

Everything's Meta: Exploring the Desire to seek Challenges beyond a Game's Design

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Abstract

This work explores the motivations of individuals that engage in challenge runs involving the Dark Souls trilogy and partake in online communities built around them. A challenge run is a popular metagame in which players build on a game's mechanical framework and create new approaches to playing by challenging themselves to reach goals within the game while voluntarily restricting access to key mechanics like levelling up. To investigate how common motivators for play carry over to metagames, challenge runners' motivations were studied through the lenses of Self-Determination, Hard Fun and Fiero, Flow and Social Cognitive Theory. This study's findings are applicable to game development, demonstrating how games can be designed with autonomy and competence in mind to facilitate prolonged engagement and relevance.

Ten semi-structured interviews were conducted with casual and elite challenge runners that participate in relevant communities and analyzed through open coding followed by axial coding. Participants appear mainly motivated by a desire to experience triumph in a game that ceased to facilitate Fiero as decreasing effort and frustration preceded in-game success after long-term engagement. Challenge runs allow for strategizing and growth of knowledge and skill, satisfying autonomy and competence needs. Participants report experiencing Flow when challenge and skill are balanced as well as boredom and anxiety when one outweighed the other. From a social perspective, motivation to challenge run was built through observation and imitation of modelled behavior, reinforced by encouragement and assistance received from peers. Lastly, external motivators are relevant to highly skilled players.

This study argues that players creatively appropriate games to satisfy their basic needs, facilitate immersion and moments of triumph and participate in communities that foster mutual support and deep engagement with the game.

Keywords: video game motivations, metagame, appropriation, self-determination, flow, hard fun, social-cognitive, dark souls.

Introduction

When engaging with games, players interact with the game's design in unique ways that are not always intended by the designers. Actions like this disrupt its original design by bringing outside factors and decisions into the gameplay (Boluk & LeMieux, 2017). This phenomenon is popularly known as a metagame and applies to both digital and non-digital games. The player uses a game's design, the rules or mechanics, as a foundation to create new ways to play the game, using outside elements "including everything from player attitudes and play styles to social reputations and social contexts" (Salen Tekinbaş & Zimmerman, 2003, p.481). As such, metagames of digital games can range from a simple passing of the controller to a friend upon death or game-related drinking games to sophisticated metagames like speedruns, in which players compete to finish a game as fast as possible (Boluk & LeMieux, 2017).

Metagamers appear to interact with games in a way that differs from non-meta gaming, deviating from the game's design and transforming the game into something of their own. Considering this, it is interesting to explore the motivations that drive players to engage in metagames. Motivations to engage in non-meta play are extensively researched from various theoretical perspectives, indicating that videogames are played for a variety of reasons. These include escapism, social interactions, immersion, enjoyment, combating boredom, creativity, identification as well as goal-oriented motivations (Cheah et al., 2022; Holl et al., 2024). However, as metagames are unique and player-created forms of play, it should be investigated how literature covering motivations for non-meta play may can explain motivations for metagames. This interaction with and subversion of the game's

design by the player is unique to metagames and should be studied as a unique phenomenon accordingly.

To explore this phenomenon, it is helpful to examine a popular example within the metagaming scene. This study will thus focus on such a popular example: the challenge run. During a challenge run, the player restricts their access to one or more mechanics of their choice or limits access to items. To illustrate, to create a challenge run, a player can choose to play a game while limiting themselves to only one of many weapon types that are available (TheBacklogs, 2023). These self-imposed rules change the gameplay experience to different extents, depending on the degree to which these restrict the player, oftentimes drastically increasing the difficulty.

Such challenge runs can be found in games of the Dark Souls trilogy (FromSoftware, 2011, 2014, 2016), which is a series of Action-RPGs that emphasize combat and challenging gameplay, while giving the player a variety of playstyles to choose from. Active communities of challenge runners have formed around these games, gathering in online spaces such as Reddit and Discord (e.g. Reddit.com, n.d.). Further, videos of challenge runs are shared to YouTube by popular content creators (TheBacklogs, 2024). Apart from this, collaborative efforts were made to create resources that grant the player access to detailed game-related knowledge, such as Fextralife's "DarkSouls-Wiki" (FextraLife, n.d.) which aims to inform readers about all aspects of the game. Apart from this, popular YouTube tutorials (ymfah, 2018) and online guides (WowZaPowa, 2016) exist to demonstrate and explain the execution of strategies.

Within the context of the Dark Souls trilogy and its challenge running community, this study is going to take a qualitative approach to explore the motivations that promote the engagement in metagames, drawing from basic needs of Self-Determination Theory together

with Hard Fun and Fiero as well as Flow. To examine the appeal of participating in a challenge running community, Social Cognitive Theory will be used. In doing so, this study aims to understand what motivates individuals to go creatively design difficult challenges for themselves and push themselves to persevere and overcome them while building connections in shared online spaces.

The main research question that will be explored throughout this work is shown below:

- What motivates players of the Dark Souls trilogy to engage in a metagame like challenge runs?

Theoretical Framework

This section seeks to provide a comprehensive theoretical understanding of Dark Souls challenge runs as a metagame. First, metagames, as discussed in the context of this study, will be defined and applied to challenge runs. To establish a basic understanding of Dark Souls and challenge runs, the core principles will be shortly elaborated on. Then, the role of appropriation in the discussion of metagames will be discussed. Afterwards, popular theories on motivations to play digital games will be presented and critically examined regarding their applicability to motivations to engage in challenge running. In the process of this, literature covering Self-Determination Theory (Deci & Ryan, 1985), Flow (Csikszentmihalyi, 1990), Fiero (Lazzaro, 2004) and Social Cognitive Theory (Bandura, 1986) will be discussed.

Defining Metagames

This study leans on the definition of metagames laid out by Boluk and LeMieux (2017). In their definition, metagames are broadly described as practices, strategies and cultures that go beyond a game's mechanics. It argues the way a player interacts with any game is not limited by code but guided by the interpretations of the game, decisions made by the player and

cultures such as communities that form around the game. These metagames can be intentionally carried out, for example through speedruns and strategizing, individually and within a community, or occur without conscious effort through any decisions made by the player during play. Being this open, the definition claims that no play could be done without metagames, as processes that go beyond the game's code and mechanics could not be avoided. As such, Boluk and LeMieux consider metagames an integral part of all play.

In the context of this definition, challenge runs stand as a type of metagame that is intentionally carried out by the player through the decision to self-impose rules that, while facilitated by the mechanical framework, are not present in the game's design but instead exist as a player-created extension of it. Before or during the challenge run, the player may also encounter and engage in cultural contexts around the challenge run, for example by making use of community-created resources to strategize and participating in community discussion.

Appropriation

Following Boluk and LeMieux' definition, challenge runs as a metagame appear related to technology appropriation. When appropriating, individuals integrate technologies into their daily lives and, in doing so, deviate from the initial intention of the technologies' designers (Carroll et al., 2003). This process can be found in metagaming, as players stray from the developer's original intention manifested in the game as-designed and creatively change the way they interact with a game, turning it from a technology-as-designed into a technology-in-use. Given the context and interest of this study, it is useful to take this perspective on technology-usage into account.

In a study on game appropriation in the context of MMORPGs, Herodotou et al. (2012) found that game-specific design characteristics, the individual player and social

context surrounding a specific game need to be considered, to come to a comprehensive understanding of game appropriation. To elaborate, while a game's structure as-designed can be appropriated, the design of a game stands as a framework for gameplay and the ways it can and cannot be interacted with. Depending on the specific design, a game may afford differing degrees of freedom for appropriation. Especially in MMORPGs, game appropriation is socially negotiated through collaborative efforts within and outside the game. Still, the appropriation of a game depends on the individual and their distinct psychological characteristics, needs, and associated video game preferences.

It appears that understanding a game's design, the individual player and social interactions within and surrounding the game is crucial to understanding game appropriation motivations and, thus, metagame motivations. To consider them, the remainder of this framework will grant insight into each of these three levels.

Game-specific Context - The Dark Souls Trilogy

To offer insight on the game-specific context of video game-appropriation, the Dark Souls trilogy (FromSoftware, 2011, 2014, 2016) will be shortly discussed in the following. The Dark-Souls trilogy is a series of single-player, dark-fantasy, Action-RPG-games in which the player explores the oppressive environments of fallen kingdoms and engages with its denizens. These can either be friendly, helpful NPCs that can be interacted and traded with or hostile creatures that must be overcome to progress the game. The game puts emphasis on combat, giving the player access to a plethora of mechanics, including attacking with various weapons, dodging attacks, parrying and counterattacking, levelling up their character. With strong boss-enemies situated at the end of areas testing the player's skill and blocking progression until they are overcome, boss fights are a core element of Dark Souls games. Although not prominent, Dark Souls games feature online multiplayer mechanics through which players can be summoned into another player's world for cooperation or invade other

players' worlds and fight them. Further, the player is afforded freedom to navigate the game world as it is split up into several areas of which most are interconnected through shortcuts, which can either be openly visible to the player or hidden from them.

Dark Souls Metagames– Challenge Running

There is a variety of ways to create challenge runs in Dark Souls. To illustrate the activities examined in this study, Dark Souls challenge running will be shortly explained using a popular example: the Soul Level One run or SL1 (e.g. ymfah, 2018). In an SL1, the player chooses the weakest out of all available starting classes and sets out to beat the game without levelling up. Because of this, the player character does not meet the level requirements for most equipment, forcing them to make effective use of the limited tools at their disposal. This restriction also forces the player to navigate late-game areas at an abnormally low level, among others, having lower health than on a usual run, leaving them increasingly more vulnerable to enemies' attacks.

Individual Motivations

Self-Determination

A popular theory to investigate an individual's motivations and needs is Self-Determination (Deci & Ryan, 1985). In general, this theory is used to describe human motivations and differentiates between intrinsic and extrinsic motivation. While intrinsic motivation is aimed at engaging in activities for inherent satisfaction, extrinsic motivation is driven by rewards or pressure.

Self-Determination identifies three basic psychological needs that must be fulfilled to ensure an individual's well-being: autonomy, competence and relatedness. To elaborate, human beings have an inherent desire to be skillful at something (competence) and to be free in their decisions (autonomy) while also having a need to be part of a social setting

(relatedness). The satisfaction of these needs plays a crucial role in the quality of an individual's motivation and engagement in an activity as well as their well-being (Ryan & Deci, 2000). These needs are more likely to be satisfied by intrinsically motivated actions than those that are extrinsically motivated (Deci & Ryan, 2009).

This motivational theory was also oftentimes used to investigate the appeal of video games. In 2006, SDT was first applied to video games (Ryan et al., 2006), introducing the "Player Experience of Need Satisfaction" model (PENS) to assess how games meet the basic needs laid out by SDT. The study found that satisfaction of basic psychological needs is a strong predictor of enjoyment, preference for future play, and in-game immersion. Specifically, the flexibility to choose a playstyle (autonomy), difficulty (competence), and social interactions (relatedness) afforded by a game are decisive predictors of sustained engagement. This pioneer research has sparked a wave of research that uses Self-Determination as a basis to explore motivations for play.

Przybylski et al. (2012) argue for the importance of autonomy and competence stating that players are more engaged in games that allow them to act like a version of themselves that they aspire to be in ways not afforded to them as much outside of the game setting. Johnson et al. (2016) add to this that sustained game play is more strongly associated with the satisfaction of intrinsic motivations than by external motivations like rewards. As Uysal and Yildirim (2016) state, an overreliance on rewards as external motivators risks undermining the player's need for autonomy and consequentially harming engagement.

SDT in Challenge Running. The need for competence may be able to explain some reasons of why challenge runners increase the difficulty of their play. Challenge runners appear to have a particularly high need for competence. These individuals are oftentimes highly skilled at their games, to such an extent that the game as designed may not satisfy their

competence needs any longer. To satisfy their need for competence, challenge runners creatively raise the skill-floor beyond the games' design, by adding self-imposed rules to allow their own competence to grow. However, the competence need may be unable to explain why some players choose to engage in challenges that feature extreme, punishing difficulty and do not promote competence but rather create highly frustrating experiences that are dominated by frequent failure.

The expression of creativity that is afforded by challenge running appears to be related to the need for autonomy as the player imposes their own ideas on a game's design. Challenge-runners deeply explore the variety of options for rules and playstyles offered by the comprehensive mechanical framework of the Dark Souls games. While their activities are facilitated by this mechanical framework, they are not explicitly suggested or promoted within the game but a product of their own agency. However, autonomy does not seem able to explain why some players place highly limiting restrictions on themselves that drastically impair their freedom. Further, players may push themselves to invest significant time into frustrating challenges with high occurrence of failure despite not enjoying it, in turn violating their need for autonomy. Thus, it appears that some motivations to engage in challenge runs cannot be explained through autonomy.

The applicability of relatedness to challenge runs seems to depend on the specific context. As challenge runs are generally performed alone, the need for relatedness is not satisfied by the mere act of challenge running. As such, relatedness may not be relevant for individuals that play alone and do not participate in any community activities. However, as these activities are discussed in online spaces and shared through social media, the social context that metagaming appears to be embedded in promotes satisfaction of relatedness needs. Nevertheless, relatedness is likely least satisfied compared to the previously discussed needs for competence and autonomy.

The above considerations of Self-Determination's applicability to challenge running raise the following question:

- To what extent are the players' needs for competence, autonomy and relatedness relevant to Dark Souls challenge runners' motivations?

High-Skill Play - Flow

The theory of flow, as laid out by Csikszentmihalyi (1990) is a popular theory to explain why individuals are drawn to digital games. Flow is conceived as a state of deep engagement and immersion, which arises when an individual's perceived skill is perfectly balanced with the challenge the game confronts the individual with, along with immediate feedback and defined goals. If this balance is not achieved, boredom may occur in the case of a lack of challenge, while excessive challenge may cause anxiety; flow stands as a middle ground between these extremes (Csikszentmihalyi, 2000).

When experiencing flow, the individual becomes fully immersed in their task. In a state of flow, individuals experience complete absorption in their activity, a loss of self-consciousness and distortions in their perception of time. The performed task becomes inherently satisfying rather than extrinsically rewarding (Csikszentmihalyi, 1990, 2000). Flow is accompanied by feelings of competence and confidence (Moneta & Csikszentmihalyi, 1996) as well as clarity, purpose and effortless focus (Engeser & Rheinberg, 2008). Further, participants in a study performed by Rheinberg and Engeser (2018) reported to have felt both stimulated and relaxed simultaneously while experiencing flow. These reports are supported by neural evidence as Yu et al. (2023) link flow to heightened attention and cognitive control. When engaging in competition, sensations of heightened excitement and concentration may occur, especially when the competition is highly yet still manageably challenging (Sepehr & Head, 2018).

Flow may be particularly relevant for high skill play as Moneta and Csikszentmihalyi (1996) emphasize that skill and challenge must be high to sustain flow. Further Engeser and Rheinberg (2008) point out that flow can occur in more intense ways if it is paired with personality traits such as absorption. This state is driven by intrinsic motivation; flow may be disrupted by extrinsic rewards such as scores or trophies (Rheinberg & Engeser, 2018). Flow is also relevant to competitive gaming, as Sepehr and Head (2018) argue that well-structured competition in which success appears to be realistically attainable can amplify feelings of flow and satisfaction.

Flow in Challenge Running. From a perspective of Flow, challenge runners may have a desire for immersive experiences. They may be underwhelmed by the (perceived) challenge the games present them with compared to their (perceived) skill and seek to re-establish a balance between these factors to facilitate Flow. However, moments of failure, tense situations of pressure or repetitious phases in which progress is absent that occur in challenge runs may break the immersion and instead introduce frustration, anxiety and boredom. Considering this, Flow may be able to explain motivations to seek immersion by balancing skill and difficulty but not moments in which Flow does not occur or is broken.

The considerations of this section bring up the following sub-question:

- To what extent is Flow relevant to Dark Souls challenge runners' motivations?

Hard Fun and Fiero

Some players specifically seek out games that challenge them. In her research on the role of emotion in videogames, Lazzaro (2004) coined the term “*hard fun*”, which describes a type of enjoyment of video games that allow the player to tackle challenges with a variety of strategies. Players that seek out hard fun may want to play to test their skills, beat a game, have more than one objective and be required to strategize rather than relying on luck. Games

that focus on hard fun “balance game difficulty with player skill through levels, player progress, or player controls” (Lazzaro, 2004).

When engaging with hard fun, players experience through several emotions. When facing opposition to reaching their goal or losing in a game, players may go through anger. If a task is repetitious or tedious, players may lose interest in playing and become bored. If the challenge is difficult enough, players may experience emotions of personal triumph, or *Fiero*, once adversity is overcome. *Fiero* is an intense positive emotion that is present even after the play session has ended. A key condition to experiencing *Fiero* is effort that is put in in order to reach a goal or overcome an obstacle. While not necessary for *Fiero* to occur, it is often preceded by feelings of frustration and anger.

Hard Fun and Fiero in Challenge Running. *Fiero* appears to result from feats of skill achieved through competence, as it is associated with hard fun and requires effort to be experienced. As challenge runners appear to have a high need for competence, they are likely to enjoy Hard Fun. As discussed earlier, due to the players’ skill level and experience, the Dark Souls games may fail to satisfy the competence needs of challenge runners. This may create boredom and hinder *Fiero* from occurring as no struggle has to be experienced before achieving an in-game goal. Increasing the challenge may demand the players to again put in effort and persevere through struggle to reach the same goals. This may facilitate *Fiero* again. *Fiero* may also be the reason why players engage in frustrating and punishing challenge. However, these triumphs are a small part of the challenge running experience and often preceded by moments of frustration or boredom. While the reward of *Fiero* may be a motivator to accept frustration and boredom, the theory does not explain how the player copes with these emotions and enables themselves to tolerate them in non-triumphant moments.

The literature discussed in this section raises the following research question:

- To what extent are Hard Fun and Fiero relevant to Dark Souls challenge runners' motivations?

Social Motivations

Social Cognitive Theory

Social cognitive theory (SCT) explains how humans are able to learn behaviors and motivate themselves to perform them through observation, rejecting notions of behaviorism and instead places emphasis on human agency. The theory proposes that human behavior is caused by transactional interactions between personal, environmental and behavioral factors. Further, SCT argues that individuals can learn through symbolization, self-regulation, self-reflection and vicarious learning. For a behavior to be imitated, an individual needs to observe and retain it, be able to physically reproduce it and be motivated. The stage of motivation is highly influenced by the individual's perception of their capabilities (self-efficacy) and is mediated by outside reinforcements (Krcmar, 2020).

SCT has found applications in research on gaming. Lee (2015) found that interpersonal influences such as social modeling and perceived norms significantly impact an individual's game choice. Apart from this, Lee and LaRose (2007) argue that game usage behavior is influenced by expectations of enjoyment, reinforcement from the environment and personal beliefs such as self-efficacy. Davis and Lang (2012) suggest the role that a player's level of self-efficacy predicts engagement and consumer behavior. In this relationship, a game's genre acts as moderating variable. For example, simulation games were found to be strongly related to self-efficacy, presumably because of gameplay mechanics, high interactivity and defined goals. Inversely, roleplaying games were found to

have little relation to self-efficacy, which was speculated to be caused by lack of well-defined goals.

SCT in Challenge Running. Beyond activities of individual players, challenge running is embedded within a social context, be it popular social media content (e.g. (TheBacklogs, 2024) or online discussion. It is possible that players imitate behaviors they see as these are related to a game they already enjoy, reinforced by their environment as others seem to enjoy and discuss them. Further, they may have sufficient self-efficacy to try out challenge running themselves if they have prior experiences of success with non-meta playthroughs of a Dark Souls game to build confidence from. Considering this, SCT appears to be capable of explaining the social motivations to begin engaging in challenge running.

Social media communities may be particularly facilitating of vicarious learning and social modelling as players can not only observe other players' behavior but have direct contact to them to discuss challenge runs and establish bonds with each other. This may also facilitate the environmental reinforcement needed to develop self-efficacy and motivation to start challenge running as other, more experienced players can offer advice and encouragement to less experienced peers. Further, social norms created in these communities around challenge runs may shape the way new players approach challenge running.

Despite the above, SCT may not apply to all challenge runners. It must be noted that not all players actively participate in online communities. Therefore, the social motivations discussed here cannot explain the motivations of challenge runners that are not part of shared online spaces. Further, some players may choose to reject community norms and approach challenge runs on their own terms, which cannot be explained through vicarious learning and social modelling.

SCT's elements of social modelling and self-efficacy raise the following sub-question:

- To what extent are social modelling and self-efficacy relevant to Dark Souls challenge runners' motivations?

The literature covered in this framework has provided an overview of motivators to play video games and critically discussed their applicability to challenge running. A full collection of the research question and the sub-questions that were concluded from literature is displayed below:

- What motivates players of the Dark Souls trilogy to engage in a metagame like challenge runs?
 - To what extent are the players' needs for competence, autonomy and relatedness relevant to Dark Souls challenge runners' motivations?
 - To what extent is Flow relevant to Dark Souls challenge runners' motivations?
 - To what extent are Hard Fun and Fiero relevant to Dark Souls challenge runners' motivations?
 - To what extent are social modelling and self-efficacy relevant to Dark Souls challenge runners' motivations?

Methods

Design

This study is interested in the intrinsic motivations that players have when choosing to engage in several metagames and the way they experience the social contexts connected to these metagames. To account for the subjective nature of motivations, a qualitative approach was taken. Specifically, participants were interviewed in a semi-structured format to allow for spontaneity and the exploration of unexpected responses while keeping a shared framework

between all interviews. All interviews were conducted in English, audio-recorded and later transcribed for data analysis.

The Dark Souls trilogy was chosen as a case study for three reasons. Firstly, the games design seems highly suitable for metagames like challenge runs, as the level of inherent difficulty, mechanical complexity and freedom granted to the player allow for the creation of diverse, meaningful player-created restrictions and challenges as well as strategies to overcome them. Secondly, the games have an active community of challenge runners that organizes in various online spaces. This includes, among others, reddit forums, discord servers and popular YouTube channels that put out content dedicated solely to metagames involving Dark Souls. Thirdly, the game series was chosen because of high personal familiarity with the subject matter. I have extensively played Dark Souls for three years. In this time, I completed several challenge runs, familiarized myself with the game's mechanics, consumed a high amount of content on challenge runs within the game. This equips me with an understanding of the game's mechanical intricacies that may be discussed in the context of an interview on Dark Souls challenge runs. This knowledge allows me to interact with potential interviewees as an in-group member and ultimately conduct interviews with a deeper basis of background knowledge than an interviewer that is unfamiliar with the game series could.

It should be noted that not all aspects of metagames could be covered in this study. Due to high variety, there could be no nuanced distinction between all kinds of challenge-run categories. Further, while individuals that post their challenge runs on social media platforms such as YouTube were eligible for participation, full-time streamers and YouTubers were not invited to participate. This decision was made because these players may not solely view metagames as a hobby that brings personal enjoyment but engage in them as part of their job as an entertainer and thus have monetary interests in their (publicized) activities. These

monetary interests and the importance of audience engagement with their content puts them into a unique position that is hardly comparable to other runners that do not have the same standing. As such, public figures that engage in and create content around metagames like challenge runs may have unique motivations that should be studied separately. By excluding them, a higher focus can be put on a more common context of challenge running, which may be more applicable to all challenge runners.

Participants

A total of 10 interviews with a duration of about 45 to 60 minutes were conducted with participants involved in metagames in the context of the Dark Souls trilogy, specifically speedruns and challenge runs. These participants were sampled through the means of purposive sampling to ensure all participating individuals would be able to contribute meaningful insights to the study. Thus, the main criterion for eligibility was active involvement within the metagaming community, either past or present. Demographic factors such as age, gender and nationality were not relevant for sampling, however, individuals were required to be aged 16 or older to be eligible. As the interviews were conducted in English, the participants were also required to be able to converse in English.

The sampling procedure made use of discord servers and subreddits that are used by the Dark Souls community. I joined four of them to naturally immerse myself in the community as an in-group member that took part in regular discussion and additionally promote my study with permission of the moderation teams. Eligible members of these servers were invited to participate in the study. The servers included in the sampling process are as follows:

Champion's Respite, r/onebros, TheBacklogs, Firelink Pub.

All of these online spaces are directly or indirectly related to Dark Souls challenge runs. Champion's Respite is a discord server on which challenge runners of various games,

including the Dark Souls series, congregate to share their achievements, discuss strategies and the games in general. r/onebros is a popular subreddit on which challenge runners that engage specifically in SL1-runs across several games made by developer FromSoftware and harbors similar interactions as Champion's Respite. TheBacklogs is a discord server created by a popular figure in general challenge running, including Dark Souls challenge running. The server is a general hang-out place for community members but also features a channel for members to support each other in their activities in FromSoftware games, which includes the discussion of Dark Souls challenge runs. Firelink Pub is a popular space for general discussion of FromSoftware-made games. Members discuss opinions on the games, support each other through advice or online cooperation and discuss lore. While there is no explicit focus on challenge runs, they are frequently discussed.

Procedure

Interested individuals were sent an information sheet and an informed consent form. The information sheet informed about the background and purpose of the study, the participant's right to withdraw, the methods used and the handling of their data as well as the researcher's contact information and asked to consent to participating in an interview by signing the consent form (see Appendix B). Once consent was obtained, an online interview was scheduled on Microsoft Teams. For this purpose, participants who consented to being quoted in the results section were also invited to choose a pseudonym by which they would like to be referred to.

Participants were asked about their connection to challenge running, reasons for their interest, their feelings before and during the challenge run as well as in stand-out moments and their experience of being part of a community. At the end of the interview each participant was given the opportunity to bring up any topic which they find important but has

not been discussed yet during the interview. A comprehensive list of topics discussed in the interviews is displayed in Table 1.

Table 1

Topic List

Topic	Subtopics
Participant's connection to metagames	Specific metagame activities How long have they been playing DS First contact with metagaming Inspiration to start How long have they been engaging in metagames Time spent engaging in Dark Souls metagames
Reasons for interest in metagames	Why make it harder? [<i>Competence/Flow?</i>] Why add those rules? [<i>Autonomy? /Competence?</i>] Why Dark Souls specifically? [<i>Game-specific appeal?</i>]
Before the challenge run	How do they come up with their ideas for runs? [follow what they see others do? Own ideas?] Factors that influence decision to do a challenge run (or not) [Self-efficacy?] Activities before the run itself(?) Strategizing to achieve their goals (or not?) What do they use to come up with these strategies? Practicing before a run (or not?) [<i>if applicable</i>] How does participant feel about these activities? Feelings when starting a run
Experiencing metagaming	The process of a "typical" run General feelings while doing challenge/ speed run Positive moments [Fiero? Flow] Negative moments (frustrations) Time spent on activity What makes this time-investment "worthwhile"?
Being part of a community	The participant's activities in these servers (Perceived) server-culture [motivation through reinforcement in the environment?] Social context the participant's activities are embedded in Popular media Fellow server members

Topic	Subtopics
	The community's role in the participant's enjoyment of metagaming [Motivation through relatedness?]

The topics listed above and specific questions that will be asked during the interview are loosely based on popular theories regarding motivations for non-meta play. However, since it is unclear how well these can explain motivations to engage in metagames, the main basis for the interview was personal knowledge and experiences with the topic. The implementation of this personal knowledge was guided by the research questions, to align the contents of the interview with the aim of the study.

Coding

After the interview, the recordings were transcribed for analysis. This study aims to meet the participant's motivations for metagaming at face value and analyze data without assumptions of existing theories on motivations for play. Thus, the interview transcripts were initially analyzed via open coding (Corbin & Strauss, 1990). This approach allows categories to naturally emerge from the data instead of being forced into a pre-determined set of categories that may not be optimal. This decision was informed by a research gap within the field of gaming motivations regarding metagames.

Upon completion of open coding, axial coding was performed to relate the open codes to each other in consideration of relevant theories discussed in the theoretical framework. This was done to further structure the data, identify overarching themes and look out for connections to theory for discussion of findings later on. To establish connections to theories relevant for discussion later on in this study, literature was drawn from during this step. The

categories and codes that emerged during axial coding as well as example quotes are shown in Table 2.

Table 2

Coding Scheme

Category	Codes	Example Quote
Autonomy	Innovation; pushing the game; self-reliance	<i>"You have the freedom to go in so many directions [...]."</i>
Community	Enjoyment of others; Servers; Social surroundings; Popular media; Community-specific things; Comparison; Competition; Culture; Relatability; Sharing; Toxicity; Entertainer; Curiosity; Anger; Elitism; Imitating	<i>"With community members, I talk about strategies and bosses and stuff like that and just trying to share knowledge with each other so that we can get better with the bosses."</i>
Difficulty	Fairness	<i>If you're doing a quote unquote "challenge run", that's not difficult, what are you even doing?</i>
Emotion	Anxiety; Confidence; Determination; Doubt; Dread; Excitement; Frustration; Panic	<i>"It's a roller coaster of emotion."</i>
Fiero & Accomplishment	Struggle; Shock; Surprise; Satisfaction; Emptiness; Self-efficacy	<i>"It's indescribably amazing to feel. Tens, maybe often hundreds of hours of work, just paying off, in a single moment."</i>
Flow & Immersion	Adventure; Comfort; Enjoyment; Muscle memory; Predictability; Instinct; Mental drain; Experience; Boredom	<i>"It just feels like you're not playing Dark Souls."</i>

Category	Codes	Example Quote
Inspiration	Encouragement; Helping; Self-efficacy; Appreciation; Imitating	<i>"I just kind joined the Dark Souls discord, and I saw the challenge role, [...] and I thought it'd be fun to try it."</i>
Metagame motivation	Killing time; Re-discovery; Ideal self; Safeness; Replayability; Appreciation; Relaxation	<i>"It's just a new way of rediscovering the game or seeing the game, because I'm playing it in a way I've never done before, every time."</i>
Non-meta play	First playthrough; predictability; boredom	<i>"when you play a game enough times, you stop finding it fun[...]."</i>
Recognition	Bragging rights; Proving yourself; Reputation; Uniqueness; YouTuber; Streaming; External reward; Performing; Imitating	<i>"I'm recognized as one of the better players in the community."</i>
Skill	Knowledge; Learning; Mastery; Mechanical complexity; Memorization; Planning; Practice; Solution-oriented thinking; Elite players; Research; Exclusivity; Experience	<i>"The whole point is to show that you're good at it."</i>
Time	Feelings about activity (time); Grind	<i>"Usually, a kill won't last me much longer than 20 hours."</i>

Results

During data analysis, several themes around the participants' motivations to challenge run were identified. In the following, these themes are going to be presented to illustrate participants' relations to non-meta Dark Souls play, their process of moving on towards

challenge runs, factors that drive them to engage in them, their experience of it as well as their feelings about the communities they take part in.

Non-Meta Engagement with the Dark Souls Trilogy

Before engaging in Dark Souls challenge runs, almost all participants, except for one, have engaged in non-meta Dark Souls play over a considerable timespan, often having completed the games multiple times over several years, in some cases amassing several hundreds or thousands of playing time. The appeal of this game series is often attributed to difficulty stemming from mechanical complexity and the lack of clear instructions given by the games.

When talking about her views on Dark Souls, Helena said:

“Compared to a lot of the more modern games that are put out, Dark Souls is a bit less handholding. And it's a little bit more [...] cryptic. It's not easy to know what to do or exactly how the game works. A lot of the time, the more niche mechanics are actually very important.”

Becoming familiar with the games' mechanics and overcoming the challenges that Dark Souls confronts its players with can be deeply satisfying and motivating to sustain engagement, be it with the same game, other games of the trilogy or similar games outside of the series. Niels identified his experience of having beaten Dark Souls for the first time after struggling for “close two months” as a key motivator to engage with games of the same genre:

“It was [a] very triumphant moment, when I saw the end credits and realized I had just finished a really, really hard game. [...] And overall, these games just started to become something I did as a hobby.”

Moving on from Non-Meta Play

As the player's skill increased, the game started to be perceived as less difficult. The game appears to become predictable and lose its appeal. Lucia, for example, is unsure if she would enjoy a return to non-meta play:

"It's just not fun at this point because it's all been memorized. It's always the same. Actually, even if I try to spice things up using weapons, I've never really tried, it's all going to be the same. You can reliably get to the areas without getting hit. You can reliably beat the bosses without getting hit. At that point, there's no real purpose in doing it."

Participants introduced challenge runs to recreate the novelty and unpredictability Dark Souls as-designed could not offer anymore, enabling them to enjoy the games despite their high skill-level and intimate familiarity with them. Vilma noticed that, after subsequent playthroughs, she was unable to find entertainment in Dark Souls until engaging in challenge runs:

"And, really, after a while, when you play a game enough times, you stop finding it fun. So, I started doing challenge runs and challenges to kind of get the fun back into it, because there's only so many times you can watch your favorite show before it starts to get a little stale."

Autonomy. The participants claim that their challenge runs are facilitated by the high degree of freedom that the Dark Souls games afford to them regarding playstyle variety, options of progression, possibilities of navigating the game-world and mechanical depth. These freedoms are perceived as key features for any challenge run in any game to be possible and enjoyable, regardless of game. Lina revealed not enjoying a challenge run of her favorite game because, as-designed, it failed to offer enough freedom to restrict in interesting

ways. She does not see this issue present in Dark Souls, enumerating diverse options of progression and playstyle options that can be creatively used to create unique challenges:

“And in Dark Souls, at least, you get a wide variety of weapons and of spells. And then you can level certain statistics, like boost certain stats as well, to get stronger in certain areas or not. And there's such a different wide variety of gear you can equip, like rings and armor, people beating the game using only your ring damage, for example. So many more possibilities to do weird things and make up rules “

Many challenge runners strive to create a challenging experience that does not offer a clear and immediate solution, similar to the uncertainty that is felt during a first playthrough of a Dark Souls game. Further, they strive to back the sense of achievement felt during their initial playthrough. David described how imposing restrictions can help recreate this experience:

“A large part of it is bringing back the feeling of the first time playthrough where things are really difficult, you don't really know how to approach certain things, how to tackle certain challenges, but then once you overcome it, it gives you that feeling of satisfaction and personal pride.”

In summary, participants have intensively engaged with Dark Souls games before challenge running. The mechanical depth, variety of playstyle options and lack of instructions on key mechanics by the games create an atmosphere of uncertainty that prompts participants to view their experience as difficult. Pushing through this difficulty feels triumphant and rewarding, motivating to keep playing. However, as familiarity and skill level increased on subsequent playthroughs, novelty, difficulty, uncertainty, feelings of triumph, and ultimately motivation to play, started to wane. To sustain engagement, players took advantage of the autonomy granted by the game to create challenges that reintroduce key aspects of the experience.

Individual Motivations

Fiero

The feeling of personal pride that participants sought to recreate, appears to be closely related to Fiero. Participants oftentimes mentioned that overcoming a significant challenge after frustration and panic, in some high-pressure cases, allows them to experience feelings of accomplishment and pride which they name as a key motivator to challenge run. In some cases, participants mention overwhelming and intense, difficult to describe emotions and bodily sensations after completing a challenge. During the interview, Helena looked back on her emotions after completing a particularly difficult and time-consuming challenge:

“It’s indescribably amazing to feel. Tens, maybe often hundreds of hours of work, just paying off, in a single moment. [...] Something that you put months of your life into, and you finally press upload on that YouTube video, and it’s done. And it’s something that I don’t think you can ever understand unless you actually do it yourself.”

Overcoming a challenge can boost a player’s confidence in their own skill and offer validation of it. After defeating a challenging boss-enemy, participants like they could persevere against the even more difficult bosses they would encounter later in the run. Completing a particularly difficult challenge run is treated as a rite of passage that grants the player the right to consider themselves “good” at their respective game. Monica reminisced about feeling as if she ascended her skill to a new level right after completing her first deathless run:

“I guess that one felt like almost a weight off my shoulders to say, because, I always thought I was alright at the games, you know? I mean, any random person could challenge run a game using whatever random weapon. But doing deathless finally made me feel like I could say I’m pretty good at the game, so that felt like a new skill level.”

The intensity of these emotions appears to depend on the time and effort put into a challenge. Participants describe a balance between time, frustration and effort put into a challenge and the rewarding feeling after overcoming it. David explained, for this reason, he sees merit in time-consuming and frustrating challenges despite shorter challenges being available that offer quicker reward:

” things that are challenging and don't require hours on a successful attempt are often more enjoyable to actually actively do, for various reasons, but it's definitely far more satisfying to do the longer thing. [...] whatever you're putting into it is how satisfying and how good the feeling is when you complete it.”

To sum up, the experience of Fiero is a key motivator to challenge run. After overcoming failure, frustration and panic in high-pressure situations, participants are overcome with feelings of pride. These emotions are intensified by time spent on a challenge and effort put into it, enabling runners to accept time-consuming and frustrating challenges. Once a challenge is overcome, participants feel validated in their skill-level and report increased confidence in their capability to master harder challenges.

Competence

The effort participants must put in to experience Fiero is caused by amplified challenge, demanding the player to improve their own competence. Increasing the difficulty through additional challenges motivates many challenge runners to understand and master the mechanics the game on a deeper level than possible without challenge running, amassing comprehensive knowledge, developing strategies and building skill through practice. Some participants describe their challenge runs as a puzzle that requires them to use their knowledge of the game to devise strategies to overcome a difficult obstacle. This process of tackling a difficult-to-solve problem and finding solutions is a major motivator for challenge

running, as Vilma described “challenge runs are like a puzzle. You have all of the pieces in your toolkit. And then it's kind of "okay, how do I make these pieces fit?"”

The execution of strategies normally takes place in high-stakes situations, like boss-fights, adding a layer of difficulty. Lucia explained that a key aspect of her enjoyment of challenge-running is that it pushes her not only to be aware of every possible situation that can occur during a boss fight but also remember and execute a strategy even under pressure:

“It's not only the execution that is difficult, but, while you're under the nerves of being close to getting a kill, you're reminding yourself of everything that needs to be happening, everything that can go on, every possibility that's going to happen with specific bosses, all that kind of stuff.”

Before eventually succeeding in their efforts, runners regularly experience failure. To counter the disappointment and struggle felt in these moments, coping strategies are developed, building a mentality that allows runners to persevere in spite of frequent failure. Helena feels the mentality she built through challenge running is beneficial not only to her playing but real life:

“ I think challenge running has actual application to doing things in real life that are important. It teaches you stuff, and it requires a mentality that I think is beneficial in everyday life, for doing things that are difficult. Challenge running is about not putting limits on yourself and actually understanding if you put in the effort to do stuff, no matter how difficult it is, you can do it.”

Not all participants emphasize conquering a difficult challenge as their main motivation for challenge running. Some find comfort in replaying a game, while keeping it novel and unpredictable, through challenges that force them to approach it from a different, less familiar angle. In this instance, the competence demanded by challenge runs is not the main appeal

but an opportunity to engage with a familiar game while avoiding the boredom that participants claim made them stop playing before challenge running. Challenge runs are not always the sole focus of a player but are sometimes also used to return to a game that offers said comfort, as Lina indicated:

” It always takes me a bit of time to recalibrate and then going back to a sort of baseline sort of comfort game is very nice. And games get boring if you just replay them. So, I think that's also a thing of challenge running to me. It's just a new way of rediscovering the game or seeing the game, because I'm playing it in a way I've never done before, every time.”

Succeeding in a challenge run both requires and provokes mastery of the game. Runners need to apply deep mechanical knowledge to devise strategies to overcome a challenge.

Participants enjoy these “puzzles” as they feel enabled to engage deeply with a game they are passionate about. These strategies must then be applied in high-pressure situations require mental strength, skill and practice to execute properly. Due to the difficulty, attempts to beat a challenge frequently results to failure. Participants are willing to accept this, claiming it helps them to build a mentality of perseverance despite failure. Besides this, replaying a familiar game with an additional challenge can provide comfort and facilitate rediscovery.

Flow

In situations that allow players to display their skill, some claim to be deeply immersed in their playing. In these situations, runners are able to “zone out” and execute strategies without conscious effort, oftentimes while consuming outside stimuli, such as music. This appears to be caused by great knowledge and high degrees of practice. Generally, participants report performing better and reaching their goals faster in these moments of immersion and describe it as a satisfying and rewarding experience. Lucia thinks this state of focus is necessary for sufficient performance in high-difficulty situations:

“I'll play that for a little bit, and I don't think about when I'm fighting the boss. [...] I just think about the music I'm listening to, a podcast or something. Because, if I think about it at all, I'll just forget how to do it completely. It's all instinct at this point. [...] You just kind of learn a boss and then you just turn off your brain and just do it.”

When encountering a highly familiar, repetitive, low-difficulty section of a challenge run, participants report effortlessly navigating it, similar to Lucia's experience showcased above. However, in these instances, it is described as boring and underwhelming. Helena explained she uses external stimuli to keep herself entertained in these sections, only focusing on the game as difficulty increases:

“it can be kind of boring, honestly. That's why I tend to have some other external stimuli, listening to music, talking with friends, watching a video. [...]. I mean, you play through the same part of the game a million times. The magic definitely left. You tend to just come back to reality and lock in for the hardest parts of the run.”

In moments of overwhelming pressure, participants experience themselves on “autopilot”. Recounting a moment in which she was close to completing a difficult run, Helena reported being panicked, saying” [t]hat's separate from the panic kind of autopilot at the end of a run. In that case, you're definitely not bored.”.

During challenge runs, participants experience states of immersion that fall into the Flow spectrum. When a challenge allows the player to display their high skill, neither overwhelming nor underwhelming them, states of Flow are reported in which difficult situations can be navigated effortlessly. Participants highly enjoy this state and claim that it helps them perform at a high level. Further, states of boredom are encountered in which the challenge is perceived as underwhelming and while, navigable without significant effort, are not rewarding. Lastly, if pressure is overwhelming, Flow is broken, and participants experience states of anxiety.

Social Motivations

Community Participation and Belonging

The majority of participants explained that they are part of communities that are dedicated to metagames, such as discord servers and subreddits. The “OneBros” channel of the discord server Dark Souls was explicitly mentioned oftentimes. Helena described it as a “tight knit” subcommunity of the Dark Souls discord server that is characterized by a positive and helpful atmosphere in which challenge runners share and discuss their activities with other runners:

“OneBros is kind of like a server within a server. Imagine it's just like a forum. You know, people just post it constantly. Some people just only talk in OneBros. And so, you get to know those people pretty well, if you hang around in OneBros a lot. [...] Like I said, it is pretty tight knit. You always have the newbies coming in and asking questions and stuff and you always have the people who have been there for years that are gonna help them out.”

Most participants that are part of these communities regard them as a crucial motivator for their enjoyment of challenge runs. Many emphasize they would not be engaging with challenge runs as heavily if they were not a part of a community. A common reason for this sentiment is the ability to share a hobby with others that can relate. This also applies to participants that are not part of the communities as they find joy in sharing their struggles and achievements with others, such as real-life friends that have made similar experiences. Lucia emphasized she is happy to have found the community she is part of as she feels she cannot talk about it to anyone outside of it:

“So, having people to talk to you about it is quite a blessing. Because most people can't really relate. So, this is not something I bring up in my in my real life.”

Apart from individual motivations related to Fiero, Competence and Flow, participants enjoy sharing and discussing their activities with fellow runners in a tight-knit, helpful atmosphere. This motivates them heavily to engage with this hobby. A key reason for this

sentiment is the fellow runners' ability to relate to each other's struggles and achievement, an understanding that appears to be seldomly found outside the community.

Collaboration and (Role-)Modelling

Participants often cited communities such as the "Dark Souls" discord server as an important inspiration to either start with challenge runs or attempt more complex challenges. This is attributed to being able to observe other players' strategies, learn from them and receiving direct encouragement from peers. David revealed that seeing the strategies that other server members used inspired him to do more difficult challenges:

"Like I said, prior to joining this community, a lot of my challenges were much more casual. [...] But once I joined the community and I saw the strategies that they use for it, it sort of came together a lot more clearly. And I realized this is within my potential. I can do this. So, if it wasn't for the community, I don't think I would be doing anything nearly this difficult."

Participants that were not introduced to challenge running through a community name popular media or immediate social surroundings as inspirations. Seeing videos of challenge runs inspired Pit to pick up Dark Souls challenge running without having played the game before or ever having seen a non-meta playthrough of the game:

"Well, I watched the video, I thought 'well, I see people are struggling with it. Looks fun, let's buy it'."

The challenge running community appears to co-operate on a basis of shared knowledge and resources under the common goal of "pushing" the limits of what is possible within the game. In the process of this, some players will take expert roles by uncovering, gathering and sharing comprehensive knowledge on specific issues such as boss-enemies. This creates a

basis of shared knowledge that can be built upon through innovation. Erik likened the process of building on others' discoveries and achievements to scientific work:

"It's like science. You can't discover something new without holding on other people's discoveries. So, firstly, you will have to learn what other people learned and then try to figure something new."

Similarly, some experienced and knowledgeable runners, especially those who are skilled enough to innovate new strategies instead of merely following existing ones, find themselves in a mentor-like position in which other, less experienced and knowledgeable players reach out to them and ask for advice. These individuals see being able to use their expertise to help other runners as a rewarding experience that motivates them to seek and share knowledge.

David finds satisfaction in helping less experienced players and newcomers:

"I love the fact that I'm able to take someone that's never done one of these runs before, and then I can teach them from start to finish how to complete it. It's really satisfying seeing somebody grow and knowing that I was part of that growth."

The community also established an official set of standard runs, with differing degrees of difficulty. These are accompanied by official rulesets and serve as a shared framework for discussion and, as standardized and widely recognized runs, stand as milestones to pursue.

Lucia claimed that relevant challenge running actives can be easily explained and recognized by merely mentioning its title:

"there's community standard runs. [...]. So, when I say, "Grandmaster Artorias" [...] you can instantly know exactly what I'm talking about just because the ruleset was already established for the community, and most people are familiar with them."

Within shared online spaces, communities create and uphold a collaborative atmosphere.

Newer players are given assistance and encouragement and are able to observe more

experienced runners, which raises their self-efficacy to imitate the behaviors they see. The experienced players that mentor less experienced ones take great satisfaction from being able to facilitate their growth. The community appears to unite under the shared goal of pushing the limits of the game, creating a shared basis of discussion with standard runs, players seeking out knowledge of the game and sharing it to others that and trying to implement it.

Rewards and External Validation

Besides intrinsic motivations, participants indicated a need for recognition of their skills and achievements by others. Many participants disclosed actively sharing their gameplay to others. Some of them publish recordings of their gameplay on YouTube and share it to the community in hopes of “getting noticed”, as David put it:

“I would like to grow my channel. And one of the ways I can do that is by engaging in these challenges and spreading. [...] I would like to eventually gain a large following.”

However, sharing gameplay is not always necessarily motivated by a need of recognition.

Vilma explained she appreciates streaming her gameplay as an opportunity to have a shared experience with friends as an additional source of enjoyment on top of the challenge run:

“It’s an adding. A crowd’s a different type of fun, because now it’s not just solving a problem. Now it’s also “I’m solving a problem and I’m hanging out with the people I love at the same time”. It’s like it’s two wins instead of just one.”

While the general challenge running community is rarely competitive, some members engage in informal, friendly competition, in some cases in spaces dedicated to this exact purpose.

Further, some highly skilled players compete to establish themselves as one of the elites, for example by being the first in the world to complete a challenge. Besides these races, no emphasize is put on competition. This appears to be caused by a lack of comparability

between executions of the same challenge. Helena argued there barely are any possibilities to quantify differences between two runners' performances:

“But with these runs, it's more of qualitative differences a lot of the time. So, it can be hard to compare who's better at what. So, it's really either a very isolated thing at the highest level of challenge running or just a little informal thing.”

Still, during the interviews, runners frequently compared their skill and achievements to others. For Erik, this is a way of pushing himself to improve:

” It's a way to get yourself into thinking about why you can't do it. It's a way of improving. When you compare yourself to people different than you, you can tell new stuff about the thing you're comparing because the difference is there [...] It's not about feeling like you are bad. It's more like trying to motivate yourself or help yourself think more”

Communities offer rewards for specific achievements. For example, if a player on the “Dark Souls” server proves completion of a standard run, they may carry a role on the server that indicates their achievement to other members. Members of Champion's Respite can offer monetary compensation or other rewards to the first player to complete a pre-set challenge, an activity which the server calls “bounty hunting”. These rewards serve as recognition of a player's skill and achievement and are motivators to engage in difficult challenges and participate in community discussion. While bounty hunting is not a focal point of Champion's Respite, it drives innovation and creativity. Erik views it as an event that brings together runner's that through their own ideas contribute to solving a challenge:

” Someone will want to watch a kill so bad, but he can't do it. [...]. So, they put a bounty on it, for real-life money or for a gift or something to get people to try it out. People with other mindsets, with other ideas that maybe can look at it from a different

view and have unique ideas and possibly help make it possible. And this influences the community a lot. There are a lot of bosses and stuff that were solved in this way.”

External validation appears to be part of challenge runners' motivations. Major achievements are shared to gain recognition and cultivate a following on social media. Besides this, some players live-stream their gameplay to other players or friends to enhance the enjoyment of challenge running through the presence of friends. While challenge running does not facilitate competition due to a lack of comparability, informal competition is engaged in. Further, highly skilled players race each other to be the first to reach important milestones to become recognized as an elite runner. The pursuit of the aforementioned goal of “pushing the game” is also fueled by competition by offering rewards for completion of difficult challenges, sparking creativity and innovation. In general, rewards, such as server roles, can be used to incentivize participation in difficult activities.

Discussion

The aim of this study was to explore the motivations of video game players that engage in metagames, specifically, Dark Souls challenge running, focusing on basic needs described by Self-Determination Theory, Hard Fun and Fiero, Flow as well as social modelling and self-efficacy. Findings suggest that experienced players have a desire to create additional challenges in a game that does not challenge them anymore to become immersed in it and experience moments of triumph. Further, many challenge runners enjoy taking part in a community-setting in which they share and discuss their activities in which they give and receive both encouragement and assistance. In this section, key findings are going to be interpreted and discussed in relation to prior research laid out in the theoretical framework and this study's research questions.

Key Findings

Participants engage in challenge runs to experience the satisfaction of overcoming a difficult challenge through effort and perseverance which they felt during their first playthrough but encountered less during subsequent ones, making Fiero a key motivator. Autonomy both facilitates the creation of a challenge run and is satisfied through strategizing and creativity. Further, competence needs are met as players can grow their knowledge of the game, apply it in difficult situations and ultimately drastically improve their skill. Participants' experience of challenge running ranges from boredom to emotions of anxiety, depending on how the challenge is perceived in relation to skill. When challenge and skill are balanced perfectly, participants report entering a flow-like state that is described as both satisfying and necessary for high-performance.

Online communities are a popular inspiration to start challenge running and keep engaging with it. Before challenge running themselves, many observed server members, learned of widespread strategies and received encouragement from other members to try a challenge run themselves. These observations of modelled behavior and the reinforcement received through encouragement and assistance enabled participants to build motivation and self-efficacy to challenge run. Lastly, highly skilled players place relevance on external motivators including recognition, competition and rewards.

Links to previous Research

Findings of this study align with Self-Determination Theory. Participant's statements closely relate to Ryan et al. (2006) and Przybylski et al. (2012) who argue that autonomy of playstyle choice and competence reflected in mastery of game mechanics are important motivators of sustained game engagement. Further, social interactions in the communities appear to satisfy relatedness needs. Participants appear to place higher focus on intrinsic satisfaction like Fiero

than extrinsic ones like recognition, connecting to Johnson et al. (2016) who claim that sustained engagement with a game is associated more strongly with intrinsic motivations compared to extrinsic ones.

Apart from SDT, findings are linked to Flow. Participants' experiences of boredom, deep immersion and panic fit the challenge-skill model (Csikszentmihalyi, 1990, 2000). The high self-reported skill of participants may have facilitated this feeling, as Moneta and Csikszentmihalyi (1996) argue that skill is required to uphold Flow.

Participants made references to Lazzaro (2004), frequently sharing narratives of overwhelming personal triumph after intense struggle and frustration. One participant also mentioned that the intensity of their Fiero is dependent on the amount of time spent on the challenge, which is in line with the assumption that Fiero requires effort in order to be experienced. Participants explained that, with their experience, they could effortlessly beat Dark Souls without metagames involved and described this experience as boring. This lack of effort and dull experience may imply a non-meta experience of Dark Souls may not have posed sufficient challenge to experience Fiero. This appears to have been countered by introducing new and demanding challenges that meet the criteria to facilitate Fiero once overcome.

Lastly, Social Cognitive Theory explains participants' social motivations. Observing norms within the community and standard runs (Lee, 2015) and taking part in community discussion may have formed an expectation of enjoyment based on the other runners' perspective and provided the participants with sufficient environmental reinforcement to challenge run themselves (Lee & LaRose, 2007; Lee, 2015). The choice of challenge run does not seem to depend on the runner's self-efficacy. Considering that many runners self-reported to be good at the games, this is in line with Davis and Lang (2012) which suggest that, in

experienced players, self-efficacy may not be factor for game engagement in RPGs as it tends to be generally high. The only relevance of self-efficacy appears to be in the initial engagement, as observing other runners' strategies and successes increased participants' confidence in their own ability to imitate these behaviors. However, their reasoning that RPGs do not relate to self-efficacy because of lack of defined goals does not apply here. While Dark Souls is an RPG-type games and does not give the player clear instructions, Dark Souls challenge runs have clearly defined goals, such as defeating a boss enemy.

Practical Implications

Participants' motivations exhibit strong links to SDT, Flow, Fiero and Social Cognitive Theory as well as game appropriation. Challenge running illustrates that processes of game appropriation resulting in metagames are driven by personal motivations, social dynamics and shaped by game-specific contexts. This study demonstrates how these theories can explain complex, player-created metagames embedded in a community setting.

The findings of this study find application in game design. Metagames like challenge runs promote sustained engagement with a game by balancing out experienced players' skill with self-created challenges that, on one hand, force the player to navigate unfamiliar and unpredictable situations that demand effort and skill and, on the other, reward them with emotionally intense moments, once they are overcome. While game developers cannot design metagames and communities into a game to achieve this effect, as these are by definition player-created, they can create gaming experiences that are encouraging to create metagames within. Drawing from Dark Souls, this can be achieved by implementing challenging obstacles and mechanical depth into the game that the player can overcome with a variety of a variety of tools. In doing so, developers can promote sustained engagement with their game, facilitating long-term relevance and longevity.

Limitations and Suggestions for Future Research

While diverse, the sample may be unfocussed as it includes both ambitious elite runners and casual runners and is thus made up of several differing identities and needs. There appear to be slight differences between these types of players' motivations, especially regarding competitive behaviors. To make sure both perspectives on challenge running and its appeal are heard independent from each other, future studies should focus on one type of challenge runner. This would help build towards a nuanced understanding of challenge running and players participating in them

As the sampling procedure relied exclusively on reaching out to members of challenge running communities, this study's sample is biased towards players that take part in these very communities. This sampling strategy may have caused the heavy focus on community found in the collected data, skewing interpretation of results in this direction. It needs to be emphasized that motivations of runners that are not present within challenge running communities may differ from those who are immersed in them, especially concerning the role of social motivations. As they were not included in the sample, no statements can be made on them. To remedy this bias, future studies should make a particular effort to reach out to players participating in challenge runs outside of any community context.

As famous challenge runners were excluded from the sample under the assumption their motivations may be unique and leaning heavily on extrinsic motivations due to their engagement with challenge running in front of an audience that may provide them with monetary gain, this type of challenge runner's motivations are not represented in this study. To create knowledge on the factors that drive this unique type of challenge runner, future studies should set out to study their motivations in relation to players that have not amassed an online following around their activities.

It must be noted that a study of Dark Souls challenge runners' motivations does not cover all types of (Dark Souls) metagames. While it provides insight into the motivations of players engaging in this type of metagame, it is unlikely these fully apply to other types of metagames such as speedrunning, which greatly focusses on competition which participants of this study reported as mostly irrelevant to challenge running. Additionally, this study limited itself to only one game. As the game-specific context is relevant to exploring motivations to appropriate a game into a metagame (Herodotou et al., 2012), it is uncertain whether the motivations reported by Dark Souls players involved in this study carry over to other games that have a different design. To gain a more comprehensive understanding of all aspects of metagames, future motivational research should extent its scope beyond challenge runs and explore more types of metagames. This should not be limited to the Dark Souls trilogy, however. Instead, all games in which these metagames are created and carried out should be considered to be individually studied in future research to investigate the role of game-specific contexts in metagame motivations.

Conclusion

This study explored the motivations of Dark Souls challenge runners. These individuals exhibit levels of proficiency, experience and knowledge that prevents any challenge to be posed by the games, preventing Fiero from occurring as much as it did during their initial playthroughs. To experience it again, the games as-designed are appropriated to create challenging and unpredictable situations that feel rewarding to overcome through effort. This appropriation is facilitated by high degrees of autonomy afforded by the game. Further, players find great enjoyment in further improving their competence and entering flow-like states, once their skill is met by an equivalent challenge.

Challenge runs are embedded in social practice relevant to relatedness needs and Social Cognitive Theory. Many participants started their challenge running activities by observing behavior modelled by fellow runners and built motivation to participate through environmental reinforcement and expectations of enjoyment. Further, some runners seek external validation and participate in (implicit) competition. Self-efficacy does not impact runners' choice of run as it is generally high.

This study demonstrates that players do not only consume digital games but creatively appropriate and embed them in social contexts to create experiences that satisfy basic psychological needs, allow for moments of immersion and triumph, and foster a communal atmosphere that allows for deep engagement with the game. Further, this study demonstrates that SDT, Flow, Fiero and SCT are relevant, not only to game experiences as-designed but to complex self-created experiences built through appropriation.

References

- Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Prentice-Hall, Inc.
- Boluk, S., & LeMieux, P. (2017). *Metagaming: Playing, Competing, Spectating, Cheating, Trading, Making, and Breaking Videogames* (1 ed.). University of Minnesota Press.
<https://doi.org/10.5749/9781452958354>
- Carroll, J., Howard, S., Peck, J., & Murphy, J. (2003). From Adoption to Use: the process of appropriating a mobile phone. *Australasian Journal of Information Systems*, 10(2).
<https://doi.org/10.3127/ajis.v10i2.151>
- Cheah, I., Shimul, A. S., & Phau, I. (2022). Motivations of playing digital games: A review and research agenda. *Psychology & Marketing*, 39(5), 937-950.
<https://doi.org/10.1002/mar.21631>
- Corbin, J. M., & Strauss, A. (1990). Grounded theory research: Procedures, canons, and evaluative criteria. *Qualitative Sociology*, 13, 3-21.
<https://doi.org/10.1007/BF00988593>
- Csikszentmihalyi, M. (1990). *Flow: The Psychology of Optimal Experience*. Harper Perennial.
- Csikszentmihalyi, M. (2000). *Beyond boredom and anxiety*. Jossey-bass.
- Davis, R., & Lang, B. (2012). Modeling the effect of self-efficacy on game usage and purchase behavior. *Journal of Retailing and Consumer Services*, 19(1), 67-77.
<https://doi.org/10.1016/j.jretconser.2011.09.002>
- Deci, E. L., & Ryan, R. M. (1985). *Intrinsic Motivation and Self-Determination in Human Behavior* (1 ed.). Springer New York, NY. <https://doi.org/10.1007/978-1-4899-2271-7>

Deci, E. L., & Ryan, R. M. (2009). The “What” and “Why” of Goal Pursuits: Human Needs and the Self-Determination of Behavior. *Psychological Inquiry*, 11(4), 227-268.

https://doi.org/https://doi.org/10.1207/S15327965PLI1104_01

Engeser, S., & Rheinberg, F. (2008). Flow, performance and moderators of challenge-skill balance. *Motivation and Emotion*, 32(3), 158-172. <https://doi.org/10.1007/s11031-008-9102-4>

FextraLife. (n.d.). *DARK SOULS WIKI*. Retrieved April 6, 2025 from <https://darksouls.wiki.fextralife.com/Dark+Souls+Wiki>

FromSoftware. (2011). Dark Souls. *Bandai Namco Entertainment*.

FromSoftware. (2014). Dark Souls 2. *Bandai Namco Games*.

FromSoftware. (2016). Dark Souls 3. *Bandai Namco Entertainment*.

Herodotou, C., N., W., & Kambouri, M. (2012). A Motivationally Oriented Approach to Understanding Game Appropriation. *International Journal of Human–Computer Interaction*, 28(1), 34-47. <https://doi.org/10.1080/10447318.2011.566108>

Holl, E., Sischka, P. E., Wagener, G. L., & Melzer, A. (2024). The Motivation to Play Scale (MOPS) - introducing a validated measure of gaming motivation. *Current Psychology*, 43(39), 31068-31080. <https://doi.org/10.1007/s12144-024-06631-z>

Johnson, D., Gardner, J., & Sweetser, P. (2016). Motivations for videogame play: Predictors of time spent playing. *Computers in Human Behavior*, 63, 805-812. <https://doi.org/10.1016/j.chb.2016.06.028>

Krcmar, M. (2020). Social Cognitive Theory. In M. B. Oliver, A. A. Raney, & J. Bryant (Eds.), *Media Effects: Advances in Theory and Research* (Fourth ed., pp. 100 - 114). Routledge.

Lazzaro, N. (2004). Why we Play Games: Four Keys to More Emotion without Story. *Game Developers Conference*.

- Lee, D., & LaRose, R. (2007). A socio-cognitive model of video game usage. *Journal of Broadcasting & Electronic Media*, 51(4), 632-650.
<https://doi.org/10.1080/08838150701626511>
- Lee, S. Y. (2015). Interpersonal influence on online game choices. *Computers in Human Behavior*, 45, 129-136. <https://doi.org/10.1016/j.chb.2014.11.086>
- Moneta, G. B., & Csikszentmihalyi, M. (1996). The effect of perceived challenges and skills on the quality of subjective experience. *Journal of personality*, 64(2), 275-310.
<https://doi.org/10.1111/j.1467-6494.1996.tb00512.x>
- Przybylski, A. K., Weinstein, N., Murayama, K., Lynch, M. F., & Ryan, R. M. (2012). The Ideal Self at Play: The Appeal of Video Games That Let You Be All You Can Be. *Psychological Science*, 23(1), 69-76. <https://doi.org/10.1177/0956797611418676>
- Reddit.com. (n.d.). *r/onebros*. Retrieved June 8, 2025 from <https://www.reddit.com/r/onebros/>
- Rheinberg, F., & Engeser, S. (2018). Intrinsic Motivation and Flow. In J. Heckhausen & H. Heckhausen (Eds.), *Motivation and Action* (pp. 579-622). Springer, Cham.
https://doi.org/10.1007/978-3-319-65094-4_14
- Ryan, R. M., & Deci, E. L. (2000). Self-Determination Theory and the Facilitation of Intrinsic Motivation, Social Development, and Well-Being. *American Psychologist*, 55(1), 68-78. <https://doi.org/10.1037/0003-066X.55.1.68>
- Ryan, R. M., Rigby, C. S., & Przybylski, A. (2006). The motivational pull of video games: A self-determination theory approach. *Motivation and Emotion*, 30(4), 347-363.
<https://doi.org/10.1007/s11031-006-9051-8>
- Salen Tekinbaş, K., & Zimmerman, E. (2003). *Rules of Play: Game Design Fundamentals*. The MIT Press.

Sepehr, S., & Head, M. (2018). Understanding the role of competition in video gameplay satisfaction. *Information & Management*, 55(4), 407-421.

<https://doi.org/10.1016/j.im.2017.09.007>

TheBacklogs. (2023, 11.03.2023). *Can You Beat DARK SOULS 1 With Only Scythes?*

[YouTube Video]. Retrieved June 8, 2025 from

<https://youtu.be/qEgOuzWgg4g?si=XJyXVhKQFFx5FFq6>

TheBacklogs. (2024, 28.07.2024). *Can You Beat DARK SOULS 1 With Only One Hit? | The Backlogs One-Shot Contest* [YouTube video]. Retrieved April 28, 2025 from

https://youtu.be/nahDpQB8sE4?si=DWd2_VU6UU4b31fD

Uysal, A., & Yildirim, I. G. (2016). Self-Determination Theory in Digital Games. In B.

Bostan (Ed.), *Gamer Psychology and Behavior* (pp. 123 - 136). Springer International

Publishing Switzerland. https://doi.org/10.1007/978-3-319-29904-4_8

WowZaPowa [u/WowZaPowa]. (2016). *Dark Souls 3 SLI Guide* [Reddit Post]. Retrieved June 8, 2025 from

https://www.reddit.com/r/darksouls3/comments/4g4wy9/dark_souls_3_sli_guide/

ymfah. (2018, 31.05.2018). *How to be OP and SLI Dark Souls Remastered* [YouTube Video].

Retrieved June 8, 2025 from <https://youtu.be/iBRpNdY1i8o?si=5U2URYWjkyYOq-ig>

Yu, D., Shurui, W., Fanghao, S., Yan, L., Shiyi, Z., Yirui, W., Xiaojiao, X., & and Zhang, Z.

(2023). Research on user experience of the video game difficulty based on flow theory and fNIRS. *Behaviour & Information Technology*, 42(6), 789-805.

<https://doi.org/10.1080/0144929X.2022.2043442>

Appendices

Appendix A – Systematic Literature Search Log

Table 3

Systematic Literature Search Log

Search engine/ database	Literature
Google Scholar	Herodotou, C., N., W., & and Kambouri, M. (2012). A Motivationally Oriented Approach to Understanding Game Appropriation. <i>International Journal of Human–Computer Interaction</i> , 28(1), 34-47. https://doi.org/10.1080/10447318.2011.566108
Google Scholar	Boluk, S., & LeMieux, P. (2017). <i>Metagaming: Playing, Competing, Spectating, Cheating, Trading, Making, and Breaking Videogames</i> (1 ed.). University of Minnesota Press. https://doi.org/10.5749/9781452958354
Google Scholar	Uysal, A., & Yildirim, I. G. (2016). Self-Determination Theory in Digital Games. In B. Bostan (Ed.), <i>Gamer Psychology and Behavior</i> (pp. 123 - 136). Springer International Publishing Switzerland. https://doi.org/10.1007/978-3-319-29904-4_8
Google Scholar	Donaldson, S. (2016). <i>Metagaming and Subversive Play in League of Legends</i> Proceedings of the 1st International Joint Conference of DiGRA and FDG
Google Scholar	Ryan, R. M., Rigby, C. S., & Przybylski, A. (2006). The motivational pull of video games: A self-determination theory approach. <i>Motivation</i>

Search engine/ database	Literature
	<i>and Emotion</i> , 30(4), 347-363. https://doi.org/10.1007/s11031-006-9051-8
Google Scholar	Holl, E., Sischka, P. E., Wagener, G. L., & Melzer, A. (2024). The Motivation to Play Scale (MOPS) - introducing a validated measure of gaming motivation. <i>Current Psychology</i> , 43(39), 31068-31080. https://doi.org/10.1007/s12144-024-06631-z
Google Scholar	Csikszentmihalyi, M. (1990). <i>Flow: The Psychology of Optimal Experience</i> . Harper Perennial.
Google Scholar	Przybylski, A. K., Weinstein, N., Murayama, K., Lynch, M. F., & Ryan, R. M. (2012). The Ideal Self at Play: The Appeal of Video Games That Let You Be All You Can Be. <i>Psychological Science</i> , 23(1), 69-76.
Google Scholar	Lazzaro, N. (2004). Why we Play Games: Four Keys to More Emotion without Story. <i>Game Developers Conference</i> .
Web of Science	Cheah, I., Shimul, A. S., & Phau, I. (2022). Motivations of playing digital games: A review and research agenda. <i>Psychology & Marketing</i> , 39(5), 937-950. https://doi.org/10.1002/mar.21631
Web of Science	Sepehr, S., & Head, M. (2018). Understanding the role of competition in video gameplay satisfaction. <i>Information & Management</i> , 55(4), 407-421. https://doi.org/10.1016/j.im.2017.09.007
Web of Science	Schaffer, O., & Fang, X. W. (2019, Jul 26-31). Digital Game Enjoyment: A Literature Review. <i>Information Systems and Applications, incl. Internet/Web, and HCI</i> [Hci in games, hci-

Search engine/ database	Literature
	games 2019]. 1st International Conference on HCI in Games (HCI-Games) Held as Part of the 21st International Conference on Human-Computer Interaction ((HCII), Orlando, FL.
Web of Science	Lee, D., & LaRose, R. (2007). A socio-cognitive model of video game usage. <i>Journal of Broadcasting & Electronic Media</i> , 51(4), 632-650. https://doi.org/10.1080/08838150701626511

Note. During literature search, literature reviews or studies that examined large sets of relevant literature were used to get an overview of relevant themes within research on motivations to play video games and to draw literature from. The literature drawn from these reviews were directly accessed through their DOI and were not retrieved through search queries. For this reason, these sources are not listed in this log.

Further, the book chapter on Social Cognitive Theory by Krcmar (2020) and the article on coding by Corbin and Strauss (1990) are not listed because they were retrieved from study material for modules that were part of the B-COM program. As such, these sources were not systematically searched for in any databases or search engines.

Search Terms

Metagame

“metagame”

“what is metagaming”

“metagaming video games”

“digital games meta game”

“metagaming”

Appropriation

“appropriation gaming”

“appropriation video games”

“media appropriation”

“appropriation media”

Self-Determination Theory

“self determination theory in media”

“self determination theory gaming”

“gaming motivation self-determination”

“gaming motivation skill”

“gaming motivation high skill”

“PENS”

“player experience of need satisfaction”

“player experience of need satisfaction model”

“model motivation video game skill”

Flow

“flow theory gaming”

“flow theory gaming motivation”

“flow theory csikszentmihalyi”

“flow digital games”

Social Cognitive Theory

“modelling SCT”

“motivation and social cognitive theory”

“social cognitive theory core concepts”

“Social cognitive theory”

“modelling behaviour SCT”

Fiero

“fiero”

“fiero gaming”

“fiero video games”

“fiero videogames”

“fiero in videogames”

“fiero in videogames enjoyment”

Search Strings

“Digital games motivation”

“digital games”

“video game and motivation and scale”

“digital game motivation”

Self-Determination Theory

“Selfdetermination video games motivation”

“Self-determination”

“Self-determination digital games”

Social Cognitive Theory

“social cognitive digital games”

“Social cognitive digital games motivation”

“social cognitive theory and video games and motivation“

„social cognitive theory and video games and motivation“

“social cognitive theory“

„Self efficacy and gaming“

“Self efficacy and gaming and motivation”

„Self efficacy and gam*“

"social cognitive" and "digital game"

"observational learning" and "digital game"

"Observational learning" AND "digital game"

“SCT and video game”

“SCT and video game usage”

“SCT and video game And usage”

““SCT AND "video game usage””

“SCT and video game”

“digital game AND social”

“video game AND self-efficacy”

“video game AND self-efficacy AND hardcore”

“influencers AND video game”

“community AND video game”

„influencers AND promotion“

Appropriation

“appropriation and video games“

“appropriation and games”

„appropriation and digital games“

“appropriation and motivation”

“game appropriation and motivation“

“game and appropriation and motivation”

Flow

“video game AND flow”

“video game AND flow AND Addiction”

“digital game and high skill”

Appendix B – Information Sheet and Consent Form

Information sheet

Everything's meta - A qualitative study about the desire to seek challenges beyond a game's design

Researcher: Julian Alexander Beck, Bachelor Student, University of Twente

Last edited [08.05.2025]

You are hereby invited to participate in the study “Everything's meta”. The purpose of this study is to explore the motivations that drive players of the Dark Souls trilogy to interact with their videogames in ways that are not intended by the developers – or in other words, engage in metagames. You may also be familiar with this phenomenon as “challenge-running” and/or “speedrunning”. This study consists of a 45 to 60 minutes long audio-recorded interview in which you will be asked to elaborate on your personal experiences with metagaming, what drives you to engage in them and how you experience being part of a community that discusses these activities.

There are no known risks associated with participation in this study. To ensure this research is in line with standards of research ethics, this research project was reviewed and approved by the BMS Ethics committee in the domain of Humanities and Social Sciences.

Your participation in this study is entirely voluntary. You have the right to decline your participation or withdraw from the study at any time without any negative consequences or having to provide any reasons. If you decide to do so, all collected data will be deleted and removed from the report.

During the interview, no information will be collected that directly identifies you as a participant. All data will be pseudonymized. No personal data will be published in the report or the bachelor defense presentation. You have the right to request access to your personal data as well as rectification and erasure.

Some of your responses may be quoted and published within the bachelor's thesis and a bachelor's thesis defence presentation. In this case, the quotes will be used in connection to a pseudonym of your choice.

The audio-recording of your interview will be used for the purposes of data analysis in the context of a bachelor's thesis. The recording will be transcribed as text for data analysis and destroyed

thereafter. The data will be treated confidentially. The pseudonymized audio-recordings and transcripts will be stored password protected on the researcher's personal device. The data can only be accessed by the researcher and their supervisor. After completion of the research project, the pseudonymized transcripts will be archived in the database of the University under controlled access.

As a participant, you may opt to receive a summary of the study's findings. If you are interested in this, feel free to indicate this on the informed consent form.

If you have any further questions, please, do not hesitate to contact me under this e-mail address:

Researcher: Julian Beck (j.a.beck@student.utwente.nl).

If you have questions about your rights as a research participant, or wish to obtain information, ask questions, or discuss any concerns about this study with someone other than the researcher(s), please contact the Secretary of the Ethics Committee/domain Humanities & Social Sciences of the Faculty of Behavioural, Management and Social Sciences at the University of Twente by ethicscommittee-hss@utwente.nl.

Informed Consent Form for "Everything's meta"

YOU WILL BE GIVEN A COPY OF THIS INFORMED CONSENT FORM

Please tick the appropriate boxes

Yes No

Taking part in the study

I have read and understood the study information dated 08.05.2025, or it has been read to me. ☐ Yes ☐ No

I have been able to ask questions about the study and my questions have been answered to my satisfaction.

I consent voluntarily to be a participant in this study and understand that I can refuse to answer questions, and I can withdraw from the study at any time, without having to give a reason. ☐ Yes ☐ No

I agree to be audio recorded.

☐ ☐

Use of the information in the study

I understand that the information I provide will be used for analysis within the context of a bachelor's thesis and a bachelor defence presentation.

☐ ☐

I understand that personal information collected about me that can identify me, such as my name, will not be shared beyond the study team.

☐ ☐

I agree that my information can be quoted in research outputs.

☐ ☐

I agree that a pseudonym of my choice can be used for quotes.

☐ ☐

Future use and reuse of the information by others

I give permission for the anonymised transcribed data that I provide to be archived in the data repository of the University of Twente so it can be used for future research and learning.

☐ ☐

Interest in a summary of findings

I would like to receive a summary of the study's results.

☐ ☐

Signatures

Name of participant

Signature

Date

I have accurately read out the information sheet to the potential participant and, to the best of my ability, ensured that the participant understands to what they are freely consenting.

Researcher name

Signature

Date

Study contact details for further information: Julian Beck, j.a.beck@student.utwente.nl