Replayability: A Structural Approach to Players and Computer Games

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Abstract

På trods af en bred enighed om at genspilningsværdi er et velkendt fænomen, er det imidlertid et begreb, der ikke er blevet teoretiseret i detaljeret grad. Begrebet er blevet tillagt mange betydninger, der ikke mindst skyldes dets subjektive konnotationer. I den henseende er der i specialet primært sat fokus på at kortlægge aspekter relateret til motivation og emotion, der kan forklare nogle af årsagerne til, hvorfor vi genspiller computerspil. Til dette formål anvendes Michael Apter's *reversal theory*, der har som hovedpointe, at vi ofte skifter mellem såkaldte metamotiverende tilstande, der mere kendetegnes som en "måde at være på" end konkrete motivationer. Når vi er i disse tilstande, fortolker, organiserer og forholder vi os til motivationer på en bestemt måde.

Det argumenteres, at en forståelse af genspilningsværdi må findes i forholdet mellem spil og spiller, og således tages også en spilteoretisk tilgang i brug. I den første del forelægges en definition, der tager udgangspunkt i, at genspilningsværdi nødvendigvis implicerer en kerneoplevelse, der er genkendelig på tværs af gennemspilninger. Det antages, at uden denne kerneoplevelse vil spillet falde uden for en definition af at være genspilleligt. Samtidig tillægges genspilningsværdi en kvalitet af at være anderledes, hvor nye gennemspilninger bevirker en fornemmelse af noget nyt. I relation hertil identificeres de elementer, der udgør spillets lighed og forskellighed med afsæt i koncepterne primære og sekundære kernemekanikker. Hvor primære kernemekanikker relateres til de mekanikker i spillet, der er nødvendige for at gennemføre et spil, henleder sekundære kernemekanikker til handlinger, der ikke er nødvendige, men som gør det lettere at nå målet.

I henhold hertil argumenteres det, at en oplevelse af lighed og forskellighed forudsætter en tilgang, der skelner mellem indholdsmæssige og formmæssige aspekter ved spil. Således tages der afsæt i en strukturel tilgang, der både appliceres på et formelt spilniveau og på et erfaringsbaseret spillerniveau. I relation til den første del tages der afsæt i koncepterne om emergente og progressive spilstrukturer. Emergente strukturer defineres som værende strukturer, der genererer komplekse og uforudsigelige adfærdsmønstre på trods af, at de indeholder relativt få regler. I modsætning hertil er progressionstrukturer defineret ved at være forudbestemte, idet der kun eksisterer ét enkelt valg, hvorfra spillets mål kan nås. Disse strukturer kobles til koncepterne om lighed og forskellighed. Det argumenteres, at emergente strukturer tillader forskellige tilgange til det samme indhold, mens progressionstrukturer er kendetegnet ved en manglende forskellighed i kraft af, at spillet kun kan gennemføres på én måde. Således må konceptet om forandring tillægges andre faktorer i progressionsstrukturer, der knytter an til det oplevende individ i takt med, at et spil mestres.

Dette leder til projektets anden del, hvor Apter's motivationsteori *reversal theory* tages i brug. Der diskuteres, i hvilken udstrækning spilelementer har indflydelse på de metamotiverende tilstande samt den dynamiske proces, hvori vi regelmæssigt skifter fra en tilstand til en anden. Dette relateres til de forskellige spilstrukturer identificeret i projektets første del. Tilgangen til genspilningsværdi er således at forstå, i hvilken udstrækning spillet kan akkommodere de regelmæssige skift mellem tilstande, samt de behov disse medfører og derigennem forlænge spillets levetid.

Overordnet struktureres projektet omkring en forståelse af spil på tre niveauer: som platform, som virtuelt rum eller som aktivitet. Således kan et spil betragtes som en platform, hvori et virtuelt rum eksisterer. På samme måde udgøres dette virtuelle rum af forskellige aktiviteter, der i sig selv kan betragtes som spil. Formålet med denne klassificering er at komme

problematikken ved forskellige definitioner af genspilningsværdi til livs, hvor antagelsen er, at genspilningsværdi må betragtes i forholdet mellem lighed og forskellighed. Det argumenteres, at forståelsen af dette forhold afhænger af det konkrete niveau, hvorfra spillet analyseres. Det virtuelle rum opnår sin beskaffenhed af lighed i kraft af, at forskellige aktiviteter kan være indbyrdes relaterede i form af fælles mål. Ligeledes argumenteres det, at spil forstået som platform i sig selv udgør en fornemmelse af lighed, der defineres ud fra platformens egne præmisser. Denne klassificering kobles til *reversal theory* for at diskutere, hvordan eventuelle skift af tilstande forløber i en given aktivitet, på tværs af aktiviteter, der er forbundne i kraft af fælles mål samt på tværs af aktiviteter uden nogen tilknytning.

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Introduction

Since its recent arrival as a viable academic field, game studies have made great progress in capturing the ontology of games. In a similar manner, game design research has focused on the specific elements and criteria needed to develop desired gameplay. Less attention has been given to the concept of replay value, also known as replayability, despite it being an important design principle for game development companies. It would be easy to assume that replayability is reliant solely on the core game experience. If the game is enjoyable, I am likely to play it again at some point. From a design perspective, this would be an implicit form of replay value. Another way to define replay value is in terms of content in which the game responds to player actions and reacts accordingly. This is a more direct way for developers to invite players to play the game again. Some scholars have studied aspects that bear some insight to the phenomenal aspects of replayability. Jesper Juul argues that some games in which players can pursue different pathways towards a goal might accommodate replayability more than those that are linear (Juul, 2002). However, no sufficient approach has as of yet been made to address how and why we play a game multiple times after initial completion. One can suspect that this is partly due to the fact that the relationship between playability and replayability is so closely intertwined that a discussion of the former necessarily implies the latter, and thus that no further study is warranted. Many of the widely agreed-upon elements that comprise good gameplay such as choice and challenge apply to playability as much as replayability, and therefore a formal distinction between the two remains problematic and in some regard unnecessary: A discussion of replayability becomes a matter of playability.

The questions that arise then are: 1) Is there more to replayability than simply good gameplay and 2) to what extend must a game be different to be replayable? In regard to the latter, one could argue that if the game is not recognizable during the second play-through, it would not be an act of replaying but playing a different game entirely. Depending on the perspective, the implications are thus 1) the notion that replayability is not so different from playability that it deserves further study and 2) how we can distinguish between playability and replayability. These two notions are of course closely related.

The dynamics of motivation

It can be argued that there are as many reasons for replaying a game as there are gamers. This implies that replayability is a highly speculative and subjective area. Some might simply enjoy the game, its immersive story, or its satisfying gameplay and feel compelled to return for another session. Others might value customization of play higher in terms of replayability where different choices lead to different outcomes. Yet others might adopt a more focused goal-orientation as motivation for replaying a game when trying to unlock every achievement the game has to offer. It is clear that if we are to define replayability, we must not only get a better understanding of games, but also what motivates players to replay a game.

In addition to being subjective, motivation is also dynamic. In most cases I might be playing a game for the sake of fun, but when the game becomes too hard, I potentially get frustrated to the extent that reaching the goal is all that matters. Eventually it might even result in quitting the game altogether. Insofar there is this risk of frustration, there is a general consensus that games must be neither too easy nor too hard. However, in addition to leaving the game behind as a result of the game being too hard, there are other less often discussed aspects that can influence this. As human beings, we are prone to a certain rhythm of satiation

where at some point we might feel a need to be more productive when engaged in activities of amusement for a given period of time. I might at some point feel the need to wash the dishes or clean up. Equally, we tend to need these activities of leisure after extended periods of work. Thus, while games might consist of all the components needed for replayability, they cannot immediately account for this rhythm of serious and playful behavior such as the need for at some point to disengage from the game and tend to real-life matters. While no research of this idea exists within the field of game studies specifically, Michael Apter's reversal theory, which is regarded as a holistic theory, is a standard argument of how we shift between mental states that are ontological opposites such as the playful and serious states mentioned (Apter, 1989/2007). While there are certainly external factors that can cause frustration or other emotions that lead to shifts between these states, it is postulated in reversal theory that if these do not occur, one will eventually reverse between states as a result of satiation. As I will argue, this idea is useful in the study of replayability. Reversal theory allows for an approach that not so much aims to impose a number of qualities to replayability such as choice, agency, or immersion, but aims to understand how these shifts or reversals between states occur in games, and specifically how they are facilitated by the game itself. The assumption is also that this approach might to some extent account for replayability beyond the scope of the game itself in the sense that the need to be productive or serious can be facilitated within the game to some degree. From this perspective, the thesis is that replayability of a game can be derived from the extent to which it can facilitate the natural need to shift between these mental states. Secondly, reversal theory is general due to how it is concerned with metamotivational states, which implies that it does not so much describe specific motivations as it describes how one perceives these motivations based on which metamotivational state is active.

Research Question

The aim of this project is not to discuss replayability in terms of design. Rather, it is a theoretical discussion of how replayability can be understood from the perspective of reversal theory. To this end, I aim to provide a framework that accounts for how these different theoretical assumptions relate to each other. First of all, I will offer a definition of replayability that is general enough to account for its ambiguous and subjective nature. I will then apply reversal theory to this definition and examine its potential usefulness in understanding replayability on a level that is general enough to account for this ambiguity.

Formulated as a research statement the aim is thus:

> There is a lack of common understanding of the phenomenon known as replayability.

> Based on the premise that replayability is subjective, a general framework of motivations needs to be applied. This framework should account for the fact that motivations are non-static and must be derived from the dynamic shifts that occur as part of human experience. I will examine to what extend reversal theory can account for these implications as a theory of the dynamics of motivation.

Case: World of Warcraft: Mists of Pandaria

World of Warcraft: Mists of Pandaria (Blizzard Entertainment, 2004) (henceforth abbreviated WoW: MoP) will be used to demonstrate many of the theoretical assumptions put forth in the following chapters. It is a game with a grand scope of activities and can thus be used to exemplify the many forms of replayability represented in a broad range of game modes.

WoW: MoP is a game of the genre massively multiplayer online roleplaying game, abbreviated MMORPG. The game takes place in a persistent online world where thousands of players interact using a custom-made character. In a general sense the overarching goal is to complete quests and defeat enemies and powerful bosses. These activities reward the player with weapons and armor allowing them to take on bigger challenges. In a more specific sense, the goal is rarely fixed. As is the case in most MMORPGs, new content is released on a regular basis resulting in a dynamic goal structure. In addition, WoW: MoP is also a game of competition and cooperation. Many of the challenges require players to form groups that vary between five and twenty-five people depending on the specific group content, while player vs. player mode (henceforth abbreviated pvp) pits two teams against each other in a controlled arena environment. While these are the activities that constitute the core gameplay of WoW: MoP, other forms of activities exist. For instance, the player can pursue other avenues of acquiring items. Crafting allows the production of potions, armor, and weapons using materials gathered around the world.

For the study of replayability in computer games, the variety of WoW: MoP provides a solid foundation for analysis as it can be perceived as a game from many different perspectives. This is due to its varied content that allows for many different ways to experience replayability.

Method

The main approach of this project is structural in the holistic sense as I aim to understand how aspects of the game are systematically related to each other. This is true both in terms of game structures, and the structure of experience. A structural approach is useful in that it is primarily concerned with identifying underlying patterns that can be applied across a variety of situations.

As preliminary work I will discuss and put forth an understanding of replayability that is general enough to account for the implication of subjectivity. I will draw upon work in game studies as well as literature and will discuss this in relation to different conceptualizations of games. This is done to account for the fact that the term "game" in itself is ambiguous as it denotes both the physical product and the process of playing. It is theorized that these various meanings have a direct impact on the ambiguity of replayability, and that replayability must be understood within these different parameters.

The notion of ambiguity will then be further explored in a discussion of game structures where the concepts of emergent and progression structures will be used to describe how different forms of replayability emerge within these structures. Emergent structures are games that allow multiple paths towards reaching the goal, whereas progression structures only have one possible path.

The structure of experience will draw upon the field of psychology, primarily reversal theory. The argument is that the theory is concerned with metamotivational states rather than specific states as it provides a framework of deep abstract structures of states through which any given motivation is experienced in a specific way. In this sense it is general enough to

account for the problem of subjectivity. In addition, it constitutes the premise of this project: it allows for the study of replayability as form rather than content. That is, the way in which games mirror and facilitate the dynamic shifts in motivations by means of directing the player towards different reversal, inducing activities.

Finally, the reversals and metamotivational states are discussed in relation to emergent and progression structures in order to understand how they influence replayability in different ways. The Massively Multiplayer Online Game (MMORPG) WoW: MoP (Blizzard Entertainment, 2004) will be used as a case for analysis to demonstrate the theoretical assumptions put forth. As it is a game comprised of both emergent and progression structures with a variety of activities it is used to address many different motivations for replaying games. The analysis of WoW: MoP is to some extent speculative. My approach is theoretical rather than empirical and because I will be concerned with the structure of experience and motivation my arguments these concepts are highly subjective. Thus, my arguments will primarily be abductive in the sense that the best possible explanation is given based on contextual factors.

Defining Replayability

As mentioned in the introduction, there are several ways to define replayability. An adequate definition requires studying of the relationships between systemically defined games and the act of playing them. Just as we cannot describe gameplay by discussing the concepts of game and play in isolation, we must address the notion of replayability in a similar manner. In turn this will help us come to terms with differences between playing a game for the first time and replaying it. While these differences might seem subtle, I will argue that they have far-reaching consequences for the understanding of replayability.

Play and games

Some scholars and designers have noted that there are differences in how we understand the process of playing. Johan Huizinga has defined play in terms of *"*a free activitiy standing quite consciously outside 'ordinary' life as being 'not serious*"'* (Huizinga, 1955, p. 13). This suggests that play is deliberate. The fact that one is quite consciously aware of this behavior implies a certain make-believe mentality where actions are distinguished from "ordinary" life as being non-serious. Others such as Bateson, defines *play* as metacommunication between two or more individuals.

> "Now, this phenomenon, play, could only occur if the participant organisms were capable of some degree of metacommunication, i.e., of exchanging signals which would carry the message 'this is play'" (Bateson, 1972, pp. 316-317).

He goes on to note that play occurs in the same manner that animals in play recognize that their activities simulate and thus refer to other activities (Bateson, 1972). In this way, they metacommunicate. Thus a *play frame* is established in which meanings and rules are

temporarily transformed. Common for both of these notions is that they are based on a dichotomy in that play is differentiated from 'something else'. However, one might argue that one can never truly be fully separated from one or the other, as both play and non-play are defined structurally by means of their difference. Furthermore, while both definitions account for the transformative power of play, they do not sufficiently distinguish between the concepts of game and play. As Katie Salen and Eric Zimmerman note, play without the constraints of rules might be conceived of as the purest form of play similar to how girls play with their dolls making up stories and rules as they go (Salen & Zimmerman, 2004). In this sense, play lacks many of the features we generally associate with games such as predefined rules and goals and is characterized by a general sense of freedom of choice. By contrast, the act of playing within the context of a game requires the adoption and adherence to its rules. In this sense, play is rather contradictory in that the act of play in the context of a game both retains its explorative dimension in some regard while adhering to rules. Thus, it becomes a process of discovering and testing the limits of freedom within the boundaries of the game. We can summarize this as gameplay as a process.

In the same manner, the act of replaying a game necessitates rules that constitute and define that particular game. We cannot replay a game we have not experienced beforehand. We would simply be *playing* something else entirely rather than *replaying*. Thus, replayability must conform to the same constraints as those of gameplay by default in which the game is consistent and recognizable across multiple play-throughs. Going further, however, it becomes clear that replayability does not rely solely on this consistency. It is not simply a descriptive term that denotes the process of re-experiencing something. It is also evaluative as some importance is attributed to it. While specifics are a subjective matter in this regard, we can at least assume that the motivation for replaying would most often be of leisure rather

than duty. As Roger Caillois notes games are unproductive (Caillois, 1961) and yield no benefit outside the game. It is true that some games played out in a tournament format would have real life consequences. Even games in which there are no monetary gain could be experienced as duty, but we can at least assume that the initial motivation must be that of leisure. This begs the question why anyone would replay a game if it has already been experienced beforehand. If replayability requires that a game remains the same, there would be no novelty in playing it again. As I will argue in the following, these notions of novelty and sameness are the basis for replayability. Replayability is to experience the same content differently.

The problem of change and identity

It will now be clear that we face a logical paradox: How can we say that something is the same yet different? What core properties can we define that constitute this sameness and consequently the 'other' of sameness?

In existential philosophy there is an oft-cited story of the ship of Theseus that can be used to demonstrate this paradox:

> The ship wherein Theseus and the youth of Athens returned from Crete had thirty oars, and was preserved by the Athenians down even to the time of Demetrius Phalereus, for they took away the old planks as they decayed, putting in new and stronger timber in their place, in so much that this ship became a standing example among the philosophers, for the logical question of things that grow; one side holding that the ship remained the same, and the other contending that it was not the same (Plutarch, n.d.).

One might be inclined to say that the ship has changed so much over time that it is indeed no longer the same ship. New planks have replaced the old ones. This view acknowledges the

notion that the exact physical parts of the ship are what define it. We can also say that people change over the duration of their life to the extent that they are not the same in adulthood as in childhood. Conversely, the word "same" could just as easily be used as a counterargument. If we say, "she has changed a lot" it is implied that there is *one person* who underwent the change. In this sense the old lady is the *same person* she was thirty years ago.

This simple yet paradoxical question of change and identity has kept philosophers occupied for centuries. Rather than trying to answer it, we can adopt a more pragmatic approach by examining for what purpose the word "same" is being used. What is the common denominator across genres of games from which we can establish the sameness of the Theseus as it were? One answer would be goals. Goals are partly what separate games from play activities. It necessitates that one adopts strategies and tactics as a means to achieve it. In this view, we define sameness by function rather than differentiating between individual constituents with similar functions, such as the planks used for the Theseus.

Core mechanics

If we agree to the notion that goals are universal to games and the function that prescribes actions to achieve it, the next question would be: how do we go about achieving it?

In game terminology there is the concept of game mechanics, which can be said to delineate the "methods invoked by agents, designed for interaction with the game state." (Sicart, 2008) Going further, Miguel Sicart defines the concept of core mechanics as "the game mechanics (repeatedly) used by agents to achieve a systemically rewarded end-state." In this regard we can distinguish between mechanics that exist for the player to achieve the *main* goal and those that do not. I put emphasis on *main* as these other mechanics may serve some other goal found in the game. More on this later.

Miguel Sigart goes on to define two types of core mechanics: primary core mechanics and secondary core mechanics. Primary mechanics are understood as core mechanics that can be applied directly to solving challenges that lead to the desired end-state. They are readily available and consistent throughout the game experience. In shooter games they are the commands or combinations of commands for firing a gun or running. Thus, they are mechanics that are always available to the player. Secondary mechanics, on the other hand, are mechanics that ease the player's interaction with the game world towards reaching the end-state. They are either available occasionally or are used in combination with primary mechanics.

We can then define primary core mechanics as mechanics that remain constant across multiple play-throughs, and secondary core mechanics that change. For instance, in most first-person shooters the option to move, shoot, and jump are mechanics required to finish the game. Other mechanics such as the option to take cover are not necessary for completing the game but can be useful tools in this regard. Replayability, as we define it, relies on the sameness of the former to remain a replayable experience and the changeability of the latter to create a sense of perpetual novelty where new methods are discovered through mastery of skill.

If we recall, WoW: MoP facilitates different ways of obtaining items. From one perspective these can be seen as secondary core mechanics in the sense that they are tools that help the player defeat the end-boss and thus complete the goal of the game. They are activities that differ fundamentally from other secondary mechanics but can still be categorized as mechanics that ease the player towards the same desired end-state. This helps us defend the notion that replayability can retain consistency in the form of persistent goals while at the same time facilitating different modes of play.

However, this definition will not suffice if we are to get a complete understanding of replayability. Some games can inspire replayability despite their lack of secondary mechanics. These types of games, commonly referred to as progression games, will be described later. It is also important to note that games may on the surface offer different primary mechanics on different play-throughs while still retaining the sameness of the game. An example of this can be observed when one replays the game with a different class. The mechanics involved differ in the sense that each character class gains access to different combat moves, yet they are primary because they are necessary tools in advancing the game. In this case we must account for another type of replayability in which primary core mechanics are reduced to interactions in a way that retains their similarity. They must be reduced to basic actions such as movement, interaction commands, etc. - as actions that constitute all other mechanics in the game. These all other mechanics are what Sicart refers to as compound primary mechanics:

> …a compound game mechanic is a set of related game mechanics that function together within one delimited agent interaction mode. These modes are defined by the interaction of these different modalities: as such, the driving compound mechanic is composed by a set of mechanics interrelated to provide a relatively accurate model of driving (Sicart, 2008).

Thus, there is a distinction here that calls for a classification. We can name the first ones *constitutional mechanics.* These denote the fundamental mechanics from which all other mechanics, the *compound mechanics,* are comprised. In a similar manner, as the example given, the mechanics for combat can be reduced to basic interactions, and this helps us infer a sense of sameness across play-throughs where different primary compound core mechanics are active. Thus, while character classes may differ in the way they are played, they share fundamental similarities in form. In addition, most abilities have a resource cost, all classes

have rotations[1] and so on. While these may not be constitutive on the same fundamental level of movement and clicking they are nevertheless constitutive for the compound and primary mechanic of combat.

Replayability measured in time

Another cause for ambiguity in defining replayability is that the word is often used interchangeably with the word longevity. MMORPGs are unique in the sense that they do not have a definite end-goal that once achieved concludes the game. People often refer to the "end-game" as the content that players can partake in after leveling their character to the highest level. The longevity of a game can be viewed as an indication of how long this content can entice us and does not necessarily imply that a game is played multiple times. Thus, longevity suggests that replayability must be understood in terms of duration. In her work on rereading, Patricia Meyer Spacks has alluded to the fact that some time ranging from weeks to decades has passed before a desire to reread occurs (Spacks, 2011). She argues that stories that may look the same are experienced differently as a result of how readers refine their understanding of the world and the more time spent between rereading the more noticeable this personal change. If applied to games this notion allows us to define replayability in terms of time spent between game sessions. In this perspective the replayability of a game is not derived from the notion of goals alone. It is also derived from the iterative process of gradually mastering an activity until some goal is met. In this sense

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[1] A rotation means using abilities in a specific sequence to optimize play. Some have higher priority than others and some can only be used occasionally. Thus, abilities which have lower priority are used when other more important abilities are unavailable. This pattern is used repeatedly which is why the term rotation is used.

we can infer that while the sameness relates to the activity itself the difference refers to the gradual increase in skill that is obtained through iterative play.

Game classifications

If we are to define replayability in terms of primary and secondary core mechanics as well as compound mechanics, we must also refine our understanding of games on a structural level. While the premise for Sicart's classification of mechanics are goals, there are multiple ways to define a goal – this is even more so the case in games such as WoW: MoP, which is comprised of multiple activities with self-contained goals. If we accept that certain activities within the game are comprised of primary and secondary mechanics, these are what constitute the sameness and difference, respectively. Let us call these activities *games as activities*.

However, moving one level of detail higher, we can define games as its space of possibility within the game world. In this view, games are defined as *virtual space* in which multiple activities exist each with self-contained goals. However, these can also be viewed as different means toward a more general shared goal. As an example, preparing for a raid fight might require the player to acquire better equipment. There are multiple activities that accommodate this, each with very specific primary core mechanics. One method is to collect materials and craft the equipment, another to do quests that award it. The implication is that there is no concreteness from which the sameness of the game can be observed. We can assume that all of these events consist of their own individual set of primary core mechanics, yet we cannot define these as being the same. This partly explains why replayability is often so vaguely defined and why it is often conceived of as playing games multiple times despite the

fundamental divergence in familiarity that constitutes its sameness. In this case we must assume that sameness must be derived from mechanics other than those of, say, combat mechanics such as attacking, defending, and using abilities in a specific order which are found in some game *activities.* They are the *constitutive mechanics* that we have described earlier such as movement, interaction commands, etc. but also more advanced primary core mechanics such as rotation, resource systems and the like.

Finally, if we abstract even further, we can think of games as *platforms* whereby games are defined as playable text: as physical or digital objects comprised of algorithms and materiality. This implies a somewhat tautological statement that the primary core mechanics is the game itself meaning that the core experience can be reduced to the physical product and everything it contains. Everything within it can conceivably be viewed as activities that constitute sameness although no functional sameness is perceived. The fact that they are contained within a single platform is sufficient from this perspective. Moreover, this also helps us distinguish between replayability viewed specifically as multiple play-throughs and more generally as longevity. In the first case, we perceive the game as a series of activities that necessitates a goal. In the latter, the game is perceived as a platform that does not necessitate this goal. Thus, the replayability of the game is derived from its duration.

These classifications might explain why so many different understandings of replayability exist and support our claim that they are interrelated with how we classify games where sameness and difference is a matter of perspective. It could also be argued that change is not a core feature of replayability as some games may be enjoyed on multiple play-throughs simply because they are fun. A discussion of "fun", however, is beyond the scope of this project. The discussion pertains to the aspects of replayability that relates to the concepts of change within the experiencing subject (the player) and the experienced object (the game).

The different classifications described are useful in identifying this understanding of replayability in a systemic way. It allows us to examine how different activities in games might represent several methods towards reaching a unified goal, and how these activities are interrelated as a means to extend the longevity of a game.

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Game structures

With the broader notion that games are perceived either as activities, virtual space, or platforms that in turn influence the perception of replayability as defined, let us now examine how these can be structured. It has been hinted that if we define games as *virtual space*, several activities that differ in primary core mechanics share a unified goal whereas games defined as *activities* pertain to a single activity with a limited set of primary core mechanics. If we are to understand the process of playing and replaying, we must also examine the structures in which it occurs.

Jesper Juul points out that games can be divided into two distinct structures that we can relate to these concepts: Games of emergence and games of progression. For now let us try to describe progression games and discuss how they relate to replayability. These are games that are relatively constant in function and content.

Games of Progression

Juul describes progression games as follows:

> In progression games, the player has to perform a predefined set of actions in order to complete the game… This leads to the infamous experience of playing a game "on a rail", i.e. where the work of the player is simply to perform the correct pre-defined moves in order to advance the game. Progression games have walkthroughs, specifying all the actions needed to complete the game… Progression games are also characterized by the fact that they can be completed, and that their replayability is subsequently very low (Juul, 2002).

While Juul's notion on replayability is valid in the sense that all actions are predefined, his view that these games have low replay value is arguable. This perspective mirrors that of

contemporary game design philosophy where choice leading to different outcomes is the main prescribed method of adding replayability. However, if we recall our argument that replay value is determined by the relationship between player and game, it seems plausible that change is not exclusive to games but occurs for players as well. Additionally, one might argue that this change is more easily observed in progression games where skill can be directly measured due to the fact that the content of the game is constant throughout multiple play-throughs. In this way, players can utilize the non-changing elements of the game as a constant from which change can be measured.

In this sense, progression games share some similarities with the novel form in which the sequence of events is also constant. Patricia Meyer Spacks has studied the phenomenon of rereading novels, and while her ideas require some adjustments to be applicable to games, she makes a compelling point:

> The excitement of rereading differs from that of reading for the first time. It stems from a process of accretion: knowledge of what is to come changes speculation about outcomes to speculation about meanings-a deeper form of excitement (Spacks, 2011, p. 137).

Thus, initial readings might invoke a sense of urgency where the reader feels compelled to know how the story unfolds. Giving full attention to the facts, the reader might not be concerned with or be aware of the subtleties of the text. Second readings can provide the reader with foreknowledge and might reveal subtleties not previously observed or indeed invoke certain feelings about characters based on the outcome derived from previous readings. It is because of these subtleties that texts invoke the sensation of change. In many aspects, interpreting ambiguous texts seems to be the main reason for rereading. Underlying this is the notion of challenge where the ambiguity inspires a sense of accomplishment once new meanings are accrued.

If we apply this idea of challenge to the concept of progression games, we can find some similarities and differences. While we could certainly argue that the representative aspect of the narrative is a reason for replayability in and of itself, our primary concern is that of the ludic qualities of the game. The purpose is not to discuss the challenge of interpreting narrative meaning in games but to understand the challenge involved in the performative act of playing them. Similar to how we overlook certain subtleties during our initial read of a text, we tend to complete the game in the initial play through using the tools given to us in the most direct and obvious manner. We are primarily concerned with completing the game, and the methods involved are secondary to fulfilling that goal. In second play-throughs we might be concerned with other aspects such as optimizing our play, which involves using the tools in a different manner or more effectively.

Games differ from novels in that their defining feature is interactivity. Where stories are about meaning first and foremost, games are primarily about the performative act. This has the implication that games rely on the performative skills as a means to advance the game and require repetitive play of select segments of the game. By this, I mean that even initial play-throughs require replaying whatever challenge we are faced with until we have mastered it sufficiently to advance the game. It is by repeating this process that we, however subconsciously, can measure our progress more accurately on account of the content being constant. While the replaying of select segments of the game is not a characteristic inherent to progression games, one could argue that the balancing of challenge and skill is often more easily facilitated within these games. The space of possible actions is limited enough to remain fairly predictable. Thus, while progression games does not offer much in terms of complexity of choice and outcome, they generally allow developers more control of game flow.

Games of emergence

The other type of games Juul mentions are those of emergence: A core feature of these is that they contain relatively few rules, while maintaining a great degree of complexity. Generally speaking, rules are methods invoked to constrain possibilities. Their function is to control and delimit choice spatially and temporally. As we have seen progression games feature very controlled environments. While we may have some degree of choice in how we approach a challenge, there is often only one correct way to advance the game. In contrast, emergent games are characterized by a limited number of rules by means of which more freedom of choice is afforded. An emergent game like Chess is a simple game in terms of rules, yet the number of board configurations remains large enough that new strategies continue to emerge. Thus, emergence is not just about sheer possibility. Lines of play and regularities emerge over time so that an expert player would handedly beat a novice player.

This notion of choice also touches upon the relationship and distinction between playability and replayability. As mentioned, the distinction can seem blurry as even initial playthroughs are generally more enjoyable when choice afforded by emergence is involved. We do not know if the other choice will result in the same kind of enjoyment on second playthroughs, but the very possibility for the choice to exist is likely to enhance our enjoyment as we perceive that our choices have consequences and are impactful. As such, the replayability of a game can be derived in part by examining the playability of a game. However, it must also be defined by exploring alternative choices, and the extent to which they are impactful on the outcome. Thus, from an empirical perspective, further examination of replayability involves in part that we look at time duration between initial and secondary play-throughs as well as time duration between secondary and subsequent play-throughs.

A more in-depth understanding of emergence requires that we think of games as dynamic complex systems. Let us first turn to an opposing philosophical position in systems theory through which we can define emergence more accurately by way of contrast – that of reductionism.

Reductionism is a philosophical position, which holds that in order to understand a complex system it must be broken down to its component parts. It is postulated that any phenomena can be explained in terms of relations between more fundamental phenomena. This is a linear process in the sense that all component parts can be added together to form a whole and conversely broken down to their components parts. This allows for a great degree of predictability as all future outcomes can be formulated beforehand as the same rules of additivity apply for each state of the system. For instance, a clock can be reduced to component parts such as the mechanism that controls pointer intervals. This can then be further reduced to cogs and wheels. Likewise, we can predict all states of the clock by adding these components together. This way of linear reductionist thinking means that they contain simple rules of structuring. The same rule of reduction is repeated over and over. From a game perspective, a reductionist position would argue that any occurrence and state in the game is reducible to its component parts such as its constitutive rules or even algorithms.

An opposing position is that of emergentism. While reductionism holds that the whole is nothing but the sum of its parts, emergentism argues against this. It is proposed that not all systems are reducible to their component parts, but must be understood by examining how these interact. Similar to a reductionist view, emergent systems contain relatively few rules, but outcomes must be inferred from the interaction of component parts rather than the parts themselves. As a result, the number of outcomes increases exponentially relative to the number of rules. That being said, emergent systems are not chaotic. The often-cited butterfly

effect in chaos theory implies that a flapping of the butterfly's wing in Argentina will cause worldwide effect in the weather. Such inclinations are anything but predictable. However, as has been argued, the study of chaos is of limited use in the study of emergence as the study of such phenomena does not necessarily need to work at a level of detail (Holland, 1998). For instance, the key to effective weather prediction is based on *fronts* as opposed to remote initial conditions such as the butterfly effect. Emergent systems, on the other hand, usually involve patterns of interaction that persists despite a continual turnover in the constituents of the patterns. Holland describes emergence by using the analogy of a standing wave in front of a rock in a white-water river. The molecules that make up the wave change instant by instant, but the wave persists as long as the rock is there and the water flows (Holland, 1998). While emergence is a complex phenomenon, it retains a degree of order found in the interaction of the parts that make up the wave.

From this interaction, we can observe that the whole is more than the sum of its parts. And this is not just applicable to computer games but to all kinds of systems. For instance, Robert Sapolsky uses the brain network of neurons as a case in point during a lecture where he notes that a neuron for recognizing one's grandmother cannot be reduced to its constituent neurons for a very simple reason. Namely, that there are not enough neurons in the brain to accommodate a point-for-point reduction that explains face recognition. Rather, as is the position of emergentism, states of these very specific kinds are the result of dynamic interactions between neural networks by which unpredictable patterns emerge (Stanford University, 2011).

Games are relatively simple compared to brain structures, and in some cases a reductionist view can be adopted to understand their complexity, such as in pure progression games. Whether or not a reductionist view is useful is very much dependent on the level of detail

sufficient for the object of study. For instance, the classification of games as *activities, virtual space and platforms* and how core mechanics are perceived within these parameters was made using a reductionist approach. It applied the same rule of linear abstraction from specific activities to the game as a platform where core mechanics remained constant and predictable in form. If we, however, are to examine *how* play occurs within these different parameters as a dynamic process, a greater level of detail is required. We cannot get a representative picture of a game of chess by studying the board pieces in isolation. The pieces interact to support one another. Thus, while reductionism can be useful in the study of linear systems such as clocks and pure progression games, it cannot account for the interaction in chess and other emergent games.

Similar to how we observed that the binary pairs of primary-secondary and compound-constitutive core mechanics can induce the sensation that something is the same while still being different, emergence does so by containing rules that remain constant, yet produce component combinations that result in vastly different outcomes. Holland uses the waterfall as an example where he explains that the pattern of the waterfall retains its consistency, but the individual molecules that comprise it behave in highly irregular and chaotic patterns.

A Continuum of structure
Having described games of progression and games of emergence and how they relate to replayability, it bears to mention that there rarely is a one-to-one correspondence between types of games and types of structure. There are only a few game types that can be considered to be of pure progression or pure emergence. Rather than describing these in terms of dichotomies, it is more fruitful to place them on a continuum with pure progression on one end of the scale and pure emergence on the other. While a first person shooter can be

considered a progression game, the player is given some control of how the game progresses. Different weapons can be chosen, and different tactics can be used in order to overcome challenges. Furthermore, there seems to be some correlation between Sicart's notion of core mechanics and these structures. For instance, pure progression such as adventure games are characterized by the fact that there is only one way of completing them. They do not contain any secondary core mechanics that ease the player towards the end-state. Nor do they contain different primary core mechanics from play-through to play-through, but are comprised solely of primary core mechanics. Strategy games, on the other hand, are games with strong emergent qualities. The various pathways towards the goal involve several strategic elements: Units are classified in a rock-paper-scissors format where some units are strong against certain enemies and weak against others. In addition, based on the decisions of the enemy player, the ability to change one's strategy accordingly is generally what defines a good player.

With WoW: MoP it is possible to observe both emergent and progression properties and is thus somewhere in the middle of the continuum. Whether or not one classifies it as one or the other is largely dependent on the level of detail observed. Like most other MMORPGs, WoW: MoP is played out in an open-world environment and allows for a variety of activities. However, each individual quest-line could be conceived of as individual games with self-contained goals, and these would be classified closer to the progression end of the continuum as they offer very limited freedom of choice along the way. Quests have predetermined goals and while there are some novelty to be found in terms of class variety, we have already argued that they are compound mechanics made up of fairly similar constitutive mechanics and thus generally similar in function.

Multiple Structures

We have defined replayability as being dependent on some activity that remains constant at its core but with slight variations across multiple play-throughs. Similarly, we have described games as activities with some sort of core gameplay that remains constant. This is facilitated through primary core mechanics that either remain the same across play-throughs or similar in terms of constitutive mechanics. However, there are implications. When we play a game, we can observe a core experience that defines that particular game, yet many games do not fit into this categorization. In MMORPGs, players can participate in a variety of activities that differ from each other not only in form but also in function. An example of this can be found in Star wars: The Old republic. The player can advance the game by traditional means such as completing quests, battling monsters and so forth. The player is then rewarded with equipment that improves its character. Alternatively, the player can undertake spaceflight missions in which the game changes into a flight simulator. By completing missions, items are rewarded that makes the spaceship faster, better at fighting enemies, etc. Not only does the core mechanic differ from those of other activities, but the rewards are also there to ease the player towards a goal that is self-contained and fully separated from other modes of play. Moreover, the rewards that are awarded are meant to advance this specific game mode and have no impact on other aspects of the game.

It seems then that there are implications to how we view games. If we are to classify Star wars: The Old Republic as a game, we cannot adopt a traditional perspective where games are defined by a set of core mechanics that permeate the game. They are better understood as *platforms* wherein multiple forms of gameplay emerge. Like a deck of cards that can house so many different games: Blackjack, poker, solitaire, etc. (Aarseth, 2004)

In WoW: MoP similar examples exist: The so called pet battle system is a turn-based Pokémon inspired mini game in which the player controls a team of three battle pets. Each pet has access to a variety of combat moves that counters certain types of enemies. They are then pitted against other players in turn-based combat. The first person to kill all three of the opposing player's pets wins. These mechanics are not an integrate part of the gameplay thus far described as they do not contribute to the completion of the goal associated with it. Similar to Starwars: The Old Republic, we can then infer that WoW: MoP should be classified as a platform of games rather than a game in and of itself.

We cannot adopt the view that replayability is dependent on non-changing content without also adopting the view that games contain a single core experience defined by primary core mechanics.

However, if we apply our previous concept of games as they are perceived at various levels of detail, we can posit that the structure of play is variable with the level of detail observed. For instance, it has been noted that emergence is experienced on a macro-scale related to different activities with unified overall goals. This would be a case of perceiving the game as virtual space. We can also refer to emergence on a micro-scale in which one adopts different tactics in reaching a goal. In this view, we perceive games as *activities*. Since games as virtual space can be comprised of multiple activities with shared goals this interconnectivity means that they are potentially emergent even when the individual activities follow a structure of progression. In a similar manner, the implication with multiple structures in which no sameness can be derived can be addressed by looking at games as platforms in which the game as a whole constitutes the sameness. Just as we can generally posit that games perceived as *activities* can be both of emergence and progression while retaining their sameness, the same arguably holds true when we view games as platforms. However, this is

not their defining feature. They can be chaotic in the sense that they do not *necessarily* imply a goal or causality for that matter in order to retain their sameness; they are defined exclusively by their materiality as opposed to those of games as activities where goals, challenges, and choice are what define them. In contrast, games as virtual space or activities can never be chaotic and still retain their sameness as this sameness is derived from their goals and the procedures taken in reaching them.

Finally, it should be noted that the mere fact that games as platforms contain a virtual space, which in turn contains activities, implies that we can examine the ways these different activities interplay. While multiple structures do not imply the necessity for interaction between activities, they are related in terms of proximity. As such, individual activities can support each other in the way that when one activity no longer instills a sense of novelty another might. Then, when this other activity is saturated, the first one might again instill novelty.

Determining structures in WoW: MoP

We have defined WoW: MoP as a game with both progression and emergent properties, and we have classified it as a platform wherein a multitude of game activities can be experienced. Let us start by examining which structures are generally predominant in some of these activities. As have been noted, the main argument for determining whether a structure is either that of emergence or progression is derived from the amount of freedom provided to the player and thus the degree of predictability that an activity implies.

Depending on the level of detail observed, goals can be perceived as relating to specific formal goals in a specific activity, abstract goals relating to games as virtual space, and finally player-defined goals relating to games as platforms. Regarding the latter, they are

player-defined as it is up to the player to decide which activity is chosen. If we examine games as virtual space, one of the abstract goals is character improvement either by increasing one's character level or acquiring better equipment. We can observe several methods of doing this. In the case of leveling a character, several activities can be observed:

- Questing

- Grinding

- Engaging in player versus player combat.

Each of these activities award experience points needed to advance the character to the next level.

Questing can be seen primarily as an activity of progression with a few emergent qualities. There is some degree of variability in terms of which character class is chosen to undertake the quest, but the explicit things we must do to complete the goal is predetermined as exemplified in the objective screen (see figure 1). In general, the classes are fairly homogenous in terms of how combat is experienced. While each class gains access to different abilities, the way they are played is fundamentally similar. For example, the warrior class can stun enemies preventing them from doing anything for a few seconds. The mage class has similar tools that root the enemy player in place allowing the mage to attack the enemy from afar. While different in form, their function is the same in that they prevent the enemy from attacking. As a result, we can assume that the perceived variation and novelty is fairly small.

Figure 1: Quest Objective Screen (Blizzard Entertainment, 2004).

Killing monsters as a means to acquire experience would be another case of progression and can be viewed as a case of *grinding*. In MMO terms grinding denotes the activity of doing repetitive tasks over and over until some goal is achieved; it typically involves accumulating a certain amount of materials needed for crafting potions, weapons, etc. or, as is the case of leveling, accumulating experience points to advance in levels. Again, there is variability in terms of character classes, but there is generally one correct way of grinding within an activity whether it is collecting materials or killing monsters.

Finally, pvp is a game mode that departs from the progression structure. It is emergent primarily due to the fact that it is played out in a multiplayer setting. Like in other multiplayer-games, the skill required of the player is based on the ability to respond to the choices of other players, and this amounts to a great degree of unpredictability. As mentioned, the mage class can specialize in controlling opponents from afar by using magic

to root them in place. A character class that engages an enemy in close-quarter combat such as the warrior might be heavily penalized by this as the mage can attack from a safe distance while the warrior is rooted. Other classes that engage combat from afar would be less impacted by this. As a way to counter the mage, the warrior may have the option to specialize in abilities that allow him or her to break free of these control effects. As such, this choice would be fairly simple. However, one cannot be certain if the opposing team even has a mage on their team, and even so there may be other classes that counter the warrior in other areas. Since specializations are mutually exclusive, the choice becomes more complex especially because there are many ways to specialize a character.

Thus, we can assume a general setting wherein questing and grinding as activities follow a structure of progression while PvP follows a structure of emergence. These structures are determined in relation to the goal of these specific activities. Now, if we perceive the overarching and more abstract goal as leveling a character, we adopt a view of the game as virtual space. At this level of detail, any structure of progression will transform into one of emergence due to how individual activities are interrelated by a unified goal. They each represent one of several methods to achieving said goal. What then constitutes the sameness in our example is the combat mechanics needed to achieve this goal. As mentioned earlier, the classes are fairly homogenous in terms of combat. From a design and economical perspective, they need to be because the same combat mechanics are applied to different types of activities. Balancing each class in terms of power in one area impacts the other areas. The more heterogeneous the classes are the more difficult the balancing task becomes. In this sense, we can assume that the homogenization of classes can be viewed as a precaution on the part of the designers. This also means that when combat as a primary mechanic is shared across multiple activities, it effectively impacts the complexity of structure. If we view

emergence at the level of detail of games as virtual space, the variety experienced relies not so much on variation between classes as much as it relies on other elements. These being that players tend to prioritize certain class skills over others depending on the activity chosen such as whether one is engaged in PvP or grinding. Abilities that remove control from the opponent are generally not necessary when grinding as one deliberately chooses to engage weak monsters in order to speed up the process of grinding. Thus, while activities may be based purely on progression when observed in isolation, they become emergent if we perceive the game as virtual space by virtue of being highly context-dependent.

Reversal Theory

While we have implied that the word replay value have subjective and evaluative connotations, the concern thus far has primarily been systemic descriptions that only account for one aspect of the phenomenon, namely games. We now turn to the other aspect of replay value, which is concerned with the player and its subjective interaction within the game. While a lot can be said about replayability on a structural level, how it achieves its value is, as already stated, subjective. As such, it necessarily becomes a matter of motivation that acts as a reflection on this value. Our motivations are what reveal our intent and by virtue of what value we attribute to the object of this intent. Instead of relying on our own presuppositions of motivations and personalities, we can turn to some scholars who have studied this phenomenon in games and thus provide a contextualized classification of motivations that suits our purposes.

One of these is Richard Bartle who theorized that players can be divided into four types (Bartle, 1996):

- *Achiever*: one who is motivated by reaching some in-game goal.
- *Explorer:* one who is motivated by understanding how mechanisms in the game work and the impact they have on the game.
- *Socializer:* one who is motivated by and interested in other people in the game world.
- *Killers:* These are concerned with imposing themselves on others often by killing off their character. The frustration this might cause is a source of enjoyment.

Underlying this typology which is derived from a discussion of MuDs[2], is the viewpoint that interaction can be divided into either interaction with the game world itself or the people within it. *Achievers* and *explorers* are primarily concerned with activities intrinsic to the game world itself whereas socializers and killers are driven by the interaction with other players. While the four types are commonly referred to as player types Bartle notes that they do not imply that any one gamer belongs to a single category. Rather they are representations of motivations that are dynamic and that change over time. The problem with this typology is that many of the player types overlap. For instance, we can assume that the primary motivation of the explorer type is to understand how the game works. However, this motivation can also be used in service of some other motivation such as the achievement of some goal. Equally, socializers might be motivated to engage in raids in order to defeat bosses and thus be motivated by achievement, but the underlying motivation might be that of socializing with other players by participating in group content. Bartle specifically states that each of these conflict with each other.

Nicholas Yee developed a refined version of Bartle's typology as a means to address some of these issues (Yee, 2002). Whereas Bartle was concerned with player motivation in MUDs, the premise of Yee's study is for MMORPGs specifically through which it has been verified and validated empirically.

His main approach is factor analysis which is the process of classifying various occurrences or phenomena into groups that bear some correlation with each other. It is also important that these phenomena does not overlap ontologically with other phenomena outside the group. When these criteria are met they form groups known as factors. Contrary to Bartle who

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[2] Multi-user Dungeon: A forerunner to the MMORPG genre.

proposes that different motivations will suppress each other, Yee suggests that many of these factors can be active simultaneously.

Achievement	Social	Immersion
Advancement Progress, Power, Accumulation, Status	**Socializing** Casual Chat, Helping Others, Making Friends	**Discovery** Exploration, Lore, Finding Hidden Things
Mechanics Numbers, Optimization, Templating, Analysis	**Relationship** Personal, Self-Disclosure, Find and Give Support	**Role-Playing** Story Line, Character History, Roles, Fantasy
Competition Challenging Others, Provocation, Domination	**Teamwork** Collaboration, Groups, Group Achievements	**Customization** Appearances, Accessories, Style, Color Schemes
		Escapism Relax, Escape from RL, Avoid RL Problems

Figure 2: Motivation grouped into major and minor factors (Yee, 2002).

In figure 2 we can observe ten factors that are categorized under three overarching factors. Similar to Bartle's typology some patterns can be derived such as the fact that achievements is a factor closely related to the ludic aspects of the game, while immersion may be more related to representative aspects.

While both of these models are useful in describing motivations that can occur in the context of play, and by that token the many ways one can be motivated to replay a game, what they lack is an account of the dynamics of motivation. Both Bartle and Yee notes that motivations are rarely static, but shift as the result of internal and external factors. In the following part Michael Apter's Reversal theory is introduced as a theoretical approach to this inclination.

Reversal Theory

One way of overcoming the subjectivity inherent to the concept of play is to look to more general patterns of motivations, emotions and personality and their dynamics. That is to say theories that deal with the deep phenomenological structures of experience. Reversal theory, developed by Michael J. Apter (Apter, 1989/2007), is such a theory, because it provides a framework of the range of motivations that can conceivably appear in all kinds of situations. It has as its main argument that the range of motivations can be categorized into metamotivational states and – more importantly – that these states alternate between themselves and their ontological opposites; a function Apter calls reversals. This theory – including descriptions on how reversals occur - provides a helpful guideline to understand and subsequently map player behavior in games. For the study of replayability it also potentially allows for possible ways to manipulate motivations within the confined space of the game as a means to extend player presence.

Arousal

As a discussion of motivations reversal theory is also a theory of emotions, one of the most salient of these being *arousal*. Apter describes arousal as the feeling of being "worked up" or emotionally intense about what one is doing. He goes on to say that arousal is not to be confused with the feeling of, say, being energetic. One can be energetic but composed, and one can be worn out but shaken. Furthermore there is the feeling of how pleasant arousal is felt. For instance, one is likely to be pleased in a high arousal mode when watching a thriller, while high arousal during an exam can be felt as unpleasant. Thus, by combining the two variables - arousal and hedonic tone – one can produce four types of emotions: Pleasant high arousal, unpleasant high arousal, pleasant low arousal and unpleasant low arousal. Four

English words can then be used to describe these combinations as excitement, anxiety, relaxation and boredom, respectively.

Apter notes that out of these combinations emerges a pattern of binary opposites, namely that boredom (unpleasant low arousal) and excitement (pleasant high arousal) are related in that they are complete opposites. The same can be observed of anxiety and relaxation. Thus, there are two totally different ways in which one can experience arousal: One in which increased arousal is pleasant, and one in which it is unpleasant. This is shown in the figure 3:
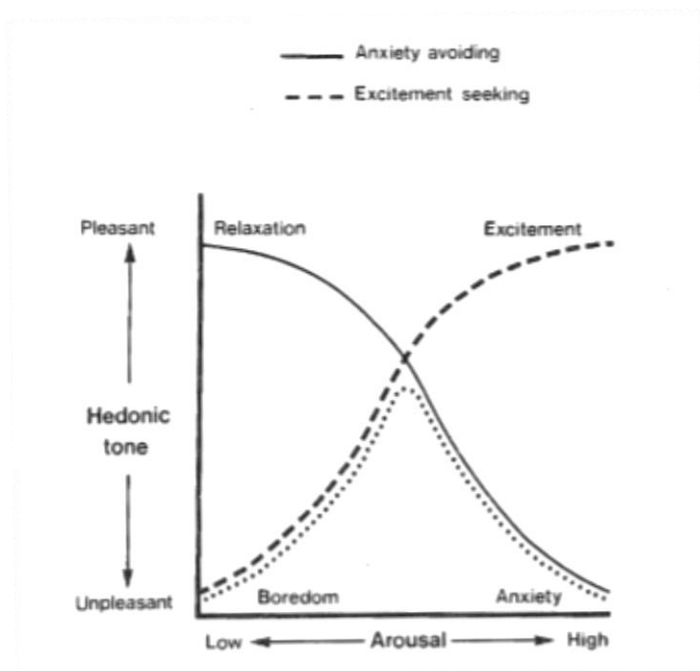

Figure 3: (Apter, 1989/2007).

The two curves represented by a continuous and a dashed line represent the two modes postulated in reversal theory. In each mode arousal is experienced in diametrically opposite ways. This means that these states are mutually exclusive; one cannot be in both states at the same time.

Metamotivational States

Apter goes on to describe two types of metamotivational states that correspond to these two opposite ways of experiencing arousal: the telic and the paratelic state. In the telic state one is primarily concerned with reaching some goal. The actions taken to reach it are secondary in the sense that they exist in service of the goal. Conversely, in the paratelic state one is concerned with the actions themselves and the goal is secondary acting as a means to enhance the pleasure of a given activity. As an example playing tennis can produce two opposite ways of experience depending on which metamotivational state is active. The professional tennis player will often be in a telic state, as winning or losing will directly impact his career. The goal is primary and the activity is there to fulfill that goal. A casual player, on the other hand, might engage in such an activity as recreation. While he can definitely be goal-driven once the game starts, the defining feature that separates him from the professional is that the activity was initiated as a means of recreation. Thus, the telic state can be said to be the *serious* state, while the paratelic is *playful.*

We can then go on to distinguish the two ways of looking at goals are related to arousal. There is in the telic state a future-time orientation where an activity has 'significance beyond itself' (apter). This orientation implies that anything that disrupts from achieving the goal will increase arousal in an unpleasant way that leads to anxiety. Once the goal is achieved arousal will likely go away and one will feel a sigh of relief or relaxation. In the paratelic mode, in contrast, there appears to be a present-time orientation, an emphasis on instant gratification in the here-and-now. One is likely to enjoy what one is doing and want to experience it as sharply and intensely as possible. This increases the likelihood that high felt arousal will lead to excitement. Equally, failing to invoke this sensation will eventually lead to boredom.

Reversals

So how does one go about inducing the reversals between these states? Apter describes three types of reversals that might induce this change: Contingency, frustration and satiation.

Contingent reversals occur when some environmental event bring either a goal or an activity to the focus of the phenomenal field. Felt danger is an example of a contingent reversal from a paratelic to a telic state. If one hears a loud crashing noise that cannot identified it is likely to induce a telic state. When we find out that nothing had happened the arousal will decrease and we will be more relaxed. This will in turn potentially induce the paratelic state. Another example of a contingent reversal from a telic to a paratelic state would be the achievement of some goal. Once the goal is achieved one will likely feel less anxious and more relaxed. As a result of less felt urgency a reversal to a paratelic state is likely to occur.

Other forms of reversals are those enacted by frustration. Using the previous example of playing tennis as a leisure one might have problems scoring points; a goal initially meant to enhance the activity. A mounting frustration might then cause the goal to outweigh the activity and induce a reversal from a paratelic to a telic state. Likewise, frustration can cause a reversal from the telic to the paratelic state. If you are in an argument about something important, but fail to convince others of your viewpoint, the frustration might cause you to pay more attention to a doodle on your notebook or seeing the funny side of things.

Finally, Apter describes reversals that are prone to a certain rhythm. Unless a contingent reversal or reversal based on frustration are brought into focus simply being in one state for a time might at some point cause satiation, where for no apparent reason a reversal occurs from one state to the other. As an analogy Apter mentions the sleeping-waking cycle. Just like we go to sleep when we are tired and wake up when we are rested, we reverse between paratelic and telic states as a result of satiation.

The experience of rules

We now come to another pair of opposite metamotivational states, namely those concerned with the experience of rules. These are defined as the conformist and negativistic states. While the telic-paratelic pair is about a bodily motivation, the conformist-negativistic pair is more concerned with perception of behavior. They represent how likely one is to conform to rules and conventions or go against them. In the negativistic state there is an emphasis on a desire to oppose some external pressure of correct behavior, while the conformist state is the inverse of this; a desire to behave in accordance to this pressure.

If we then combine this pair of binary opposite states with those of the telic-paratelic pair, we can produce a refined framework of motivation with a more varied range of emotions. The conformist state would apply to the emotions already described: anxiety, boredom, excitement and relaxation. For example, in the negativistic telic state high arousal will be experienced as anger, while the conformist telic state is associated with the previous example of anxiety. This is because anger is driven by a desire to harm or destroy and thus an expression of opposition. It is also an emotion of felt unpleasant high arousal, just like anxiety, and must therefore be a telic emotion. Equally, the negativistic states transform the previously mentioned emotions of relaxation, excitement and boredom. A feeling of placidity would apply in case of low arousal in a telic-negativistic state. As for the emotions associated with the paratelic state, excitement and boredom, negativistic high felt arousal will produce a sort of devilish glee, where one finds him or herself enjoying being in opposition. This is also a case where the person finds oneself within a protective frame such as in sports or the kind of love-hate relationship one can have with a villain in a movie. Finally low felt arousal in a negativistic-paratelic combination produces a sense of being sullen.

The following hypothetical model (figure 4) shows the relationship between arousal and hedonic tone in the negativistic state.
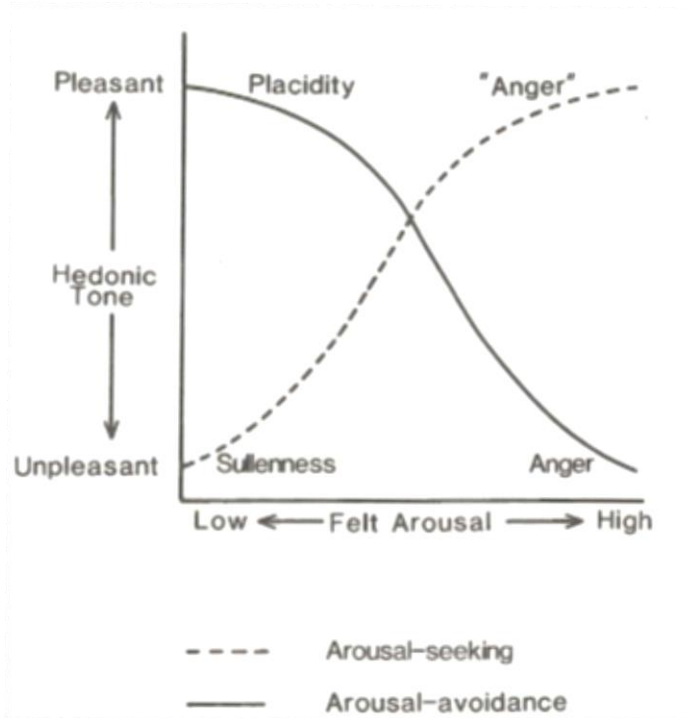

Figure 4: Relationship between arousal and hedonic tone in the negativistic state (Apter, 1989/2007)

Apter underlines one final important factor. The conformist state is not always driven by a desire to conform to rules. He explains that if there is no apparent desire to oppose rules or conventions one will conform to rules by default. In this case one does not go against the rules nor does one actively try to conform to them.

The experience of relationships

The next pair of metamotivational states are those related to relationships. These are emotions that arise out of transactions with other agents.[3] They are interpersonal relationships such as pride and gratitude. Instead of felt arousal the variable of these states is that of "felt

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[3] Emphasis on agents understood as both computer- and player opponents.

transactional outcome". They have to do with feelings of winning or losing, succeeding and failing, and so on. The way in which satisfaction is derived from this variable is dependent on two factors: Whether one sees oneself as most important or puts oneself in place of the other person, sees that person as more important than oneself. As always they can be divided into pairs of opposites - in this case the autocentric state – referring to self - and the allocentric state – referring to others. If in the autocentric state gain in transactional outcome will result in *pride,* whereas loss will be felt as some degree of *humiliation.* If one is in the allocentric state, then gain at the expense of others will be felt as *shame,* and loss as *modesty.* Let us return to our tennis scenario: purposely just winning or even losing when playing against a child is an example of an allocentric state with low outcome; you might want to boost the confidence of the child, and in so doing you feel satisfaction on behalf of others. Equally, winning too easily against same child as a result of better physical strength and experience might produce *shame*. Figure 4 shows the schema of these motivational states under the domain of mastery:
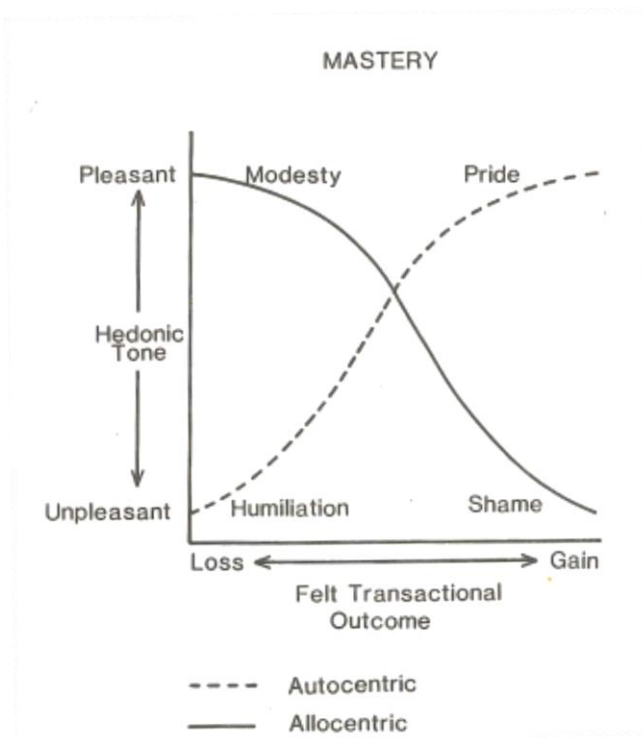
Figure 4: The relationship between transactional outcome and hedonic tone in the mastery state (Apter, 1989/2007).

It should be noted that the fact that one is concerned with oneself does not necessarily mean that this is on expense of others. The intra-autic state is used in place of the autocentric to imply concern with self in the way one exercises to remain healthy. Here no one else "comes into the picture". Equally, the one can experience oneself as part another as is the case when we identify with a character in a movie. This is named the pro-autic state. Inclusive for both the autocentric and intra-autic is the autic state, while the allocentric and pro-autic state is included in the alloic state. Finally, where mastery is concerned with power and control another pair of states related to relationships are those of care and nurturing. The key variable is still transactional outcome but now they are experienced as being about giving or being given, rather than taking or "giving up". The four combinations are as follows: giving, not giving, being given and not being given. Examples: In the autocentric state gain will be associated with *gratitude*, such as when being given a present and loss with *resentment,* as

when a friend forgets to turn up. In the allocentric state loss will be associated with *virtue* (e.g. listening to a colleague's problems), and gain with *guilt* (e.g. forgetting to send a thank you letter). Again we see Apter's schema of the relationship between hedonic tone and felt transactional outcome, this time in the domain of sympathy (see figure 5):
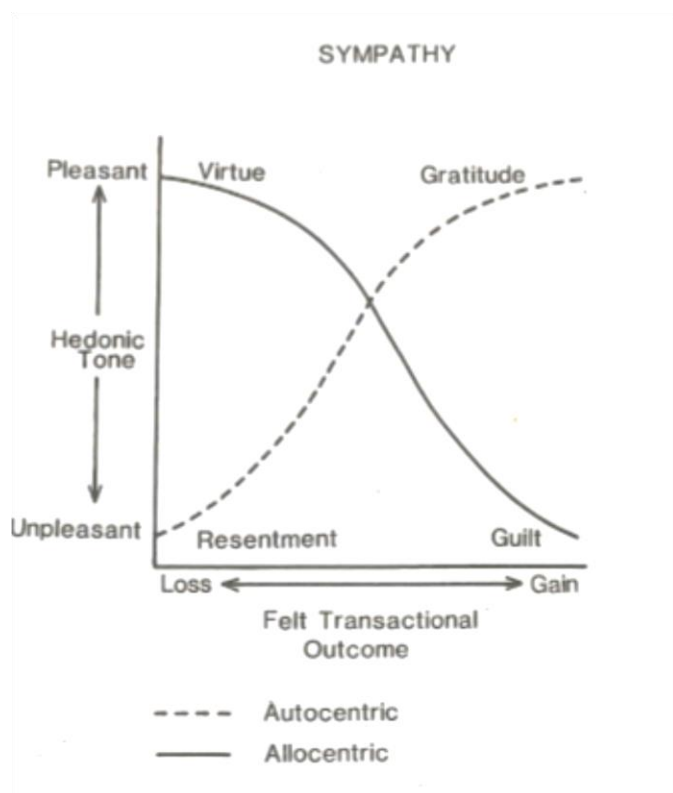
Figure 5: The relationship between transactional outcome and hedonic tone in the sympathy state (Apter, 1989/2007).

As was the case where the telic and paratelic states could be combined with the negativistic and conformist states across the variable of arousal, the mastery and sympathy states can be combined with allocentric and autocentric states across the variable felt transactional outcome. This again as we have seen produces four different state combinations. Like before they are mutually exhaustive, meaning they cannot be active at the same time.

The whole person

Figure 6. The four domains of experience. (Apter, 1989/2007)

The core structure of reversal theory is combined of the four domains of experience so far described (shown in figure 6). At any one time, one member within each pair will be active, but one or two states will be more active than others. Thus, there can both be r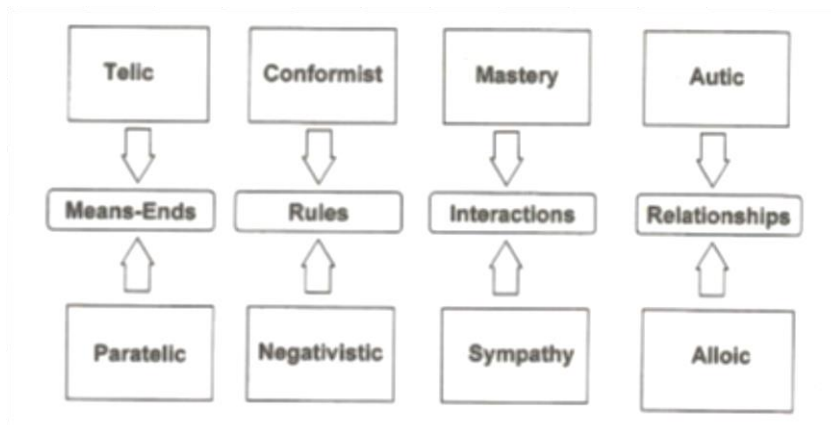eversals within a pair and change across pairs. Moreover, it can be used to show two kinds of tendencies. The tendency for a person to be in one state or the other within a domain and the tendency for some domains to be more active over others.

If we compare reversal theory to Nick Yee's typology of motivations in MMORPGs we can find some similarities (see figure 2). Namely status, a motivation under the advancement factor would be a value associated with a telic-autocentric state combination, while competition in the form of provocation would be a case of negativistic-paratelic combination. It is also important to note that the components earlier presented in Yee's typology of motivations does not represent player types in the same manner that domains of metamotivational states occur in congruence with other domains. As we have seen any one state does not act on its own, but concurrently with other states and reversal theory holds, in

fact, that four of the eight states will be active at any one time. The various ways these can interact with each other reflects the complexity of a personality.

Reversal theory and replayability

So how does reversal theory fit in with the study of replayability of games? We might argue that Apter's model is to abstract and an ad hoc model, such as the ones presented by Yee or Bartle would be more suitable, as they are less about metamotivation and more about specific motivations found in the context of MMORPGs. As a framework of metamotivation Reversal Theory provides a useful tool to capture the full scope of motivations and emotions needed to capture the subjectivity of playing games. It is by classifying specific motivations in terms of a general setting of metamotivation, that it might provide a much more complete picture of replayability. This becomes arguably easier within the context of a game since some assumptions related to the activity of game play must already be met at the outset.

The second advantage is that it, as has been stated, allows to account for the dynamics of motivations that the other theories lack. As we have assumed the dynamics of motivations are intrinsic to replayability as subsequent play-throughs might be undertaken for different purposes. Equally, we have argued that motivations change in-play during a single play-through. This is where reversals are important. By analyzing when reversals might occur we can get a better understanding of why players stop playing games, and why they keep playing them. It is quite possible that the replaying of some activity in the game might instill a reversal to a state opposite of the one active during the initial play-through. The telic state for example would likely be more prevailant during subsequent play-throughs where one plays to reach some distant goal as the familiarity of the activity implies low arousal.

There is also the notion of game space to consider. As we have argued many games does not hold up to traditional definitions of games, because they act as platforms wherein multiple games are played. I have already defined my view on replayability as replaying the same core content with slight variations, and these games would not fit into that definition. However, as I will try to argue, confining two or more games within the same semiotic space can potentially boost replayability across the entire span. The main argument for this is that of contingent reversals, that bring about attention to something in the phenomenal field where players oscillate between not only states but various games within platforms of games. This can help alleviate the satiation effect that is more difficult to design against.

Finally, we must account for the fact that a metamotivational approach is more sufficient for an empirical study than a theoretical one, since it is not our role to collect scientific evidence for behavior through empirical observation, but through logical argumentation. As reversal theory has shown, the dynamics of motivations are very complex and thus our claims are primarily speculative. Bear in mind that what we propose are claims about likelihood of one state being more active than another based on observation from the context of play. Thus, our formal approach of analysis is not dissimilar to abductive design thinking in which we are concerned with probability rather than absolute truths. By an abductive approach is meant that we give the best possible explanation based on circumstantial factors. By the best is meant the most economical where the fever assumptions we can make the more accurate our statement is likely to be.

Protective frames

As a final note on reversal theory and how it relates to a discussion of games and replayability specifically let us turn to the concept of protective frames. In later work Apter describes the metamotivational states as they occur in games suggesting that games provide a *protective frame* in which situations are experienced differently; indeed often in complete opposite ways than would generally be the case (Apter, 1993). This can be seen as a development on the idea that anxiety can sometimes be experienced as excitement in the arousal-seeking state. Other scholars have commented on the idea of protective frames; one of the most well-known being Caillois who coined the concept of the magic circle (Caillois, 1961). The magic circle delineates a space where different rules apply and where specific objects and actions signify something else than their correlate outside of this space. Within this domain the activity of play occurs, suggesting that we are distanced from the role undertaken and by inhabiting this role we are allowed to do things that would normally be outside the boundaries of norms and rules. The magic circles is related to Apter's concept of protective frames. However, as he points out these can be divided into different types each corresponding to the different domains of experience of reversal theory.

The first type of frame described is the *encapsulation frame* which is related to the paratelic state. Within this frame activities do not have importance beyond themselves. They are cut off from the rest of life, have no consequences outside of the activity itself and are generally played for their own sake.

The *exemption frame* concerns the way in which rules as a wide-ranging denotation are experienced in the negativistic state. It is a frame in which one finds himself or herself exempted from the coercive power of whatever rules are salient at that time. One might be

aware that it is impolite to swear, but does not allow this rule to have authority over oneself. One goes on to swear anyway. In some games such rules are meant to be broken and is culturally condoned as the pay-off outweigh the punishment for doing so. Thus, in Soccer actions that are considered a foul might deliberately be used to gain a tactical advantage.

The *objectifying frame* is related to states that concerns the transactions with others and how one perceives its outcome. In the mastery state one might regard other people as less than humans – in fact more as objects to be manipulated and taken advantage off, discounting the fact that they are sensitive beings with personalities and their own subjective mental states.

Finally, the *mergence* frame is related to the alloic state in which one finds oneself becoming one with another person. One might identify with the hero of a film or feel as one becomes one with nature. One is, of course aware, that the other person is in fact a person separated from oneself, but the disbelief is suspended.

In all of the examples shown the phenomenological effect is paradoxical. One perceives a particular aspect as being the same-but-not the same. Each frame, its related state and effect is summed up in the table shown in figure 7.

Frame type	Related to	Phenomenological effect
Encapsulation	Paratelic mode	Significant goal which is not significant
Protective	Arousal-seeking mode	Danger which is not danger
Exemption	Negativistic mode	Rule which is not a rule
Objectifying	Mastery mode	Person who is not a person
Mergence	Alloic mode	Other who is not other

Figure 7: The protective frames and their phenomenological effect in the metamotivational states (Apter, 1993).

Determining State Dominance in WoW: MoP

Having described reversal theory as a framework of motivation let us examine how the range of metamotivational states relate to activities found in WoW: MoP. In order to account for as broad a notion of replayability as possible we will use our previously defined framework of both the different levels of detail at which games can be perceived (platform, virtual space and activity), and the specific structures of play that can occur within them (emergence, progression and chaos).

The preliminary method is applying the aspects with which the four domains of experience are concerned: Means-Ends, Rules, Interaction and Relationship. Relating these to different game activities in WoW: MoP we can assume some initial tendencies of active states based on the notion of protective frames and the specific context in which they are situated.

We can assume that while all states will permeate everyday life to some extent the protective frames that is active in play activities such as games implies a tendency for some states to be more active. It will be recalled that each frame is characterized by how one state is experienced within it, while its opposite is experienced without it. The paratelic state will be more focal than the telic state. Games are ideal facilitators of paratelic play due to their unproductive qualities. The negativistic state will be more focal than the conformist state as one is allowed to break rules without any real consequences and while we may not perceive rule-breaking as a self-evident motivation, we can recall that play often involves testing the limitations of the game rules. While we do have to adhere to rules as they are necessary for completing the game, some games might have flaws that can be exploited. Whenever such exploits are encountered they are generally taken advantage off if it means easier advancement of the game. The mastery state will be more focal than the sympathy state due

to how the objectifying frame is impacted by the fact that threats are paradoxically not threats. The very existence of goals that so strongly define games necessitate a tendency toward mastery rather than sympathy. Finally the alloic state more focal than the autic state. We might become so immersed in the game that we identify with the character we are playing referring to it as ourselves when we for instance say "I just died". The paradox of the alloic state, however, is that we are both concerned with ourselves and others as the notion of mergence implies a tendency to think that we are in fact identical to this other.

While the protective frames can give some indications on state dominance in games it bears to note that they are not necessarily a given; they are merely likely based on the context of play. The concept of protective frames are a bit simplistic as it is indeed nothing more than an idea of how games transform rules and meanings within the context of play. However, this context cannot be fully separated from outside factors, as players are situated within these frames as well as outside of them. For example, Juul who has studied the concept of failure more recently implicitly asserts that while emotions such as failure in games does not impact the player in the same way it does the avatar this failure is a real felt emotion that when experienced reminds us of our own inadequacy (Juul, 2013). Furthermore, Apter's notion that some states are more dominant presumably applies more to single-player games than multiplayer games as actions have no impact on other players. The degree to which they are salient in multiplayer games, on the other hand, varies as the interaction with other players tend to blur the boundary between what is left inside and outside of the frame. When we encounter other players we are faced with elements that are not entirely within nor without the game. For instance, when some loot drops that both we and another player is able to use, there are factors that might indicate a tendency towards the sympathy state, such as whether or not the other player haven't received as much usable loot as we have. This might cause us

to feel a degree of sympathy towards them. Inversely, we might feel that we should be the ones to get the loot if we are the ones to have had bad luck in the past. We are still in the sympathy state, but are concerned with the aspect of 'being given' rather than 'giving'. Thus, if we are to analyze any given game we must account for situations in which the boundaries of the protective frames might seem blurry.

Recalling our previous analysis of structures it was argued that the goal of acquiring levels could be facilitated by a variety of activities; namely, grinding, questing and PvP. Depending on the level of detail observed these could then be designated different structures of play. Our main reason for analyzing structures in games is to show how seemingly unrelated activities interrelate. For example, we have argued that if we view games on the level of detail of virtual space the sameness of the game can be derived from the way activities are connected by a unified goal. As such if we are to explore how reversals occur in games, not just between states, but between activities as well we must identify this connectivity. However, before we proceed an account on initial state dominance and salience is necessary as a starting point from which we can posit potential reversals.

Starting with means and ends this concerns the goal and the way one prefers to go about achieving it. In order to get an in-depth understanding of how one goes about achieving a goal in a given activity we must examine how states act on their own as well as in combination with other states. As it has been noted, the protective frames of games might indicate a tendency for some states to be more dominant than others. However, these frames are sometimes obscured, and even more so in multiplayer games such as WoW: MoP where the telic, conformist and sympathy states also tend to be dominant. Furthermore, we have argued that the protective frames cannot protect us against our own sense of inadequacy when we fail to master the game. This feeling of failure cannot be fully contained within the

protective frame; it is a real sensation that might induce the telic state. Thus, while we generally can assume that the initial motivation for engaging in any game is likely to be experienced in a paratelic, negativistic, alloic and mastery state there are factors that cannot be ignored.

We have assumed that the abstract goal of questing is the accumulation of experience points. It is structured to present the players with increasingly difficult challenges in order to counteract the increase in power gained as the player advances in level. We previously classified questing as a structure of progression as the actions needed to achieve the goal is strictly predetermined. In addition, questing is the primary means by which narrative is conveyed to the player and relies on ludic elements such as a varied set of mechanics to instil a sense of novelty in between quests. In one instance the player might be tasked with killing a certain amount of boars; in another to explore and map an ancient ruin. Due to the unpredictability of such activities we can assume that the initial motivation for engaging in these task is related to a paratelic state as the potential increase in arousal we experience by engaging in this variety is likely to be preferred. Grinding, on the other hand, is an activity that would likely appeal more to the telic state due to its repetitive nature. It allows for the internalization of actions which enables one to perform them with a minimum of effort and this will allow one to reach a desired goal faster. As we recall the goal is focal in this state and anything that obstructs one from reaching it is experienced as undesirable. Indeed, repetitive actions are preferred. In player versus player combat the paratelic state is likely dominant due to the emergent properties inherent in this activity. The outcome of actions are highly unpredictable as they are made in response to other player's actions as opposed to the limited set of actions of a computer opponent.

Using these examples, we can initially assume that the telic state is dominant in the progression structure of killing monsters while the paratelic state is likely to be active in the emergent structure of player versus player combat. Quests, however, are more problematic: Being a structure of progression one might be less prone to distraction due to how the player need only be concerned with one way of completing them. In this sense they would appeal to a telic state. On the other hand, if we view multiple quests in sequence they would appeal more to the paratelic state as the variety experienced between them would be a means to increase arousal. Thus, progression structures may or may not imply a tendency toward one state or the other. While predictability is preferred in a telic state, one might argue that we must also account for real novelty associated with exploring new quest-lines. This is a case where playability and replayability differs. In initial play-throughs there will typically be a sense of novelty in progression structures, such as increasing challenge. This is experienced as a distraction in the telic state. On second play-throughs, however, the structure of progression will be preferred as one has become familiar enough with the progressive structure of each quest to complete them with minimum of effort. One is mainly concerned with replaying them for the purpose of some other reward beyond the activity and the more capable one is to advance the game effortlessly the better. It then follows that the capability of the individual player must be measured against the challenge in order to determine which state is likely to be active.

At this point it is important to note that we have thus far only described arousal in the telic and paratelic states in terms of how one perceives the means related to some goal. An equally important aspect is that of ends. In the telic state one is not only concerned with the effort required but also the reward or achievement associated with it. While a game may be complex in the sense that there are multiple pathways to some goal, there is the potential risk

for certain dominant strategies to emerge whereby the most efficient means to achieve a goal is always chosen. In WoW: MoP one might be more inclined to engage in PvP mode in which arousal is increased when in the telic state if the reward for doing so outweighs that of simply killing monsters. Inversely, one might be more willing to be more goal-oriented in the paratelic state if the goal leads to some desired game mode in which arousal is increased. The repetitive task of grinding as a means to prepare for a challenging raid encounter is an example of this. Thus, we cannot account for states on the basis of activities alone, but must account for them in congruence with their associated rewards.

As mentioned, the paratelic and telic states rarely act on their own. In the case of questing and grinding we can assume that the conformist state would also be active as we conform to rules by default. The rules are predetermined and cannot be negotiated. In this ludic sense norms would be irrelevant as the interaction is confined between player and game. In PvP we must also adhere to rules, but due to there now being other players involved there may be norms associated with certain actions. In general it is considered impolite to *graveyard camp;* an activity characterized by players grouping up on the opposing team's respawn point picking individual players off as they emerge from death. There is also the notion of the incentive to explore the limits of the rules to consider. While we cannot say that progression or emergent structures imply one state over the other in and of themselves, we can assume that there may be some case of design oversights in complex emergent structures that lead to exploitive behavior. When this is the case, we cannot discount the negativistic state as being likely.

Determining which state is likely to be active in the interactions domain involves inferring whether the game activity lends itself towards control (mastery) or care and nurturing (sympathy). In terms of ludic aspects mastery will always be dominant regardless of activity

and structure. However, sympathy is not unlikely in the case made about how players may engage in *graveyard camping* and may explain why some chose to do it and others do not. In the context of play this could also be a case of giving-up and thus related to mastery. The difference in this matter between giving and giving-up may be too subtle to have any relevance.

Finally, as far as relationships are concerned questing and grinding would be instances where the autocentric state is likely to be active. We are concerned with a sense of self-actualization as there are no other players to account for. In Apter's terminology this would be a case of an intra-autic state defined as an autocentric state in which one does not benefit from an activity at anyone's expense (Apter, 1989/2007). PvP would also be a case of an autocentric state as it concerns a contest between teams. However, there is also a contradiction here in that the cooperation within a team can shift to a contest for power. This is exemplified in the in-game tracking of how well one is performing in comparison to other players in terms of enemy player kills or player deaths. In this case the autotelic state would likely be more active. An example of this is when players ignore objectives in favor of getting the most kills. This would also be an incentive to graveyard camp.

State Combinations

Let us return to our notion of how dominant strategies might cause one to undertake activities not necessarily preferred in favor of a goal associated with it. We can classify these conflicting interests between means and ends as a form of telic and conformist state combination, where the activity is not necessarily preferred in and of itself, but the high degree of felt significance associated with the fact that the activity is significant beyond itself,

such as the reward, counters this and induces the conformist state. Thus, reward distribution among activities is an important factor in determining which state is predominant in any one activity. Conversely, the conformist-paratelic state combination would be a case of game playing described in a previous chapter in which one is concerned with exploring the space of possibility within the constraints of the game rules. For instance, if *grinding* is the method chosen to acquire experience, one might enjoy the various ways one can optimize its character for this otherwise monotonous task by specializing in abilities that hit multiple enemies at once and try gathering as many enemies as possible. Furthermore, if a match is lost only half the amount of experience points are awarded supporting the notion that the activity is primary.

The telic-negativistic state combination, in which a goal is more important than some external pressure, can be exemplified in the exploitation of some bug allowing one to get experience faster than intended. One such case in WoW: MoP is camping a certain boss monster and killing it over and over for large amounts of experience, depriving other players of killing it as a requirement of a quest. In this case the autocentric state would also apply, and it can be inferred that if the allocentric state was active one would not be as likely to exploit this bug at the expense of others. Of course at stated previously one state might be more dominant than others and by examining this particular example in which conflicting states interact (the allocentric and the telic state) we can presume that the telic state is dominant. The person might express some degree of guilt (through which we can determine the allocentric state is active) but the significance of the reward will outweigh this sense of felt guilt.

The purpose for this exemplification of state combination is to show the myriad of personal reasons one can have for replaying a game, be it as "work" or leisure, does one find gratification in helping others or does one own need come first, etc. For each of these state

combinations the game must account for the motivation that inspires replayability in any given domain. If the game is too exploitable, such as the aforementioned bug, this would invoke replayability for people in the conformist state. However, replayability for people in the allocentric state would be subsequently low. If there is no longer any significant goal to pursue the replayability in the telic state would be low, etc. While we can account for state combinations in WoW: MoP, we must also account for reversals between them as well as the dominance of a certain domain such as means and ends, transactional outcome and mastery of skill.

Determining salience

We are now confronted with another issue. If we recall the notion that while one state within each domain will be more dominant than the other there is also a tendency for some domains to be more dominant. So far we have been concerned with the former. Let us now turn to the concept of salience; the tendency for some domains to be more focal than others. With all of these states acting in combination how then can we infer which domain of motivations is more focal? For instance, we have described multiple possible metamotivational states that can be active in the activity of *graveyard camping,* one being autocentric another being negativistic. Even the telic state could be active as denying the enemy players coordinated play by picking them off one by one as they respawn helps tip the game in our favor. Inversely, the paratelic state would imply that one finds sadistic pleasure in the activity and is as such paired with the negativistic state.

While Apter postulates that this salience rely on personal factors, we can again posit a general setting based on the likelihood that some domains would to be more focal at some points than others. Our way to address this issue is by assuming an initial condition in which a particular

player choice and its relation to a domain is absent. In the case of solitary activities such as questing and grinding we can assume that the conformist state is relatively dormant if there is no strong indication of external pressure. Pressure would imply choice and in the case of a single-player experience we are dealing with rules that are non-negotiable in contrast to norms that can more readily be opposed or conformed to. We can then observe whether a choice are presented that can potentially lead to a reversal. If we are given a choice between exploiting an oversight such as a flaw in the system and conforming to the prescribed norms of play either the negativistic state or the conformist state will most likely be in focus. Equally, the autic state is likely to initially be in focus as one is concerned with oneself. However, one might be joined by other players or perhaps shifts to other activities in which other players are present. In this case there might be conflicting interests and the domain of relationships would be focal as a choice that are motivated by either the auto- or allocentric state is presented. The degree to which the mastery state is focal would depend on factors such as perceived difficulty relative to player skill; in other words, the contest between player and game. If an imbalance is perceived either the sympathy or mastery state would presumably be focal. The notion of sympathy in solitary gameplay requires further explanation as we generally do not associate feelings of sympathy when interacting with a computer opponent. However, some might feel that a game is too punishing, again an issue related to perceived difficulty, and that it doesn't care about them. In this case a combination of the sympathy and autocentric state would be focal. It could also-however irrational it may seem-be a case of sympathy-allocentric state combination where we feel sympathetic towards the game. However, we can assume that the former is likely the case. In all of these cases our assumption is based on the likelihood that a choice is involved; If at one point a choice is

possible that pertain to one of two contradictory ends we can assert a reversal would occur and thus indicate the likelihood for some domains to be more salient than others.

To complicate matters, Apter notes that one state might be used in service of another. For instance, in the example given in which a situation where cooperative play also involves a contest for power one might conform to the pressure of other players while in the autocentric-mastery-telic state combination if it helps the advancement towards some goal. In other words, the telic state will be more focal than the mastery-autocentric state combination and the latter will be suppressed in order for one to achieve a goal with a minimum of conflict. In either case it is not sufficient to examine choice in isolation. We must account for the relationship between action and outcome to get a better understanding of both presumed state dominance and domain salience. This might seem problematic as goals can be both short and long-term, and inferring state dominance when the long-term goal of an activity in the emergent macro-structure of WoW: MoP would prove a daunting task. However, if we can assume the likelihood of some initial condition of an activity, its perceived outcomes - both short- and long-term - and any instances of conditional choice that might bring some domains to the fore we can make some assumptions on the active state and which domain is likely to be most salient. In turn, the relationship between active state in the initial condition and the salient domain we can infer from the condition of the choice will help us demarcate changes in states across and within domains. Looking at outcomes we can posit that an activity is either experienced for its own sake or for some long or short term benefit and that certain conflicting states might be tolerated for some long term benefit.

Reversals in Games

Having described the metamotivational states we now turn to reversals. This chapter will focus on the progression and emergent structures we have so far described and aims to propose how reversals functions within these parameters. At first glance reversals might not seem to be related to a discussion of replayability. When they occur they do not imply a sense of increase or decrease of interest in an activity. They merely change how we approach it. Whereas we can discuss replayability in terms of how long it can instill a sense of novelty reversal theory is intrinsically concerned with shifts in metamotivational states and not activities per se. However, we can posit that any given occurrence of reversals be they of contingency, satiation or frustration might result in loss of interest as the game might not accommodate the state induced by the reversal of interest. The argument is thus that the optimal moment for a reversal of contingency to occur is when it converges with those of frustration and satiation.

Reversal-inducing elements in games

Apter points out that while reversals cannot be controlled directly they can be invoked indirectly by changing contextual parameters. If we think a little more carefully about the reversal functions in terms of how they can accommodate specific behavior we can think of how this behavior is invoked in games. By this is meant how games manipulate reversals indirectly towards metamotivational states by means of contextual change. We can classify these means in different ways. First of all, we can think about reversals in terms of the degree to which they can be induced by factors in the game. Contingent reversals and reversals of frustration would be relatively easy to induce. While they are dependent on a variety of personality factors such as skill, preference, etc. they are generally directly linked to aspects

such as difficulty and situational change. Reversals of satiation, on the other hand, would be a case of low controllability as there is no causality between this type of reversal and environmental or personal factors to rely on.

Another way to classify reversals as effects is in terms of the elements that induce them as being either proactive or reactive; that is, how they are measures taken in advance in response to an expected reaction or conversely a reaction that results in behavior to act on that reaction. Proaction is understood partly as looking ahead while reaction is understood as looking back. Games that effectively accounts for reversals of satiation consist of elements that react upon them. When satiation occurs attention is drawn to these elements. Satiation is a subconscious bodily reaction that cannot be traced back to any environmental factors. However, it cannot be denied and requires a specific response once it occurs. This is also the case when reversals of frustration occur. They require one to determine whether the player is in the arousal-seeking or arousal-avoidance state in order to deduce how difficulty is experienced. They can also be proactive to account for the satiation effect. For instance, when an activity is experienced extensively in the paratelic state a reversal to the telic state will at some point occur as a result of satiation. By increasing the difficulty of the activity games can potentially induce this reversal, as the resulting frustration might cause one to become more serious about completing the goal. This helps ensure that the player is able to satisfy the needs of the telic state within the game. Finally, elements that induce contingent reversals would be proactive in the sense that games tend to account for moments of frustration and satiation proactively by implementing elements that cause situational change. Also, contingent reversals do not require reaction as they are yet to be experienced by players.

Summing up, we have assumed that games in which contingent reversals occur at moments of satiation or frustration tend to prevent reversals that could potentially cause loss of interest

in an activity. Bear in mind that we examine this from a game standpoint as opposed to that of the player. What this means is that although elements that induce a reversal of satiation can, in fact, also cause proactive behavior from the player's point of view they are generally not proactively pursued as a means to increase the longevity of the game. In this view the reversals imply a degree of valence; that is, reversals of satiation and frustration being of negative valence and contingent reversals positive when contained within the game. We generally want to avoid frustration and satiation within the game as well as contingent reversals outside of it. The latter, however, is inarguably beyond our control.

Utilizing this classification we can examine how these reversals prolong or limit player presence in games. In a purely utilitarian sense a discussion of replayability under the heading of reversal theory becomes a matter of determining how long a game can entice us and this is in turn directly linked to how replayable a game is. Let us first examine how this is facilitated in progression structures which we defined as structures with predefined courses of action.

Reversals in progression structures

Recalling our classification of games (see page 21) a discussing of progression structures is correlated to a discussion of games as *activities* due to the fact that a progression structure on this level of detail is identical to the progression structures found in further abstractions. They are studied in isolation and thus provides the most basic foundation for an analysis of reversal theory. Having identified the function of reversals as means to extend the longevity of the game, let us now examine each on in sequence.

Reversals of frustration

If we place reversals in the context of challenge, one particular form of reversals seems the most prevalent; that of frustration. In order to understand how reversals caused by frustration occur we must examine the subtle ways in which games impose challenge and the different processes required of the player to overcome them. In the following I will argue how reversals between states hinge on both of these factors.

As already noted, frustration can potentially give rise to a reversal between the paratelic and the telic state. Depending on a variety of factors frustration can also either increase motivation in overcoming challenges or become a potential roadblock causing one to lose interest in the game. How frustration is experienced depends on several factors, such as state dominance, tolerance to resistance and the degree of value attributed to the goal.

As we have argued personal change most readily measured in progression games hinges on a sense of improvement. In reversal theory this would be the domain of mastery in which emotions associated with winning and losing in a contest with some opponent is in focus. We can assume that the more balanced the relationship between player skill and game challenge the more a sense of mastery can be experienced. Mihaly Csikszentmihalyi's theory of flow is at its core the standard argument of this. Flow is described as a state of optimal experience of concentration in which one is fully absorbed in an activity paying little to no heed to one's surroundings (Csikszentmihalyi, 1991). It is postulated that a balance between the effort the required of the player and the difficulty of the game is essential to instill a sense of flow. This process of flow is illustrated in figure 8.
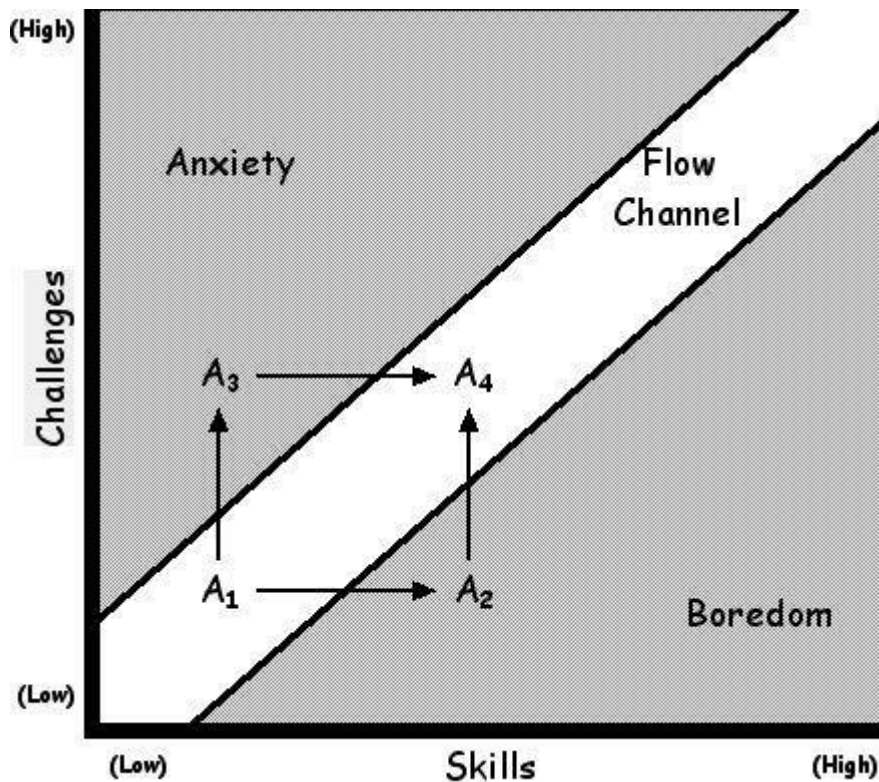
Figure 8: The core principle of flow (Csikszentmihalyi, 1991)

Here we shift from the elements of systemically defined change to how readily it can be experienced. We can see that if the challenge is too easy relative to player skill it leads to boredom. If it is too high it causes anxiety. The model also illustrates that we start any given activity with relatively low skill and through practice this skill level increases. The difficulty of the challenge must then increase accordingly to this increase for us to remain in a state of flow.

While Csikszentmihalyi notes that one typically oscillates between frustration and boredom (Csikszentmihalyi, 1991), this model does not do this view credit. Its main problem is that it illustrates a smooth increase in difficulty over time, while in reality oscillation does indeed occur. Game designer Noah Falstein suggests that an increase in difficulty should vary in

waves, where at one point the game should be a little too hard and at another a little too easy (Falstein, 2005). This process is shown in figure 9. This also how we generally approach any given activity. When we can easily figure something out we do not automatically try to improve. It is when challenge increases that we become aware of own inadequacy and a desire to improve occurs. Thus perfect flow as postulated in Csikszentmihalyi's flow model is ephemeral. In praxis it is achieved by continuously fluctuating between non-desired states. The oscillation between states can also be interpreted as an argument against a constant balance of skill and challenge. Sometimes we might enjoy a game more if it is easy for a while after overcoming some challenge, allowing us to find pleasure in relaxation. While it is true that flow is not necessarily experienced as pleasant it is however described as resulting in a feeling of improvement once the goal is met. And as already argued, the frustration caused by a high level of difficulty might result in a feeling of stubbornness in which we are even more motivated to beat the game. Thus, Falstein's model shows us that games in terms of difficulty must be divided up into segments, rather than relying on continuous challenge. It allows for more difficult challenges because it does not constantly strain the player's concentration. Frustration would be high at some points and low at others, but the felt transactional outcome in the mastery-autic state combination would result in a sense of pride as a result of the increased difficulty.
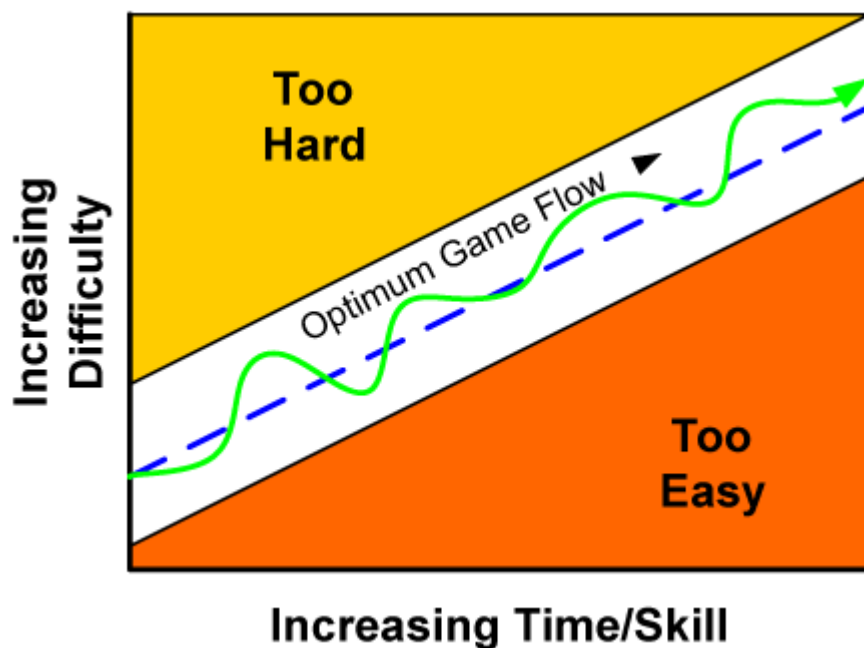
Figure 9: Falstein's version of flow (Falstein, 2005)

The observer might notice a correlation between Falstein's flow model and the arousal-seeking and arousal-avoidance modes of the telic and paratelic states, respectively. If we examine the original flow model in figure 8 boredom and anxiety is placed as undesired emotions which in reversal theory would be dependent on the active state. Looking at Apters model in figure 3 we can visualize the process of oscillation between undesired emotions as a pattern resembling a butterfly. Starting from boredom which is experienced in the paratelic implies that the difficulty is too low. As the difficulty increases it will lead to excitement. If it continues to increase it will result in anxiety and a reversal to the telic state. If then lowered it will lead to relaxation and finally when reduced even further return to boredom and a reversal to the paratelic state. As we can see not only do we oscillate between emotions as the difficulty changes. We also reverse between the metamotivational states. If we adopt Falstein's view as the most representative of flow we can then assume that reversals are an intrinsic part of it. Coupled with the argument that an oscillation results in a better flow this

also implies that the more often one experiences these reversals of frustration and endures them, the more one is likely to experience flow.

Let us examine how this oscillation and reversal process in facilitated in WoW: MoP. An example can be found in a quest-line which has reached notorious status of being one of the most difficult challenges in the game. This quest-line is only obtainable by the Warlock class. It is divided into several quests referred to as stages. At the final stage the player must defeat a powerful demon named Kanrethad Ebonlocke. This fight is further divided into phases that each increases in difficulty as new layers of mechanics are added on top of the other.

The fight starts with Ebonlocke conjuring a demon which the player must deal with by using a warlock-specific ability called *enslave*. This brings the demon under direct control allowing the player to use the demon's abilities. One ability must be used to interrupt some of Ebonlocke's more powerful attacks that would otherwise instantly kill the player. Some of these abilities cannot be interrupted and requires that the player hides behind objects in order to avoid them. In the second phase a new mechanic is introduced while the former ones are still active. Ebonlocke conjures many smaller demons that must be dealt with by using a flame attack from the enslaved demon while still managing the other abilities. In the third phase Ebonlocke conjures a new type of demon. These have the ability to reduce the duration of the *enslave* effect on the controlled demon Ebonlocke summoned at the beginning of the fight. Losing the *enslave* effect will cause the demon to run rampant and attack the player. Finally, in the fourth phase Ebonlocke will summon larger demons that must be dealth with by using an ability called *banish* which will remove them from the fight for a short duration. The player needs to constantly reapply *banish* at regular intervals in order to keep the demon controlled. During the entire fight the player must assault Ebonlocke with his or her own

class-specific abilities as the encounter is timed. Failure to kill Ebonlocke before time runs out will result in player death.

The actions required in this fight can be summarized as following:

- Using an enslaved demon's abilities to interrupt powerful attacks throughout the entire fight.
- Dealing with the various phase-specific encounters mentioned.
- Avoid getting hit by the various demons that are summoned.
- Dealing enough damage to the boss before time runs out

All of these criteria needs to be met and many of them overlap. Furthermore, some of the specific actions can be divided further into new dimensions of complexity. For instance, in order to deal enough damage to Ebonlocke before time runs out the player must use his or her abilities in a specific order rotating between them as the fight progresses. Abilities that deal damage over time for a duration must be reapplied once they run out and high damage abilities that can only be used once in a while needs to be activated as soon as they become available. Combined with encounter-specific mechanics the complexity easily adds up.

One way the game solves this problem is by way of dividing it into even smaller phases. Visual feedback informs the player that new progress have been made allowing him or her to experience a gradual sense of accomplishment.[4] The small victories induce reversals from the telic to the paratelic state until the next challenge proves too difficult. Furthermore, we can posit that an oscillation occurs where the player becomes more resistant to frustration by being exposed to activities that are experienced in a prolonged period of time in either

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[4] In Flow theory it is postulated that feedback is key criteria for flow as it allows one to discern what one is doing wrong or right.

anxiety or boredom. Thus, subsequent activities that would cause boredom or anxiety under normal circumstances are likely to be tolerated and even preferred depending on the duration and intensity of the activity.

There are, of course, limitations to this approach. If one fails in the latter phases, one must start anew and complete phases already mastered in order to get to the point where the game is again challenging. While prolonged encounters such as the one analyzed is theoretically a means to extend replayability in games repeated loss would most likely result in a reversal of frustration where the pattern is that of moving from a telic state of anxiety to a paratelic state of boredom.

Contingent Reversals

We have assumed that change as personal improvement is constituted by the varying ways in which we oscillate between emotions of anxiety and boredom. Using Falstein's model frustration would presumably occur at the high points of anxiety or boredom, and can be viewed as both a positive and negative emotions as a means to increase the replayability of a game. However, while an emotion such as frustration is malleable to some degree it relies too heavily on individual factors to be feasible as an efficient tool to increase replayability. Because of its undeniable large space of possibility WoW: MoP in particular attracts a varied player base in terms of skills and tolerance. If we are to get an in-depth insight into the mechanisms that reinforce desired behavior leading to increased replayability we must presume that some challenges might always be too hard or too easy depending on personal factors. Having identified the potential points at which frustration occurs let us now examine to what extent contingent reversals can account for this recurring theme. If we adopt the

concept of elements that induce contingent reversals as a means to proactively account for frustration we can assume that these would ideally intervene at moments of anxiety and boredom. The challenge, of course, is figuring out where these thresholds apply to players of varying degrees of skill, tolerance to resistance, state frequency and metamotivational state dominance.

When we talk about contingent reversals we can think of them as relating to situational change. Whereas frustration relates to motivations that are largely irrelevant to change of situations in that they are concerned with the challenge itself as a causal reversal, contingent reversals often occur as situations change and independently from reversals of frustration. This also means that they are largely controllable when frustration does indeed occur because they can act as a controlled solution to a problem. Applying this notion to the context of progression structures let us return to the analysis of our quest-line.

So far we have analyzed the final stage of the events; that is the final quest in the quest-line. Looking more closely at the structure of the quest-line we can observe several instances at which contingent reversals might be induced. I will not go into full detail on individual stages, as we are primarily concerned with structural analysis rather than content.

First, a short description of the various steps required to complete the quest-line:

Pre-stage: In order to begin the quest-line the player must kill a number of monsters that have a chance to drop a magical tome. Clicking on this tome initiates the quest-line.

Stage 1: The player finds that the tome is written in an unknown language and must interact with various NPCs in order to get clues about where to decipher it. It is learned that the text tells of several warlocks that banded together in the pursuit of power.

Stage 2: Now the player must track down crystals in which the memories of these warlocks are stored. The purpose being to figure out where these warlocks eventually went in their pursuit. Having given no clear description of the location of these crystals the player must engage in a mini-game very reminiscent of hot and cold in which the game informs the player how close he is to the crystals. The closer he is the hotter it gets. The farther away the colder it gets.

Stage 3: Once completed the player is led to an ancient temple where he must enter without being seen by the demons guarding the place. This requires the player to avoid circles on the ground signifying their field of vision.

Stage 4: Having completed this step the player is greeted by a caretaker named Akama, who accompanies the player through the temple as he explains current event. During this moment of dialogue the player is given a short reprieve from combat.

Stage 5: In the next challenge the player must traverse a maze-like area comprised of invisible fields. Walking into these fields will spawn several demons that attack the player. The player must use a specific warlock skill that allows him to see the correct path through these fields, but cannot walk while doing so, requiring him to memorize the path.

Stage 6+: After this stage the player is again given some reprieve. He meets Akama again and more dialogue is initiated. This pattern is continued as the player is thrown into a new difficult encounter, followed by another meeting with Akama and eventually the final confrontation with the demon Ebonlocke described previously.

Having described this questline what can we observe from this example?

Firstly, the events between stages differ in terms of challenge. The player is either given a short reprieve or thrown into a new challenge. In stage 1 we must kill monsters until some item is obtained. In stage 2 we are given some reprieve and shift to a way of progression where no high level of skill is needed to advance the quest-line. We are then again thrown into the action in stage 3. This oscillation is more readily experienced at the later stages in the temple where challenging encounters and moments of minimum gameplay are interchanged consistently. These can be perceived as situations that would likely induce a contingent reversal as they are to do with situational change, which induces reversals between metamotivational states.

Secondly, if we examine the quest-line there appears to be situational change in effect that invoke a shift in game mode. The quest-line shift from activities with conventional core mechanics found in most areas of the game and some that differ fundamentally. The boss fights are typical encounters that mimic other fights encountered, whereas the memory game and hot and cold mini-game are examples of variations not found anywhere else in the game. Personal preference of game types will inarguably have some impact on whether or not one is in a telic or paratelic state. However, we can infer a general pattern by applying Apter's notions on how certain preferences seems to be associated with specific states. For example, one would likely enjoy the variation found in the mini-game in a paratelic state as the increased arousal is preferred. This is because variation requires the internalization of new rules and mechanics, a learning process that slows down the progress that is desired in the telic state.

In the pre-stage the preferred state would be telic due to the repetitive nature of grinding the same monster over and over until the item is obtained. This would be experienced as relaxation. However, satiation will occur sooner or later at which point the game must

accommodate a contingent reversal. The narrative driven experience in stage 2 would be a case of this, where a focus on story-telling would represent some degree of situational variation and thus induce a reversal to the paratelic state. Recalling our notion that some states may be used in service of others (see page 66) and that we must infer a state by virtue of the relationship between action and outcome we can then also assume that if the initial drive to engage in the activity is telic activities that are intrinsic to the paratelic state is tolerated and might even invoke a reversal to this particular state. Conversely, the repetitive activity of grinding might be preferred if it leads to more exciting activities in the long term, and might induce the telic state in which such activities are preferred.

These two examples give rise to another problem that needs to be addressed. On the one hand, the situational change in which difficulty is either increased or decreased can induce a contingent reversal. On the other, they could also be the result of reversals of frustration seeing as they have to do with difficulty. Equally, in the example of situational change caused by a shift in game type, an activity initially identified as paratelic could just as easily be preferred in the telic state. There is no gameplay related challenge in following the plot in stage 2. One can easily skip over the narrated parts to get on to the next challenge, thus progressing the game with a minimum of effort. In these cases it is difficult to distinguish between reversals of frustration and contingency when explored in progression games. In truth they could be both.

The distinction is important as our purpose is to examine the iterative process of mastering challenges in a given activity and the extent to which games can prolong this process. In this sense of progression the game's ability to invoke contingent reversals can be derived from its ability to cause situational change when an activity is saturated in terms of the challenge it can provide to create flow. To a lesser extend the boss battle mentioned previously is an

example of this (see page 74). It divides the entire fight into phases, each one experienced as situational change. However, if the game causes a contingent reversal too early where the player is not yet in a state of frustration the longevity of the activity and the optimal degree of exhilaration one experiences when completing the challenge is not yet saturated. Thus, the more overlap between reversals of satiation or frustration on the on hand and contingent reversals on the other the more optimal short term replayability the game affords.

How then can we infer what reversal is truly in effect when metamotivational states change? We previously touched upon, how we can infer what state is active when exploiting a bug on the expense of others (see page 63). Such situations can be analyzed in terms of intersubjectivity: For instance, we can presuppose that the first player is aware that his own motivation is in conflict with other players and thus assume that the telic state is more dominant than the allocentric. This is possible because we can observe the interpersonal relationship between players and assume that there are certain norms within the game about how one behaves. In cases of interaction between player and game, however, no such relationship exists and other methods need to be applied. Games contain rules that - contrary to norms - are non-negotiable. The player must always adhere to these to advance the game. Following Apter's terminology it seems plausible that frustration is triggered by conflict *independently* of situational change, whereas contingent reversals is a matter of situational change independent of conflict. That is not to say that they cannot effect each other, but that they are fundamentally and ontologically different. When the player is introduced to a new situation, we must account for how the difficulty changes along with the change in game mode to gain insight into what type of reversal is most likely to cause change. Thus, if the difficulty is experienced as unchanged relative to player skill, but the game mode is different the reversal is most likely to be contingent. Conversely, if the situation is unchanged, but the

difficulty relative to player skill is changed a reversal of frustration is more likely. If both of these factors change then we can assume that one of either type of reversals is in effect. This is the desired scenario because the contingent reversal invoked indirectly by the game is overlapping with the reversal of frustration. While we cannot account for the relationship between player skill and game challenge, games themselves provide valid transcription tools that allows for tracking of all player actions including the time spent on any given activity. These might give some clues as to how challenging the activity is to the player and subsequently the short term replayability of the game.

Tolerance to resistance

The reversals are crucial as they can either cause loss of interest in the challenge, or increased motivation in beating them. In order to understand some of the reasons why people persist we can examine some other motivational factors.

We have thus far argued that games that facilitate contingent reversals at moments of frustration or satiation are preferred there are exceptions to this rule that must be inferred from factors not intrinsic to the activity itself. As we have argued rewards may cause one to endure an activity that conflicts with a metamotivational state if it leads to an outcome that satisfies a metamotivational need. This same rationale can arguably be applied to the concept of reversals, namely those of frustration. Depending on the value attributed to the goal reversals of frustrations are endured and as such contingent reversals at these moments would decrease the overall longevity of the activity. In WoW: MoP the reward for completing the quest we have thus far described is the ability to alter the color of certain abilities. This is purely cosmetic and might seem as a somewhat trivial reward as it provides no tangible benefit in terms of efficiency. It effectively functions as a badge of indication that the player

has completed this difficult quest-line. This might instill the player with a sense of pride; an emotion associated with the mastery-autocentric state combination, and can in turn increase the resolve when faced with difficult challenges. This tolerance to resistance means that the higher degree of difficulty of the Ebonlocke quest is tolerated along with the risk of frustration that could potentially cause the player to lose interest in the game. We can thus further assume that the representative impact a reward of prestige has on the ludic aspects of the game should not be underestimated – particular in a social media such as an MMORPG, where the presence of other players might bolster interpersonal emotions such as pride. This motivational factor can be seen as an overarching indicator of tolerance.

Another factor is that time investment which delineates a gradual increase in tolerance. Due to the extensive length of the quest-line the time investment alone might be a motivational aspect that contributes to the tolerance of resistance of the difficulty. This, in turn, may increase the satisfaction of finally overcoming the challenge. The notion of time investment can also be seen as an argument that games do not simply need to increase linearly in terms of difficulty-skill balance, but that they can strain the player's skill more towards the end as there is a smaller risk that the frustration will cause loss of interest in the game due to the time investment in the activity.

Thus, while outcomes may influence tolerance on a general scale, investment would imply that moments of frustration is gradually tolerated more and more in between moments of situational change that would bring about a contingent reversal. While Falstein's flow model is sufficient in its description of flow it does not intentionally account for this tolerance and how it impacts the longevity of an activity. The inclination that an activity should increase in difficulty to account for player skill implies that the relative perceived difficulty remains constant throughout an activity. While we could argue that most games start out simple and

become exponentially more complex the notion of relativity still applies as the player becomes more engrossed in the mechanisms of the game over time, and thus more able to undertake increasingly exponentially difficult tasks. This would still imply a relative stalemate between skill and difficulty. As we postulated in our example the quest-line in WoW: MoP becomes increasingly more difficult in a way that expands the gap between skill and difficulty over time. One way to provide evidence for this notion would be to measure time spent on individual activities. Since we have no empirical proof our claim remains speculative, however we can observe significant changes in complexity as well as amount of stages between the final fight and the initial quest-line.

Thus, if we expand on the idea of Falstein's flow model we can propose that an imbalance of skill and difficulty should be gradually more divergent from the center of flow as play progresses.

There are some key observations to be aware of: This exponential increase implies that games should be gradually more difficult relative to player skill *or* that the amount of challenges that lead to multiple reversals of frustration within the same activity, that is before situational change and an invoked contingent reversal occurs - should gradually increase. The time investment and value attributed to the goal should indicate the level of variance between skill and difficulty. Bear in mind that the purpose is not necessarily to instill a sense of flow, indeed it can be seen as taking Falstein's model in a different direction where perfect flow is experienced less, but felt more strongly when overcome.

Reversals in emergent structures

Moving on to a discussion of reversals as experienced within the structures of emergence this still concerns the notion of games as activities. However in addition, we also include games as virtual space as these concern the choice between multiple activities with shared goals. Because emergent structures allow multiple pathways that differ in content and form they can potentially shift attention between activities when frustration and satiation is likely to occur by invoking contingent reversals, accordingly. Thus far we have examined this occurrence in progression structures the argument being, that games can be divided into noticeable fluctuations of challenge. These fluctuations can then be used to pinpoint the causal link between circumstantial factors and the active metamotivational state. This allows for careful examination on whether the reversal was induced by frustration, contingency or – in lack of any other findings – it is the result of satiation. Furthermore, this allows us to examine replayability as an iterative process in a new perspective; namely in terms of the convergence of reversals of contingency on the one hand and reversals of frustration and satiation on the other. In simple terms this has to do with the period of time spent on a given difficulty before one of the three types of reversals are likely to occur and examining whether the game itself facilitates changes that bring contingent reversals to the fore.

While the aim in this chapter is similar to previous discussions, the method is different: The aim is similar because the function of provoked contingent reversals is to occur at moments of frustration or satiation just as was the case of progression structures. It is different because the reversals function differently in the parallel pattern found in emergent structures. We are

not confined to the single structures of progression games on which the longevity of the challenge hinges, but must account for how the player is able to choose – sometimes in the middle of play –different strategies and occasionally different activities as a means to achieve a goal.

As mentioned Apter is primarily concerned with reversals between states and not necessarily potential shifts from one activity to another. We have observed that WoW: MoP allows for multiple ways that one can achieve a goal and that emergent structures support different play activities towards the achievement of the same goal. Thus reversals are not limited to one activity of play, but is likely to cause shifts between activities as well. Whereas we have described reversals in progression structures as occurring within a single activity, let us now examine the reversals in relation to shifts between activities as they appear in emergent structures.

Using our previous example we argued that the process of leveling a character could be divided into multiple activities that each support different metamotivational states.(see page 35) If we are to examine how such reversals occur within these activities we can apply the same question as the one used in the discussion of progression structures. If a reversal occurs is it because of change in difficulty, situation, satiation or a combination of two or more of these factors? However, it is also important to note that emergent structures are very different in the sense that the player has the ability to choose a given activity over another contrary to progression structures where only one choice is possible. This implies that situational change is more voluntary on part of the player. For example, when engaged in the tedious task of *grinding* as a means to increase character levels one might stumble upon a quest. The player can choose to undertake the quest or ignore it and continue doing the same activity. In this instance the causality between reversal and context is more easily observed because the shift

in activity depends on the personal preference of the player. Factors such as state dominance, but also frequency of state are more easily observed on account of player choice. Games that tend to place cues at various points of an activity that direct attention to some other activity would presumably more easily extend player presence in the game. They account for how individual state dominance and frequency differs from player to player. For one person too much frustration might cause one's sense of excitement to shift to anxiety and subsequently cause one to shift to a telic state while for another this anxiety is experienced as excitement in the same way that Apter's example of parachute jumping is an activity characterized by using anxiety as a means to create excitement. The encapsulation frame, the acknowledgement that this is just a game, might just as well cause one to revel in anxiety in a paratelic state. We can choose to ignore the cues for situational change provided by the game or follow up on them depending on personal preferences. In progression structures we can either choose to play the game or leave it altogether in favor of some activity outside of it. In emergent structures there are a variety of activities we can engage in within the game when reversals results in loss of interest in an activity.

We could argue that the notion of intervening at the right time is crucial in the same way that it is crucial in progression structures. While the notion of choice allows for multiple points in an activity where contingent reversals overlap with those of frustration and satiation too many could potentially be distractive from the activity itself. Some games tend to flood the player with information on the various things the player can do early on in the form of tutorials, not only breaking up game flow, but potentially decreasing the long-term replayability by directing the player away from activities that have yet to be saturated in terms of playability. Of course, the player may return to these activities at a later point out of own interest, but this is not a certainty that can be relied on. If we are to determine

replayability in terms of longevity we must understand how contingent reversals are induced in relation to moments of frustration and satiation.

Reversals between activities

It is perhaps not surprising that we tend to think of games of emergence as structures that induce a sense of replayability. The common notion is that the more the player can do, the more likely the player is to stay in the game for extended periods of time. Such tendencies are biased towards quantity in favor of quality. Recalling our definition of emergence they are phenomena where systems contain few rules, yet allow for a great degree of variety not discernable by looking at the rules in isolation. It is clear that this does not cover the full spectrum of replayability. While games wherein multiple activities support the same goal may themselves be a short-term solution to induce a sense of replayability, they also allow for a kind of longevity I call interdependent longevity. This concept is best explained through reversal theory.

Imagine that we learn about a powerful enemy and are eager to test our mettle. We enjoy the fight for a while, but after several attempts at beating it we become frustrated realizing that we are either lacking in personal skill or equipment. As a result we lose interest in the encounter. We then learn about a certain weapon we can craft which will make the encounter more manageable. We set out to gather the materials needed. Eventually, also this activity fails to satisfy us. It becomes too repetitive and our desire for more variety leads us back to the previous encounter with renewed motivation.

In this scenario we are initially in a paratelic-mastery state combination. However, due to our failures a reversal of frustration occurs and we shift to a telic state. We are then led to an activity that supports this state, the grinding of materials, and eventually this state is saturated

as the activity of grinding becomes too repetitive for our tastes. The way to determine which states are involved in the reversal process is to derive them from the specific mechanics involved. If the encounter requires the player to move a lot and avoid certain attacks this implies that the skill required is that of mastery and the mastery state would likely be active; however, if the encounter is on a timer it implies that the player character must be equipped with powerful enough gear to kill the boss before time runs out. It is highly likely then that the player looks for ways to account for this problem such as the grinding method described.

Whether directly or indirectly, attempts at changing the activities to account for reversals can be seen in many different context in WoW: MoP. This is often done in a very subtle way such as rewarding the player with a crafting recipe after killing a raid boss. When gathering the materials for the crafting recipe, for instance harvesting plants for alchemic elixirs there might be a so called vanity pet hiding in the plant. These are collectible pets that can be used in another form of activity called pet-battles. The game is full of these signals between activities that are fundamentally different in terms of which state needs they satisfy. In addition, more often than not the activities have a common goal if we perceive this goal in relation to games as virtual space. This then further incentivizes the player to pursue these signals.

What this example shows is that when two different activities are contained within the same semiotic space they can potentially reinforce each other. If the means to advance the goal in one activity becomes boring or frustrating one can shift to another that is more appropriate in terms of temperament and skill. Because the player is situated in a controlled environmental game space the game can more easily direct the player back and forth between activities by appling reversal inducing cues at certain points in the game. This would be impossible in an open offline environment in which the complexity would result in a level of detail so vast that

emergence would turn to chaos. This sort of cueing between activities implies that a game activity that may at first prove too difficult can be substituted by another. Eventually, the arousal-avoidance mode induced by the telic state is replaced by arousal-seeking in the paratelic state at which point one would potentially attempt to overcome the challenge previously avoided. The postulation here is that games in which this interchange between activities is possible allows for more difficult challenges without risking that players give up on the game altogether. Thus, replayability can be quantified in the sense that more time is spent on each activity over time and qualified because increased challenge leads to more exhilaration once overcome. Additionally, the difficulty of the task is tolerated because at the moment of paratelic dominance the difficulty is preferred over the alternative of repetitive grinding. One might at first glance be put off by this design philosophy as constant failure would most likely cause one to lose interest in the game altogether. There are, of course limits, to how far games can go in this regard. Nevertheless, if each activity can be perceived as a progression structure that is divided into various stages as those mentioned in the previous chapter one is likely to experience a sense of accomplishment along the way, that will result in reversals within the game.

While this explains how games with emergent structures reinforce activities that support a specific metamotivational state, there is yet another issue. In the example given we are motivated by a desire to overcome a difficult challenge for its own sake. Another motivation could be that the challenge rewards us with better equipment which in turn will make later encounters more manageable. It now becomes a means to achieve some other goal; the improvement of one's character.

Digression as tolerance factor

When we adopt the notion that emergent structures may indeed increase tolerance to resistance it is because they allow novelty in the form of means yet explored in overcoming a challenge. The suggestion here is that doing the same thing over and over and failing results in a kind of stalemate, whereas new avenues of exploration provides the possibility of success. The power of emergent structures is not to be inferred from variety of choice in itself, but from the accumulative space of possibility formed in the interaction between game components. In this case there is a distinction between games as *activities* and games *as virtual space*. As mentioned the defining feature of emergence in the context of game studies is the variation of strategies possible towards reaching the same end-state. In this instance an activity such as Chess – or questing in WoW: MoP – can be both progressive and emergent and can be perceived as a single activity towards a goal. As such games as *virtual space* is merely an abstraction of this, where each activity of which it is comprised are viewed in a similar manner as different means towards an end, and while emergence in this perspective does not offer the same degree of unpredictability as that of the individual activities the fact they contain such activities themselves extend the space of possibility exponentially. When the same core mechanics are applied in different contexts, they can signify sometimes radical different things. As our previous example demonstrated, the activity of raiding and grinding for materials are two very different activities in form and content, yet of we perceive the game as *virtual space* they are unified by a common goal defined as the accumulation of gear. As such, in addition to value attributed to the goal and time investment we can infer that emergent structures provide novelty, both between activities and within them while still maintaining focus towards a unified goal.

Reversals between multiple structures

Finally, we come to our definition of games as platforms defined partly by how they allow chaotic systemic structures while retaining their sameness. We have touched upon the notion of chaos previously (s. x) where it was stated that chaos is perceived as unpredictable where the states and relationships of the elements that comprise the chaotic system are random. While individual systems that comprise the activities within the platform are not necessarily chaotic in and of themselves, the relationship between them can, in a sense, be seen as chaotic as they do not have any discernable relation other than being situated in the platform. This is of course a simplistic notion on chaos, but for our study it is useful to think of chaotic systems when we talk about multiple independent structures. In this view we cannot necessarily account for sameness in the same sense as games as activities or virtual space as there is no defining characteristics that necessarily represent a core experience from where the sameness can be derived other than the game itself. However, as we have noted game activities are eventually saturated in the sense that doing the same thing over and over will lose its novelty over time and this applies to different activities with unified goals as well. Our tolerance to resistance in reaching goals certainly has their limits. Thus, the occurrence of multiple structures can account for replayability in the same sense that we engage in different activities outside game space for different purposes. In this sense the replayability must be attributed to the game as a platform itself. We can then present a fourth type of tolerance factor that must be seen in regard to the game as platform; namely, that of shift of game activities and virtual space in the same manner as players play different games. Implicit in this assumption is the fact that even the prospect of goals cannot maintain interest

indefinitely, even when one switches between several activities as a way to experience

novelty. At some point it must be achieved. Shifts in games as virtual space, however, might

prolong the tolerance to the game as a *platform* whereas as virtual space it may be discarded.

However, games that offer multiple game activities with no unified goal benefit from keeping

the player within the virtual space and the controllability of reversals are easier to maintain

within this space. As such when metamotivational states are reversed as a result of frustration

or satiation one might be inclined to play another game, but by gradually referring back to the

previous activity the player is potentially lured back. While this notion is useful for

theoretical purposes many games seem to circumvent the chaotic nature of multiple non-

interacting and independent structures. This is exemplified well through achievement system,

where the player enters a telic state in the effort to accumulate as many achievement points as

possible. As achievement points are rewarded for every activity in the game, including pet

battles, they can in fact be seen as constitutive mechanics that constitute the sameness of the

game as a platform. As a result the game is no longer chaotic, but emergent as there is a

connection between all activities; the accumulation of achievement points. This is

strengthened by the fact that the more players are kept within the same game the more

attached they become to their accomplishments within that game and this, in turn, can result

in a telic state where one must acquire all goals and experience everything the game has to

offer. Thus, while we can no longer regard these activities as chaotic as the achievement

system makes more sense to be analyzed as virtual space, we can however determine that a

game as a platform does not necessarily need to contain unified core mechanics to constitute

its sameness. Due to the intrinsic nature of reversals we can however assume that such

multiples of game modes and structures can alleviate frustration as a whole. It also accounts

for more than the reversals between activities within the same virtual space in the sense that a

reversal from a telic to the paratelic state as enacted by frustration might result in one not wishing to shift to another activity with the same goal, as the notion of this goal might be counterintuitive to a desire to shift to the paratelic state, whereas games that offer their own self-contained goal might be perceived as being in the background of the activity itself.

As we have already noted WoW: MoP offers another experience completely distinct from the core gameplay thus far analyzed. The pokemon-inspired mini-game named pet battles. An example where situational change occurs between these different activities can be found in various game modes already described. When *grinding* one might find a pet on various slain enemies that can be added to one's collection and used immediately in pet combat. Equally, they can be obtained as quest rewards and bought from currency earned through PvP combat. Thus in addition to the previously mentioned tolerance factors we can add the notion of digression that leads the player to activities that not only differ in form, but also in function.

A framework of replayability based on reversal theory

Having identified game levels, game structures and how state dominance, domain salience

and reversals relate to them let us now summarize our findings.

We have suggested that the degree to which difficulty is increased as a means to increase the

replayability of a game must be seen in relation to the factors we have described regarding

frustration. It is postulated that difficulty is less likely to be tolerated in games defined as

single activities and it is suggested that the overlap between reversals of frustration and

contingency occur most often. In these cases tolerance factors such as reward value

attribution and time investment imply a divergence from this principle.

In games understood as virtual space the added tolerance factor is that of digression, where a

potential incongruence between frustration and contingency might imply a TEMPORARY loss of

interest in the game as an activity, but not necessarily the game as virtual space. The added

function of contingent reversals are to refer between activities in this space.

Additionally, games understood as platforms tend to imply an even stronger tolerance to

resistance in the sense that there is a digression of both means and ends. This means that there

need not potentially be a unified end-state between the two activities, and as such the game

can be experienced anew as a separate activity. As stated previously, there may very well be

limits to which players might tolerate difficulty and this applies to all of these modifications.

Barring contingent reversals either within activities or between them one might be frustrated

to the extent that the game as a whole (i.e. *platform*) can no longer be enjoyed. However, as I

have tried to demonstrate each level of detail of games adds a new layer of tolerance to the

game as a whole which increases replayability as both an iterative process and a revisiting

one, as the great moments of success when a challenge is finally overcome might also encourage replayability across multiple play-throughs.

The other part of our findings is concerned with state dominance and salience as we have described them. Using Apter's protective frames as a propagative in determining state dominance this matter was complicated by the fact that as soon as other players are involved, their opposites such as conformist, sympathy and telic states might also be dominant suggesting that activities such as player versus player combat or group-related content such as *raiding* might implicate this approach. However, in these cases it was assumed that metamotivational state was more readable due to the assumption that players are aware of the presence of other players and the impact their actions have on them. The added aspect of multiplayer suggests that a more varied palette of state dominance and salience might occur, and that this is beneficial for the longevity for the game. In reversal theory in particular saturation in one state will occur sooner or later, at which point the need for one to be in another is induced and this is only indirectly facilitated by the game by providing tools for communication and allowing certain activities that support these opposites while the agents of reversals are the players themselves.

Conclusions

In the study of replayability many approaches has been viable. While some studies call for an in-depth analysis of content, my approach has primarily been concerned with reversal theory and the structure of experience. Reversal theory has been applied to discuss the replayability of a game by putting emphasis on the metamotivational states of players, and how reversals between different game structures occur. Thus, my focus has not only been a discussion of reversals between states, but also potential shifts in activities that accommodate the specific preferences associated with a given state.

As preliminary work, a general definition of replayability was proposed from which two sub-types could be derived: replayability defined as multiple completions of a game and as an iterative process of mastering it. This distinction was necessary to account for the fact that many games, particularly those of the MMORPG genre, do not have a predefined end-goal. In a general sense, replayability was understood as the replaying of a game in which a sense of sameness was retained yet offered novel experiences. The notion of change and identity was put forth as a means to demarcate replayability as an experience. It was suggested that the concepts of primary and secondary core mechanics could be used to constitute the identity or sameness of the game and the difference, respectively. It was further noted that the concepts of compound and constitutive mechanics could be applied to account for instances in which primary mechanics would change across play-throughs yet the game would retain a sense of sameness. As an example, it was noted that replaying the game a second time with a different character would imply a sense of difference, yet the mechanics of this character as a source of difference would still be primary. Thus, it was noted that the difference of the activity would be derived from the compound mechanics specific to this character and the

sameness from certain constitutive mechanics such as basic interaction commands, movement, resource systems, etc. from which these more specific compound mechanics related to specific character classes is constituted.

These notions of core mechanics was necessary to differentiate replayability from other popular ideas: for example, some games might change so much between play-throughs that they would no longer be the same game but would become a new game entirely and thus lose their defining feature of sameness. It was suggested that these different understandings were partly influenced by contradictory classifications of games. Thus, three levels of detail of games were postulated: platforms, virtual space, and activities. Platforms delineate the materiality or "text" wherein the game space is situated, virtual space: the game space wherein game activities are presented, and activities: the individual activities with self-contained goals. Using this typology, it was recognized that the same-but-different approach to replayability would be variable with the level of detail observed. It has been suggested that games understood as platforms retain their sameness independently from number of core mechanics thus explaining why replayability might be used as reference to some games wherein there is no apparent defining sameness. In delineating games as activities, on the other hand, it was suggested that they might be divided into primary and secondary core mechanics as well as constitutive and compound mechanics.

Furthermore, it has been suggested that replayability should be classified into two kinds of change; one being concerned with in-game change and the other being concerned with psychological and physiological change within the player. The latter was done to account for the fact that some games might be replayable despite only being comprised of primary core mechanics. Two game structures were then suggested as correlates to these ways of experiencing change; progression structures where change would primarily refer to personal

change as a result of how parts of the games where gradually mastered. This also suggested that replayability could be perceived either segmentally and iteratively within a single game session or wholly between multiple completions. The concept of emergent structures was applied to the different levels of details of games. It was argued that the emergence perceived in games as activities was constituted by the different ways in which a goal can be completed. These different ways correspond to either secondary core mechanics or compound core mechanics. In regard to understanding games as virtual space, emergence was found in the way different activities would lead to the same goal. Thus, some freedom of choice was given to the player. Finally, it was suggested that games as platforms would represent a third structure with the potential for multiple game activities with no apparent interrelation in terms of goals.

The next part concerning the motivational aspects of replayability moved the discussion from the formal structure of games to the structure of experience of reversal theory. Applying the concepts of metamotivational states it was examined how one could determine state dominance, state salience and reversals in games and how the different structures identified would influence these factors. World of Warcraft was used as a case for this purpose due to its variety of structures and game activities. In analyzing this case, an abductive approach was deemed necessary due to the subjective nature associated with the motivation of replayability. Here the protective frames were used as a foundation from where some general assumptions could be made about different activities with a common goal. However, due to how some activities lead to the interaction with other people, suggested that the protective frame was not always active in games. Furthermore, some solitary activities might even be undertaken to prepare for such social interactions as exemplified by the activity of gathering materials to prepare for a raid. As such, some metamotivational states not commonly experienced within

the protective frame could potentially be dominant. This last example also demonstrated that utilizing the concept of games at different levels of detail might reveal long-term goals of an activity not necessarily directly related to the activity itself. It was argued that the virtual space might represent a more abstract goal such as the accumulation of gear or experience, and this goal was shared across multiple activities. Thus, it is conclusive to state that this classification might help refine our understanding of active metamotivational state based on the fact that some metamotivational states would sometimes be used in the service of others.

Finally, the reversals were discussed in relation to the different game structures described as well as the different abstractions of game levels. In the context of games, reversals was assigned a specific function in terms of how they could potentially satisfy the need for a particular metamotivational state and thus the longevity and replayability of the game. It was argued that the replayability in terms of reversal theory should be derived from the ability to induce contingent reversals at moments of frustration or satiation (if possible) as the particular need associated with a metamotivational state would result in one trying to find activities that would satisfy this need. The example of a reversal between the paratelic and telic state was used where one might stop playing the game in order to be productive outside of it. Thus, it was argued that the game should facilitate the metamotivational state by means of contingent reversals. This was applied to the structure of progression games where it was noted that the balance of skill and difficulty would sometimes result in fluctuations where at some times the game would be too hard and sometimes too easy. This would in turn induce the reversal effect of frustration. It was further argued that the alternative would be that the reversal of satiation would occur. The implication, however, was that satiation was defined as occurring as a rhythm similar to the sleeping-waking cycle with no observable causal relation. This lack of causality would also imply that the tendency for games to fluctuate in

difficulty could be viewed as a means to account for this lack of causality and thus induce a reversal that is more easily acted upon.

Lastly, analyzing World of Warcraft further, it was suggested that each abstraction of game level would introduce new forms of tolerance to resistance. Where games as activities would rely on value attributed to the goal and time investment, the emergent structures perceived on the level of games as virtual space introduced diversion as a tolerance factor, and finally games as platforms would introduce activities with no inherent common goal in which the diversion as tolerance would also lead to activities that diverge in function, in a similar manner as when starting a new game.

While I have argued that reversal theory can be useful in order to understand the ambiguity of replayability, this understanding would benefit from other areas of research with a less general approach to its subject matter. For instance, skill and challenge has not been directly addressed in terms of their various types. The notion of challenge has been touched upon by Sara M. Iversen who suggests that challenge can be both demanding and stimulating (Iversen, 2012). Insofar games prescribe a correct way of play, a notion of skills would also be useful such as the bodily-kinaesthetic skills commonly required in fast-paced first-person shooters or logical-mathematical skills in puzzle games. Furthermore, while my approach has been based on the notion of how replayability instills a sense of same-but-difference in that change is intrinsic to either the game or the player, there are other aspects to be pursued. The abstract terms like "fun", for instance, does not necessarily imply that games need to be different to be replayable. Thus, my approach has been one of many ways to discuss the concept of replayability.

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