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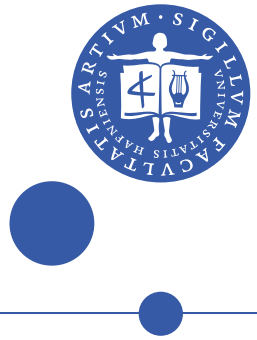

MASTER'S THESIS

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FRUSTRATION AND ADAPTATION

A PROTOTYPICAL MODEL OF ORIENTATIONAL SHIFTS IN SITUATIONAL MOTIVATION DURING VIDEO GAME PLAY

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Abstract:

The focus of this research is of orientational shifts in situational motivation during video game play. Such a study is important in order to gain a better understanding of gamers' behaviour during continuous play. The research approach adopted in this dissertation is qualitative template analysis; the theoretical background is based on Self-Determination Theory, the Hierarchical Model of Motivation, and Flow Theory. The findings from this research provide evidence that when players encounter frustrating situations they tend to adapt to the scenario by shifting their situational motivation form intrinsic to extrinsic, while they stay intrinsically motivated in a higher level. The main conclusions drawn from this study are that players' primary strategies incorporate extrinsic motivation despite the heavy focus on intrinsic element in the contemporary literature. This dissertation recommends further research in the direction of how the attentional system affects situational and contextual level motivation during video game play.

Keywords:

attention, flow, frustration ,hierarchical model, information processing, motivation, prototype, self-determination, video game

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INTRODUCTION

Video games are a huge sensation in our time, being one of the fastest growing multimedia industry, with more than 1.2 billion players worldwide (Spil Games, 2013). Although video games have many similarities with other multimedia, their consumption is inherently different, due to their interactivity. This creates a certain level of complexity that other passive forms of entertainment lack (Salen & Zimmerman, 2004, p. 2). Despite this great environment with extreme possibilities, there is still a lack of research in the area of psychology of games (Rigby & Ryan, 2011, p. xii).

This thesis serves as an addition to the growing field of video game research, by examining aspects of the relationship between motivation and gameplay that are often skimmed over by the major literature. Video game literature often breaks down to two different directions, one is concerned with the social implications of extensive video game use and violence in particular (Dill & Dill, 1999) while the other is aimed to understand what makes video games fun (Bartle, 2004b, p. 129). The latter then often takes a very practical approach and aims to "crack the code" of good game design (Bartle, 2004, p. xix; Salen & Zimmerman, 2004, p. 1).

My research, however, takes a more pragmatic angle and tries to uncover mechanisms that the previously mentioned approach perhaps overlooks. The focus, on what makes games fun and players engage in gameplay, left the research on gaming motivation a bit one sided. Although there is research that touches upon why some people play games other than for having fun, these studies usually focused on very characteristically negative outcomes like obsessive passion (Vallerand et al., 2003).

I have chosen to focus on the frustrating parts of in inherently enjoyable gameplay. My main reach questions were concerned with how people react in these situations and what keeps players motivated in frustrating scenarios. I felt the need of this study, because the prominent literature is either focused on how to design more enjoyable games (Jones, 1998; Bartle, 2004), or concerned with questions that have a bigger scope, like why do people even play (Yee, 2005) or enjoy playing games on the first place (Sweetser & Wyeth, 2005).

I have chosen *Self-Determination Theory* as one basis of my research because compared to other types of frameworks that are explaining motivation in video games[1] (Bartle, 2004; Yee, 2005) I found *Self-Determination Theory* (Deci & Ryan, 1985) the most extensive. It covers different types of motivations, using a terminology of clear and universal building blocks while other frameworks seem fuzzier and have been proven less predictive than the frameworks derived from *Self-Determination Theory* (Rigby & Ryan, 2007).

My other main fundament was *Flow Theory* (Nakamura & Csikszentmihalyi, 2002). Flow theory has been widely associated with video game research and design (Jones, 1998; Sweetser & Wyeth, 2005; Cowley et al. 2008). Treated as the template for the "optimal experience", many authors tried to create a design framework that helps to build games that let the players harness *flow* (Jones, 1998; Sweetser & Wyeth, 2005). However, the theory – though heavily focused on the affective state that Csikszentmihalyi named *flow* (1991) – explains a whole spectrum of different emotional and psychic states and the underlying attentional system. It has been proven that this framework is excellent in describing not just different types of affective states based on the underlying informational and

[1] Self Deremination Theory was fromulated with the intention to create a universal framework for understranding motivation, thus it has explanatory power beyond games (Deci & Ryan, 2002, p. 26). However, beyond the basic theroy, I will only touch upon frameworks that were created to measure and evaluate motivation in video games (Rigby & Ryan, 2007; Lafrenière, Verner-Filion & Vallerand, 2012).

attentional system, but also dynamic shifts in the player's experience (Cowley et al. 2008). I use this framework to conceptualise enjoyable and frustrating segments as well as their interplay.

My research was focused on how player motivations change as the game progresses, more specifically, the shifts in situational motivation during frustrating gameplay segments. Using template analysis (King, 2012), I have conducted a small-scale study with nine young males, who identified themselves as gamers. The result of my research is a theoretical model of a process of the aforementioned shift in motivation. Though the scale of the study does not lend itself to broad generalisation, I was able to produce a coherent model of moment-to-moment motivational shifts during gameplay that utilises both *Self-Determination Theory* (Deci & Ryan, 1985), crucial parts of the *Hierarchical Model of Motivation* (Vallerand & Ratelle, 2002) and the typology of the attention system behind *Flow Theory*.

I believe that my work is valuable to the field of video game research as it presents a testable – although to a certain extent, prototypical – model that opens up future research towards understanding micro changes in player behaviour during frustrating challenges. Moreover, the study can start bridging some gaps between two prominent theories that are applied to gameplay by bringing them next to each other, namely *Self-Determination* and the underlying attentional framework of *Flow*.

I will start with presenting the prominent literature of *Self-Determination Theory* (Deci & Ryan, 1985), how it describes the motivation, and how researchers apply it to video games (Ryan, Rigby, & Przybylski, 2006; Lafrenière, Verner-Filion & Vallerand, 2012). I will continue my literature review with *Flow Theory*, where I explain the basics of the affective states described by Csikszentmihalyi (1991) and expand upon how this system is used to view video game play (Jones, 1998; Sweetser & Wyeth, 2005; Cowley et al. 2008). I will briefly explain how the two theories relate to each other before moving on to my own research. I will present my method, how it works, how it is gathered, and structured (King, 2014). In the last part of the research, I will explain my interpretation of the data and present my model. I finish my thesis with a short reflection and discussion on further research possibilities.

SELF-DETERMINATION,
THE FUNDAMENTAL FRAMEWORK BEHIND MOTIVATION

I start my literature review with *Self-Determination Theory*. I will cover Deci and Ryan's original theory, how *motivation* forms, and what the differences are between the different types of it. I will expand on *basic psychological needs* as they were identified by Deci and Ryan (Ryan & Deci, 2000a, p. 57), which are necessary building blocks to understand their theory. I will use this terminology throughout the review and my research.

The theory, as it will be discussed later in this chapter, is based on so-called *basic psychological needs* (Ryan & Deci, 2000a, p. 57). It describes motivation as solely a function of *psychological need satisfaction* (Ryan & Deci, 2000b, p. 323; 2001, pp. 146-147). Thus, the bulk of the research in this area point to the direction of how we can support the satisfaction of these needs with environmental factors (Przybylski, Rigby & Ryan, 2010; Rigby & Ryan, 2011).

This might fall further from the common idea of motivation, in a sense of personal goal. Such frameworks do exist, such as the "Bartle types" (Bartle, 2004) or Yee's typology of MMO players (2005). These frameworks treat motivation as personal desires and behaviour to obtain something (Bartle, 2004a, p. 1). As such, they describe motivation as goal-oriented action because they label player types

based on the actions they carry out. In Bartle's typology, the four player types (achiever, explorer, socializer, and killer) are based on how they act-on or act-with the environment and players respectively (Bartle, 2004b, p. 132). Yee has a similar typology where player motivation has the achievement, social, and immersion components (2005).

It is easy to see why this type of framework is so tempting to use to designers. It describes player needs as tangible game elements that each type of player can strive for. Both frameworks are useful for player behaviour prediction. Bartle's model excels in describing player type interaction (2004b, pp. 133-134) while Yee's components of motivation can paint a more colourful picture of complex player goals (2005, pp. 6-7).

However, compared to *Self-Determination Theory,* they have a few shortcomings. One is their explanatory power. While they are useful tools to assess player behaviour, plan the game accordingly, and predict the interaction of different player types, they do not do much in terms of explaining how motivation is formed and facilitated (Ryan, Rigby & Przybylski, 2006, p. 348). The main reason for this might be that they are specifically targeted towards designers (Bartle, 2013, p. 13), thus concerned with "why do people play (sic)" (Yee, 2005, p. 7), rather than how. By doing this, these models lump different mechanisms together to form their categories. They are only worried about what people consider "fun" and how they plan to achieve that (Bartle, 2004b, p. 129; 2013, p.12, p. 17).

Self-Determination Theory is certainly more ambitious. In contrast, with the previously described frameworks, models based on this theory said to be universal and reflect "the fundamental or underlying motives and satisfactions that can spark and sustain participation across all potential players and game types" (Ryan, Rigby & Przybylski, 2006, p. 348). Constructing all motivational structures from the same building blocks (Ryan & Deci, 2000a, p. 57), this theory can explain and compare different motivations in an inherently similar manner. Moreover, it has the strong point against the already cited frameworks that it can describe motivations that are not driven by the inherent desire to have fun (Rigby & Ryan, 2011a, p. 8).

In the rest of the chapter, I will explain how this model of motivation works, starting from the smallest building blocks the *basic psychological needs* (Ryan & Deci, 2000a, p. 57). Although I will give a rundown on the main aspects of the theory, I will prominently focus on its utility in video game research.

Self-Determination Theory

Self-determination research started out in the 1970-s (Deci, 1971) as a "critical reaction" to Learning Theory (Hull, 1943) and Operant Theory (Skinner, 1953) (Ryan & Deci, 2000a, p. 57). The core of the work is associated with Edward L. Deci and Richard Ryan, who laid down the fundamentals of a whole family of theories in their book, *Intrinsic Motivation and Self-Determination in Human Behavior* (Deci & Ryan, 1985), who defined motivation as it follows:

> "To be motivated means to be moved to do something." (Ryan & Deci, 2000a, p. 54)

Since this definition was quite broad, it did not fit the traditional view of motivation-motivation dichotomy that ruled the field for a long time (Ryan & Deci, 2000a, p. 57). The new motivational model made distinctions between different types of motivation, depending on not only its level but its orientation (2000a, p. 54). The new structure provided an explanation for how people feel motivated by *extrinsic* rewards or pressures, but other times feel self-determined and fuelled by *intrinsic* motivations. (Ryan & Deci, 2000a, p. 54) In other words, *intrinsic motivation* is doing something

because it is enjoyable or gratifying in and of itself (Ryan & Deci, 2000a, p. 55), while *extrinsic motivation* is "doing something because it leads to a separable outcome" (p. 55).

Although other frameworks did make similar distinctions at the time, like Bandura's Theory of Self-Efficacy (Bandura & Schunk, 1981), these traditionally considered *extrinsic motivation* as "impoverished" and passive, which countered to the energizing *intrinsic motivation* (Ryan & Deci, 2000a, p. 55). This was based on the observation that different types of motivation lead to inherently different outcomes concerning the quality of an experience (Ryan & Deci, 2000a, p. 55). However, this idea at its core remained with *Self-Determination Theory* as Ryan and Deci considered *intrinsic motivation* more beneficial as it usually led to positive outcomes regarding one's well-being (Ryan & Deci, 2000a, p. 56). This led to a great focus on *intrinsic motivation*, in terms of how it forms, what conditions support it, and how we can induce it (Ryan, Rigby & Przybylski, p. 348; Rigby & Ryan, 2011a, p. 10). The greatest difference between this theory and theories like Bandura's was that it described all motivations as the function of the same three psychological needs that covered all basic drives with a useful level of generality (Ryan & Deci, 2000b, p. 324).

To be able to understand the more complex framework and micro-theories that add to *Self-Determination Theory*, first I have to examine the aforementioned building blocks. Psychological need satisfaction is the basis of self-determination and the formulation of genuine interest that is *intrinsic motivation* (Vallerand, 2000, p. 316).

Psychological Need Satisfaction

The heart of the theory of *Self-Determination Theory*, as I mentioned before, are the basic psychological needs "– namely, the innate needs for *competence, autonomy,* and *relatedness*" (Ryan & Deci, 2000a, p. 57; 2000b, p. 323). In Ryan and Deci's view, these are the fundamental building blocks of, not just self-determination, but eudaimonic well-being, which is associated with self-actualisation and vitality (2000b, p. 323; 2001, pp. 146-147).

The distinction of eudaimonic and hedonic experiences will be important in the discussion about the difference between *intrinsic* and *extrinsic motivation* (Ryan & Deci, 2000b p. 323). Pursuing happiness in itself is not necessarily *intrinsic* because it can be achieved through external rewards. However, the latter will not yield true well-being (Ryan & Deci, 2001, pp. 145-146).

Rigby and Ryan define the basic psychological needs, as it follows:

> "*Competence* refers to our innate desire to grow our abilities and gain mastery of new situations and challenges. [...]
>
> *Autonomy* needs reflect our innate desire to take actions out of personal volition, and not because we are "controlled" by circumstances or by others. Experiencing a sense of choice and opportunity in our lives, and acting in ways that truly reflect our wishes, result in a satisfaction of this intrinsic autonomy need.
>
> *Relatedness* refers to our need to have meaningful connections to others. […] Feelings of camaraderie, belonging, and the experience that you matter to others are all part of feeling relatedness" (2011a, p. 10)

Although satisfying these needs lead to well-being, a series of studies (Grouzet, Vallerand, Thill, & Provencher, 2000) proved that need satisfaction is not directly affecting positive psychological

outcomes, but self-determination does (Vallerand, 2000, p. 316[2]). Psychological need satisfaction plays a pivotal part of in the formulation of *intrinsic motivation* and self-determination, it "create(s) and sustain(s) the motivational force that will facilitate psychological growth" (Vallerand, 2000, p. 316). Or in Deci and Ryan's words:

> "finding an activity either interesting (*intrinsic motivation*) or important (well-*internalized extrinsic motivation*) is influenced by prior experiences of need satisfaction versus thwarting, but doing what one finds interesting or important does not have the explicit intent of satisfying the basic needs in the immediate situation." (Deci & Ryan, 2000, p. 230)

Video games are very good in supporting these needs (Ryan, Rigby & Przybylski, 2006; Rigby & Ryan, 2011). The feeling of self-efficacy and achievement can be associated with *competence* while *autonomy,* as a "sense of volition" (Ryan, Rigby & Przybylski, 2006, p. 349) can be associated with strategy, tactics, and metagaming. *Relatedness* is naturally apparent in all games with multiplayer elements (Ryan, Rigby & Przybylski, 2006, p. 350, p. 359), but of course, social groups may also gather around single player games. There many ways in which gaming can influence someone's need for *relatedness* in everyday life. Some can argue that even playing alone, isolated, the player can still fulfil this need with "'computer generated' personalities" and societies (Ryan, Rigby & Przybylski, 2006, p. 350).

This section meant to provide a basic vocabulary for the following parts that rely heavily on the aforementioned concepts. In the next segment, I will give a summary of the basic vocabulary of *Self-Determination Theory* that I will use throughout the whole thesis.

Main Orientations of Motivation

As I mentioned before, *Self-Determination Theory* focuses primarily on the *orientation* of motivation (Ryan & Deci, 2000a, p. 54). It differentiates between *intrinsic* and *extrinsic* motivational states, with the former being the one that relies heavily on the innate *psychological needs* of the individuals (Vallerand, 2000, p. 316), while the latter "refers to doing something because it leads to a separable outcome" (Ryan & Deci, 2000a, p. 55).

It is easier to understand this distinction if we look at the *perceived locus of causality.* It is a very useful concept that I will use in the last part of the thesis to explain the nature of the motivational shifts that happen during gameplay.

Perceived locus of causality describes the source of a phenomenon that is affecting the actor from a subjective viewpoint (Ryan & Connell, 1989, p. 749). Although it has two main branches, personal and impersonal causation, to the current research, only the personal side relevant. While impersonal causation simply describes a spatial metaphor, personal causation weights everything relative to the phenomenological self (Ryan & Connell, 1989, p. 759). Thus, this framework lets us describe certain internal processes as external when the self's *autonomy* is thwarted (Ryan & Connell, 1989, p. 759).

Perceived locus of causality on one hand draws a fine line between true *intrinsic* and *extrinsic motivation,* on the other hand, it explains the basic process of *internalisation*, a gradual change in the perceived locus of causality in *extrinsic motivation* (Ryan & Connell, 1989, p. 750-751). This "gradient of *autonomy*" (Ryan & Connell, 1989, p. 759) was later reworked into the *Organismic Integration Theory* (Ryan & Deci, 2000a, p. 61), which I will discuss in detail, later in the review.

[2] Vallerand cites Grouzet, F., et al. "On the social factors-motivation-outcomes causal sequence: A test of the Hierarchical Model of intrinsic and extrinsic motivation." Manuscript submitted for publication (2000).

Intrinsic motivation "exists in the nexus between a person and a task", writes Ryan and Deci (2000a p. 56). It is "*catalysed* rather than *caused"* (Ryan & Deci, 2000a, p. 58), meaning that it depends on some objective measures and specific conditions, but it is not directly linked to them. This is because *intrinsic motivation* depends on the aforementioned psychological needs rather than external factors. However, it must be noted that both need satisfaction and *intrinsic motivation* can be supported by the "novelty, challenge, aesthetic value" of the situation (Ryan & Deci, 2000a, pp. 59-60). Although usually it is described as a unitary feeling of agency and genuine interest (Ryan & Deci, 2000a, p. 55), Vallerand and Ratelle proposed a "tripartite taxonomy of intrinsic motivation", dividing it up between motivation to know, accomplish and experience (2002, p. 42).

Throughout the thesis, I will use *intrinsic motivation* to describe the player's genuine interest in any aspect of the game. I regard feelings of volition, agency, and interest in the experience, which is detached from any foreseeable reward, as the prominent telltale signs of *intrinsic motivation* in gaming.

Extrinsic motivation describes activities that are affected by rewards or pressures (Przybylski, Rigby & Ryan, 2010, p. 155). Contrary to *intrinsic motivation*, it moves on a huge scale from being *controlled* to being *compelled* to an activity (Ryan & Deci, 2000a, p. 61, Fig. 1). While the former usually considered to be thwarting positive outcomes, the latter, usually referred to as *internalised motivation,* can produce the most positive outcomes from actions that are not controlled by *intrinsic motivation* (Vallerand, Pelletier & Koestner, 2008, p. 259). *Internalised* forms of *extrinsic motivation* can be hard to spot as the expressed goals and incentives of a person tell a different story than her psychological needs (Deci & Ryan, 2000, p. 230).

Intrinsic and *extrinsic motivations* are not additive (Przybylski, Rigby & Ryan, p.155). Introducing *external* rewards or pressures will shift someone's motivation toward the *extrinsic* part of the spectrum, the presence of *extrinsic motivation* undermines *intrinsic* one (Deci & Ryan, 2000, p. 234).

There used to be a controversy in the subject to which extent extrinsic rewards can undermine *intrinsic motivations* or what actually counts as an *extrinsic reward* (Cameron & Pierce, 1994; Ryan & Deci, 1996; Cameron & Pierce, 1996; Deci, Koestner & Ryan, 1999, pp. 627-628; 2001, pp. 2-3). A meta-study (Deci, Koestner & Ryan, 1999) however, later showed that any expected "tangible reward, threat, deadline, directive and competition pressure" can shift the perceived locus of casualty and undermine *intrinsic motivation* (Ryan & Deci, 2000a, p. 59); that is pushing someone to the *extrinsic* end of the *orientation* spectrum.

This means that the slightest foreseeable reward has a very apparent and extreme effect on *intrinsic motivation* (Deci, Koestner & Ryan, 2001, pp. 9-10). The only thing that is not connected to these shifts is non-tangible *competence* feedback, which seems to reinforce *intrinsic motivation* (Deci, Koestner & Ryan, 2001, pp. 15).

In light of this, we can see the silhouette of a problem forming regarding video games. It is generally accepted and hard to argue that one of the primary motivation for playing games is to have "fun". It is inherently an *intrinsically* motivated behaviour (Przybylski, Rigby & Ryan, 2010, p.155). Thus, the most prominent studies that look at the connection of games and *self-determination* are also concerned with how games can provide soil and support *intrinsic motivation* (Przybylski, Rigby & Ryan, 2010; Rigby & Ryan, 2011). However, for anyone who plays games frequently, it is very apparent that modern games are filled with all sorts of reward and pressure systems that exceed something that we can call "*competence* feedback". Of course, some of those mechanics are designed to create a specific

challenge (like timers), and a well-optimised challenge fosters *intrinsic motivation* (Rigby & Ryan, 2011a, p.10). Nevertheless, based on player perception and game mechanics, many of modern games contain systems that are better suited to support *extrinsic motivation* than *intrinsic.*

Through the thesis, I will refer to every motivational structure as *extrinsic* that is not primarily focused on experiencing the gameplay, story, or game world, but rather motivated by incentives and pressures that are set by the game, and internal rewards and stress that are set by the player but constrain her *autonomy* (Ryan & Connell, 1989, p. 750).

In a quick summary, the *orientation* is the *perceived locus of causality* of motivation from the players' personal viewpoint. *Internal locus* means something that is in line with the player's phenomenological self while forces perceived as *external* are not endorsed by the player's "phenomenal center (sic)" (Ryan & Connell, 1989, p. 750). Thus, we can distinguish between different levels of *internalisation,* depending on how well the structure facilitates *autonomy* (Ryan & Connell, 1989, p. 759), and between *intrinsic* and *extrinsic orientations* of motivation (Ryan & Deci, 2000a, p. 55)

Measuring Motivation in Video Games

In the next section, I will introduce two directions in video game motivation research. First, I will present the *Player Experience of Need Satisfaction* framework (Ryan, Rigby, & Przybylski, 2006), which is based on the *Cognitive Evaluation* sub-theory of *Self-Determination* (Ryan & Deci, 2000a, p. 58). Then I will explain the *Organismic Integration Theory* (Ryan & Deci, 2000a, p. 61) that gives a basis for the *Gaming Motivation Scale* (Lafrenière, Verner-Filion & Vallerand, 2012).

The first theory-measurement framework duo is the prominent player in the field (Ryan, Rigby, & Przybylski, 2006; Przybylski, Rigby & Ryan, 2010; Rigby & Ryan, 2011). It has great explanatory and predictive power over other measures, but it is focused on *intrinsic motivation* (Rigby & Ryan, 2007). The second pair is more recent, yet it provides an excellent tool to identify different types of *extrinsic motivation* in video games (Lafrenière, Verner-Filion & Vallerand, 2012, p. 827). Originally, both of them contain quantitative measures, but the theory behind them, combined with their descriptions of each phenomenon helped my own qualitative research.

Cognitive Evaluation Theory and Player Experience of Need Satisfaction

Cognitive Evaluation Theory reviews *intrinsic motivation* in social contexts. It "argues that interpersonal event and structures (e.g., rewards, communications, feedback) that conduce towards *feelings of competence* during action can enhance intrinsic motivation for that action because they allow satisfaction of the basic psychological need for competence" (Ryan and Deci, 2000a, p. 58). It also focuses on the relationship between *competence, autonomy,* and *relatedness* (Ryan & Deci, 2000a, p. 58).

Player Experience of Need Satisfaction is a practical framework, consisting of several scales and measures (Ryan, Rigby, & Przybylski, 2006, p. 349; pp. 351-352) that rely heavily on the aforementioned theory. As a theoretical framework, it follows the same directions as *Cognitive Evaluation Theory*, but adjusts itself to video game play (Rigby & Ryan, 2011a, p. 10), introducing *intuitive controls* as a facilitator and *presence* as a support of *competence* and *autonomy* (Ryan, Rigby, & Przybylski, 2006, p. 350; p. 361).

The main observations of *Cognitive Evaluation Theory* are that although *competence* feedback can sway *intrinsic motivation* in both directions (reinforce or disrupt it) *motivation* (Ryan & Deci, 2000a, p.

59), it must be accompanied with appropriate levels of *perceived autonomy* to support *intrinsic motivation* (Ryan & Deci, 2000a, p. 58). This is most likely because of the connection between *internal perceived locus of causality* and *autonomy* (Ryan & Connell, 1989, p. 759). Another main observation of Ryan and Deci implies that motivation is inherently social (2000a, p. 54), but the prominence of *relatedness* can be argued. Vallerand suggests that it might not always be as valuable as it is implied in the original theory as situations that are individualistic in nature are not rely on *relatedness* (Vallerand, 2000, p. 317).

Competence can be regulated through gameplay by a highly responsive environment, and proximal challenges that yield instant performance feedback. The main issue is providing the player with opportunities to experience self-efficacy, which need quality controls and optimal challenges (Przybylski, Rigby & Ryan, 2010, pp. 155-156). In the *Player Experience of Need Satisfaction* framework assesses in-game *competence* support by measuring the optimal level of challenge and feeling of enhanced self-efficacy (Ryan, Rigby, & Przybylski, 2006, p. 351). Higher scores of *competence* can more reliably predict continuous play than the feeling of "fun" (Ryan & Rigby, 2011b, p. 36).

Autonomy support naturally enhances *intrinsic motivation* through "meaningful choices"; that is opportunities for strategy and "informational feedback"; that is positive non-tangible non-expected rewards. (Ryan, Rigby & Przybylsk, 2006, p. 349)

The core literature also mentions "procedural generation" as a prominent way to support *autonomy*, drawing examples mostly from Will Wright's games, like *Sims* or *Spore* (Ryan, Rigby & Przybylski, 2006, p. 349; Przybylski, Rigby & Ryan, 2010, p. 156). I believe sandboxes and literal "life-simulators" are heavy-handed examples for this since all types of game strategy or tactics can support *autonomy* even in confined game spaces. For example, the possible ways of advancing in the tunnel-like maps of *Call of Duty* (2015) is still supportive, since it affords different paths or approaches. If we go to the extreme end with it, we can argue that everything that is controllable is affording a certain amount of *autonomy* support. The key words are "meaningful choices", as we do not need more "options", rather a sense of volition and impactful agency (Rigby & Ryan, 2011c, p. 40). Procedural generation, however, is a double-edged sword. It is a very old technique, used since *Rogue* (1980). It refers to a method of building randomised levels through algorithms. This, of course, can increase replayability and uncertainty leading to less predictable gameplay. However, this also diminishes the intricacy of the strategic affordances that a hand-build level can produce. I feel that the high praise of procedural generation in the literature (Ryan, Rigby & Przybylski, 2006; Przybylski, Rigby & Ryan, 2010) is missing some of its points. *Autonomy* can be experienced through any activity – within games and connecting to games (like meta-strategies) – that gives a feeling of *agency* to the player (Przybylski, Rigby & Ryan, 2010, p. 155).

In the Player Experience of Need Satisfaction system, *autonomy* is measured by assessing experience of freedom, and frequency of *intrinsically* interesting choices and activities (Ryan, Rigby & Przybylski, 2006, p. 351).

Relatedness support is not as clear-cut as *competence* and *autonomy.* Ryan, Rigby and Przybylski found that Yee's achievement pattern (2005, pp. 3-4) negatively predicted post-play mood. This "suggests that the competitive tendency this construct taps may engender some pressure and stress" (Ryan, Rigby & Przybylski, 2006, p. 359). This also chimes together with the concept, which Rigby and Ryan call "destructive competition" (2011d, p. 79) that thwarts need support by giving negative *competence* feedback and limiting the *autonomy* of players. However, cooperative play, it can highly reinforce both *competence* and *autonomy* (Rigby & Ryan, 2011d, p.74). *Relatedness* either play a pivotal role in the

situations that are social in nature or does not add into the formulation of *intrinsic motivation* on the same level as *competence* and *autonomy* does in solitary situations (Vallerand, 2000, p. 317). In the Player Experience of Need Satisfaction framework, in-game *relatedness* simply measured by assessing one's degree of perceived connection with other players (Ryan, Rigby & Przybylski, 2006, p. 358).

The last element that plays a central role in the Player Experience of Need Satisfaction is *presence* (Rigby & Ryan, 2011e), which is mainly a type of spatial immersion, is a feeling that a mediated experience is non-mediated (Ryan, Rigby & Przybylski, 2006, p. 350; Rigby & Ryan, 2011e, p. 81). Rigby and Ryan discovered three main types of *presence* in games: the feelings of *physical* (being part of the environment) (2011e, pp. 88-90)*, emotional* (being emotionally invested in the characters or themes) (pp. 90-93), and *narrative* immersion (being integral part of the story) (pp. 93-94). On one hand, *competence* and *autonomy* mediate the feeling of *presence* (Ryan, Rigby & Przybylski, 2006, p. 357), but in return, *presence* can create a fertile soil for need satisfaction (p. 361).

I mention mastery of control for the sake of completeness. It is regarded as a necessary step to harness the innate support of *psychological needs* because the player has to be able to access to the game elements (Przybylski, Rigby & Ryan, 2010, p. 156). It can be facilitated by *intuitive controls* (Ryan, Rigby & Przybylski, 2006, p. 352). Although important from a design perspective, *intuitive controls* are secondary to my research that focuses more on the phenomenology of gameplay. As Rigby puts it, game controls are "the gate-keeper to experience, and not the experience itself" (Rigby, 2004, in Ryan, Rigby & Przybylski, 2006, p. 355[3]).

I based my own measures and interview prompts on the ideas and descriptions that I provided above. I used the *Player Experience of Need Satisfaction* framework specifically to identify the players' intrinsically motivated actions not just on a macro (why people play the game) but on a micro level (what makes certain bits interesting to a player). To identify the players' *extrinsically motivated* behaviour, I turned to the *Gaming Motivation Scale.*

Organismic Integration Theory and the Gaming Motivation Scale

Organismic Integration Theory is yet another sub-theory of *Self-Determination.* It is concerned with the different types of *extrinsic motivations* (Ryan & Deci, 2000a, p. 61), based on the previously mentioned "gradient of *autonomy*" (Ryan & Connell, 1989, p. 759).

The *Gaming Motivation* Scale, based on the aforementioned theory, was made with the purpose to fill the gap in the measures of motivation in video games that are prominently focused on the *intrinsic orientation* (Lafrenière, Verner-Filion & Vallerand, 2012, p. 827). The scale itself does not add anything new to the existing theory of *Organismic Integration*, just translates its typology to video game use (Lafrenière, Verner-Filion & Vallerand, 2012, pp. 827-828; p. 829, Table 1).

The framework discusses a whole range of motivational states, starting with *amotivation*, "which is the state of lacking an intention to act" (Ryan & Deci, 2000a, p. 61), when players lost their initial interest in the game and cannot reason why they persist in playing (Lafrenière, Verner-Filion & Vallerand, 2012, p. 828).

[3] Ryan, Rigby and Przybylski (2006, p. 348, p. 350, p. 351, p. 356) refer to Rigby, S. "Player Motivational Analysis: A model for applied research into the motivational dynamics of virtual worlds." motivation research group, University of Rochester, Rochester, NY (2004). – The paper cannot be accessed.

If we move from the least self-determined type of motivation to the most internalised ones, we can set up the following scale:

> "*External regulation*. Such behaviours are performed to satisfy an external demand or obtain an externally imposed reward contingency." (Ryan & Deci, 2000a, p. 61)

It is identified by the strong desire to obtain tangible rewards, rather than enjoy the game (Lafrenière, Verner-Filion & Vallerand, 2012, p. 829)

> "*Introjected regulation*. Introjection describes a type of internal regulation that is still quite controlling because people perform such actions with the feeling of pressure in order to avoid guilt or anxiety or attain ego-enhancements or pride." (Ryan & Deci, 2000a, p. 62)

Introjection is associated with "self-esteem and the feeling of worth" (Ryan & Deci, 2000a, p. 62) and manifests as "pressures such as anxiety and guilt" while playing and "irritable or restless" when leaving the game (Lafrenière, Verner-Filion & Vallerand, 2012, p. 828).

> "*Identification*. Here, the person has identified with the personal importance of a behavior and has thus accepted its regulation as his or her own. (sic)" (Ryan & Deci, 2000a, p. 62)

> "*Integrated regulation*. Integration occurs when identified regulations have been fully assimilated to the self. This occurs through self-examination and bringing new regulations into congruence with one's other values and needs." (Ryan & Deci, 2000a, p. 62)

These types of motivation are very similar to *intrinsic motivation* in that they are *self-determined*, "autonomous and unconflicted (sic)" (Ryan & Deci, 2000a, p. 62). However, opposed to *intrinsic motivation*, they remain to be focused on "presumed instrumental value with respect to some outcome that is separate from the behavior (sic)" (Ryan & Deci, 2000a, p. 62).

Identification in games usually means personal significance, through either developing real life skills or maintaining relationships (Lafrenière, Verner-Filion & Vallerand, 2012, p. 828; p. 829, Table 1).

Integration entails all action that is based on personal values and needs and regulated in a self-reflective manner (Ryan & Deci, 2000a, p. 62). A typical case is when the player does something because it is aligned with her distal goals and values, even when the activity is not pleasant (Ryan & Deci, 2000a, p. 62; Lafrenière, Verner-Filion & Vallerand, 2012, p. 828). This type of regulation though has an *internal perceived locus of causality*, it is still an *extrinsic* type of motivation as it is primarily done for a "presumed instrumental value" (Ryan & Deci, 2000a, p. 62).

Intrinsic motivation as "a prototype of self-determined activity" (Ryan & Deci, 2000a, p. 62) can be put onto the same scale that is discussed above. It represents the most internal and most *self-determined* type of motivation, because it is based purely on the *basic psychological needs* and does not contain any *external* pressures (Ryan & Deci, 2000a, p. 56). As Lafrenière, Verner-Filion and Vallerand put it, *intrinsic motivation* is experienced by "players who play because they enjoy exploring the game universe and improving their skill levels or because they like the thrill and strong sensation the game provides" (2012, p. 827).

Looking through the spectrum, often called "*self-determination continuum*" (Lafrenière, Verner-Filion & Vallerand, 2012, p. 828), one might think that it describes an optimal path of internalisation. However, Ryan and Deci points out that the model is not a "developmental continuum" (2000a, p. 62) and different types of the model just relate to each other based on the level of *self-determination* associated with them. Moreover, the *extrinsic* nature of rewards (and distal goals) draws a line between the two main types of *orientation* (Ryan & Deci, 2000a, p. 62). Ryan and Deci emphasise that

by placing *intrinsic motivation* in the same model as the other types of regulation (2000a, p. 61, Fig. 1), they wanted to show its prototypical nature, but not imply that *extrinsic motivation* can be converted into *intrinsic* through the process of *internalisation* (p. 62). Although, there is arguably a stronger connection between adjacent types compared to distal ones (Lafrenière, Verner-Filion & Vallerand, 2012, p. 828).

Ryan & Deci, in their original theory, explain how the *internalisation* process is primarily facilitated by perceived *competence*, and based on one's personal needs, *relatedness* (2000a, p. 64), but without *autonomy* support, the process cannot go further than *introjection* (p. 64). This is a major observation in relation to this study since frustrating scenarios tend to limit the players' *autonomy.*

I used the *Gaming Motivation Scale* extensively in my research as its measures gave the prompts that helped me identify players' *extrinsically motivated* actions (Lafrenière, Verner-Filion & Vallerand, 2012, p. 829, Table 1).

The Hierarchical Model of Motivation

So far, I have reviewed *self-determination* literature that is based directly on the original theory (Deci and Ryan 1985). I have explained the major concepts, provided basic definitions, and explained ways how *intrinsic* and *extrinsic motivation* can manifest within video game play. However, spotting the difference between *intrinsic* and *extrinsic motivation* is still not an easy job, especially when the *extrinsic motivation* is well *internalised* (important to the player) (Deci & Ryan, 2000, p. 230). One of the major issues is that it is hard to pin down the scope of the motivations in the original theory. Sometimes it seems that the motivations refer to global needs and actions, yet sometimes the motivation is referred to as an emergent phenomenon (Deci & Ryan, 2000, pp. 230-231).

Although *Self-Determination Theory* is thought to be universal (Deci & Ryan, 2002, p. 26), my scope was focused on the micro level changes within gameplay, thus, I had to be extra careful that I use the right measures to identify different types of motivation, especially since video games are usually fast-paced environments, filled with incentives that can easily sway players' motivation.

The original theory recognised that *motivation* is not a unitary phenomenon and described it by the means of *level* and *orientation* (Ryan & Deci, 2000a, p. 54). Vallerand, however, expanded on this framework, with adding a new structural element, which he called the "Three Levels of Generality" (Vallerand & Ratelle, 2002, p. 44).

Vallerand explains the three levels as *global*, which contains "causality orientations" or personality; *contextual*, which contains "motivational orientations" or life domains; and *situational,* which contains state or task level motivations (2000, p. 313; Vallerand & Ratelle, 2002, p. 45)

Global motivations are the most stable ones. They express general attitudes and personality, something that Vallerand and Ratelle call "general orientation" (2002, p. 45). *Contextual* motivations represent alignments towards more or less general domains of life. Vallerand and Ratelle cite "education, leisure and interpersonal relationships" as the three most prominent ones (2002, p. 44).

Although video games could be grouped by other free time activities in the leisure domain, Vallerand and Ratelle seem to suggest that "life domains" are quite flexible when it comes to definitions. They cite a wide variety of different scales, supposedly aimed to measure the contextual level of motivations from sport, through gambling and volunteering to environmental awareness and political motivation (2002, p. 46). In this light, there is no reason why we should not treat video games, or even certain

types of video game consumption (like mobile gaming; LAN-party; solo two hours, after work; raid night once a week with the clan; etc.) as different contextual (domain specific) scenarios.

Situational motivation is very hard to follow because it very unstable and measures are hard to conduct (Vallerand & Ratelle, 2002, p. 45). Generally it is hard to pin down a momentary motivation. Free-choice experiments can easily confuse *introjection* with *intrinsic motivation* (Vallerand & Ratelle, 2002, p. 46) and self-reports can be unreliable, especially when it comes to uncomfortable feelings of *internalised* pressures.

Levels of generality work primarily in a top-down fashion, by higher levels predisposing lower ones towards an end of the motivational spectrum (or, at least, shift them closer to themselves). However, lower levels can provide feedback to higher levels, thus, the dynamic is certainly not one way (Vallerand, 2000, pp. 313-314). The top-down effect of the hierarchy generally prevents lower level influences impacting higher level motivations to a good degree (Vallerand & Ratelle, 2002, p. 48). Nevertheless, social (and most likely any other) influences that affect the basic psychological needs of *competence, autonomy* or *relatedness* directly, affect *global, contextual* and *situational motivations* at the same time (Vallerand & Ratelle, 2002, p. 49).

However, underlying social structures, as a backdrop for all interactions, affect the formulation of basic psychological needs (Vallerand & Ratelle, 2002, p. 48). The sequence runs through from social factors to need satisfaction to *self-determination* to *motivation* to psychological outcomes (Vallerand, 2000, p. 316; Vallerand & Ratelle, 2002, p. 58). The *Hieratical Model of Motivation* thus reinforces the notion that need satisfaction only plays a distal role in generating motivation (Vallerand, 2000, p. 315).

Despite the most prominent effect is the top-down influence of higher level motivations on the lower ones (Vallerand & Ratelle, 2002, p. 50), the much weaker "recursive bottom-up relationship" (p. 51) that runs counter to this can induce shifts on all higher levels after a certain amount of time (p. 51). Repeated patterns in the *situational* level of motivational states can take effect on upper levels over a longer period of time, causing shifts in the much more stable contextual or global levels; and the same can be said of contextual levels affecting global ones (Vallerand & Ratelle, 2002, p. 51).

The hierarchical model suggests a very active framing process that helps in conceptualise the experience as part of a *contextual* framework (Vallerand, 2000, p. 314) and also the interplay between *contextual* frames. Vallerand and Ratelle postulate, "The relative strength of each *contextual motivation* will dictate which of these two contexts will have the most prevalent effect on *situational motivation*" (2002, p. 57). This conflict can induce drops *from intrinsic motivation* to less self-determined forms by the approximate extent of the difference between the *contextual motivations* in conflict (Vallerand & Ratelle, 2002, p. 57).

However, if one is losing *motivation* in one frame, then she could try to compensate in another, before moving on to suboptimal functioning (as suggested by the original framework) (Vallerand, 2000, p. p315). This also reinforces the idea of self-regulation, present in Vallerand's theory, where individuals try to balance their global level toward more *self-determined motivations* through seeking out *intrinsically motivating contexts* (Vallerand & Ratelle, 2002, p. 57). *Competence* seems to play a pivotal role here, as people seem to experience a rise in *self-determination* in domains, in which they already feel efficient. This can very prevalent in the connection of video games with other life domains, as generally speaking, video games are designed to be *intrinsically motivating* and to provide clear *competence* support.

This framework has proven to be very useful for my research. Although, my study is admittedly not focusing on the background "social factors" (Vallerand & Lalande, 2011, p. 45) and *global* (personality) level motivation (Vallerand & Ratelle, 2002, pp. 44-45) that sets the *Hierarchical Model* apart from *Self-Determination Theory,* but rather borrows from the structural model of different levels of generality. I used Vallerand's model prominently to examine *situational* level *motivations* in the *contextual* frame of the game. This meant that I was able to follow the players from challenge to challenge, and through their recollections, better understand the dynamic structure of video game play.

Summary

The main subject of my thesis is the shifts in *situational motivation* during frustrating segments in video game play. To understand the structure of complex motivations with a coherent vocabulary, I presented the core elements of *Self-Determination Theory* alongside with the *Hierarchical Model of Motivation.*

Motivation is a drive to act (Ryan & Deci, 2000a, p. 54). It has two main *perceived loci of causality*, from the viewpoint of the players' phenomenological selves (Ryan & Connell, 1989, p. 759). It is either *intrinsic;* that is in line with the players' innate *basic psychological needs, competence, autonomy* and *relatedness,* or *extrinsic;* that is not endorsed by the players' phenomenal centres (Ryan & Connell, 1989, p. 750). In a more casual typology, *intrinsically motivated* actions players carry out because they are interesting, while *extrinsically motivated* actions are important for them (Deci & Ryan, 2000, p. 230).

The *Hierarchical Model of Motivation* deviates from *Self-Determination Theory* as it postulates that social factors are the primary determinants of *psychological need satisfaction* (Vallerand & Lalande, 2011, p. 45), whereas in Deci and Ryan's theory, environmental factors play a much lesser facilitator role (Ryan & Deci, 2000a, pp. 58-59). However, more importantly, it expands the framework of *motivation* with three levels of generality, *global* (personality), *contextual* (life domains), and *situational* (task level) (Vallerand, 2000, p. 313). To understand and analyse the motivation structure and its changes during video game play, I will use Vallerand's typology, especially the *contextual* and *situational* levels and their relation. The former will represent a whole game or gaming experience while the latter will refer to separate tasks or game segments that the player carries out.

Finally, *Player Experience of Need Satisfaction* and *Gaming Motivation Scales* will help me to analyse and interpret my gathered data as they describe clear cues, with which different types of *motivations* and *psychological need support* can be detected in video games.

In the next chapter, I will describe *Flow Theory* and its elements relating to video game use. I will primarily focus on the connection of the attentional system and affective states as it was described by Csikszentmihalyi (1991; 1997). I will use this system to conceptualise players' subjective experiences and their changes throughout video game play. Since *flow* prominently used to describe enjoyable video game play, I will also review the different models that are used in video game research to understand and utilise the "optimal experience" (Sweetser & Wyeth, 2005, p. 4).

FLOW AND FRUSTRATION,
THE CONCEPTUAL BACKGROUND OF AFFECTIVE STATES

In this chapter, I will briefly introduce Csikszentmihalyi's concept of *flow* (1991). His concept of the optimal experience developed from observations of "the creative process in the 1960s" (Nakamura &

Csikszentmihalyi, 2009, p. 195). *Flow Theory,* as it will be described below, focuses on *autotelic* activities[4] that also have a strong connection to *intrinsic motivation* (Nakamura & Csikszentmihalyi, 2009, p. 195).

Flow can be related to both *competence* and *autonomy.* It is connected to the former through the experience of optimal challenges and efficacy (Deci & Ryan, 2000, p. 260; Nakamura & Csikszetmihalyi, 2002, p. 90), while to the latter through feeling of volition (Nakamura & Csikszentmihalyi, 2009, p. 195; Ryan & Rigby, 2011a, p. 10).

Self-Determination Theory explains the relationship between its idea of *basic psychological needs* and *flow* in the same terms as their connection with *presence,* a two-way connection where *flow* both mediate but also derived from *psychological need satisfaction* (Ryan, Rigby & Przybylski, 2006, p. 357; p. 361).

In this chapter, I will be giving a short summary of the basics of *Flow Theory* and revise how video game literature conceptualise the theory. I will conclude this chapter with a discussion about other elements of the affective states and the underlying attentional system, briefly described by Csikszentmihalyi (Nakamura & Csikszentmihalyi, 2002, p. 95, Figure 7.1b), focusing prominently on *anxiety* and *frustration* (Bessiere, 2006) and the mediation of psychic energy (1997).

The Experience of Flow

The basic tenant of *Flow Theory* is that a person is acting at "full capacity", only when she is fully engaged and *intrinsically motivated* (Nakamura & Csikszentmihalyi, 2009, p. 196). This feeling of enhanced *autonomy*, intrinsic joy, and total control over an activity is *flow* (Nakamura & Csikszentmihalyi, 2002; 2009). Although the research started with observing creative and sportsmen, subsequent findings showed that the same feelings and mechanisms emerge in almost every other life domain (Nakamura & Csikszentmihalyi, 2009, p. 196; work and leisure: Csikszentmihalyi & LeFevre, 1989; friends and family: Csikszentmihalyi, 1991, p. 275; media enjoyment: Sherry, 2004; distance-learning: Liao, Li-Fen, 2006; video games: Cowley et al., 2008).

The namesake of the theory, the psychic and affective phenomenon that is *flow* is actually a metaphor, describing a sense of "effortless engagement" that many early research subjects called "the zone" (Csikszentmihalyi, 1997a, p. 29).

Nakamura and Csikszentmihalyi describe the *flow* phenomenon with six subjective characteristics:

> 1. "Intense and focused concentration on what one is doing in the present moment"
>
> 2. "Merging of action and awareness" [That is, complete immersion in the action.]
>
> 3. "Loss of reflective self-consciousness (i.e., loss of awareness of oneself as a social actor)"
>
> 4. "A sense that one can control one's actions; that is, a sense that one can in principle deal with the situation because one knows how to respond to whatever happens next"
>
> 5. "Distortion of temporal experience (typically, a sense that time has passed faster than normal)"

[4] *Autotelic* activity means an "activity [that is] rewarding in and of itself (auto = self, telos = goal)" (Nakamura & Csikszetmihalyi, 2002, p. 89).

> 6. "Experience of the activity as intrinsically rewarding, such that often the end goal is just an excuse for the process." (2002, p. 90)

In addition of two objective conditions:

> 1. "Perceived challenges or opportunities for action, that stretch (neither overmatch nor underutilizing) existing skills; a sense that one is engaging challenges at a level appropriate to one's capacities."
>
> 2. "Clear proximal goals and immediate feedback about the progress that is being made." (Nakamura & Csikszentmihalyi, 2002, p. 90)

These are definitions often referred to as the "eight characteristics" of *flow* in contemporary literature and presented in the same manner, sometimes with slight modifications (Sweetser & Wyeth, 2005; Cowley et al., 2008), as we will see in detail in the next segment.

Despite *flow*, being an *intrinsically motivated* experience, it differs from other such activities (Nakamura & Csikszentmihalyi, 2002, p. 89). While *intrinsically motivating* activities are described as only being self-gratifying (Ryan & Deci, 2000a, p. 55), *flow* also need a certain sense of *challenge* and *mastery* (Nakamura & Csikszentmihalyi, 2002, pp. 90-91). *Flow* lies in the nexus of the player's skill and the level of the challenge perceived by the player (Nakamura & Csikszentmihalyi, 2002, p. 95). However, these challenges emerge not only from the objective arrangement of the activity but also from interests and experiences of the past (Nakamura & Csikszentmihalyi, 2002, p. 92).

Since *flow is* based on "proximal goals [that] arise from the interaction" rather than a "pre-existing intentional structure" (Nakamura & Csikszentmihalyi, 2002, p. 91), it is a very volatile experience that emerges in the moment of challenging scenarios. Like *intrinsic motivation* itself, although it can be supported by some objective conditions, it is mainly a subjective experience and thus has a very complex phenomenology (Nakamura & Csikszentmihalyi, 2009, p. 197).

As mentioned before, *flow* require *challenges* to be balanced around the skill level of the actor in a way that they still require an extreme level of attention or "selective investment" (Nakamura & Csikszentmihalyi, 2002, p. 91). Nakamura and Csikszentmihalyi describe these activities as such:

> "Clear proximal goals, immediate feedback, and just-manageable levels of challenge [that] orient the organism in a unified and coordinated way, so that attention becomes completely absorbed into the stimulus field defined by the activity". (2002, p. 91)

This sense of *mastery* is a height of self-efficacy, when the actor knows that both the challenge and her skill level are high (Nakamura & Csikszentmihalyi, 2002, p. 95). With the extremely high attentional level, awareness ("cognition, motivation, and emotion") and ultimately consciousness are fixating on the activity at hand, completing the absorption (Nakamura & Csikszentmihalyi, 2002, p. 91). This creates the perfect *autotelic* activity, because the scope dictated by the person's awareness, and the continuous excellence in the activity makes the experience both self-contained; that is not having any outside goals, other than the activity itself, and self-gratifying. It also enhances immersion and any feeling of presence in the situation, as the attentional span is completely absorbed to the point of the experience of temporal distortion. The actor cannot register much of the outside impulses. In multimedia enjoyment and especially video games, this creates an emerging connection with the material that makes the experience more meaningful to the player (Sweetser & Wyeth, 2005, p. 10).

However, *flow* needs more than just "balancing challenges and skills" (Nakamura & Csikszentmihalyi, 2002, p. 93). It needs an interesting and gratifying environment and an activity that can satisfy the

basic psychological needs (Nakamura & Csikszentmihalyi, 2002, p. 93). Flow naturally depends on a heightened feeling of perceived *competence* and need a certain level of *autonomy* to thrive (Nakamura & Csikszentmihalyi, 2002, p. 94).

The *intrinsic motivation* that arises from the *flow* experience is also emergent, as the phenomenon relies on proximal and present structures (Nakamura & Csikszentmihalyi, 2002, p. 92). In Nakamura and Csikszentmihalyi words, "the motivation to persist in or return to the activity arises out of the experience itself" (2002, p. 92).

In summary, *flow* is a special case of an *intrinsically motivated* activity, where the interesting, proximal goals and "just-manageable challenges" (Nakamura & Csikszentmihalyi, 2002, p. 92) are inviting the actor to push her limits, creating a self-contained, *autotelic* experience that emerges from the present situation. *Flow* needs an environment with clear goals and feedbacks, but the experience itself is not goal oriented (Nakamura & Csikszentmihalyi, 2002, p. 96). Despite it can be facilitated by objective conditions, *flow* is a subjective feeling of self-absorption, complete control, and *intrinsic motivation* in a present moment (Nakamura & Csikszentmihalyi, 2002, p. 90). It happens from moment to moment, and it is easily disrupted by suboptimal challenges or attentional noise (Cowley et al. 2008, p. 22). With the right conditions, however, *flow* is very easy to slip into, as the phenomenon ultimately is governed by the attentional processes, underlying human cognition (Nakamura & Csikszentmihalyi, 2002, p. 92).

Conceptualisation of Flow in Contemporary Video Game Research

In this segment, I will go through a few examples of *flow*-heavy studies in video game research. I will point out their missteps and inaccuracies and explain why I decided against to use a one-to-one mapping of *flow* to video game elements contrary what some prominent researchers do.

As mentioned before, a huge chunk of video game research (Jones, 1998; Sweetser & Wyeth, 2005; Cowley et al. 2008) and design (Salen & Zimmerman, 2004b) is concerned with *flow*. As Salen and Zimmerman explain it, games are exceptionally good candidates for the facilitation of *flow,* since they are *autotelic* in nature (2004b, p. 328).

While some researchers tried to break down *flow* in a pragmatic approach to building better "computer-based learning environments" (Jones, 1998, p. 3), other design handbooks advise caution when planning a game solely around *flow.* Salen and Zimmerman keen to point out that "although flow is a useful conceptual tool for creating pleasure in games, it is but one of many possible tools", since it is "more about the player than the game" and "not a universal phenomenon (2004b, p. 336). Nevertheless, as they say, "Csikszentmihalyi's model has a great deal of relevance to game design" (Salen & Zimmerman, 2004b, p. 347), especially in describing continuous changes in the players' experiences (2004b, p. 347). Nevertheless, many researchers use systematic models to map different aspects of the *flow* experience to different parts of games (Jones, 1998; Sweetser & Wyeth, 2005; Cowley et al. 2008). Unfortunately, the "over-literal approach" is an apparent problem with these kinds of mappings (Cowley et al. 2008, p. 16).

In an early attempt, Jones tried to create a comprehensive model that can serve as design guidelines for future games (1998, p. 3). The idea behind his model was to utilise *flow* as the prototypical optimal experience and derive a model of design guidelines for environments that facilitate *intrinsic motivation*, and contain *"*extrinsic motivational features" – which create *flow* and through it engagement, even when *intrinsic motivation* is missing (Jones, 1998, p. 3).

Jones based his model on Csikszentmihalyi's model (1991), but ultimately his model concentrates more on *presence* and immersion rather than *flow* (1998, p. 11, Table 2.). He emphasised a consequent virtual environment and ambient, the "quality of the multi-media assets (sic)" (Jones, 1998, p. 8). Jones did push for interactivity and "movement", meaning a feeling of progression (1998, p. 6), but these things can be associated with a much broader spectrum than *flow.*

Unfortunately, Jones' model is riddled with "repetitions" and "misapprehensions" (Cowley et al. 2008, p. 15) that seem to stem for the fact that he misinterprets the original theory. He wished to create a tangible framework, based on *flow,* yet he ignored the subjective structuring of challenges and environments and underappreciated the weight of mastering an activity (Cowley et al. 2008, p. 15).

Cowley et al. tried to fix these problems and redo the mapping more in line with the intentions of the original explanations of Csikszentmihalyi (1991) (Table I.).

Although this breakdown falls closer to Csikszentmihalyi's theory (1991) it is also more abstract than Jones' (1998, p. 11, Table 2.). While Jones' framework (1998) is a design guideline that tries to exploit *flow,* Cowley et al. (2008) tried to appropriate the elements of the original to a general model of game elements. However, this method is more observational than applicable in the design phase.

Table I. "Eight Elements of Flow and Corresponding Game-play Elements",
from Cowley et al. (2008, p. 16, Table III.)

Flow Elements	Gameplay elements
A challenging but tractable task to complete	The complete gaming experience (including social interaction during gameplay).
Full immersion in the task, no other concerns intrude	High motivation to play, no imperative to do otherwise; empathetic to content.
Feeling of full control	Familiarity/skill with controller, genre conventions, game-play mechanics.
Complete freedom to concentrate on the task	Telepresence and an environment dedicated to gaming.
The task has clear unambiguous goals	Missions, plot lines, levels; any explicit outcome of a successful play session.
Immediate feedback on actions	Well-timed, suitable rewards and penalties: contingencies.
Being less conscious of the passage of time	Focusing on another, temporally-independent environment.
Sense of identity lessens, but is reinforced afterward	Embodiment in game avatar; sense of achievement after play – e.g., "Hi-Score"

A similar approach was taken by Sweetser and Wyeth (2005), who built an evaluation system for how different games can facilitate the formulation of the *flow*[5]. In their breakdown of the experience, Sweetser and Wyeth mapped elements of usability and user experience literature (2005, p. 3), creating eight elements that more or less mirror the characteristics of *flow* (p. 4, Table I.). Their breakdown was based off – again – Csikszentmihalyi's original explanation (1991) (Sweetser & Wyeth, 2005, p. 3).

Since their model is used to evaluate tangible systems, they reduce and merge the subjective descriptions from the original roster and put the emphasis on the objective supports for *flow* (Sweetser & Wyeth, 2005, p. 4, Table I.). Sweetser and Wyeth do not intend accurately pair up *flow* characteristics

[5] Their rubric of the so-called GameFlow is quite long, with detailed criteria for the support of each *flow* element. The detailed breakdown is not the subject of this section, but the full model can be read in Sweetser and Wyeth (2005, pp. 5-6, Table II.).

with game elements. Their goal is to build a model that can be used by expert critics and game designers to evaluate and perhaps build video games (Sweetser & Wyeth, 2005, p. 1).

This is the culprit of the problems with these models. As Jones was after engagement (1998), Sweetser and Wyeth are after enjoyment (2005) and try to exploit *Flow Theory* to build a global model that can create the optimal experience in hopes of creating enjoyment in turn. These models think in a global – or in Valerand's terms *contextual* (2000, p. 313) – scale, and merge the objective and subjective characteristics of *flow* (Nakamura & Csikszentmihalyi, 2002, p. 90) into the same map, without any indication. Pushing for a magic formula, all of them are trying to map *contextually* present game elements that make up the whole of the gaming experience to the volatile and *situationally* emergent characteristics of a subjective *flow* experience (2002, p. 91).

> "It is the subjective challenges and subjective skills, not objective ones, that influence the quality of a person's experience (sic)" (Nakamura & Csikszentmihalyi, 2002, p. 91).

Flow is neither *global,* nor *contextual*, it is always *situational* (Nakamura & Csikszentmihalyi, 2002, p. 91), and hence, according to Cowley et al. creating a framework to build environments that could facilitate *flow* should take a more "case-by-case" approach (2008, p15).

In summary, the aforementioned models are "missing the point" to a certain degree (Nakamura & Csikszentmihalyi, 2002, p. 96). Their focus on the "positive correlates and outcomes" of *flow* misinterpret the experience, as it is subjective, "self-justifying", and "by definition, an end in itself" (Nakamura & Csikszentmihalyi, 2002, p. 96). *Flow* is not meant to be a structuring phenomenon, rather an emergent feeling when everything falls into its place (Nakamura & Csikszentmihalyi, 2002, p. 91). Nevertheless, there is some value in these models. As Cowley et al. point out:

> "Descriptions of Flow […] are just models, useful in understanding a system […], but any model is just a representation of the particular set of invariances we are interested in (sic)" (2008, p. 16).

Assessing all these models and advice from Salen and Zimmerman (2004b, p. 336; p. 347), Nakamura and Csikszentmihalyi (2002, p. 96), and Cowley et al. (2008, pp. 15-16), I decided to use the only the original description of the eight characteristics of *flow* (Nakamura & Csikszentmihalyi, 2002, p. 90) in my research. Although learning from the aforementioned models did help me to identify the characteristics of *flow,* I did not utilise any of the special frameworks built for game design and took the advised "case-by-case" approach (Cowley et al., 2008, p15).

Challenge, Frustration and *Psychic entropy*

Although a very complex phenomenon, *flow* is not universal for all experiences (Salen & Zimmerman, 2004b, p. 336). In the following segment, I will explain the underlying attentional and psychic system of *Flow Theory,* and how it can be used to describe changes in the affective state of players. I will use this typology extensively in the later part of my thesis, as I will explain challenges and negative affective states based on the level of *psychic entropy* in the information processing system that causes them.

Csikszentmihalyi distinguishes between *entropic* and *negentropic psychic states*, also labelled as negative and positive emotions, based on the disturbance they cause in the attentional focus of the actor (1997a, p. 22). Given that "apathy, boredom, and anxiety, like flow, are largely functions of how attention is being structured at a given time" (Nakamura & Csikszentmihalyi, 2002, p. 92), *psychic entropy*, describes a state when there is "noise in the information processing system" of an individual (Cowley et al. 2008, p. 22) that prevents her to properly focus on the activity at hand.

Since this *psychic entropy* is experienced through negative emotions, people try to escape this entropy and get into a negentropic state by resolving the noise in their system (Nakamura & Csikszentmihalyi, 2002, p. 90; Cowley et al. 2008, p. 22). However, this noise is based on two distinct sources, "external complexity (stimuli) and internal complexity (cognition)" (Cowley et al. 2008, p. 22). Thus, the two main viable strategies are to prioritise the tasks, closing some out of the proximal focus, or to restructure the cognitive model with which we want to solve the problem. Csikszentmihalyi explains that mental ordering of a situation follows the lines of goals and motivations (1997a, p. 22). Since focusing attention by structuring the situation reduces noise, engaging in either *intrinsic* or *extrinsic motivation* helps to resolve *psychic entropy* (Csikszentmihalyi, 1997a, p. 23).

However, not all entropic states are the same in terms of external complexity (Cowley et al. 2008, p. 22). Some of them create entropy by giving such low levels of input to the system that keeping the attentional focus becomes hard, as there is no substance in the activity. On the other hand, challenges are situations described by high arousal (Mandryk & Atkins, 2007, p. 342, Fig. 15.), if not met with the appropriate amount of skill from the actor, can create *psychic entropy* (Nakamura & Csikszentmihalyi, 2002, p. 92) because the high arousal level appears as noise in the informational system after a certain threshold (Bessiere, 2006, p. 944).

In video games, players experience frustration as high arousal, negative valence emotion (Mandryk & Atkins, 2007, p. 342, Fig. 15.), making it parallel to Csikszentmihalyi's *anxiety* (Nakamura & Csikszentmihalyi, 2002, p. 95, Figure 7.1b). Frustration, just as *anxiety* work against *flow*, by gradually causing an informational overload that shifts the focus of attention to the cognitive processing system rather than action, causing "performance dysfunction" (Bessiere, 2006, p. 944). Although this process is not inherently maladaptive (Bessiere, 2006, p. 944), by drawing focus to the external and internal impediments, it is usually disruptive.

Challenges can give way to both negative and positive outcomes. Looking at Mandryk and Atkins' model again, we can see how a challenging situation (here labelled as a distinct emotion out of convenience (2007, p. 340)), on its own, does not carry any particular valence for the player, yet excitement is distinctly positive in valence and high in arousal (2007, p. 342, Fig. 15). This also mirrors Csikszentmihalyi's typology from a different perspective, where *arousal* (in Csikszentmihalyi's terminology)*, flow,* and *control* all require fairly high challenges, thus high arousal levels (Nakamura & Csikszentmihalyi, 2002, p. 95, Figure 7.1b). The enjoyment of a challenge comes from resolving the entropy it caused in the player's information processing system (Cowely et al. 2008, pp. 20-21).

Not surprising that high outcome uncertainty leads to higher enjoyment, because, despite the situation of such challenge is ambivalent, arousal is maximised. Abuhamdeh, Csikszentmihalyi, and Jalal found that in competitive games, being slightly ahead of the competition leads to the most enjoyment (2015, pp. 5-6). This can be explained by the high arousal from the risky situation, and the high competence feedback (Abuhamdeh, Csikszentmihalyi & Jalal, 2015, p. 6), given from the slight advantage, which also lowers the possibility of the rise of frustration.

Lastly, Mandryk and Atkins' fun construct merges all activities that players find pleasant and *intrinsically* interesting. These activities range from high to low levels of arousal, but always have a distinctly positive valence (Mandryk & Atkins, 2007, p. 342, Fig. 15). By these criteria, it is not hard to identify the matching phenomena in *Flow Theory,* as they correspond with each emotional state that Csikszentmihalyi describes as "psychic negentropy": *arousal, flow, control,* and *relaxation* (1997a, p. 22).

On the Compatibility of Self-Determination and Information Processing

Since I will use both the terms of *Flow Theory'*s information processing and attentional system and the motivational structures of *Self-Determination Theory* (and the *Hierarchical Model of Motivation*), in this sub-segment, I will explore the validity of putting these two systems next to each other.

Although there were studies comparing these frameworks and they seem compatible, they mostly remained in the field of how *basic psychological needs*, as described by *Self-Determination Theory*, correlate with *flow* (Kowal & Fortier, 1999). While there were promising contributions, they rarely touched upon the underlying framework given by Csikszentmihalyi.

Flow Theory regards every affective state as a function of an attentional system (Nakamura & Csikszentmihalyi, 2002, p. 92). Cowley et al. expanded on this, explaining video games and *flow* in terms of information processing (2008), while Csikszentmihalyi explained motivations as "manifestations of psychic negentropy" (Csikszentmihalyi, 1997a, p. 22). However, we can see in Vallerand's model that affective states are actually outputs of different levels of *motivations* (2000, p. 313, Figure 1.). Unfortunately, there is no universally accepted unifying interpretation for the two theories.

Nevertheless, it is clear that both *self-determination* and *flow* are higher-level constructs than what Ryan and Deci describe as basic psychological needs (2000a) and the attentional system that Csikszentmihalyi explains through *psychic entropy* (1997). In which way these processes relate to each other is not immediately clear, however, Ryan and Deci point into the direction that *competence, autonomy* and *relatedness* are not the bedrock of motivation as they describe "social and environmental factors that facilitate versus undermine intrinsic motivation." (2000a, p. 58).

In Cowley et al. (2008) and Csikszentmihalyi's work (1997a), the motivational structures are depending on the attentional structure. *Self-Determination Theory* does not specify such thing, as it is more concerned of how *basic psychological needs* are facilitated (Ryan & Deci, 2000a, pp. 58-60). However, the connection can be made by examining how "novelty, challenge or aesthetic value" that create *intrinsic motivation* in *Cognitive Evaluation Theory* are the same phenomena that govern the attentional system, "novelty and complexity" (Cowley et al. 2008, p. 21).

I conclude that the connection between the informational system of the game (and the attentional system of the player) and *motivational structures* have a valid connection. *Intrinsic motivation* depends on the novelty and complexity of the environment (Ryan & Deci, 2000a, pp. 58-60) as well as the subjective mental state (Ryan & Connell, 1989, p. 749), all of which can be expressed through the typology of the attentional system that is described in *Flow Theory* (Csikszentmihalyi, 1997a; Cowley et al. 2008). Thus, we can say that while *negentropic psychic* states will foster intrinsic motivation, *entropy* will disrupt it.

Summary

In this last chapter, I presented the basics of *Flow Theory,* which describes the optimal experience where the players' skills and the challenges they have to face are in perfect balance (Nakamura & Csikszentmihalyi, 2009, p. 195). I also explained a prominent path that is usually taken by researchers when they try to create a model that is based on *flow* and applicable to game design (Jones, 1998, Sweetser & Wyeth, 2005, Cowley et al. 2008). Unfortunately, these frameworks serve more as design guidelines and do not lend themselves as good to inductive research (Bryman, 2012a, pp. 24-27).

I also displayed a comprehensive vocabulary to identify changes in the affective states of the player, based on her attentional focus and arousal (Csikszentmihalyi, 1997; Cowley et al. 2008). In the last part of this segment, I took a little detour to explain the applicability of the typology, borrowed from information processing in *Flow Theory* (Csikszentmihalyi, 1991), and to the *motivational* structures based on the *Hierarchical Model of Motivation* (Vallerand & Ratelle, 2002).

In the next chapter, I will present my research design, methodology, and sampling considerations. I will also exhibit different steps of my research along with the structured data, my final template. After the next chapter, I will finish my thesis with a short discussion and conclusion, featuring a few closing thoughts on future research possibilities.

THE RESEARCH

In this chapter, I will talk about the core of my research. I will explain my chosen method, template analysis (King, 2012) and describe my research setup. I will expand on sampling considerations and give a comprehensive account of the research process and the development of the data. I finish this chapter with presenting the completed template, its hierarchical structure, and integrative patterns.

Please keep in mind that the given time and scope constrained the research size. Although everything is though out and possible limitations are considered, it should be emphasised that primary goal of the study was to build an interpretive model that can be tested further in future research. I will also use "players" and "participants" interchangeably in this and the next chapter. This is merely a rhetoric decision and to avoid repetition does not imply generalizability.

Research questions and hypothesises were used to classically structure the study and drive the exploration. Due to the highly inductive nature of the methodology (Brooks & King, 2014, p. 7), these questions and hypothesises are treated as guidelines to keep the research focused and structured, rather than using them deductively (Bryman, 2012a, pp. 24-27).

Template Analysis
the Methodology in Practise

I have chosen template analysis as my method of research because it provided me with a flexible framework that was specifically designed to uncover underlying themes and patterns in a sample (King, 2012).

> "[Template analysis] can be employed in the kind of relativist qualitative work that accepts much of the conventional positivistic position of mainstream quantitative social science […] that is concerned with 'discovering' the underlying causes of human action" (2012, p. 427)

The method uses any qualitative or quasi-qualitative data (usually interview transcripts (Brooks & King, 2014, p. 4) to construct a continuously evolving template of codes (King, 2012, p. 426) that are later interpreted by the researcher (King, 2012, p. 446; Brooks & King, 2014, p. 8).

The centre of the first part of the technique is the "development of the coding template" (2012, p. 426). The initial coding is done on a subset of the data or a predetermined code set (Brooks & King, 2014, p. 6), then as the datasets are recorded, the template gets refined and goes through many iterations. With each round, the researcher has the opportunity to refine her interview questions and methods to steer the analysis in the right direction (Brooks & King, 2014, p. 7). The template keeps evolving with each arbitrary group of dataset analysed and integrated. In this process, codes are revised, expanded or collapsed and ordered into a hierarchical structure (Brooks & King, pp. 7-8). After

all the data has been collected, the template is finalised. This is, however not the result of the research, merely a tool to interpret the themes and patterns underlying the data (King, 2012, p. 446; Brooks & King, 2014, p. 8).

The interpretation of the data can follow the lines of either comparing individual case studies around the themes; presenting an underlying structure with examples drawn from the dataset; and a thematic presentation based on a case study separate from the original research (King, 2012, p. 446). I have chosen to rely more heavily on the second type of analysis, aided by examples pulled from participants' transcripts.

I chose to rely heavily on integrative themes. These are underlying patterns, to which King refers as "undercurrents", are themes relating to many codes at once, affecting them meaningfully rather being simple higher-level codes (2012, p. 432).

The method supports a "contextual constructivist" view, in which the position of the researcher and the context of the study influence the outcome as there is more than one interpretation of a phenomenon (King, 2012, p. 427). Thus, King suggests:

> "Concern with coding reliability is, therefore, irrelevant; instead the emphasis is on the reflexivity of the researcher […], the attempt to approach the topic from differing perspectives and the richness of the description produced." (2012, p. 427)

While other, more relativist approaches focus on actual content in the collected datasets, template analysis is more concerned with the underlying themes and pattern in and across them (King, 2012, p. 428). Of course, this also presents the greatest liability of the method. The close involvement in the interpretation by the researcher can compromise the objective evaluation of the data. Brooks and King point out that one of the main concerns of this type of research should be to "demonstrate researcher objectivity and coding reliability" (2014, p. 5).

King recommends several methods to keep the quality and thus value of the study high, from critical comparison to independent coding (2012, p. 433). In the current study, however, I am choosing to follow the "audit trail" method, which is a "record of the steps the researcher has gone through in carrying out an analysis and the way his or her thinking has developed" (King, 2012, p. 433). This method is known to increase a study's dependability, a concept mirroring reliability in quantitative studies (Bryman, 2012d, p. 392).

In summary, the next sections will describe the original problem formulation and the development of the research in the terms of template analysis (King, 2012). The typology contains *cases*, which are individual interview transcripts; *codes*, which are index labels associated to a certain snippet of the text; *themes*, which are relatively distinct, repeated patterns across cases, ordered into a hierarchical structure; and *integrative themes*, which are underlying patterns across the template structure.

Research Questions and Problem Formulation

Although the huge bulk of literature is concerned about fun and optimal experiences (Bartle 2004, Yee, 2005), playing video games is not always fun (Rigby & Ryan, p. 8). Most of the games have frustrating challenges or controls, parts that we wish would not be there. Not only this, many games employ extrinsic reward systems to motivate their players (Lafrenière, Verner-Filion & Vallerand, 2012, p. 827).

Since all tangible or promised reward pushes the player away from *intrinsic motivation* (Ryan & Deci, 2000a, p. 59), not all gaming experiences are motivated this was (Rigby & Ryan, p. 8). Yet players are

keep returning to previously frustrating games or choose to play with games that contain such elements (Rigby & Ryan, pp. 8-9).

Because *motivation* and *flow* are very subjective feelings, I set out to pursue the experience of the player instead of the supporting capabilities of the game space. My question was, how do players mediate frustrating parts of games? My hypothesis was that this kind of process must show in the point-to-point (or *situational*-to-*situational*) motivational changes during the game session.

After consideration, I posited the following questions, on which I could base the research:

> Question A: How do players initially react to an overly challenging experience?
>
> Question B: How do players mediate their frustration and anxiety during and following a frustrating episode?
>
> Question C: What makes players return to a game that was previously frustrating?
>
> Question D: How does the players' motivation changes through the series of play sessions?

My original hypothesis was that all of these questions can be answered with the help of Vallerand's model, by considering a hierarchical structure for *motivation* (2000; Vallerand & Ratelle, 2002).

Based Deci & Ryan's simile of *intrinsically motivating* things feel interesting, while *extrinsically motivating* things feel important (2000, p. 230), I hypothesised that players must change their point-to-point *motivation* depending on how they prioritise distinct game segment or tasks. There should be scenarios when they deem a previously interesting (*intrinsically motivating)* aspect important to reach (*extrinsically motivating*) when their experience is halted. Considering this hypothetical process, I decided to make the three following predictions:

> Hypothesis A: When players meet with overly high challenges and stay determined, they keep on playing and try to restore the previous state.
>
> Hypothesis B: Players deem some previously interesting tasks important in the new situation and shift their motivation from *intrinsic* to *extrinsic* accordingly.
>
> Hypothesis C: Players resolve their frustration on a situational level while keeping their interest (*intrinsic motivation*) on the contextual level in a certain threshold.

Though these research questions and hypothesises served as a basic structure to for the study, I have chosen to follow a looser, bit more inductive path (Bryman, 2012a, pp. 24-27). King (2012; Brooks & King, 2014) suggests that the focus of the analysis should be the finding and interpretation of themes in line with the research aims, rather than answering exact questions, as he suggests that researchers "develop themes more extensively where the richest data (in relation to the research question) are found" (Brooks & King, 2014, p. 7). Nevertheless, research questions, hypothesises, and priori themes can structure the study in a way that redundant coding can be evaded (Brooks & King, 2014, p. 7).

The Development of the Template

The development of the template started early on. As qualitative research can be very lengthy due to a large amount of data and I had limited amount of time for the project, I started to gather the data and develop the template simultaneously.

The first iterations of the interviews were more like prototypes, testing the possible paths that the research could take. This meant that I had a tighter grip on the direction and enabled me to move relatively fast with the project. However, this approach also had a downside. It can make it hard to

"approach each new transcript with an open mind" and bias the researcher towards neglecting themes that are hard to fit into her established structure (Brooks & King, 2014, p. 7). Keeping in mind these limitations, I chose to follow this path to keep my work more focused.

Initial Template

The initial template was born from the idea of identifying main elements in the presented theories (Table II.). This kept a firm structure and enabled an analysis based on the established literature.

This template, as mentioned above, was thought as a prototype that could help the understanding of the first interview and give a starting point to develop more complex or more appropriate templates.

Table II. Initial Template

A. Initial motivations, first reactions
B. Self-Determination Theory
B.1 Extrinsic Motivation
B.2 Intrinsic Motivation
C. Perseverance
C.1 Learning Curve
C.2 Outcome Uncertainty
C.3 Personal Goals
C.4 Social Connections, Community, Reviews
D. Frustration
C.1 Causes of Frustration
C.2 Effects of Frustration
C.3 Differences between Perceived Frustration, Challenge and Excitement
D. Continuation and Development
D.1 Flow
D.2 Creating Strategies
D.1 Developing Self-Efficacy
E. Framing of the Game

This version (and all that came after it) relied on parallel coding; that is labelling a segment of the transcript with multiple codes simultaneously (Brooks & King, 2014, p. 7). The initial coding was meant to be more descriptive than interpretive, where the transcripts were broken down and labelled mechanically, with snippets associated with labels to which they can explicitly relate to (King, 2012, p. 429).

For example, the following snippet would be labelled with "C.1 Causes of Frustration":

> "It is very frustrating because it is sure that you'll die like a million times before you get to move 10 minutes forward ingame." (Subject Alpha)

The decision to use this coding method was partially influenced by the time limitations and the simultaneous recording of the interviews and developing of the template. On the other hand, it gave a good underlying structure to create more interpretive themes later on[6].

Sampling

After the priori themes were constructed, the first interview was conducted based on purposive sampling (Bryman, 2012e, p. 418). I chose this method of sampling because I wanted to avoid recording a redundant interview as my study targets a specific demographic. While today, people, who

[6] Note: the method of template analysis is very flexible in this area too, as it doesn't require one coding method to be prominently used. King even argues that there is no „clear distiction between descriptive and interpretive coding" (2012, p. 429).

frequently play video games, are not hard to come by, I wanted to make sure that the prototype interview was done with someone, who plays frustratingly hard games, as this was the focus of my research. I needed a critical case (Bryman, 2012e, p. 419) for my first subject to start evaluating my template and research direction.

The first interviewee was a personal connection, who frequently played very hard video games. This can be seen as convenience sampling (Bryman, 2012c, p. 201), which has its obvious limitation on the study's generalizability and validity, but in another way, I could make sure that the interviewee fulfils all the criterion for the purpose of my study.

I knew that the sample size will be low, due to qualitative nature of the study (Bryman, 2012e, p. 425), I decided to focus on males, between the ages of eighteen and thirty-five (twenty-six on average), who frequently play video games. I partly chose this demographic, because, based on the Entertainment Software Association's record (2015), the majority of players fell into this demographic. My other reason was quite opportunistic (Bryman, 2012e, p. 419). Due to the time constraints, it was the fastest way to gather all the participants through snowball sampling (Bryman, 2012e, p. 424). Again, this decision – although was very practical – can be justified with the specific demographic criteria.

After the initial interview and first round of evaluation (more on that in the next segment), I decided to conduct a focus group interview with the next three participants. I chose focus group interview as my next step because its ability to "emphasize a specific theme or topic that is explored in depth" (Bryman, 2012g, p. 501), obtain more detailed account of the participants' reasoning (Bryman, 2012g, p. 503), and uncover previously hidden patterns that the researcher might have overlooked (Bryman, 2012g, p. 503).

After considering the data collected in this round, however, I went back to semi-structured interviews (Bryman, 2012f, p. 471) as the focus group deemed insufficient and unnecessary. The data collected in this round from each participant was considerably less than in the individual interviews that generally lent themselves for more in-depth and detailed exploration of each case (Bryman, 2012f, p. 470). I continued to collect the rest of the data through these means during the next iterations of the template.

In summary, I used a convenient, yet highly purposive, snowball sampling method to gather my participants. They were all Hungarian males, twenty-six years old on average, who played video games frequently and identified as gamers. I had nine participants in total, six semi-structured interviews, and one focus group with three participants. All sessions took about an hour, hour and a half and each produced roughly eight standard pages of transcripts.

Iterations of the Template, the Written Account of the Research Process

The template went through a few iterations during its development. After considering the initial interview, I expanded and modified the template, while keeping the original idea; that is structuring the transcript based the reviewed theories.

The first iteration (Table III.) was done just after the first interview that was based a simple semi-structured interview around *Dark Souls 2* (2014). At this stage, I had a specific game in mind to get people on the same level, providing additional external validity to the study (Bryman, 2012b, pp. 47-48). This later didn't turn out to be feasible, as getting players to play the same game over several sessions can seriously undermine both the ecological validity (Bryman, 2012b, p. 48) of the study and, most importantly, it can disrupt their genuine *motivations*.

Table III. First Iteration of the Template

1. Initial motivations
2. Self-Determination
    2.2 Extrinsic motivations
        2.2.1 Amotivation
        2.2.2 External Regulation
        2.2.3 Introjected Regulation
        2.2.4 Identification
        2.2.5 Integrated Regulation
    2.3 Intrinsic motivations
        2.3.1 Competence
        2.3.2 Autonomy
        2.3.3 Relatedness
3. Challenges
    3.1 Flow
        3.1.1 Outcome Uncertainty
        3.1.2 Optimal Experience
    3.2 Hard Challenges
        3.2.1 Retrials
        3.2.2 Meta-Game
        3.2.3 Gratification
4. Frustration
    4.1 Causes
    4.2 Adaptation
    4.3 Levels
5. Exit Points
    5.1 Session Exit
        5.1.1 Causes
        5.1.2 Strategies Outside of the Game
    5.2 Game Exit
        5.2.1 Causes
6. Enjoyment, Causes of Play
7. Presence
    7.1 Atmospheric Immersion
    7.2 Story based Immersion
    7.3 Gameplay Immersion
    7.4 Social Immersion
    7.5 Presence and character immersion

I continued to work with this framework and coded the data of the focus group interview accordingly. Nevertheless, the obvious problems of this first iteration started to show, as I had redundant higher-level codes and repetitions. For example, the “Gratification” code did not have any real meaning and its contents could be better associated with other themes in the template.

After considering the focus group interview, I realised that this method might be counterproductive. Although the participants shared insightful things about team play, their individual motivation was clouded sometimes. There was not enough time for every participant, who often just nodded to what the other participants said, instead of giving their own interpretation of the question. Though these are limitations to plan for if someone is using focus groups (Bryman, 2012g, pp. 517-518), I did not see the group mechanic is adding anything that would have been meaningful to my research.

I reverted to semi-structured interview as my method of data gathering (Bryman, 2012f, p. 471). I prepared a new interview template, based on the things I learned from the first interview and focus group. While these templates were quite straightforward, the new template was more elaborate. Based loosely on Mia Consalvo’s Object Inventory, Interface Study, and Interaction Map (2006), I tried to get the players to break down the gameplay of their favourite game to see the point-to-point *motivation*. Unfortunately, this did not lead to greater insight, as the participant still needed more guidance to reach the topic, about which I wanted them to talk. I decided to revise the interview template after I went back to code and integrate the new transcript.

Table IV. Early Integrative Themes

A. Depletion of Need Support
B. Depletion of Rewards
C. Flow as a Reason to Play
D. Immersion as a Reason to Play
E. Frustration Rising from Repetition
F. Frustration Rising from Bad Controls
G. Frustration Rising from Mismatched Challenge Levels
H. Frustration Mediated through Extrinsic Motivation
I. Frustration Mediated by Avoidance
J. Rewarding Metagame
K. Challenging Metagame
L. Transformative Relatedness

During the next step, I introduced integrative themes (Table IV.) to the template. These new elements were spread across the template and were indicated by colour codes. Contrary to the hierarchical coding, these new themes served a more interpretive purpose (King, 2012, p. 429).

In the next step, I revised the interview template and started to record the final five transcripts. The new interview template was much more straightforward. It had questions like: "When do you find a gaming experience frustrating?" often followed by prompts (Bryman, 2012f, pp. 472-473) like: "What turns a very enjoyable part very frustrating?"

As I started to process the new data, I also cleaned up the template (Table V.). This became the most detailed version of the template, as I later realised that some categories were better collapsed, as they did not contain any specific information on a lower hierarchy that was relevant for the study. The integrative themes, I described above, helped me to sort these out later. At this point, I wanted to make sure that I see the whole picture as clearly as I can.

The greatest problem of this iteration was the overly detailed focus on *flow*, that was not justified neither by the focus of the research, nor the density of the data. It also contained redundancies, as "6.1.6 Experience of Intrinsic Motivation" was already present under "3. Intrinsic Motivations". Nevertheless, the template was ready for the final revision. I needed to cut some codes that seemed redundant to the research or did not contain useful data. Most notably, I stopped recording participants' account on their real life plans for their future (under "Self-Determination" in Table III.). My original idea behind this code to infer their *global motivational orientation* but this seemed unfeasible as I felt it too speculative and it did not correlate with anything else.

Table V. Second Iteration of the Template

- 1. Initial motivations
- 2. Extrinsic motivations
  - 2.1 Amotivation
  - 2.2 External Regulation
  - 2.3 Introjected Regulation
  - 2.4 Identification
  - 2.5 Integrated Regulation
- 3. Intrinsic Motivations
  - 3.1 Competence
  - 3.2 Autonomy
  - 3.3 Relatedness
  - 3.4 Presence
    - 3.4.1 Emotional Immersion (Atmosphere)
    - 3.4.2 Narrative Immersion
    - 3.4.3 Physical Immersion (Gameplay)
- 5. Relaxation
- 6. Flow
  - 6.1 Subjective experience of Flow
    - 6.1.1 Focused Concentration
    - 6.1.2 Merging of Action and Awareness
    - 6.1.3 Loss of Reflective Self-Consciousness
    - 6.1.4 Sense of Control
    - 6.1.5 Distortion of Temporal Experience
    - 6.1.6 Experience of Intrinsic Motivation
  - 6.2 Objective Conditions of Flow
    - 6.2.1 Perceived Challenges
      - 6.2.1.1 Retrials
      - 6.2.1.2 Outcome Uncertainty
    - 6.2.2 Clear Proximal Goals and Immediate Feedback
- 7. Frustration
  - 7.1 Causes
  - 7.2 Adaptation
- 8. Meta-Game
- 9. Session Exit
  - 9.1 Re-Entry
  - 9.2 Game Exit

Before presenting the final template, I would like to summarize the account that I presented above. I started the data gathering process quite early, thus, my first interview and focus group was more pilot-

like. With the priori template, the structure went through three main iteration before arriving on the finalized version. With time, the template got more intricate, but it kept the essence of its first iteration; that is structuring the transcripts according to the phenomena that are mentioned in the chosen literature. After the first iteration, I discovered integrative themes that helped me identify patterns and underlying themes during the analysis.

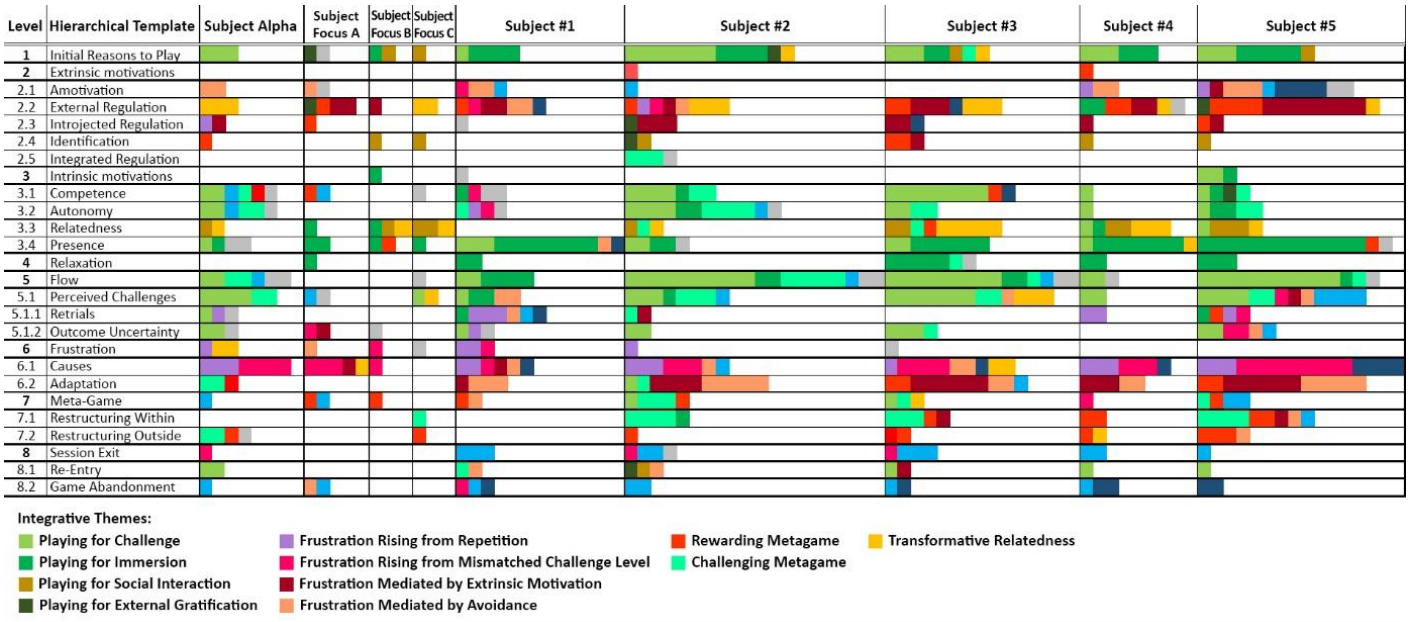
The Final Template

After all the data was structured according to my last iteration, I revised every code and the whole template and realised that the structure was unnecessarily complex. Neither the hierarchy of "6. Flow", nor "3.4. Presence" contained meaningful information, as *Flow* was generally associated with the "Playing for Challenge" while *Presence* was generally associated with the "Playing for Immersion" integrative theme.

The same could be said about "Intrinsic Motivations" as a whole, yet I felt there was enough variance between the building blocks to keep the hierarchy. With other minor restructuring and revising of all the codes, I arrived at my final template (Table VI.)[7].

The following Table (VI.) shows the final hierarchical template, complete with the approximate frequency of the colour coded integrative themes.

Table VI. Final Template



The Hierarchical Structure

Although the structure of the hierarchical model is very straightforward, I will give a rundown below, supported by examples of typical codes that fell under each code. Codes that are lower in the hierarchy are either structurally or thematically derived from the higher-level ones.

"Initial Reason to Play" is associated with the players' own recollection of their own motivations. They generally refer to the *contextual* level of a whole game or gaming in general. It contained such excerpts as:

[7] A detailed version also available in the Appendix section, online.

> "For me video game is a form of relaxation, when I totally segregate myself from the world around me." (Subject #1)

> "I want flow, focus and concentration and it should follow my performance, give me challenges that are feasible but difficult." (Subject #3)

"Extrinsic Motivations" is based entirely on the *Gaming Motivation Scale* (Lafrenière, Verner-Filion & Vallerand, 2012, p. 829). The coding adopted the cues from the descriptions and scale items that were developed by Lafrenière, Verner-Filion and Vallerand (2012). These items were used to identify the several types of *extrinsic regulations* and (out of convenience) *amotivation*. A very typical snippet that was labelled as "Extrinsic Regulation" reads like this:

> "Because I need these in order to complete the parts afterwards. If you are not buffing your character up, you cannot complete the game. You have to do some repetitive stuff, but sometimes I don't understand why they are there." (Subject #5)

"Intrinsic Motivations" is based on the original breakdown of the basic psychological needs that foster intrinsic motivation by Rigby and Ryan (2011a, p.10), completed with presence, to mirror the *Player Experience of Need Satisfaction* scales that were developed by Ryan, Rigby and Przybylski (2006, p. 349; pp. 351-352). I added "Presence" as a merged category of all three types of *immersion* here (Rigby & Ryan, 2011e) as, according to Rigby and Ryan, immersion has a strong relationship with all three basic psychological need across almost all genres (2007). As which type of immersion supports which type of need is not the subject of the current analysis, I decided to simplify the template. A great example for both "Competence" and "Autonomy" is the following exchange:

> [How important is the feeling of competence for you?]
>
> "I think it is very important, because if it's missing, then nobody will play the game."
>
> [And the options, opportunities?]
>
> "It is also important, for the extent that you can still feel competent, and don't feel lost. If you start on a path, you can be confident. You might realise that it wasn't the best, but at first you have to feel competent. There might be a ton of options but it should be dosed so you always feel confident." (Subject #3)

"Relaxation" is associated with every excerpt, in which the participant talks about active seeking of relaxation, often with avoiding high-level challenges. The best example in the transcripts is this snippet:

> "After a long hard day, I just sit down and watch some series and then play a game then the story is much more important. So if I am in the mood to prefer a story oriented gameplay it is mainly because I want to relax and enjoy casual gaming and not the challenging part of a game." (Subject #4)

"Flow", originally a huge part of the template, was collapsed and besides of recording the mentions of *flow* experiences (generally also associated with the "Playing for Challenge" integrative theme), also contains the players' account of challenges, retrials and outcome uncertainty.

After these, themes require much less explanation, with the exception of "Metagame". As *metagames* are also associated with the more interpretive integrative themes, their nature will be described in that section below. For now, the important thing is that in the hierarchical template, "Metagame" contains every notion to a type of play, when gamers either expand the scope of the game outside of the game space (Salen & Zimmermann, 2004c, pp. 474-475). This is usually associated with learning about strategies outside the game:

> "Other times you have to look up stuff, learn and look at how other people do it. I watch a stream and then I try to develop my skills, and that is not no relaxing anymore. Engaging 'flow' like experience is in there too and the preparation is lucrative on a level, but I don't think it is solely recreation." (Subject #3)

Alternatively, when they restructure the actions and possibilities within the game to achieve something that was not indicated by the given situation presented to the player. A typical case of this is experimenting within the game to achieve something that was not set by the game, but is still possible:

> "So it becomes really interesting to try and get some of the magics working. Like only going with illusion, casting made a very challenging game. Also interesting how can you get magics that not meant to really damage but disable your opponent or make them turn on each other and how to use those to get past stuff." (Subject #2)

"Frustration" contains "Causes" and "Adaptation" lower level codes. The former is quite self-explanatory, it registers the sources of the participants' frustration while the latter is associated with all the strategies that players employ to avert frustrating situations or meet them head on:

> "If I look at a part of a game that is frustrating and I decide to do it, I do it to advance the story." (Subject #4)

"Session Exit" encompasses those snippets, in which players talk about their reasons to put down the game for a while. A good example of this is the instances when the player feels burn out:

> "Crafting and gathering can get boring or if you are not using fast travel, riding around can burn you out a bit. But then I just take a break." (Subject #1)

"Re-Entry" contains the few mentions of people coming back to a game, while "Game Abandonment" focuses on why players leave the game for good. This can happen for a few reasons, but one of the best examples for this code is this excerpt:

> "Games like Dark Soul deplete after a while after you went through the game naked there is not much more challenge and possible combinations." (Subject Alpha)

The presented hierarchical structure, along with the integrative themes (discussed in the next segment), is the basis of the interpretive analysis that will be carried out in the next chapter. This summary of the template only serves as an explanation for the background of my findings.

Integrative Themes

Integrative themes, which emerged during the first iterations of the template, are codes that reveal underlying patterns in across the transcripts (King, 2012, p. 432). As I already wrote about my consideration behind using integrative themes when building my template, here I will only introduce and explain each integrative theme and provide examples for them.

Focus of Gameplay

"Playing for Challenge" has taken over the similar "Flow as a Reason to Play" early theme's place. It is associated with each bit of the transcripts, where participants talk about enjoying the challenge and engaging gameplay. Some snippets are about actively looking for a challenging game or activity within the game while others just register players' expression of gameplay related enjoyment. This code is deeply connected to *flow* experience. The majority of the "Experience of Flow" higher hierarchy code is covered by this integrative theme. It is also prominent in challenge-seeking players, which somewhat resemble Yee's achievement component of motivation (2005, pp. 3-4), and connected more to the

feeling of *competence*, although it has prominence across all sub-codes of "Intrinsic Motivations". A good example of this theme is this snippet:

> "I want flow, focus, and concentration and it should follow my performance, give me challenges that are feasible but difficult. So I can find these small steps in it." (Subject 3#)

"Playing for Immersion" is another theme resembling one of Yee's components of motivation (2005). Drawing parallels with the immersion component of motivation, observed in MMORPGS (Yee, 2005, pp. 4-5), the desire to immerse is also connected to *intrinsic motivation* (Rigby & Ryan, 2007). Not surprisingly, it is most prominently associated with "Presence" and "Relaxation" in the template, but it is also appearing in players' own expressed reasons to pick up a game. A typical excerpt looks like this:

> "To engage and make me immersed. It depends on the game. In a building game, I want relaxation. I want exciting and interesting atmosphere into which I can immerse. From those games that are based on a story, I want a good story." (Subject #1)

"Playing for Social Interaction" is a later theme that registers players' desire for group play. It is connected to the need of *relatedness*, but it is also associated with *identification*, as the *Gaming Motivation Scale* recognises this – among other things – as a type of *extrinsic motivation* as "developing/maintaining friendships" (Lafrenière, Verner-Filion & Vallerand, 2012, p. 828). For the latter the best example is Subject #2's account:

> "To me this kind of tower defence is not that interesting but a friend of mine was a very big player and I downloaded the game and played with him from time to time because he really enjoyed it and I wanted to play with him." (Subject #2)

"Playing for External Gratification" is also added. The code is used scarcely, only indicating that gaming, in general, is inherently *intrinsically motivated* activity. The few instances are scattered through different types of *external motivations*, "Initial Reason to Play", and one example of "Competence":

> [Do you often make your challenges in games?]
>
> "I do. Like doing Mass Effect in 'insane mode'. I am very proud of myself that I could do it." (Subject #5)

Though this latter case can also be attributed to the "Playing for Challenge" integrative theme, it indicates a feeling of prestige (Lafrenière, Verner-Filion & Vallerand, 2012, p. 828), as the subject talked about the same instance in this light:

> "When I completed Mass Effect on 'insane', I felt the external goal […] I am motivated by that I said that I do it and I accomplish it. Even if I quit it for a while, I go back just to get the achievement" (Subject #5)

This also shows that some parts of the transcripts were hard to code as players sometimes had complex motivations behind their actions.

Nevertheless, the two main patterns were "Playing for Challenge" and "Playing for Immersion". From the individual cases, a few profiles seem to emerge along the lines of these themes. Players who play for the challenge, like Subject #2, seem to have a resemblance to Bartle's achiever type (2004b, p. 130) and fuelled by the same drives what Yee describes as achievement component of motivation (2005, pp. 3-4). Other players, like Subject #1, seek immersion, just like Bartle's explorers (2004b, p. 130), following the same lines as Yee's immersion component of motivation (2005, pp. 4-5). This reinforces the notion that such typologies fall closer to what people think of motivations. However, we can see

in the template that these descriptions are much looser than the motivational framework based on *Self-Determination Theory* (Ryan, Rigby & Przybylski, 2006, p. 348). Immersion and socialisation can sometimes manifest in *extrinsic motivations,* and rather than giving insight into the inner mechanisms of motivation, they are better at describing rough player profiles (Ryan, Rigby & Przybylski, 2006, p. 348).

Focus on challenge seems to yield more *flow*, along with heightened *competence* and *autonomy.* This might not come as a surprise, as *flow*, the optimal experience fosters *competence* and thrives on *autonomy* (Nakamura & Csikszentmihalyi, 2002, p. 94). On the other hand, focus on immersion, while still creating an *intrinsically motivated* action, creating a more relaxed experience. Perhaps, this can be explained by some players actively evading challenging situation because it would be disruptive to their comfortable, relaxed state (Csikszentmihalyi & LeFevre, p. 821) as it is evident from a previously quoted excerpt:

> "After a long hard day, I just sit down and watch some series and then play a game then the story is much more important. So if I am in the mood to prefer a story oriented gameplay, it is mainly because I want to relax and enjoy casual gaming and not the challenging part of a game." (Subject #4)

Nevertheless, relaxation and the feeling of *presence* through *immersion* have a strong relationship with *intrinsic motivation* (Nakamura & Csikszentmihalyi, 2002, p. 96; Rigby & Ryan, 2007).

Frustration

The next categories of the integrative themes are concerned with how participants reported *frustration.* These accounts do not necessarily follow tight literature based definition, but let more insight on how players reflect on situations that they deem frustrating.

"Frustration Rising from Repetition" is a very common theme. Why players find repetition frustrating can be explained by the increasing loss of novelty with each iteration that not only reduces the level of arousal but work against "intrinsic psychological reinforcers (sic)" (Cowley et al. 2008, p. 20). Both feelings of *autonomy* and *competence* are being diminished as the player repeatedly forced into the same situation:

> "The frustration is obviously not coming from the events in the game or the story. It comes from your failure to do a task. It comes from the endless retrials. It is the same as failing an exam over and over again." (Subject Alpha)

"Frustration Rising from Mismatched Challenge Level" is the typical case of *anxiety* in *Flow Theory.* The complexity of the task is higher than the player's skill level, thus creating a *psychic entropy* that the player cannot resolve (Cowley et al. 2008, p. 22). From this attentional processing perspective, it does not matter if the said complexity stems from the innate complexity of the challenge or the lack of *intuitive controls* (Ryan, Rigby, & Przybylski, 2006, p. 350) (formerly coded as "bad controls"). As Subject #5 puts it:

> "If I die because the bad mechanics or the enemies are unrealistically hard that is frustrating." (Subject #5)

These were two main identified reasons for the participants to experience frustration. The integrative themes also showed two main patterns in dealing with emerging frustration.

"Frustration Mediated by Extrinsic Motivation" encompasses all the strategies that the participants employ to overcome a frustrating segment of the game by directing their *motivation* to a future reward or outside pressure. One very typical case is players want to regain their previous negentropic state;

that is *flow* or *relaxation* (usually the later manifests through the feeling of *immersion*) and use this "promise" to fuel themselves through the frustrating bits of the game:

> "Now what pushes me is to obtain new levels of entertainment, I only have to push through and after that I'll have a bigger map, advance the story or something like that. I get rewards for the whole thing. If I look at a part of a game that is frustrating and I decide to do it, I do it to advance the story." (Subject #3)

Other times it is a more integrated type of *motivation,* like this *introjected* case:

> "First it was the challenge then [after it got frustrating] it was the 'I can do it. I must do it. Come on this game cannot get past me like this.'" (Subject #2)

It is interesting, however, that this type of mediation usually remains in the less integrated part of the *self-determination continuum,* like *external* or *introjected regulation* (Ryan & Deci, 2000a, pp. 61-62). Although, this can be explained by the sudden shift in *situational motivation* that does not let much room for more complex *internalisation* to take place, and video game rewards might seem tangible, yet distant enough from the player's personal values that her *motivational orientation* remains less integrated. The player might also feel forced into a situation that damages her perceived *autonomy*, without which one can only reach *introjected regulation* (Ryan & Deci, 2000a, p. 64).

Examples of *identification* and *integrated regulation* can be found, however. These instances show signs of these types of *motivations* being present on an organisational level (Lafrenière, Verner-Filion & Vallerand, 2012, p. 828), rather than being *situationally* emergent:

> "I think it is in line with my personal values. If you are doing something do it well. But it also developing my abilities, for example getting better reflexes, thinking about better tactics, quicker responses. These skills can be improved and games that force you to improve." (Subject #2)

Finally, "Frustration Mediated by Avoidance" signifies the instances when the participants reported avoiding the frustrating situation or the challenge they deemed either too hard or yielding insufficient rewards. These different types of considerations were lumped together because ultimately all of them tried to avoid a situation that would have caused the player high *psychic entropy*, either by causing *anxiety, boredom* or *amotivation*. The latter is associated with extremely high levels of *psychic entropy* (Csikszentmihalyi, 1997a, p. 23). A typical case of this theme looks like this:

> Now, if the challenge is too big or I feel it unjust, the chance to win random or too low, I would say "screw it, I won't bother". (Subject #3)

Metagames

Metagame is, as Salen and Zimmermann explain:

> "'The game beyond the game' and refers to the aspects of game play that derive not from the rules of the game, but from interplay with surrounding contexts.
>
> Metagaming refers to the relationship between the game and outside elements, including everything from player attitudes and play styles to social reputations and social contexts in which the game is played." (2004c, p. 474).

Although Salen and Zimmermann use the somewhat problematic concept of the "magic circle" [8] to explain how metagames extend outside the boundaries of the predefined game (2004c, pp. 474-475), the "magic circle" is better replaced with "game space" in the current discussion.

I refer to everything as metagaming that has a connection outside the set up game space. Salen and Zimmermann cites a good amount of excellent examples (2004c, pp. 474-475), but a typical case of this can be using a strategy guide as an outside tool, with which the player gains additional information that was hidden in the situation given by the game. I also use the term metagaming prominently to the strategic mental restructuring of the game that creates new possibilities using tools and affordances that are inherently present in the game, but are not indicated as a primary option or actively hidden.

Salen and Zimmermann (borrowing from Richard Garfield) explain four type of metagames, based on their relation to the game space:

> "1. What a player brings to a game.
>
> 2. What a player takes away from a game.
>
> 3. What happens between games.
>
> 4. What happens during a game other than the game itself." (2004c, p. 475)

However, based on the subjective, *motivational* relation of the player to the metagame, I identified two main categories.

"Rewarding Metagame" is generally associated with *extrinsic motivation,* and, on a low level, "Adaptation (to frustration)". It encompasses strategies and actions, in which the players earn some reward or gratifying value. This type of metagame is sometimes used as a technique to avert frustration, by lowering the challenge level of a situation with acquiring extra information, or extra power. A good example of a *rewarding metagame* is Subject #2, who regularly looks up the most rewarding strategies on the internet:

> "After some time I am playing games, I usually look up guides and solutions on the internet, in terms of min-maxing, how to get best results." (Subject #2)

"Challenging Metagame", on the other hand, is associated with either directly increasing the challenge level of the game, or consciously thinking about the challenges that are provided by the game as meta-puzzles. The former is characterised by using in-game elements and tools to create more challenging situations:

> "So it becomes really interesting to try and get some of the magics working. Like only going with illusion, casting made a very challenging game. Also interesting how can you get magics that not meant to really damage but disable your opponent or make them turn on each other and how to use those to get past stuff." (Subject #2)

The latter form is characterised by continuing the strategic thinking outside of the game:

> "After this, I start to look at online wikis and look up data on spells and weapons and thinking about how to advance my character. Sometimes I figure out something nice so I

[8] Debating the validity of the concept is not the topic of the presented study, however, I find it problematic for the reasons explained in Mia Consalvo's „There is no magic circle" (2009). The notion of the „magic circle" especially feels too rigid in relation to metagames.

> start the game after a half hour again and I try the new thing until I get frustrated again." (Subject Alpha)

These two types of behaviours were merged together into the same category mainly because they both involved *flow* and corresponded with the "Playing for Challenge", and usually go together.

Depletion

Themes of depletion refer to the feeling of something being lost from the gaming experience with time. The development of the template identified who main types of this theme, both of them strongly connected to the initial reason the players started the game.

"Depletion of Need Support" is somewhat connected to "Playing for Challenge", as it describes the loss of additional opportunities for *intrinsically motivated* actions and consequently *flow.* As Subject Alpha explained it:

> "Games like Dark Soul deplete after a while after you went through the game naked there is not much more challenge and possible combinations." (Subject Alpha)

Although often this feeling is temporary, manifesting in boredom:

> "[I stop playing] when I feel like a zombie. When I don't feel the game, don't enjoy it anymore just doing it. When I have other things to do or if I am getting bored." (Subject #1)

This type of depletion was uniquely connected to the causes of "Session Exit" in almost all cases. In such instances, players usually reported that after "recharging" the game can feel fresh again:

> "You calm down, you are in a better mood, better mind-set to play again." (Subject #4)

"Depletion of Rewards" means the exhaustion of in-game rewards, in terms of power-ups, items, levels, or even narrative elements. Though some players reported frustration and *amotivation* when they did not get certain rewards for their actions, perhaps a more typical case of this type of feeling is a player who initially started to play for the *immersion*, but all the narrative elements that supported this are run out:

> "[I quit] if it cannot give me anything plus that I deem important. I quit a GTA when I played through the storyline. […] If the story is over I don't play anymore. If the thing that hooked me disappears I leave it." (Subject #3)

Transformative Nature of Social Interaction

"Transformative Relatedness" refers to a curious pattern across the template. It seems that feelings of *relatedness* in the sense of "quality relationship" and meaningful interaction with others (Rigby & Ryan, 2011a, p. 10) can magnify the effect of a situation, regardless of valence. Positive feelings that stem from situations that support *relatedness* are pretty much given in a "mutually supportive connection" (Rigby & Ryan, 2011a, p. 10), however in Rigby and Ryan describe *constructive* and *destructive competition* in relation to *relatedness* (2011d, p. 79). Because investigating the effects of social interactions on game enjoyment was not the focus of this study, it might very well be that this code just arbitrarily lumped together different types of social interactions. However, even if this is the case, the differences between *constructive* and *destructive* social behaviours are more subtle and more dependent on the player's subjective evaluation of the situation than suggested by the literature (Rigby & Ryan, 2011d, p. 79). A great explanation is given by Subject #2:

> "[Cooperative game play] is a big point in both directions. Having a friend with whom you play a game and encourages me to play is the biggest draw for me to get past these parts, because I want to play with them again. […] But at the same time in online playing finding

> someone who is so much better that you in terms of skill that you cannot even see the bottom of their feet is one of the most discouraging thing." (Subject #2)

The code also encompasses every mention of a newfound or magnified feeling of *motivation* when multi-player or a community is involved:

> "[The desire to excel] is more pronounced if you have a shared benchmark with others. If there is a high-score and I see that others can do it." (Subject #3)

Summary, Limitations and Potential Problems

I presented my hierarchical template and integrative themes in detail. They are the assessment of the data I have gathered through my research and the first part of my inductive study (Bryman, 2012a, pp. 24-27). I explained each code and the considerations behind them when needed. Unfortunately, the full rubric is too long and does not contain enough interpretive segments it is not viable to be summarised meaningfully in a paragraph. I will instead briefly examine the possible limitations and potential problems that might hinder the validity of the interpretation that will follow in the next chapter.

The first limitation is the scope and size of the sample. The study, being qualitative, is relatively small and has little variety (Bryman, 2012e, p. 425), thus, the general applicability of the data and the predictions that are derived from it are questionable (Bryman, 2012b, p. 48). Nevertheless, the participants' profiles do show diversity in terms of classical player profile (Bartle, 2004; Yee, 2005). This can increase the dependability of the study (Bryman, 2012d, p. 392) as it shows that the participants', to a certain extent, can act as critical cases for young male gamers (Bryman, 2012e, p. 419).

Another source that can cause potential problems is that I carried out all the data gathering, assessment, and interpretation alone. Although I was trying to stay critical of the value and validity of my work, my close involvement with the data might skew my interpretation (Brooks & King, 2014, p. 5). To counter this, I enclosed a detailed account of my thought process and template above. I hope that the transparency of the data helps future readers in understanding and assessing the value of my research.

FINDINGS AND DISCUSSION

This chapter discusses the findings of the interpretive analysis of the data, presented in the form of the hierarchical template and integrative themes above. The method of template analysis does not contain any specific technique to interpret the data (King, 2012, p. 446), I chose to rely on highlighting an underlying process across all individual cases, because of the prominence of integrative themes in my template.

Since the method of analysis and interpretation is flexible and the former was subject of gradual change during the length of the research, the findings, although do not depart far from the original research questions and hypothesises, do expand slightly differently based on the richness of the collected data (Brooks & King, 2014, p. 7).

The chapter starts with the analysis and interpretation, aided by cases that are pulled from the individual transcripts[9]. After this presentation, I continue with the synthesis and discussing the

[9] The transcripts are available in the Appendix section, online.

implications for the theories presented in the literature review and finish with recommendations for further research.

As I have already discussed the limitations of the method and the actual research design in the beginning of the previous chapter (and in summary above), I will not mention them again through the analysis. As this interpretation is based on the aforementioned data, it carries its limitations and innate problems. The language of this chapter does not mean to imply universal generalizability as it presents a prototypical model that has been derived from the limited dataset of the research (again – described above).

Analysis

The focus of the research was to learn more about players who meet with highly challenging and frustrating scenarios. The data gathered from the research sample seem to show a particular pattern across players, in which they mediate frustrating bits of the game. Although, I cannot say that my sample was representative by any means, the very similar way all these interviewed players choose to tackle rising frustration indicate that motivational models for video game play can largely benefit from a hierarchical view, similar to which was discussed in the first part of this dissertation, under "The Hierarchical Model of Motivation" headline.

In the following segments, I will explain my interpretation of how players meet and handle frustrating situations in video games. To do this, I divided my explanation into four parts that are building on one another. These upcoming parts will describe how the interviewed players divide the game into *situational* segments, structure and play their games to achieve their *contextual* goals, how they mediate frustrating scenarios, and how they contextualise these situations to get back on track with their initial goals.

Segmenting the Game

Summarising, the *Hierarchical Model of Motivation*, based on the works of Vallerand, is a theory expanding the *level* and *orientation* of *motivation* (Ryan & Deci, 2000a, p. 54) with a three-level hierarchy, the *levels of generality* (Vallerand & Ratelle, 2002, p. 44).

The three new hierarchy are *global, contextual* and *situational.* The top is concerned with personality and general motivation while the middle focuses on "domain specific" and the lowest with momentary motivation (Vallerand, 2000, p. 313).

In this framework, a video game, which a player plays, can be considered as *contextual* level, since "playing video games" can be considered as a special case of a "leisure domain" activity (Vallerand & Ratelle, 2002, p. 46). Every task, situation or action then is the subject of not only *contextual* but *situational motivation,* since these are segments within the *contextual* frame.

This is important because the players are not just perceiving the game as a series of chunks, but also consciously segmenting it. They regard different bits separately. Some of them are deemed positive and carry value for the players, while others are just means to an end, or even considered avoidable.

Many participants talked about the game in the context of different parts. Subject #4, who was invested in the MMORPG, *World of Warcraft*, explained the game in terms of different activities that a player can do:

> "You either play against other players in PVP or you play with other players in a party and experience the story. […] Of course these are the main aspects of the game […] you can gather information, read more on certain items, quests, and characters. […] There are also

> some time consuming activities that can be enjoyable for some, like casual fishing, or certain events and festivities that you can take part in."

However, often these game segments are not so clear-cut. Obviously, games that are more complex show this segmented structure better, because they give different options to the player. Nevertheless, the same segmentation can be found in linear gameplay. In such gameplays, different challenges are regarded as separate, often categorised by their toughness:

> "If we look at Neverhood, there were easier and harder [puzzles] and then they were followed by a very hard one." (Subject #3)

This foreshadows the underlying structure of how players view games. Some bits are regarded easy some are hard, and similarly, some are regarded frustrating while others challenging or relaxing:

> "When I completed Mass Effect on "insane" [difficulty], I felt the external goal; I felt that I had to reach my goal when I reached a frustrating part. Other than that I just played and didn't care about the difficulty." (Subject #5)

However, in line with Vallerand's model (Vallerand & Ratelle, 2002) these frustrating situations are not oozing automatically into the whole (*contextual*) game experience.

> "Only parts become frustrating, not the whole game. There is a frustrating part, like in every game. Like in Neverhood, when you have to cross the room, and it takes forever." (Subject #3)

Just like as it has been described in the *Hierarchical Model of Motivation* **[cite]**, several continuous frustrating episodes have to follow each other to make the whole *context* of the game frustrating.

> "But the game built up its image in a way that I know that I could solve it. The game already won me over and I knew that I could solve it. But if it opens with a challenge on this level, I probably won't bother to play at all no matter if I can do the first puzzle in the end or not." (Subject #3)

This similarity to the *Hierarchical Model of Motivation* (Vallerand & Ratelle, 2002) is important because not only these players' perception of actions, challenges, relaxation and frustration are structured this way, but – as I will describe below – also their motivation.

Getting What You Want, Situational Reinforcement of Intrinsic Motivation

Before moving on to explaining how players mediate frustrating segments, I take a detour and identify what is their initial state before going into the frustrating episode.

The most prominent reasons for the participants to play were experiencing challenging situations (which inherently lead to *flow*) or *relaxation*; that is a low challenge scenario, which is based on the *intrinsic* values of immersion (in the case of video games).

This leads to the obvious conclusion that players are *intrinsically motivated* to play games on a *contextual* level. As Lafrenière, Verner-Filion and Vallerand describe it:

> "Players who play because they enjoy exploring the game universe and improving their skill levels or because they like the thrill and strong sensation the game provides are representative of individuals who are intrinsically motivated." (2012, p. 827)

As it was discussed in the "Integrative Themes" section of the previous chapter, the players' focus of gameplay is determining how they orient within the game world, what kind of challenges or game elements they seek, and what they wish to avoid.

Players thus start *intrinsically motivated*, both *contextually* and *situationally.* As it shows in the excerpts from Subject #3 above, players decide to go into frustrating situations only after their initial *intrinsic motivation* is reinforced *situationally*. Players expressed how an intrinsically interesting value should be provided by the game for them to consider facing its frustrating parts:

> "Depends on how the game's other parts can interest me. If I would like to see those then I can suffer through it, but otherwise, I leave it be." (Subject #1)

> "I usually play through first to get the story, then I want to see what the game have to offer in terms on the challenge." (Subject #2)

> "It is about how did the game built its image so far. […] The game already won me over and I knew that I could solve it. But if it opens with a challenge on this level, I probably won't bother to play at all no matter if I can do the first puzzle in the end or not." (Subject #3)

> "You are involved with the characters, you are immersed in the story, and you know, you hope for the best. You want it to be good. And if the bad part comes, you don't want to book it as a bad game. You just really wanted to be good." (Subject #4)

> "To be a good game, I need a story and a world in which I can take interest, how it ends, and I want to push through. I want to know the end of the story or the world." (Subject #5)

It is clear that this phenomenon is not based on achieving *flow* experience, but rather it is tied to the reinforcement of *intrinsic motivation*. This can be inferred from the fact that some players avoid challenging situations and focus only the *intrinsically motivating* value of the story or game world. This is evident from a previously quoted excerpt from Subject #4:

> "So if I am in the mood to prefer a story oriented gameplay it is mainly because I want to relax and enjoy casual gaming and not the challenging part of a game." (Subject #4)

This also means that players actively seek out those elements in a game that interest them and can reinforce their *intrinsic motivation.* Some players do this by avoiding challenges and seeking out certain themes that they deem interesting. While others, – who seek *flow* and challenges – can go as far as bumping up the challenge level by creating their own challenging scenarios:

> "[Dark Souls 2] became a challenge on its own. How people can play the game without gear and such. I think it stems from the mentality of the type of players that plays this type of game, who likes these challenges." (Subject Alpha)

It is important, however, that the *contextual intrinsic motivation* can change from session to session. Many participants expressed that they sometimes seek out challenges while other times they just wanted to relax. This created a *context* for their play session that was not necessarily true for all of their sessions. What controls this is hard to say based on the current research, but participants' recollection generally direct to mood and vitality (Ryan, Rigby & Przybylski, 2006 p. 352), which in turn suggests that the nature of the *contextual* focus of gameplay is affected by the *global level motivational state* (Vallerand, 2000 p. 314). Unfortunately, the current study had insufficient scope to measure and analyse the *global level motivation* of the participants.

To summarise, players consciously segment games into *situational* chunks. This segmentation builds on both the structure of the game, and bumps in the complexity of the game that create challenging and sometimes frustrating scenarios based on the noise generated in the informational processing

structure (Cowley et al. 2008, p. 22). From the game structure, players seek out the parts that can reinforce their initial *intrinsic motivation* (usually what pushed them to start playing in the first place). In reality, games try to cater to the need of players and different games meet the different expectations of players, thus, this reinforcement is not an issue. However, if the game fails to reinforce players *contextual intrinsic motivation* by giving them *situational* scenarios, in which they can stay interested; that is *intrinsically motivated*, the players will most likely abandon the game:

> "I mean if the first ten [situations] are good and then comes two bad, you push it through. If the first ten are bad, you leave. Mass Effect 1 had it the same way. I wasn't engaged initially" (Subject #5)

When players are engaged and their initial expectations are fulfilled, their *situational motivations* got enough time and instances to reinforce their *contextual motivation* (Vallerand & Ratelle, 2002, p. 51) they are ready to face frustrating scenarios without abandoning the game.

Facing Frustration

Games usually build up tension and challenges over time (Salen & Zimmerman, 2004a, p. 321). Since this curve is hard to match for each player, because personal skills are depending on too many subjective factors (Nakamura & Csikszentmihalyi, 2002, p. 91), for which the designers cannot account for, usually every player experiences frustration.

I have already established in the previous chapters that the frustration of the participants rose prominently from either repetition or mismatched challenge levels. However, both of these factors can be broken down to the increase in the complexity of the informational system, presented by the game, to a point where the increase in attention becomes maladaptive (Bessiere, 2006, p. 944). This phenomenon causes a negative feeling in the player, described as a state of *psychic entropy* by Csikszentmihalyi (1997a, p. 22).

One of the obvious strategies to avoid such states is to avoid them. However, my research showed that though players often use this method, it is not the most frequent technique. The research, of course, might be skewed because of its focus, since all the interviewed players identified as "gamers", thus perhaps playing more intensively than the average player does. The lessened degree of avoidance strategy can also be explained by the basic structure of games; that is often it is not viable to avoid frustrating scenarios, if one wants to progress in the game.

Nevertheless, when engaging in frustrating situations, players generally utilised two basic techniques. In the following sections, I will interpret the participants' reported strategies when dealing with these situations. These sections will rely heavily on the integrative themes associated with "Metagames" and "Frustration Mediated by Extrinsic Motivation".

Structuring the Challenge

An interesting pattern that can be found in the template is that Subject Alpha and Subject #2, both very challenge centred players, who are most likely to come across frustrating situations during gameplay, engaged in the least amounts of behaviours that were considered as "Frustration Mediated by Extrinsic Motivation"[10].

[10] A word of caution is the fact that Subject Alpha and Subject #2 completed different interviews. Moreover, Subject #1, who reported to be a very immersive player, focusing on relaxation, also had low number of the said code. Although, this can stem from the fact that Subject #1 completed, yet again, a different interview. However, it is more possible that he utilised another type of strategy, supported by the high amount of "Frustration Mediated by Avoidance" code in his part of the template.

When asked Subject Alpha about the frustrating bits of *Dark Souls 2* this was his answer:

> "Obviously that you die a lot. It has the same property of the old games. […] We liked those games and they were substantial because they didn't help. You were thrown into a game and you had to figure everything out. […] And this game gives the same. It doesn't hold your hand it doesn't help. This can be simultaneously interesting and frustrating. […] You don't know in game mechanisms that are usually told to you by tutorials in other games. This has nothing and that is very frustrating." (Subject Alpha)

It sounded almost like he enjoyed the frustratingly difficult challenges because he saw them as puzzles to be solved, rather than a series of situations that failed to cater to his skill level. He was talking casually about endless retrials:

> "Most of the time you cannot do anything else than thinking because direct approach is not working, you don't have any hits for tricky approaches and so you can only think. You can go again for 50 times because you might see something on the 49th attempt." (Subject Alpha)

And how once a strategy or mechanism was cracked, he felt more accomplished:

> "The learning curve is very rewarding. When you get even a little better, the system rewards you much positivity […] because if you cannot accomplish something for 20 times and then finally get it, you are very happy." (Subject Alpha)

This behaviour is pointing into the direction of a very specific metagame. It is still connected to the "Challenging Metagame" theme, explained in the previous chapter; however, it is also an effective technique to avert frustration.

Since, we know that frustration is connected to both, "external complexity (stimuli) and internal complexity (cognition)" of the information system (Cowley et al. 2008, p. 22). Restructuring the situation can decrease internal complexity while introducing new external information can help reducing the external complexity.

Thinking about strategies and tactics outside of the gaming situation does just that. The player effectively expanding the frame of the situation to the whole context of the game, systematically measuring every affordable tool provided by the game:

> "When I have the time, I sit down and I play until a point where I cannot pass, this is usually between 4 to 30 minutes and then I start to think. […] I quit when I don't want to play anymore, but if I want to keep deal with it, I can still think about it. […] I put it like this: if I don't have anything going on, it feels good to exercise my brain by thinking about these things. In this sense it spills out, of course, but I don't see the difference between thinking about this or when I was solving equations on the bus." (Subject Alpha)

I am saying expanding the frame because, as we can see, this often requires "thinking outside the box", that is figuring out strategies that are not prevalent in the situation. Completing this with the help of strategy guides or just even with item or skill lists, and the player has a complex strategy to combat rising frustration:

> "After I know it is more frustrating than entertaining I stop. I mean I stop playing. After this I start to look at online wikis and look up data on spells and weapons and thinking about how to advance my character. Sometimes I figure out something nice so I start the game after a half hour again and I try the new thing until I get frustrated again." (Subject Alpha)

In summary, the player restructures the seemingly complex problem within the context of what tools the whole game offers, in contrast, what the situation gives, which reduces internal complexity. This restructuring strategy also loosens the focus on the situation, not letting the eventual rise of non-specific arousal and attention to turn into maladaptive frustration (Bessiere, 2006, p. 944). She also introduces new information to reduce external complexity, but this also combats uncertainty that helps to focus, reducing internal complexity even further.

Though other – more relaxation and immersion seeking – players use strategies to reduce the complexity of a challenge, described in the "Rewarding Metagame" section in the previous chapter, they usually lack the extent of explorative behaviour that was reported by Subject Alpha and Subject #2:

> "In terms of metagaming, for example crafting in the game, like 'here's something you can do, check it out' and I tried it, what it can do how can I improve and, at first, is just trying out the first things in it. I don't really try to make it the best immediately and just see how it works and if I like it or not and start incorporating it into the strategy as I go on. […] I enjoy setting challenges. They help focus the game." (Subject #2)

Other players engaged in metagames more if they needed something to complete the game or earn their goals:

> "Because I need these in order to complete the parts afterwards. If you are not buffing your character up, you cannot complete the game. You have to do some repetitive stuff, but sometimes I don't understand why they are there. […] I don't really enjoy that I have to look stuff up. […] I do it because it would be too frustrating or I fear that it would take away my mood to do it, or if I am stuck somewhere." (Subject #5)

Although these strategies might be similar to what I described above, they lack the *intrinsic motivation* to overcome the complex situations the game presents this way. This represents a huge divide, because while solving the problems and challenges through *intrinsically motivated* metagames help resolve the frustrating situation in a way that leads to *psychic negentropy* and positive feelings (Csikszentmihalyi, 1997a, p. 22), conceptualising metagames as rewarding mechanisms push the player into *extrinsic motivation* that does not have the same positive payoff (Vallerand, Pelletier & Koestner, 2008, p. 259):

> "I have a goal and I want to reach it, even though suffering. In those times, I don't even enjoy the game, but I feel good when I know that I could do it. But it is more like "yeah, I did it, screw the developer". (Subject #5)

Shifting to Extrinsic Motivation

Eventually, almost all players arrive at a section in the game that causes them frustration and which they cannot reconceptualise in a form of a metagame. These frustrating segments often characterised by the players' *extrinsic motivation*:

> "I ran into an enemy who was literally beating me into the ground. And I think I did more than a hundred tries before I gave up and went the other way. Simply because I thought I could beat it. […] First it was the challenge then it was the 'I can do it. I must do it. Come on this game cannot get past me like this.'" (Subject #2)

I have already touched upon the nature of mediating frustration through *extrinsic motivation* in the previous chapter when discussing integrative themes. I explained how players use rewards or mental pressure to motivate themselves through frustrating game segments. I also emphasised how *situational* shifts in *motivation* seem to fall further from the *intrinsic* side of the motivational scale,

with the former behaviour is usually characterised by *extrinsic regulation*, while the latter has more *integrated* forms.

Here, I would like to expand further on how the players' *intrinsic motivation* shifts towards *extrinsic* in the *situational* frame, while their *contextual motivation* remains *intrinsic.*

Building forth from the previous steps (segmenting the game, reinforcing motivation to play) we can identify the main process that leads players through frustrating challenges. Since frustration can be characterised with *psychic entropy* (Csikszentmihalyi, 1997a, p. 22), it is a state of negative emotions (Mandryk & Atkins, 2007, p. 342, Fig. 15.) and confusion (Bessiere, 2006, p. 946). Thus, players try to overcome this situation, which already presents a pressure that weakens their *intrinsic motivation* (Nakamura & Csikszentmihalyi, 2002, p. 90; Cowley et al. 2008, p. 22).

However, the players lose something else in these situations. They have a focus during their gameplay, playing for the challenge or relaxation, experiencing a game world or story. They started the game in the first place because they deemed these things interesting and thus *intrinsically motivating.* In the wake of frustration, they are stripped of their balanced state as the pressure of getting rid of *psychic entropy* rises.

> "Yeah, because if there is a huge challenge that you have to get past then you are in the flow and get to this challenge and it just breaks the whole thing." (Subject #2)

In this new situation, their *contextual* focus that is orienting toward challenge or immersion remains the same *intrinsic*. However, the *situational* motivation shifts towards *extrinsic* due to the pressure of the uneasy state of frustration. What the player deemed interesting at first now becomes distant due to the disruption caused by the frustrating scenario.

This can be explained with the players prioritising their actions in a way that the proximal pressure of the newly risen *psychic entropy* takes the first priority (Nakamura & Csikszentmihalyi, 2002, p. 90; Cowley et al. 2008, p. 22). In the new situation, the players thus feel the previously reinforced *intrinsic motivation* slipping away, along with the elements that supported said *motivation*.

To understand this, I reached back to Deci and Ryan who explain *intrinsically motivating* actions as interesting (due to the nature of *intrinsic motivation*) and *extrinsically motivating* actions as important (due to the presented pressures or rewards) (2000, p. 230). This rough simplification can help us understand the underlying shift and dichotomy between the *contextual* and *situational* frame of the game.

The player starts with a focus on something interesting for her. This aspect is presented to her repeatedly, reinforcing her *intrinsic motivation* to take part in the game further. When she encounters a frustrating bit, she feels pressure to escape the scenario:

> "I got accustomed to it. If that changes it doesn't really offer me the same satisfaction as it did. And it doesn't offer me anything. It just consume time and makes me angry." (Subject #4)

However, most participants reported that simply escaping the frustrating segment of the game is not the primary basis of their *motivation*. Since the first part of the game reinforced their initial *motivation*, they also formed expectations that the game will continue to support their needs:

> "I mean as you start a game you spend a few hours in it and you get hang of it. And if that changes, you get angry. You don't know why it is there and it is not the thing you got used to in that few hours." (Subject #4)

This can be explained with the fact that *psychic entropy* has its highest levels when there is absolutely no structure in the attentional and information processing system (Csikszentmihalyi, 1997a, p. 23). In the rise of frustration and/or *anxiety,* the player looks for any artificial motivator to regain any kind of structure since *extrinsic motivation* still has a lower level of *psychic entropy* than *amotivation* (Csikszentmihalyi, 1997a, p. 23).

Thus, the same focus they had when started the game that supported their initial *intrinsic motivation*, now becomes the focus of their *extrinsic motivation*, because they start to regard it as a reward if they manage to pull through the frustrating segment. Ultimately their *perceived locus of causality* between their phenomenological self and the object of their focus shifts towards an external relationship (Ryan & Connell, 1989, p. 759). This explains why players who have genuine interest and *intrinsic motivation* towards the game on the *contextual level*, experiencing *situational* parts as "work", "suffering" and "necessary evil" to their gaming experience:

> "Where the challenges are constantly so hard, that is not enjoyable for me. It's work." (Subject #1)
>
> "In the game there were few points when it was challenging and I enjoyed it, and then there were a few points when I just wanted to get it done." (Subject #2)
>
> "There is a big difference between looking up the info and harvesting the fruits, putting the experience into use are gravely different things. If I compare them, I don't enjoy it, I enjoy playing." (Subject #3)
>
> "Well I consider it as work, as a job to be done. […] The are necessary evils" (Subject #4)
>
> "I do this while grinding my teeth because going there, kneeling down, pushing the button again, because the game is buggy, just to earn a skill point. But I need the skill point because it is valuable. Same in alchemy, suffering for the oils. I don't care about the bombs. […] With the oils, I farm them to maximise my damage and it is good for a build, so I suffer for them." (Subject #5)

In summary, video games, as it has been discussed before, *intrinsically interesting* for the players, hence their *contextual* frame usually *intrinsic,* and stay intrinsic during the *situational* shifts too. However, in pressing situations, those things the players held interesting can become important to reach. When their initially positive experience disrupted, players feel the importance to return to the elements that supported their positive state and *intrinsic* motivation. However, with their *situational intrinsic motivation* disrupted, the players quickly look for another way to focus and structure their attention to avert extreme *psychic entropy*. While keeping their focus of gameplay intact, their perceived locus of causality between them and their object shifts. In these situations, they regard previously *intrinsically interesting* elements as rewards, *extrinsic motivators:*

> "Sometimes you have to do [the frustrating segments] and I was interested in the game enough to go through them. Because they are in the way and then you just have to do it […] and there is the idea that the moment you get past that you'll be put back into the flow and everything will be enjoyable again." (Subject #2)
>
> "Now what pushes me is to obtain new levels of entertainment, I only have to push through and after that I'll have a bigger map, advance the story or something like that. I get rewards for the whole thing. If I look at a part of a game that is frustrating and I decide to do it, I do it to advance the story. […] If it couldn't give me rewards that give me relaxed enjoyment, then I won't spent time on it." (Subject #3)

> "Because I need these in order to complete the parts afterwards. If you are not buffing your character up, you cannot complete the game." (Subject #5)

We can also infer this from the few accounts that speak about "getting back to track" after a frustrating segment and from the contrast between why players experience frustration, how do they deal with it and their reasons for quit a session and abandon a game.

Normalising the Experience

So far, I described the process of *orientational* shifting of *situational motivation*, from initiating a game, through having the *contextual intrinsic motivation* reinforced, up to the point where the players shift their *situational motivation* from *intrinsic* to *extrinsic* in the wake of frustration.

The last piece of the process is what happens after the frustrating situation has been averted. One might assume that since *extrinsic motivation* works against *intrinsic* in a very impactful way, the players' initial motivation suffers. However, participants across the board seemed to get back to their *intrinsically motivated* state quite easy. As Subject #5 described the experience:

> "I felt the external goal, I felt that I had to reach my goal when I reached a frustrating part. Other than that I just played and didn't care about the difficulty" (Subject #5)

This can indicate that the player did not felt the external push that is usually associated with *extrinsic motivation* when the game ran according to his expectations. Subject #2 also expressed similar feelings when talked about what motivates his through the frustration:

> "There is the idea that the moment you get past that you'll be put back into the flow and everything will be enjoyable again." (Subject #2)

Though unfortunately this part of the interview template was underdeveloped because the initial focus was on how players act under a frustrating scenario rather than after one, we can infer a lot from the above quotes and the curious case of reward and need support depletion experienced by the participants.

As I already mentioned in the previous chapter, when discussing the integrative themes, "Depletion of Need Support" was uniquely associated with "Session Exit" but not with the "Causes" sub-level code of "Frustration". "Depletion of Rewards" did pop up consequently as a reason for game abandonment with players like Subject #1, #4 and #5, who were more focused on the story, since the story elements could be perceived as tangible rewards for completing the game. This, of course, does not mean that these players are not *intrinsically motivated* to play the game, only that with the story ending, they lose interest:

> "I played with Witcher 3 and it was a really good game in terms of gameplay and story as well, but as soon as I finished the story, I haven't really played much since then. It wasn't really interesting for me anymore. I was mainly invested in the story so there were no other things to do." (Subject #4)

Despite this pattern, these players had the same reason for session exits as challenge oriented players. There were a few instances when unresolved frustration led to "rage-quits"; that is leaving the game with a highly negative emotion after a major failure, but generally, the main reasons were boredom, fatigue, and loss of perceived *competence* and/or *autonomy*:

> "When I feel like a zombie. When I don't feel the game, don't enjoy it anymore just doing it. When I have other things to do or if I am getting bored." (Subject #1)

> "I am just not interested in the game anymore and save it and get back to it later. […] Boredom. It's the biggest issue. When I explored every possibility and every different method then that game is finished." (Subject #2)

> "You don't quit a frustrating game because it obviously doesn't give you any positive values, that you can feel good about, or progress the story, this is not happening with a real game, only that it doesn't compensate you enough for your hardship. But in a better moment, you can feel that you get into it again." (Subject #3)

> "Skyrim, for example, after I got a maxed out character, I started to explore the world, but there weren't any challenges anymore. The world exploring got repetitive also. If I can't find a new goal then I have no motivation." (Subject #5)

These feelings are often characterised as *amotivation,* and heavily contrast the high arousal level that is associated with frustration (Mandryk & Atkins, 2007, p. 342, Fig. 15.). This is also supported by the spread of integrative themes in the template. While "Depletion of Rewards" is present sometimes in a story focused players, who might feel cheated if they do not get their content for their hard work (Subject #5 is the best example), the main causes of frustration are not, or just marginally present among the causes of session exits and abandonment.

Taking all of this into account, it is safe to hypothesise that after the frustrating situation is resolved, the players are able to regain their initial *intrinsic motivation* in the next segment of the game. The main themes that point into this direction are the fact that accounts of "rage-quits", caused by unresolved frustration, are seemingly rare, and players' accounts of positive gameplay sessions that are only interrupted, but not meaningfully disrupted by frustrating segments:

> "I enjoyed it for the most [time]. I enjoyed 2 hours and because I didn't enjoyed the last 30 minutes as much I did the first 2. I know if I sit down again I know I will enjoy 2 hours again." (Subject Alpha)

> "However, if I have to retry four, five times, and I only get this hard challenge about only every hour, then I can enjoy it." (Subject #1)

> "When playing the game and reached a really-really difficult challenge. […] Passing it, again and again, will gives you a better feeling because you managed to it." (Subject #2)

> "Only parts become frustrating, not the whole game." (Subject #3)

> "I started the first [Mass Effect] a lot of times, but I always quit […] I thought, okay I'll try one more time, my teeth clamped. And then I was so engaged by the world that I did all the side quests and went to last planet just so I can gather every bit of information, discover every species." (Subject #5)

The obvious limitation of the idea that I described above is the small scope of the sample. It might very well be that the participants were just very persistent players who grew accustomed to the difficulties of gameplay and in dire situations hoped for the best, based on their previous knowledge about video games. It should be the focus of future research if the previously described patterns hold up with players that are more "casual".

However, there are strong supports for the argument. The main pillar is being Vallerand's *Hierarchical Theory of Motivation* (Vallerand & Ratelle, 2002). Since in his model the top level *motivations'* effect on lower level ones are considerably greater than the bottom-up effect (Vallerand & Ratelle, 2002, p. 49), this view seems to support the idea of the *contextual motivation* is creating a sort of "baseline" to which the player easily returns once a *situation* is over and he is entering a new one.

Another pattern that can support this interpretation is that the game might be harder to leave in an unresolved state, thus players who already experienced the positive, psychic negentropy that the game can support feel compelled to play up to a point where the *psychic entropy* caused by the frustrating scenario is resolved. This idea can be further supported with Csikszentmihalyi's interpretation of emotional experiences being a "function of attention" (Nakamura & Csikszentmihalyi, 2002, p. 92), and the "Zeigarnik effect", explained by Rigby and Ryan as an innate drive to completion (2011f, p. 109).

> "Because you know if you leave it, it will still be there and you can't start the game to get into the flow because there will be this challenge that is ridiculously difficult and makes you frustrated and from the beginning." (Subject #2)

Nevertheless, both the present study and the literature have deficiencies. It seems that both *Self-Determination* and *Flow* literature (Ryan & Deci, 2000a; Ryan, Rigby & Przybylski, 2006; Przybylski, Rigby & Ryan, 2010) as well as game design handbooks (Bartle, 2004; Salen & Zimmerman, 2004; Rigby & Ryan, 2011) concentrate more on why people start playing and how they remain motivated rather than the underlying processes behind session exits and total game abandonment.

In the next segment, I will summarise my model of *situational* shifts in player *motivations* during video game play. A word of caution is that the model is obviously not grounded enough to be taken at face value. As I mentioned above, some parts of the presented process are more speculative due to limitations of the study and the overall literature. Thus, I will present my model as a prototypical foundation for further research. I do believe that my data showed strong patterns in the behaviour of different kind of gamers, yet I still want to emphasise that my findings are focused to create a testable framework, rather than a complete, general interpretation.

Summary

I have started my research with a number of the research question and hypothesises. As I mentioned before, despite the more inductive (Bryman, 2012a, pp. 24-27) nature of the study I felt the need to have a frame and focus for my study. As my chosen method of data gathering and primer analysis promotes flexibility, I regarded finding definitive answers to the set hypothesises secondary to the useful interpretation of the data. The result of my analysis ultimately has a different structure that can be directly inferred from the research questions and hypothesises, however, the presented results not only answer the research questions, but they manage to go further. Hence, I will not give a proper rundown on each research questions and hypothesises because they are redundant to the presented process and secondary for the research.

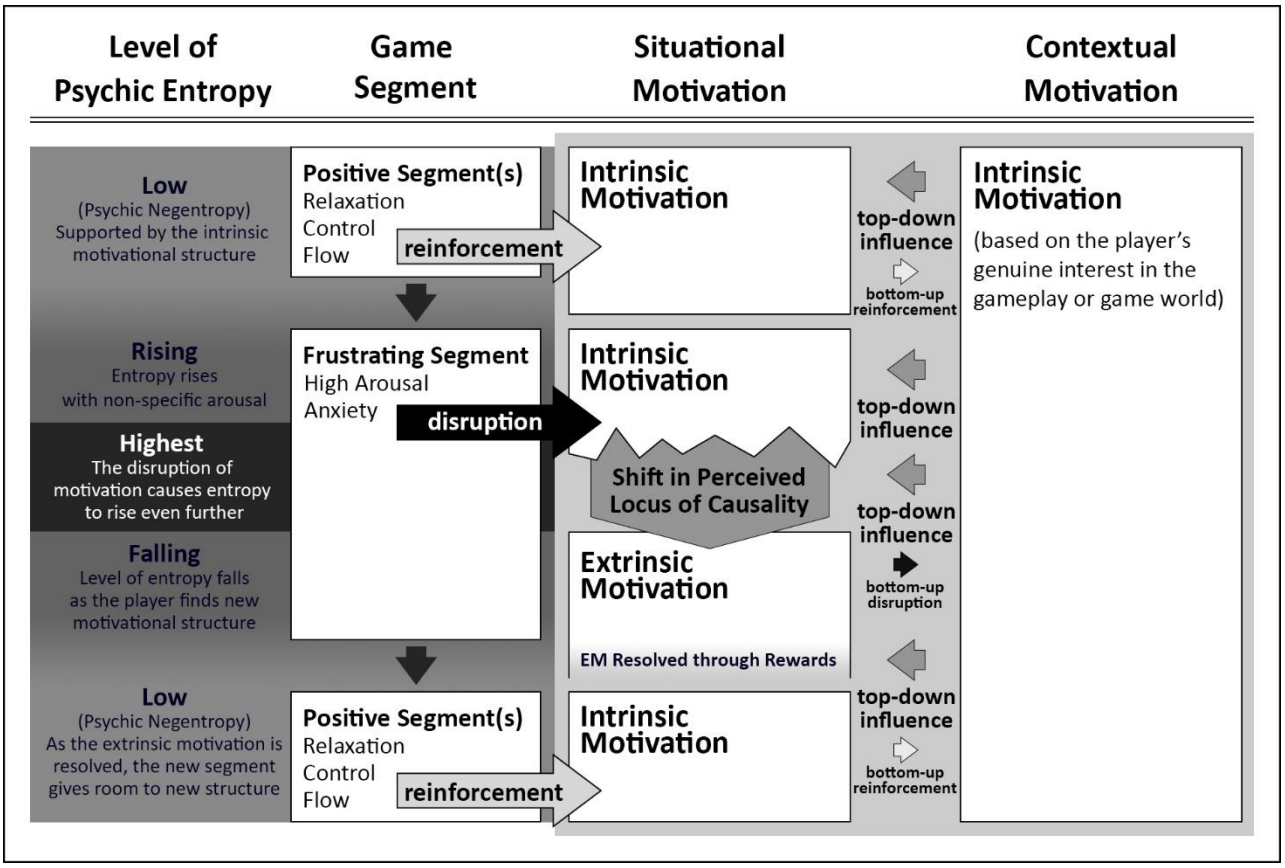
What I would like to present instead is the model of the process described in detail above. Keeping in mind that I had a limited sample that only contained young males, who played frequently and identified as gamers, I will present a process that was underlying each participant's regular gameplay, based on their recollection.

As I described above, the model is based on the notion that players segment the game into chunks based on the game innate structure and their own emotional experiences. The *situational* instances of *motivation* follow these segments. The shifts in *motivation* are happened in and between these *situational* frames. Below, I will explain my interpretation of this *situational* shift, taking into account both the examined patterns above and the processes of frustration and motivation explained in the literature review section.

The complete model that is shown in Table VII. describes an instance of establishing and reinforcing *intrinsic* motivation, slipping into a frustrating game segment, temporarily losing the *situational*

intrinsic motivation, replacing it with an *extrinsic* one, then reverting back to *intrinsic* again, after the frustrating situation is resolved.

Table VI. Model of Orientational Shifts in Situational Motivation during Video Game Play



The first step in this process is the establishment of *situational* level *intrinsic motivation.* This is needed so the player will persist in the frustrating situation. This process could be explained by the reinforcing bottom-up effect of *situational motivation* on *contextual*. The positive feelings also create a negentropic state that signifies a clear structure in attention. The player is comfortable and has the attentional focus further reinforces her *intrinsic motivation.*

The "Level of *Psychic entropy*" column helps to understand the possible cause of the shift in terms of *Flow Theory* while the right side of the Table speaks in terms of the *Hierarchical Theory of Motivation*. The two half are connected in the background to show the inherent connection between the two systems. While it seems that the attentional system and "psychic energy" (Csikszentmihalyi, 1997a, p. 22) can affect motivational states, the structuring property of these states also affect *psychic entropy* (1997a, p. 23; Cowley et al. 2008, pp. 20-21).

As we can see, the disruption of *intrinsic motivation* does not start right away. The prominent influence of the higher-level *motivation* helps to create a new *intrinsic situational state.* However, this new state will be harder and harder to maintain as the noise and/or complexity of the situation rises. The frustration that creates non-specific arousal (Bessiere, 2006, p. 948) continues to generate noise and further increase the *psychic entropy* of the situation.

As the challenge becomes harder (or too noisy), the affective state of the player changes to *arousal* then *anxiety* (Nakamura & Csikszentmihalyi, 2002, p. 92). Since the player feels the pressure of

escaping the increasingly entropic state, her *intrinsic motivation* to purse the situation is disrupted (Nakamura & Csikszentmihalyi, 2002, p. 90; Cowley et al. 2008, p. 22).

The sudden disruption causes *psychic entropy* to spike since there is no structural framework that can guide attention (Csikszentmihalyi, 1997a, p. 23). However, the player is too involved in the game to abandon the situation. Firstly, she most possibly wants to find a resolution that returns her to a negentropic state, which is less likely if she abandons the game, secondly, the already reinforced *contextual* motivation is still *intrinsically* involved, upkeeping the player's general interest, and *motivation.*

Since the general interest of the player, her focus of the gameplay did not change, the quickest and easiest solution to this uneasy situation is to shift the *perceived locus of causality* of their object of focus (challenge, gameplay, story, characters, etc.). This way the general structure remains the same in terms of main motivators. The only difference is before he played because the said focus was interesting for her, and now he plays because the said focus became important to reach.

The newfound *extrinsic motivation* helps structure the attention and thus lowering the level of *psychic entropy* (Csíkszentmihalyi, 1997a, p. 23). This, in turn, will help the player to both solve the challenge and keep herself *motivated*. When the frustrating segment is over; that is the challenge has been completed, two things happen. First, the *psychic entropy* drops further, creating positive emotions and the *extrinsic motivation* is being resolved through the reward, which the player set for herself in the form of wanting to reach the next interesting or potentially *flow*-inducing bit.

Since by this time the *psychic entropy* is low enough, with the help of the top-down influence of *contextual motivation* a new *situational intrinsic motivation* forms that reinforce the *contextual* frame again. The player is essentially back in the beginning, she preserved her *intrinsic motivation* towards the game itself through the *situational s*hifts in the wake of *frustration*.

Of course, prolonged or frequently repeated frustrating episodes can give enough bottom-up feedback to the *contextual* level that the player's motivation diminishes and she abandons the game. It can be theorized that the more reinforcement the player gets through positive segments, the stronger her contextual motivation, the more he can withstand occasional frustrating segments. This notion seems to be supported by participants who reported more likely to abandon a game it is was frustrating up front, even if it got better later and when they knew that there was not much more to look forward to:

> "It depends on what is the game's life beforehand, how likable it is, how it can motivate me to solve the puzzle." (Subject #3)
>
> "I got accustomed to it. If that changes it doesn't really offer me the same satisfaction as it did. And it doesn't offer me anything. It just consume time and makes me angry." (Subject #4)
>
> "The bandit camps are the same frustrating stuff as the monster nests because you don't get anything worthwhile." (Subject #5)

This marks the end of my presentation of my "Model of Orientational Shifts in Situational Motivation during Video Game Play". I believe that it managed to answer all my research questions and set the direction for possible future studies. Even though there are apparent limitations to this interpretation that stem from the data gathering and small scope, the model fits seamlessly into the framework provided by the core literature.

Implications for the Core Literature

As I mentioned above, generally the model described above fits nicely with mainstream theories of the field. It relies equally on the parts of literature that I presented in the first half of the thesis and the structured data I gathered through my research.

The presented model although uses the vocabulary of *Self-Determination Theory,* takes a different approach. The bulk of self-determination research is aimed to uncover how to facilitate the *basic psychological needs* (Ryan & Deci, 2000a, pp. 58-60). This means a heavy focus on *intrinsic motivation.* We can see this in game design literature with design frameworks that are aimed to create games that facilitate *intrinsic motivation* better (Bartle, 2004; Yee, 2005; Rigby & Ryan, 2011). While this aim is understandable, it closes out a huge chunk of the motivational framework. For a designer who is looking for design cues, this is not that big of a deal, but it can leave the field of research impaired. The framework that is assessing how players engage in video games through *extrinsic motivation* (*Gaming Motivation Scale*) (Lafrenière, Verner-Filion & Vallerand, 2012) was born six years after the one that extensively focuses on *intrinsic motivation* (*Player Experience of Need Satisfaction*) Ryan, Rigby & Przybylski, 2006).

The same could be said about *Flow Theory*. Most of the design frameworks are fixated on *flow* as a magic formula to the optimal experience (Jones, 1998; Sweetser & Wyeth, 2005), forgetting that games are far from being optimal experiences (Salen & Zimmerman, 2004b, p. 336; Rigby & Ryan, 2011a, p. 8). They have the capacity to facilitate optimal experiences, but the experience itself is subjective (Nakamura & Csikszentmihalyi, 2002, p. 91). However, not even the core material in *Flow Theory* explains much about the processes outside of *flow.* It seems that the literature is more concerned with how to facilitate the positive experience than to explain the mechanisms of the negative one.

Perhaps there is not much to discuss about these negative experiences, but as I discussed in the sub-chapter, "On the Compatibility of Self-Determination and Information Processing", there was little work done to meaningfully connect the two frameworks not just by mapping and correlating their manifestations, but also looking into their shared source.

At first glance, the picture, painted by the literature, seems clear cut and very black and white. Something is either facilitating the best possible outcomes (*flow* or *intrinsic motivation*) or not. However, the presented model shows that often the sub-optimal scenarios can facilitate these feelings (or, at least, *intrinsic motivation*) on a *contextual level.* Vallerand, Pelletier and Koestner suggest the same saying that when *intrinsic motivation* is not a feasible state in the situation an *extrinsic* state should take over (2008, p. 259). This also echoed by Csikszentmihalyi, who propagates *extrinsic motivational* structures the same way to overcome *entropic psychic states* (1997a, p.23). It seems feasible to work towards a system that recognises an attentional or information processing system as the basis of perceived *need support* and in turn self-determination. This same framework could easily account for *flow* as an affective output, just like Vallerand's hierarchical model (Vallerand & Ratelle, 2002).

The presented model showed the utility of the levels of generality (Vallerand & Ratelle, 2002, p. 39) in terms of the *motivational* system when looking at such a complex process as video game play. Contrary to *Cognitive Evaluation Theory,* where the exact scope of the motivation at hand is hard to pin down (Deci & Ryan, 2000, pp. 230-231), the *Hierarchical Model of Motivation* provides a more structured example with a capable vocabulary (Vallerand & Ratelle, 2002).

Conclusion

The thesis was set out to examine how players behave in under frustrating segments in video games. Instead of an experimental setup, I decided to take a qualitative approach, because experiments observing motivation and free choice can easily skew their own results (Vallerand & Ratelle, 2002, p. 46) and I wanted to focus on how different motivational structures manifest in real life scenarios.

I presented two of the currently leading theories in motivation (Deci & Ryan, 1985) and affective experience (Csikszentmihalyi, 1991). I used the former as a model to understand the motivational structures and the latter to learn about the interplay of the attentional system and different affective states.

I conducted several semi-structured interviews that were aimed to assess players' motivation both when engaging in gameplay and when facing highly challenging and frustrating scenarios. After showing how I analysed and structured the data based on the template analysis method (King, 2012), I presented my interpretations. The underlying themes of the individual cases pointed into the direction of the same underlying process.

This process described how the players, who are *intrinsically* interested in the game, change their situational motivation from intrinsic to *extrinsic* under the pressure of a frustrating scenario and how this process helps them to overcome such situations.

I presented my findings in the form of a prototype model that can be the subject of future research. In the closing word of my thesis, I would like to expand on future research possibilities for this model.

Future Research

Based on the main limitation being the very specific sample, the model should be tested on an audience that is more "casual". It is likely that the gamers who participated in the research are more persistent than others are. Moreover, it is not clear how much reinforcement needed to establish a level of self-determination in the *contextua*l level that affords frustrating segments without the player simply quitting the game.

Although Vallerand's model has three levels (Vallerand & Ratelle, 2002), the current study only examined the *contextual* and *situational* levels. Future research could take in a direction where the players *global* or personality level motivation are taken into the equation. Even though the individual player profiles showed similarities with existing player typologies (Bartle, 2004; Yee, 2005), it is highly likely that *global motivational structures* are behind the connection. However, the current data is not enough to make these large-scale predictions.

Setups that are more experimental could assess if there is a difference between different affective states and that manifest during gameplay and their connection to the reinforcement of *situational* and *contextual intrinsic motivation*. Although the current data is not suggesting any large difference, since different affective states have different arousal levels (Mandryk & Atkins, 2007, p. 342, Fig. 15.) they could interact differently with the attentional system.

Lastly, the model showed how the motivational system of *Self-Determination Theory* (and the *Hierarchical Model of Motivation*) could be understood in terms of attentional and informational processing. Since these frameworks are built to recognise changes in the system (Cowley et al. 2008), it could be valuable for the field of video game research to have a model that provides a clear vocabulary that can complement the fast paste and complex environment of video games, and help

comprehend the players' subjective experience and intentions. Further research should focus on the effects of the attentional system on *situational* and *contextual* motivations.

In the future, I would like to see the model evolve into a framework that handles the whole process of video game play from the entry point through micro shifts in motivation to macro changes in affect, intention, and emotion to the eventual exit and re-entry points, based on the same principles.

REFERENCES

Bibliography

Abuhamdeh, Sami, Mihaly Csikszentmihalyi, and Baland Jalal. "Enjoying the possibility of defeat: Outcome uncertainty, suspense, and intrinsic motivation." *Motivation and Emotion* 39.1 (2015): 1-10.

Bandura, Albert, and Dale H. Schunk. "Cultivating competence, self-efficacy, and intrinsic interest through proximal self-motivation." Journal of personality and social psychology 41.3 (1981): 586-600.

Bartle, Richard A. Designing virtual worlds. New Riders, 2004.

Bartle, Richard A. "Chapter 1: Introduction to Virtual Worlds." Designing virtual worlds. New Riders, (2004a): 1-80.

Bartle, Richard A. "Chapter 3: Players." Designing virtual worlds. New Riders, (2004b): 125-246.

Bartle, Richard A. "2 Design Principles." Multiplayer: The Social Aspects of Digital Gaming 3 (2013): 10.

Bessiere, Katie, et al. "A model for computer frustration: The role of instrumental and dispositional factors on incident, session, and post-session frustration and mood." *Computers in human behavior* 22.6 (2006): 941-961.

Brooks, Joanna, and Nigel King. "Doing Template Analysis: Evaluating an End of Life Care Service." *Sage Research Methods Cases* (2014).

Bryman, Alan. *Social research methods*. Oxford university press, (2012).

Bryman, Alan. "Chapter 2: Social research strategies" *Social research methods*. Oxford university press, (2012a): 18-43.

Bryman, Alan. "Chapter 3: Research Design" *Social research methods*. Oxford university press, (2012b): 44-78.

Bryman, Alan. "Chapter 8: Sampling" *Social research methods*. Oxford university press, (2012c): 183-207.

Bryman, Alan. "Chapter 17: The nature of qualitative research" *Social research methods*. Oxford university press, (2012d): 379-414.

Bryman, Alan. "Chapter 18: Sampling in qualitative research" *Social research methods*. Oxford university press, (2012e): 415-429.

Bryman, Alan. "Chapter 20: Interviewing in qualitative research" *Social research methods*. Oxford university press, (2012f): 468-499.

Bryman, Alan. "Chapter 21: Focus groups" *Social research methods*. Oxford university press, (2012g): 500-520.

Consalvo, Mia. "There is no magic circle." *Games and culture* (2009).

Consalvo, Mia, and Nathan Dutton. "Game analysis: Developing a methodological toolkit for the qualitative study of games." *Game Studies* 6.1 (2006): 1-17.

Cameron, Judy, and W. David Pierce. "The debate about rewards and intrinsic motivation: Protests and accusations do not alter the results." Review of Educational Research 66.1 (1996): 39-51.

Cameron, Judy, and W. David Pierce. "Reinforcement, reward, and intrinsic motivation: A meta-analysis." Review of Educational research 64.3 (1994): 363-423.

Cowley et al., Ben, et al. "Toward an understanding of flow in video games." Computers in Entertainment (CIE) 6.2 (2008): 20.

Csikszentmihalyi, Mihaly, and Judith LeFevre. "Optimal experience in work and leisure." Journal of personality and social psychology 56.5 (1989): 815.

Csikszentmihalyi, Mihaly. *Flow: The psychology of optimal experience.* Vol. 41. New York: HarperPerennial, 1991.

Csikszentmihalyi, Mihaly. *Finding flow: The psychology of engagement with everyday life*. Basic Books, (1997).

Csikszentmihalyi, Mihaly. “The Content of Experience.” *Finding flow: The psychology of engagement with everyday life*. Basic Books, (1997a): 17-34.

Deci, Edward L. "Effects of externally mediated rewards on intrinsic motivation." Journal of personality and Social Psychology 18.1 (1971): 105.

Deci, Edward L., and Richard M. Ryan. Intrinsic motivation and self-determination in human behavior. Springer Science & Business Media, 1985.

Deci, Edward L., Richard Koestner, and Richard M. Ryan. "A meta-analytic review of experiments examining the effects of extrinsic rewards on intrinsic motivation." Psychological bulletin 125.6 (1999): 627-668.

Deci, Edward L., Richard Koestner, and Richard M. Ryan. "Extrinsic rewards and intrinsic motivation in education: Reconsidered once again." Review of educational research 71.1 (2001): 1-27.

Deci, Edward L., and Richard M. Ryan. "The" what" and" why" of goal pursuits: Human needs and the self-determination of behavior." Psychological inquiry 11.4 (2000): 227-268.

Deci, Edward L., and Richard M. Ryan. Handbook of self-determination research. University Rochester Press, 2002.

Dill, Karen E., and Jody C. Dill. "Video game violence: A review of the empirical literature." *Aggression and violent behavior* 3.4 (1999): 407-428.

ESA (Entertainment Software Association), *2015 Essential Facts About the Computer and Video Game Industry* (2015): 20.

Grodal, Torben. "Video games and the pleasures of control." Media entertainment: The psychology of its appeal (2000): 197-213.

Hull, Clark. "Principles of behavior." (1943).

Jones, Marshall G. "Creating Electronic Learning Environments: Games, Flow, and the User Interface." (1998).

King, Nigel. "Doing template analysis." Qualitative organizational research: Core methods and current challenges (2012): 426-450.

Kowal, John, and Michelle S. Fortier. "Motivational determinants of flow: Contributions from self-determination theory." The Journal of Social Psychology 139.3 (1999): 355-368.

Lafrenière, Marc-André K., Jérémie Verner-Filion, and Robert J. Vallerand. "Development and validation of the Gaming Motivation Scale (GAMS)." Personality and Individual Differences 53.7 (2012): 827-831.

Liao, Li-Fen. "A flow theory perspective on learner motivation and behavior in distance education." Distance Education 27.1 (2006): 45-62.

Mandryk, Regan L., and M. Stella Atkins. "A fuzzy physiological approach for continuously modeling emotion during interaction with play technologies."*International journal of human-computer studies* 65.4 (2007): 329-347.

Nakamura, Jeanne, and Mihaly Csikszentmihalyi. "The concept of flow." Handbook of positive psychology (2002): 89-105.

Nakamura, Jeanne, and Mihaly Csikszentmihalyi. "Flow theory and research." Handbook of positive psychology (2009): 195-206.

Przybylski, Andrew K., C. Scott Rigby, and Richard M. Ryan. "A motivational model of video game engagement." Review of general psychology 14.2 (2010): 154-166.

Rigby, S. "Player Motivational Analysis: A model for applied research into the motivational dynamics of virtual worlds." motivation research group, University of Rochester, Rochester, NY (2004).

Rigby, Scott, and Richard Ryan. "Rethinking carrots: A new method for measuring what players find most rewarding and motivating about your game." *Retrieved December* 3 (2007): 2007.

Rigby, Scott, and Richard M. Ryan. Glued to Games: How Video Games Draw Us In and Hold Us Spellbound. ABC-CLIO, (2011).

Rigby, Scott, and Richard M. Ryan. “Chapter 1: The Emotional Experience of Games Today.” Glued to Games: How Video Games Draw Us In and Hold Us Spellbound. ABC-CLIO, (2011a): 1-14.

Rigby, Scott, and Richard M. Ryan. “Chapter 2: Games and the Need for Competence.” Glued to Games: How Video Games Draw Us In and Hold Us Spellbound. ABC-CLIO, (2011b): 15-38.

Rigby, Scott, and Richard M. Ryan. “Chapter 3: Games and the Need for Autonomy.” Glued to Games: How Video Games Draw Us In and Hold Us Spellbound. ABC-CLIO, (2011c): 39-64.

Rigby, Scott, and Richard M. Ryan. “Chapter 4: Games and the Need for Relatedness.” Glued to Games: How Video Games Draw Us In and Hold Us Spellbound. ABC-CLIO, (2011d): 65-80.

Rigby, Scott, and Richard M. Ryan. “Chapter 5: Immersion and Presence.” Glued to Games: How Video Games Draw Us In and Hold Us Spellbound. ABC-CLIO, (2011e): 81-96.

Rigby, Scott, and Richard M. Ryan. “Chapter 6: Dangerous Waters: The Addictive Undertow of Games.” Glued to Games: How Video Games Draw Us In and Hold Us Spellbound. ABC-CLIO, (2011f): 97-118.

Ryan, Richard M., and James P. Connell. "Perceived locus of causality and internalization: examining reasons for acting in two domains." Journal of personality and social psychology 57.5 (1989): 749-761.

Ryan, Richard M., and Edward L. Deci. "When paradigms clash: Comments on Cameron and Pierce's claim that rewards do not undermine intrinsic motivation." Review of Educational Research 66.1 (1996): 33-38.

Ryan, Richard M., and Edward L. Deci. "Intrinsic and extrinsic motivations: Classic definitions and new directions." Contemporary educational psychology 25.1 (2000a): 54-67.

Ryan, Richard M., and Edward L. Deci. "The darker and brighter sides of human existence: Basic psychological needs as a unifying concept." Psychological Inquiry 11.4 (2000b): 319-338.

Ryan, Richard M., and Edward L. Deci. "On happiness and human potentials: A review of research on hedonic and eudaimonic well-being." Annual review of psychology 52.1 (2001): 141-166.

Ryan, Richard M., C. Scott Rigby, and Andrew Przybylski. "The motivational pull of video games: A self-determination theory approach." Motivation and emotion 30.4 (2006): 344-360.

Salen, Katie, and Eric Zimmerman. *Rules of play: Game design fundamentals*. MIT press, (2004).

Salen, Katie, and Eric Zimmerman. "Chapter 24: Games as the Play of Pleasure." Rules of play: Game design fundamentals. MIT press, (2004a): 325-358.

Salen, Katie, and Eric Zimmerman. "Chapter 24: Games as the Play of Pleasure." Rules of play: Game design fundamentals. MIT press, (2004b): 325-358.

Salen, Katie, and Eric Zimmerman. "Chapter 28: Games as Social Play." Rules of play: Game design fundamentals. MIT press, (2004c): 453-482.

Sherry, John L. "Flow and media enjoyment." Communication Theory 14.4 (2004): 328-347.

Skinner, Burrhus Frederic. *Science and human behavior*. Simon and Schuster, 1953.

Spil Games, *2013 State of Online Gaming Report*, Spil Games (2015): 17.

Sweetser, Penelope, and Peta Wyeth. "GameFlow: a model for evaluating player enjoyment in games." Computers in Entertainment (CIE) 3.3 (2005): 3-3.

Yee, Nicholas. "Motivations of play in MMORPGs." (2005): 1-8.

Vallerand, Robert J. "Deci and Ryan's self-determination theory: A view from the hierarchical model of intrinsic and extrinsic motivation." Psychological Inquiry (2000): 312-318.

Vallerand, Robert J., and Catherine F. Ratelle. "Intrinsic and extrinsic motivation: A hierarchical model." Handbook of self-determination research 128 (2002): 37-63.

Vallerand, R. J., Blanchard, C., Mageau, G. A., Koestner, R., Ratelle, C., Léonard, M., Gagné, M., & Marsolais, J. Les Passions de L'Âme: On obsessive and harmonious passion. Journal of Personality and Social Psychology, 85 (4), (2003): 756-767.

Vallerand, Robert J., Luc G. Pelletier, and Richard Koestner. "Reflections on self-determination theory." Canadian Psychology/Psychologie Canadienne 49.3 (2008): 257.

Vallerand, Robert J., and Daniel R. Lalande. "The MPIC Model: The perspective of the hierarchical model of intrinsic and extrinsic motivation."*Psychological Inquiry* 22.1 (2011): 45-51.

Games Mentioned

In text

Call of Duty: Advanced Warfare. Sledgehammer Games. Activison (2014)

Dark Souls 2. FromSoftware. FromSoftware (2014)

Rogue. Michael Toy, Glenn Wichman, Ken Arnold. (1980)

Sims. Maxis. Electronic Arts (2000)

Spore. Maxis. Electronic Arts (2008)

World of Warcraft. Blizzard Entertainment. Blizzard Entertainment (2004)

In the transcripts

Anno 2205. Ubisoft Bule. Ubisoft (2015)

Assassin's Creed. Ubisoft. Ubisoft (2007)

Assassin's Creed: Black Flag. Ubisoft Montreal. Ubisoft (2013)

Battlefield 4. EA Digital Illusions . Electronic Arts (2013)

Call of Duty. Infinity Ward. Activison (2003)

Command & Conquer 3. Infinity Ward. Electronic Arts (2007)

Dark Souls 1. FromSoftware. FromSoftware (2011)

Dark Souls 2. FromSoftware. FromSoftware (2014)

Deus Ex. Ion Storm. Eidos Interactive (2000)

Dishonored. Arkane Studios. Bethesda Softworks (2012)

Don't Starve. Klei Entertainment. Klei Entertainment (2013)

Grand Theft Auto V. Rockstar North . Rockstar Games (2013)

Heroes of Might and Magic III. New World Computing. The 3DO Company (1999)

Heroes of the Storm. Blizzard Entertainment. Blizzard Entertainment (2015)

League of Legends. Riot Games. Riot Games (2009)

Limbo. Playdead. Microsoft Studios (2010)

Lineage 2. NCSOFT. NCSOFT (2003)

Mass Effect 1. Bioware. Microsoft Game Studios (2007)

Mass Effect 3. Bioware. Electronic Arts (2012)

Neverhood. The Neverhood, Inc. DreamWorks Interactive (1996)

Planetary Annihilation. Uber Entertainment. Uber Entertainment (2014)

Prince of Persia. Ubisoft Montreal. Ubisoft (2003)

The Elder Scrolls V: Skyrim. Bethesda Game Studios. Bethesda Softworks (2011)

Starcraft. Blizzard Entertainment. Blizzard Entertainment (1998)

Trine. Frozenbyte. Nobilis (2009)

Witcher 2. CD Projekt RED. CD Projekt RED (2011)

The Witcher 3: Wild Hunt. CD Projekt RED. CD Projekt RED (2015)

World of Tanks. Wargaming Minsk. Wargaming (2010)

World of Warcraft. Blizzard Entertainment. Blizzard Entertainment (2004)

APPENDIX

ONLINE APPENDIX

Unfortunately, due to the sheer size of the spreadsheets that contain most of the coded data, I am unable to enclose them as part of the thesis.

I decided to open a public folder for all the materials that were used in the writing of this research, including interview templates, transcripts, coding sheets, different iterations of the template and a high-resolution image of the completed model.

The full text of the thesis is also available digitally at the address below.

https://www.dropbox.com/sh/hdn6289otv690kr/AADckrr8rXHahcfBr1xlhUEUa?dl=0