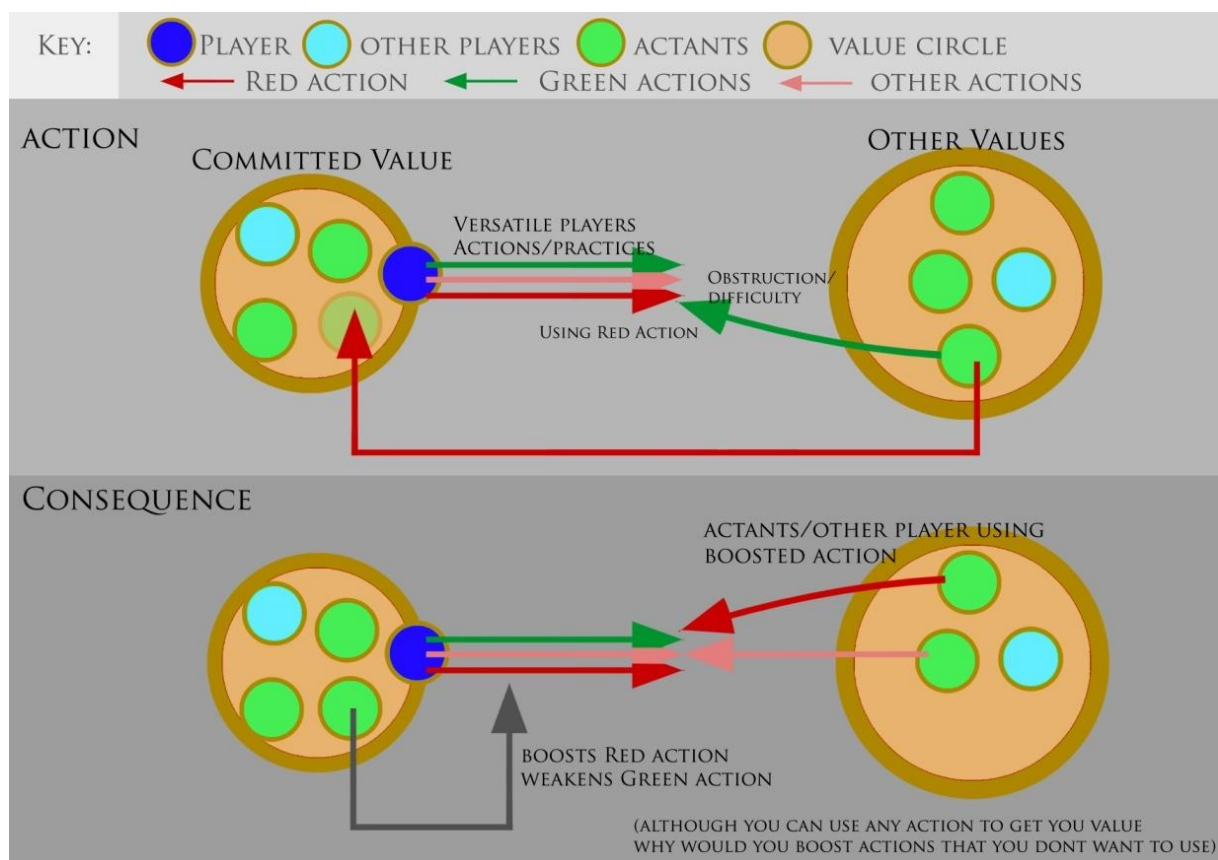


Figure: 12. Lai, Chun Ting. (2015). Value shifting Feedback Loop. (Diagram).

Value Shifting Feedback Loop System

This system seek to present an alternative method of progression and maintenance with interchangeable valuable end state that enables player agency.

The seven key components and its required attributes are combined to form the above diagram.

The valued end state is selectable. The system can support multiple value circles for players to choose and commit. This ensures that valued end states are selectable. Each value is distinctive by what specific actions it supports.

Player actions are versatile. The arrows appearing from the player circle illustrates all the actions that they can use, enabling player agency and action versatility.

Choice and limitation of actants. Players can choose a limited amount of actants to progress their value from either their own or other value circles.

Actions are consequential. Using an action on an actant will consequentially shift its value to progress or maintain your committed value.

Obstructions shift progression speed. These actants will obstruct the players actions with their own actions. Because the effectiveness of these actions are shared, players can estimate the difficulty of the actant as an obstruction.

End states are advantageous. Shifting the actants end state to the players value will also shift the effectiveness of the actions used. The winners actions are boosted while the failing action is reduced.

And finally, actions leads to presence and co-presence. Player actions expresses their intentions and develop their virtual identity. Presence is observed by their actions shifting the game state, while co-presence is observed by player reactions to the shifting game state.

Note that this diagram only presents one instance that these seven key components could be arranged, and that multiple variations of systems supporting selective commitment could exist.

Within this system, the players have agency to utilise different actions on obstructive actants with diverse difficulties to progress their committed end state.

Player actions will ultimately result in progressing their chosen value if successful, as shown by the grey arrows on the diagram . The actions consequences will result in the actants valued end state to change or be maintained. If the actants end state is changed, the effectiveness of the actions used will change according to the outcome. But certain actions are more favourable for specific values. The failed actions effectiveness will decrease while the winners actions effectiveness will increase.

The end states value amplifies from the obstructions difficulty and the effectiveness of the values favourable actions progressing. The obstructions difficulty is determined by what actions it benefits or detriments. As the actants end state is interchangeable, players commit by changing or maintaining the actants end state to their value.

The systems has a limited number of actants and values. This results in players being motivated to choose their own actants to progress their chosen value. If player manage to shift all the actants end states to their own value, commitment will be to maintain this state. However the more actants that need to be maintained, the more difficult commitment will be as players have more actants to defend from their opponents. The difficulty increase as the actants shifts what actions it benefits or detriments.

Introduction of the Board Game: Lost Avatar

Lost avatar is a board game that utilises the value shifting system explained above. The objective of the game is to score the most points by having the most area card structures match the structure that the player intended each round.

The theme of the game is that players are competing to shape the characteristics of several areas to match specific structures. How effective players can shape the areas depend on the knowledge card, which changes according to the existing structure of the areas.

Analysis of Game Components

Tokens:

Tokens are used to mark the current position of certain measurements. Players move these tokens when they change the area cards characteristics, change their score on the player score card, change the effectiveness of actions in the knowledge card, and mark how current structures are formed on the structure card.

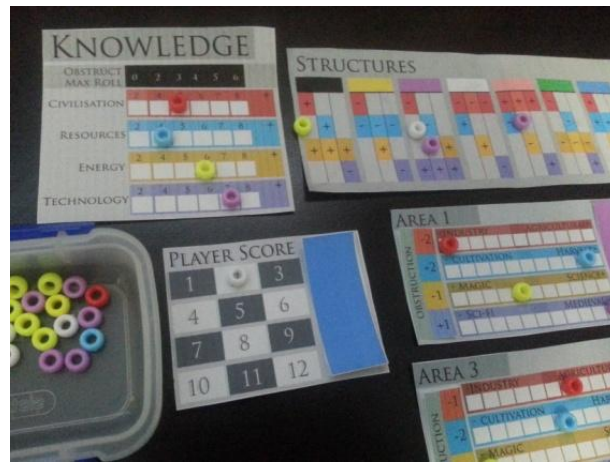


Figure: 13. Lai, Chun Ting. (2015). Game Tokens. (Photograph).

Knowledge card:

The knowledge card determines the effectiveness of players actions. This portrays that end states are advantageous. The effectiveness shifts according to the current structure of the area cards. The obstruct max roll area determines the difficulty of the obstruction according to how effective the action currently is.

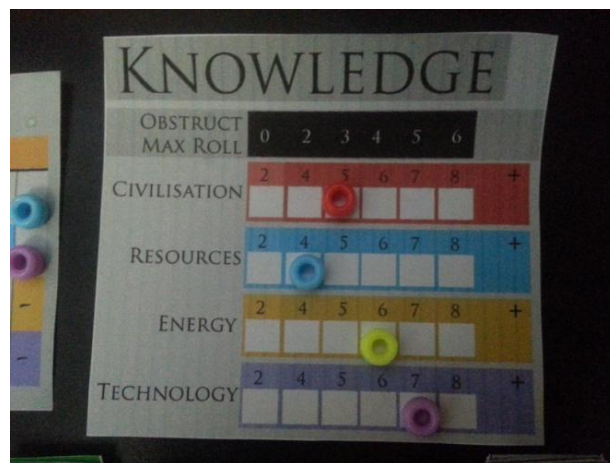


Figure: 14. Lai, Chun Ting. (2015). Knowledge Card. (Photograph).

Area card:

The area cards are actants with interchangeable value structures. This portrays the choices and limitations of actant choices and that actions are consequential. The current structure is placed on the state area on the card. The structure of the area is changed when two characteristics reaches its end in each round. There are four different characteristics each having two different results that player actions can change. The consequential value is determined when two characteristics have reached its end result. The obstruction piece is placed in the obstruction area of the card.



Figure: 15. Lai, Chun Ting. (2015). Area Card. (Photograph).

Obstruction Piece:

The obstruction piece changes what actions the actants support or obstruct based on its numbers. This portrays that obstructions shift progress speed. Obstruction pieces are changed at the beginning of each round.

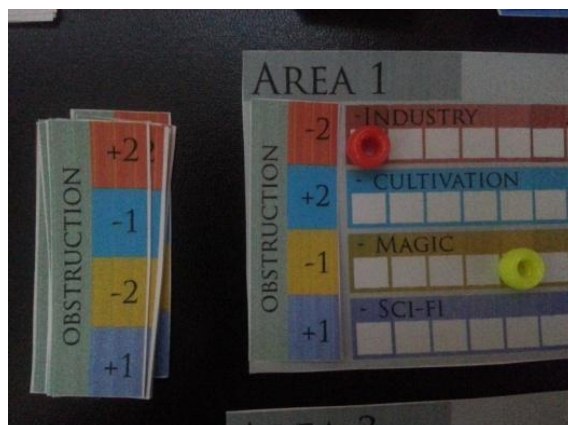


Figure: 16. Lai, Chun Ting. (2015). Obstruction Piece. (Photograph).

Structure card:

The structure card explains what two characteristics are required to create a structure in an area. This portrays that actions are versatile. There are eight structures differentiated with different colours. Each structure has three different combinations of two characteristics, providing players versatility in action resulting in player agency.

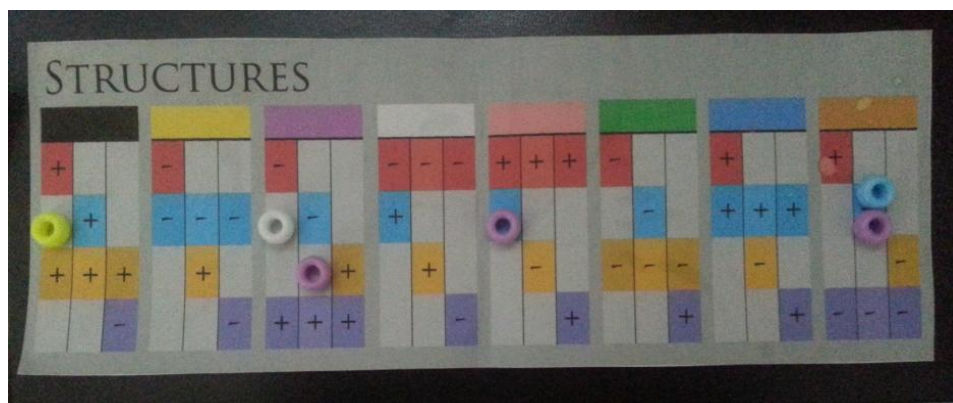


Figure: 17. Lai, Chun Ting. (2015). Structure Card. (Photograph).

Structure piece:

The structure piece is used to indicate the current areas structure and the players previous or current intended structure. This portrays that valued end states are selectable. The furthestmost right structure piece allows players to create their own structure as an alternative play style.



Figure: 18. Lai, Chun Ting. (2015). Structure Piece. (Photograph).

Red and white dice:

The red dice determines the level of obstruction that players face when performing an action. The result is then changed according to the obstruction piece of the area.

The white dice is used after each players turn on a characteristic that the current player chooses and has not changed.



Figure: 19. Lai, Chun Ting. (2015). Red and White Dice. (Photograph).

Player score card:

The player score card keeps track of the players previous intended structure. This portrays that actions lead to presence and co-presence. It also keeps track of their score, the amount of structures that match the structure that the player intended each round. It also indicates to other players their previous value intentions. The game ends when player reaches the end of the score card or a group approved score goal.

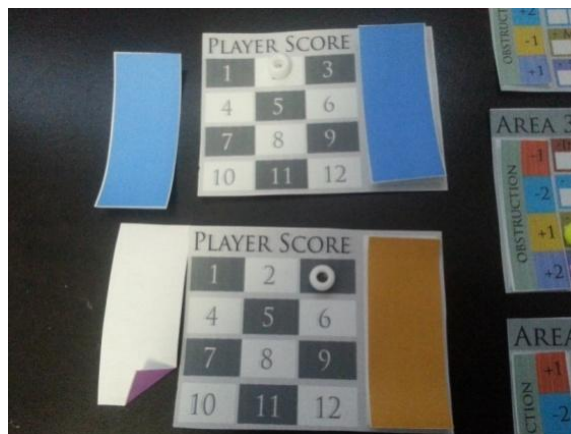


Figure: 20. Lai, Chun Ting. (2015). Player Score Card. (Photograph).

Research Results

Following the qualitative heuristics methodology, The researcher and three participations will interrogate the board games system, identifying how the key components enabled the participants to enact selective commitment. Kleining & Witt (2000) proposes that the systems legitimacy would be verified by gathering qualitative data from interrogating this system. The system would be validated if the data collected confirms that these key components enabled selective commitment. The qualitative data was gather by observing how players interacted within this system and if the systems components acted as explained in the systems diagram. The game could theoretically be played with a vast amount of players if there were enough areas and player score cards. But a large amount of players would increase waiting times between turns and worsen the game experience.

During the games interrogation, I noticed that players picked their initial valued structure based on the actions characteristics. This suggest that players initially value the consequences of their actions greater than the end state. Players often stuck to their initial structure, only changing if they found the difficult increased during early rounds. Players rarely changed their structure during later rounds even though they were capable and that each structure operated similarly. The players that shifted to different valued structures was no less effective from the change. This suggests that value was not forced by the system and were horizontally differentiable, indicating that players selectively choose their commit structures.

I believe that players learned to be mindful of obstruction while choosing area cards to progress. Players stuck to particular area cards to avoid confrontation with other players. Players often risked using the white dice to attempt locking a structure with varying success. Obstruction pieces aided or obstructed certain actions, ensuring that all structures could be potentially reached any round. This result aligns with Lee et al. (2007), Hirsh et al. (2012) and Barr et al. (2007) belief that the obstructions difficulty must be equivalent to player progression to maintain agency and commitment. However this also indicates that a lack of actants would result in a lack of potential advantages for certain values.

I observed that players would study the structure card to learn how to maintain agency and control of area cards that were obstructed by other players. Players adapted by moving the area cards token placements to prevent areas from locking, obstructing other players. This indicated that players agency changed how the game was approached, supporting Sullivan et al. (2012) and Moon et al. (2013) suggestion that versatility of actions was necessary for player agency. Players also enjoyed guessing what value structure that other players sought.

Once someone locked an area card with their actions, I found that players questioned their true intent. This lead to an unexpected but interesting deception game. Occasionally the white dice created unintentional value structures, further adding to the deception. This was an unexpected effect of player co-presence, supporting Mennecke et al. (2011), Looy et al. (2012) and Tyhsen & Hitchen (2006) claim that identification promoted player motivation and commitment.

In later rounds I found that players began to contextualise their play according to how their actions conflicted. They also become attached to certain area cards values and its characteristics movements. This interest to contextualise play supports Tyhsen & Hitchen (2006) and Myres(2003) observation that players would develop their own fabula, imposing emergent values during play.

Conclusion

Player loyalty and commitment is desirable for games where player retention determines the games success such as MMORPG's (Moon et al., 2013). The project identified seven key components and its attributes to support selective commitment. The value must horizontally differentiable to prevent dominant strategies. The actions must be consequential to have recognisable meaning. The consequences must be advantageous to be desirable. Player actions must be versatile to enable player agency. The game must have various choice of actants for various methods of progression and maintenance. Obstructions must maintain a desirable difficulty level and control the speed of progression. And the players actions is capable of developing the players fabula and identity from their presence and co-presence.

The project has developed a value shifting feedback loop system based upon these key components. Progression within this system is to convert actants with interchangeable end states to the players values. The system promotes player agency to adjust their practices according to the shifting game state. The system offers players various but limited amounts of actions, actants and obstructions supporting player agency, a self chosen progression path, and value specific difficulty respectively.

Several limitations restricted this project and notable questions are revealed for further studies. The data acquired from a qualitative heuristics methodology are the researchers subjective interpretation of the games events. There were also a limited number of researcher selected participants that may have influenced the projects findings. Because of this, the system presented in this project may not be the optimal design that supports all the key components and its requirements for selective commitment. Longitudinal play tests is required to fully comprehend the systems effectiveness, such as the average 22.72 hours that MMORPG players invest in the game each week (Yee, 2006).

The current study only examined aspects such as the choice of actions that promoted selective commitment. The projects prototypes has explored the emergence of identities based on visual representation, but does not explore how these game elements affected players choice of commitments, removing them from the final design. Further research could focus on the effects of aesthetics such as the player avatars design and its effect on commitment (Taylor, 2002). Other focuses could be on how groups encourage specific value commitments (Martinez, 2011), and how external obstructions and player personality affect commitments within games (Lee et al., 2007).

Results of game interrogations have found that players attached to particular value structures but players could switch values with the same level of effectance. This indicates that the system promotes and provides players the capability for selective commitments. These results have shown that selective commitment could potentially be designed into a game with the proposed system of a value shifting feedback loop.

References

- Barr, P., Khaled, R., Biddle, R., & James, N. (2006). Get Out Of My Way! Exploring Obstruction in Popular Video Games. In *International Academic Conference on the Future of Game Design and Technology*, London, Ontario.
- Barr, P., Noble, J., & Biddle, R. (2007). Video game values: Human–computer interaction and games. *Interacting with Computers*, 19(2), 180-195. Retrieved from http://www.pippinbarr.com/academic/Pippin_Barr_PhD_Thesis.pdf.
- Blizzard Entertainment. (2004). *World of Warcraft* [Computer Game]. Irvine, CA: Blizzard Entertainment.
- Cohen, J. D., McClure, S. M., & Angela, J. Y. (2007). Should I stay or should I go? How the human brain manages the trade-off between exploitation and exploration. *Philosophical Transactions of the Royal Society B: Biological Sciences*, 362(1481), 933-942. Retrieved from <http://rstb.royalsocietypublishing.org/content/362/1481/933.short>.
- Dormans, J. (2011). Integrating Emergence and Progression. In *Think Design Play: Proceedings of the 2011 Digital Games Research Association Conference, Hilversum the Netherlands*.
- Gee, J. P. (2007). Pleasure, learning, video games, and life: The projective stance. *A new literacies sampler*, 95-113. Retrieved from <http://ldm.sagepub.com/content/2/3/211.short>.
- Giddens, A. (1984). *The constitution of society: Outline of the theory of structuration*. Univ of California Press.
- Hamari, J., & Lehdonvirta, V. (2010). Game design as marketing: How game mechanics create demand for virtual goods. *International Journal of Business Science & Applied Management*, 5(1), 14-29. Retrieved from http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1443907.
- Hirsh, R., Mayeda, M., & McIver, S. (2012). Why Are World of Warcraft Players Bored? A Study on What Aspects of World of Warcraft Cause Player Boredom (University of Denver). Retrieved from <http://wow.richardcolby.net/wp-content/uploads/2013/04/Hirsh-et-al-P1.pdf>.

- Juul, J. (2002). The Open and the Closed: Games of Emergence and Games of Progression. In CGDC Conf..
- Juul, J. (2010). The game, the player, the world: Looking for a heart of gameness. *PLURAIS-Revista Multidisciplinar da UNEB*, 1(2). Retrieved from <http://www.revistas.uneb.br/index.php/plurais/article/view/880/624>.
- Kleining, G., & Witt, H. (2000). The Qualitative Heuristic Approach: A Methodology for Discovery in Psychology and the Social Sciences. Rediscovering the Method of Introspection as an Example. In *Forum Qualitative Sozialforschung/Forum: Qualitative Social Research* (Vol. 1, No. 1).
- Lee, I., Yu, C. Y., & Lin, H. (2007). Leaving a never ending game, quitting mmorpgs and online gaming addiction. *DiGRA*. Tokyo.
- Lin, Y.-L., & Lin, H.-W. (2011). A study on the goal value for massively multiplayer online role-playing games players. *Computers in Human Behavior*, 27(6), 2153-2160. Retrieved from <http://www.sciencedirect.com/science/article/pii/S0747563211001154>.
- Linden Research Inc. (2003). *Second Life* [Computer Game]. California, USA: Linden Research Inc.
- Lopez, M. (2006). Gameplay design fundamentals: Gameplay progression. Retrieved from http://www.gamasutra.com/view/feature/130188/gameplay_design_fundamentals_.php?print=1.
- Manninen, T., & Kujanpaa, T. (2007). The value of virtual assets – the role of game characters in MMOGs. *International Journal of Business Science and Applied Management*, 2(1), 21–33.
- Martinez, N. M. (2011). Liminal Phases of Avatar Identity Formation in Virtual World Communities. In *Reinventing Ourselves: Contemporary Concepts of Identity in Virtual Worlds* (pp. 59-80). Springer London. Retrieved from http://link.springer.com/chapter/10.1007%2F978-0-85729-361-9_4.
- Mennecke, B. E., Triplett, J. L., Hassall, L. M., Conde, Z. J., & Heer, R. (2011). An examination of a theory of embodied social presence in virtual worlds*. *Decision Sciences*, 42(2), 413-450. Retrieved from <http://onlinelibrary.wiley.com/doi/10.1111/j.1540-5915.2011.00317.x/abstract>.

- Moon, J., Hossain, M. D., Sanders, L., & Garrity, E. J. (2013). Player commitment to massively multiplayer online role-playing games (MMORPGs): An integrated model. *International Journal of Electronic Commerce*, 17(4), 7-38. Retrieved from [http://www.researchgate.net/publication/237151329_Player_Commitment_to_Massively_Multiplayer_Online_Role-Playing_Games_\(MMORPG\)_An_Integrated_Model](http://www.researchgate.net/publication/237151329_Player_Commitment_to_Massively_Multiplayer_Online_Role-Playing_Games_(MMORPG)_An_Integrated_Model).
- Myres, D. (2003). The attack of the backstories (and why they won't win). In *DIGRA Conf.*. Retrieved from <http://www.digra.org/wp-content/uploads/digital-library/05150.39290.pdf>.
- Parker, F. (2008). The significance of jeep tag: On player - imposed rules in video games. *Loading...*, 2(3). Retrieved from <http://journals.sfu.ca/loading/index.php/loading/article/view/44/41>.
- Rokeach, M. (1973). *The nature of human values* (Vol. 438). New York: Free press.
- Rollings, A., & Morris, D. (2004). *Game architecture and design: a new edition*. Indianapolis: New Riders.
- Rothbaum, F., Weisz, J. R., & Snyder, S. S. (1982). Changing the world and changing the self: A two-process model of perceived control. *Journal of personality and social psychology*, 42(1), 5. Retrieved from <http://psycnet.apa.org/index.cfm?fa=search.displayRecord&uid=1982-23598-001>.
- Salen, K., & Zimmerman, E. (2004). *Rules of play: Game design fundamentals*. MIT Press.
- Salen, K., & Zimmerman, E. (2005). Game design and meaningful play. *Handbook of computer game studies*, 59-79.
- Sewall Jr, W. H. (1992). A theory of structure: Duality, agency, and transformation. *American journal of sociology*, 1-29. Retrieved from http://isites.harvard.edu/fs/docs/icb.topic1134127.files/March 7 Readings/Sewell_Theory_of_Structure.pdf.
- Sullivan, A., Mateas, M., & Wardrip-Fruin, N. (2012). Making quests playable: Choices, CRPGs, and the Grail framework. *Leonardo Electronic Almanac*, 17(2).

- Taylor, T. L. (2002). Living digitally: Embodiment in virtual worlds. In *The social life of avatars* (pp. 40-62). Springer London. Retrieved from <http://rhetoricandwriting.com/cyborg/wp-content/uploads/2014/02/Taylor-Living-Digitally-Embodiment-in-Virtual-Worlds.pdf>.
- Thrun, S. B. (1992). The role of exploration in learning control. *Handbook of intelligent control: Neural, fuzzy and adaptive approaches*. Retrieved from <http://ci.nii.ac.jp/naid/10008844422/>.
- Tychsen, A., & Hitchen, M. (2006). Ghost worlds – time and consequence in MMORPGs. In *Technologies for Interactive Digital Storytelling and Entertainment* (pp. 300-311). Springer Berlin Heidelberg. Retrieved from <http://dl.acm.org/citation.cfm?id=2175772>.
- Van Looy, J., Courtois, C., De Vocht, M., & De Marez, L. (2012). Player identification in online games: Validation of a scale for measuring identification in MMOGs. *Media Psychology*, 15(2), 197 – 221.
- Woodford, D. (n.d). Exploring agency: Dominant conceptions of avatar related game world control. Retrieved from http://www.academia.edu/847116/EXPLORING_AGENCY_DOMINANT_CONCEPTIONS_OF_A_VATAR-RELATED_GAME_WORLD_CONTROL.
- Yee, N. (2006). The psychology of MMORPGs: Emotional investment, motivations, relationship formation, and problematic usage. *Avatars at work and play: Collaboration and interaction in shared virtual environments*, 34, 187-207.
- Yee, N. (2007). Motivations for play in online games. *CyberPsychology and behavior*, 9(6), 772-775. Retrieved from [http://www.nickyee.com/pubs/Yee - Motivations \(2007\).pdf](http://www.nickyee.com/pubs/Yee - Motivations (2007).pdf).

Appendix

Lost Avatar Game Instructions

Start of Game:

Each player receives one of each structure pieces and a player score card. Players choose a structure piece as their intent for the round and hides it face down under their player score card.

The knowledge card and area cards are placed to be observable to all players. The number of area cards are two more than the number of players. Each area cards is given an obstruction piece. Tokens are placed in the middle dark area of each area cards characteristics, on the number one of the player score card, and number two on each action on the knowledge card.

Player Round:

On the players turn, players move two of an areas characteristics as their two action according to the knowledge card. Each action requires that players roll the red dice, limited by the obstruct max roll on the knowledge card, change the roll according to the areas obstruction piece, and subtract the result from the action.

After two actions, players choose a characteristic that has not changed during their turn and rolls the white dice. Move the characteristic according to the white dice. Then the turn passes to the next player.

If two characteristics of an area have reached their end, the area is locked for the round and cannot be changed.

Players then change the structure piece of the area according to the structure card. The effectiveness of the actions on the knowledge card is decreased according to the two characteristics of the previous structure, and increased by the two characteristics of the current structure.

Players can place a token on the structure card onto the locked areas two characteristics to keep track of what characteristics to change when the areas cards structure changes.

When all areas are locked the game moves into an evaluation round.

Evaluation Round:

Once all areas are locked, players will reveal their intent structure. Players will move their score on the player score card according to how many structures on the area cards matches their intent structure. All tokens on the areas are reset to the middle. if no player score card has reached the maximum, players chooses another intent structure piece, puts their last rounds intent on their player score card and begins the player rounds again.

General Rules:

The player cannot choose the same characteristic twice each turn.

Turns are passed on clockwise.

If structures have the same requirement for two characteristics, the player whose actions has locked the area decides which structure it will become.

The project will take qualitative data from the board game, analysing the players intent structure and the resultant area structure for each round. The project will use a qualitative heuristics approach to analyse player commitment based upon whether players recurrently select the same structure, and how often the area structure matches their intent structure each round.