FUNDAÇÃO GETULIO VARGAS
ESCOLA DE ADMINISTRAÇÃO DE EMPRESAS DE SÃO PAULO

LUCAS BUSANI XAVIER

THE LEGEND OF VIDEO GAMES

A link to affordance theory

SÃO PAULO
2023

LUCAS BUSANI XAVIER

THE LEGEND OF VIDEO GAMES

A link to affordance theory

Master thesis project submitted to São Paulo School of Business Administration, Fundação Getulio Vargas (FGV EAESP), as partial fulfillment of the requirements for the Master of Business Administration Degree.

Knowledge Area: Marketing Strategies

Advisor: Eliane Pereira Zamith Brito, Ph.D.

SÃO PAULO
2023

Xavier, Lucas Busani.
The legend of video games : a link to Affordance Theory / Lucas Busani Xavier. - 2023.
76 f.

Orientador: Eliane Pereira Zamith Brito.
Dissertação (mestrado CMAE) – Fundação Getulio Vargas, Escola de Administração de Empresas de São Paulo.

1. Vídeo games. 2. Jogadores de videogames. 3. Revisão estruturada (Computação). 4. Comportamento do consumidor. 5. Tecnologia - Aspectos sociais. I. Brito, Eliane Pereira Zamith. II. Dissertação (mestrado CMAE) – Escola de Administração de Empresas de São Paulo. III. Fundação Getulio Vargas. IV. Título.

CDU 658.89

Ficha Catalográfica elaborada por: Isabele Oliveira dos Santos Garcia CRB SP-010191/O
Biblioteca Karl A. Boedecker da Fundação Getulio Vargas - SP

LUCAS BUSANI XAVIER

THE LEGEND OF VIDEO GAMES
A link to affordance theory

Master thesis submitted to São Paulo School of Business Administration, Fundação Getulio Vargas (FGV EAESP), as fulfillment of the requirements for the Master of Business Administration Degree.

Knowledge Area: Marketing Strategies

Advisor: Eliane Pereira Zamith Brito, Ph.D.

Approval Date: ____/____/____

Committee Members:

_____
Eliane Pereira Zamith Brito, Ph.D.
FGV-EAESP

_____
Marlei Pozzebon, Ph.D.
FGV-EAESP / HEC-Montréal

_____
Thaysa Costa do Nascimento, Ph.D.
UFRJ (COPPEAD)

ABSTRACT

Video game consumption is frequently researched, given their relevance as a media. Still, studies tend to ground the analysis of the relationship between gamers and video games on Technological Determinism or Radical Constructivism. As complex, relational, and communicative artifacts, it is important to consider that falling into either one of those extremes would be a major issue for understanding video game consumption. Thus, I used Affordance Theory as a means for addressing the relationship between gamers and their games. In technology studies, affordances refer neither to the socially constructed interpretations of individuals of technological artifacts, nor how artifacts determine the social behaviors of individuals, but to the possibilities and limitations of actions that emerge through the interaction between a social individual, the given technology, and the environment in which both reside. Thus, the proposed research question was: what are the affordances that emerge through video game consumption? Which has led to finding five affordance types: Co-creative, Expressive, Learning and Discovery, Immersive and Incorporative, and Connective and Communicative. During this process, I also found that affordances in video games follow a somewhat rigid power structure in which actors struggle to exert their agency, as well as strong referential aspect that intermediate video game consumption.

Keywords: video games; affordance theory; technological determinism; radical constructivism; walkthrough method.

RESUMO

O consumo de videogames é frequentemente pesquisado, dada sua importância como mídia atual. Ainda assim, estudos tendem a fundamentar suas análises da relação entre gamers e os videogames dentro do Determinismo Tecnológico ou no Construtivismo Radical. Como artefatos complexos, relacionais e comunicativos, cair em um desses extremos seria um grande problema para entender o consumo de vídeo games. Assim, utilizei a teoria da affordance como meio de abordar a relação entre jogadores e seus jogos. Nos estudos de tecnologia, affordances não se referem nem às interpretações socialmente construídas dos indivíduos de artefatos tecnológicos, nem a como os artefatos determinam os comportamentos sociais dos indivíduos, mas sim às possibilidades e limitações de ações que surgem através da interação entre um indivíduo social, a tecnologia dada e o ambiente em que ambos residem. Assim, a questão proposta foi: quais são as affordances que emergem através do consumo de vídeo games? O que levou à descoberta de cinco tipos de affordances: Cocriativa, Expressiva, de Aprendizagem e Descoberta, Imersiva e Incorporativa e Conectiva e Comunicativa. Durante esse processo, também descobri que as affordances em vídeo games seguem uma estrutura de poder um tanto rígida em que os atores lutam para exercer sua agência, bem como um forte aspecto referencial que intermedia o consumo de videogames.

Keywords: videogames; teoria das affordances; determinismo tecnológico; construtivismo radical; método walkthrough.

FIGURE LIST

TABLE LIST

SUMMARY

1. INTRODUCTION

Since the early days of video game history, almost five decades ago, they have become one of the main forms of cultural media consumption, not only in terms of the size and power of its industry but also in cultural influence and social pervasiveness (Seo et al., 2015). Video game consumption has become more complex and multifaceted than ever before. Seo and colleagues (2015) identified three broad streams of research related to video games: "(i) consumer behavior questions related to the player-game interactions and experiences; (ii) issues related to the purchase decisions about computer games; and (iii) research addressing the role of computer games within the broader social life of consumers" (p. 354). Despite its importance, video game consumption has yet to be more profoundly addressed by consumer research. Studies have focused primarily on video games concerning external topics rather than "the richness of gaming as a consumptive behavior worthy of investigation in its own right" (Kuo et al., 2017, p. 101).

As fundamentally experiential products, video games have the potential – and have shown their power – to influence the lives of their consumers in various ways. Recent studies have shown some of the facets of what video game consumption is composed, such as: video game content, meaning the narrative, graphical and sound elements that make up any given game (Buchanan-Oliver & Seo, 2012; Gangadharbatla, 2016; Ham et al., 2016; Kim et al., 2016; Walker et al., 2018); behaviors within video games (Abbasi et al., 2019; Kaimann et al., 2018; Liao et al., 2019; Prugsamatz et al., 2010; Wei et al., 2017), meaning what gamers do inside the virtual worlds; behaviors derived from video games (Bassiouni & Hackley, 2016; Costa Pinto et al., 2015; Malik et al., 2020), such as things learned and replicated from gaming experiences; video games as businesses and how different business models emerge and influence the industry and it's consumption (Phau & Liang, 2012; Thorhauge & Nielsen, 2021); as well as marginal aspects relation to video game consumption, such as game reviews/critique

(Cox & Kaimann, 2015), audiovisual cocreation in online platforms (Harwood & Garry, 2014), video game piracy inhibition in online communities (Scaraboto et al., 2020), eSports (Seo & Jung, 2016) and gameplay streaming (Wulf et al., 2020).

The examples brought still resemble the dichotomy – which has mostly been surpassed in other lines of study – between two perspectives dealing with the relationship between technologies and individuals: Technological Determinism and Radical Constructivism. While the former poses that technological artifacts have inherent properties that determine their uses by individuals and, thus, also their behaviors and sociability, the latter counters such proposition, stating that these properties are the outcomes of discursive practices in relation to the technological artifacts, such as it is with texts, and, as such, these artifacts can be read and used differently by attributing different uses, values, and understandings into them (Hutchby, 2001; Shaw, 2017). While Determinism is widely used to understand how the usage of different technologies might affect the behaviors of those involved, Constructivism explains how the same technology might yield different results when employed in a different social environment. Regardless, considering either the role of technology as a mold of sociability or technology as an empty husk to be given meaning by its users means giving up a more nuanced and complete understanding of the complex process of production and social usage of technology, which is intrinsically open and negotiated (Hutchby, 2001).

Thus, to better deal with the complexity of video game consumption, I posit that an alternative approach could promote a more nuanced understanding of the phenomenon. To do this, I bring forth Affordance Theory, which originated in environmental psychology (Gibson, 2014) and is fundamentally relational (Schmidt, 2007). The theory considers that “the meaning of an object is a relational property that depends upon the structure of the animal as well as the structure of the environment” (Schmidt, 2007, p. 138). In the context of video games, a game’s meanings emerge through the relationship between the game itself and its structure, the players

and their structure, and the environments in which the game and its players exist and their structure. As such, in the context of technologies, affordances refer neither to the socially constructed interpretations of individuals of technological artifacts, nor how artifacts determine the social behaviors of individuals (Evans et al., 2017) but to the possibilities and limitations of actions that emerge through the interaction between a social individual, given technology and the environment in which both reside (Davis & Chouinard, 2016).

Affordance Theory has been used in communication studies focusing on the interaction between people and technology (Davis & Chouinard, 2016; Evans et al., 2017; Hutchby, 2001; Nagy & Neff, 2015; Schmidt, 2007; Shaw, 2017; Trepte, 2015), as well as consumer cultures studies (Borghini et al., 2021; Kozinets et al., 2021; Shamayleh & Arsel, 2022), given its powerful potential for understanding human behavior in technological environments while avoiding the aforementioned determinist-constructivist dichotomy. Still, within studies on consumption, Affordance Theory has been mostly used to describe how social media and other online platforms afford users different possibilities of action, interaction, and behaviors (Kozinets et al., 2021; Shamayleh & Arsel, 2022). Video games are not only one of the most influential and culturally pervasive forms of media consumption (Seo et al., 2015) – and, thus, a worthy context of a study on its own – but if we take a closer look at social media platforms, they have incorporated game logic and mechanics since their initial success as a means for engagement, interactivity, and immersion. As such, by exploring video game consumption through the lens of Affordance Theory, we might not only advance consumer culture knowledge about one of the most relevant forms of media consumption of our time but also yield a better understanding of the digital environments we inhabit in our daily lives – whether those are in video game form or any other.

Thus, this study contributes to the intersection of the areas of game studies and CCT in two major aspects. The first is to better understand the affordances that emerge through the

interactions of consumers/users with and within digital environments. The second contribution is to bring a more nuanced view to the understanding of video game consumption. To build these contributions, I addressed video game consumption through Affordance Theory by asking: *what are the affordances that emerge through video game consumption?* In order to answer this question, I used a methodological approach based on the walkthrough method (Light et al., 2018) combined with immersive methods brought from video game studies (Aarseth, 2003; Cuttell, 2015).

The results can be summarized by two discussion points and five affordance types. Firstly, the Agency Power Structure found in video game consumption delimits a hierarchical but also cyclical structure, where players and developers each exert their own agency and struggle for power in delimiting the hegemonic, negotiated, and oppositional form of playing video games. Secondly, this power structure is cyclical due to the importance of the Referentiality of video games as cultural objects that build upon one another. Finally, the five types of affordances found are: Co-creative, Expressive, Learning and Discovery, Immersive and Incorporative, and Connective and Communicative. Each affordance type found intersects with the others and can be found in multiple elements of video game consumption in concomitance.

This Thesis is structured as follows. First, I present and discuss Affordance Theory in greater depth, building the theoretical background for the research. The following sessions will go over the applied methodology. After that, I go over the findings, where the five types of affordances found are described and analyzed. Finally, I present the final discussions about the theoretical and methodological contributions.

2. THEORETICAL BACKGROUND

This section is divided into three parts: in the first, I address the conceptualizations and theorizations made about affordances and its theory by delving into articles that go beyond the realm of consumer culture studies and help bring clarity and nuance to the concept of affordances; I then go through the some of the most recent and influential studies within Consumer Culture Theory that have worked with Affordance Theory as their theoretical lens in order to build upon these previously created knowledge; finally, I review some of the most influential works in Video Game Studies so that I can properly analyze video game as its own medium using the concepts and knowledge from its own field of study. Neither of the reviews intent on being all-encompassing nor totalizing summary of either Affordance Theory or Video Game Studies, but, rather, define the conceptual pillars and referential works that support my current research.

2.1 Affordance Theory

As previously stated, Affordance theory comes from environmental psychology (Gibson, 2014) and relates to possibilities of action that arise from the interaction between an actor with their environment. Hutchby (2001) calls out two main aspects of affordances: they are both functional and relational. The first refers to the fact that affordances are both enabling and constraining factors when an individual aims to act, while the latter reminds us that the affordances of an object differ depending on the perceiver. In this sense, "the meaning of an object is a relational property that depends upon the structure of the animal as well as the structure of the environment, and consequently, exists neither in the perceiver nor in the physical environment but as part of an econiche[1]" (Schmidt, 2007, p. 138). As such, opposing

[1] The econiche is defined as "the aggregate sum of the relations between the perceiver and his or her environment" (Schmidt, 2007, p. 138).

the idea that meanings exist not inside the perceiver's head as mental representations, Affordance Theory poses that meanings emerge from the interaction between individuals and their environment (Evans et al., 2017). So, meanings are formed by the interaction between individuals and their environment, and the specific characteristics, current states and overall variability of each one has the potential to alter the affordances that emerge and the ones that stay dormant (Davis & Chouinard, 2016). In the context of video games, the meanings arise as players experience their games, and the emergent meanings depend on the player's structure, the game's structure, and the environment in which both are placed.

Within studies of human interactions with and through technologies, affordances are understood as possibilities and restrictions of actions brought up by a given technological artifact (Davis & Chouinard, 2016). As such, Affordance Theory "posits that an individual perceives an environment based on the possibility for action implicit in that environment, rather than solely on its features and characteristics" (Borghini et al., 2021, p. 891). These possibilities/restrictions can either be perceived or not by individuals (Shaw, 2017), but are nonetheless always present when interactions with and through technological artifacts happen (Davis & Chouinard, 2016). This perspective asks us to consider the materiality of technological artifacts, whether they are physical or virtual/digital (Leonardi, 2010), and has been brought to social studies to "avoid the arbitrariness of the radical constructivist position […] and to evade the equally unilateral epistemology associated with technological determinism" (Hutchby, 2001, p. 453).

Even though Affordance Theory has seen its fair share of attention and applicability, Evans and colleagues (2017) reinforce that, due to the lack of conceptual clarity on the definition of affordance, researchers mistake affordances with objects, their characteristics, features, and outcomes. To surpass these issues and bring clarity to the theory, the authors propose three criteria for delimiting an affordance (Evans et al., 2017): (1) confirm proposed

affordance is neither the object nor a feature of the object; (2) confirm the proposed affordance is not an outcome, and (3) confirm the proposed affordance has variability. According to the authors (2017), many different studies that do not bring conceptual clarity end up discussing "the same ideas while using completely different terminology", bringing lists of affordances that "often exist at a micro- or context-dependent level, making theory-building more challenging", and describing "phenomena that more closely reflect a feature of a technology (e.g., filtering) or an outcome of an affordance (e.g., community building)" (Evans et al., 2017, p. 2). Having this conceptual clarity in mind, we can dive into Affordance Theory, without falling into the same issues identified by Evans and colleagues (2017). From the many conceptualizations and definitions, I select two of the most impactful and that appear to yield more nuanced and rich results for my proposed study: Social Affordances (Schmidt, 2007) and Imagined Affordances (Nagy & Neff, 2015).

Social Affordances are better understood through the metaphor of the "econiche", defined as "the aggregate sum of the relations between the perceiver and his or her environment" (Schmidt, 2007, p. 138). These relations are not mere connections and meanings, nor are they dependent on a cognitive process happening inside an individual's head, but a conglomerate of relational and extensional meanings that emerge from the interaction between an individual and his environment (Schmidt, 2007). This econiche brings forth not only relations and meaning of material objects and individuals physically present, but it extends further through time and space, incorporating networks of sociability and social meaning-making processes. As such, Social Affordances delimit all the underlying possibilities/restrictions of actions an individual can perceive through interacting with their environment and technological artifacts that originate from social phenomena. Such social affordances can be observed when, for example, an individual chooses certain paths of action based on a series of socially constructed events. Schmidt (2007) exemplifies this with the case

of the cup he uses every day to drink coffee in the morning: although he perceives this cup to have the same technical affordances as any other, such as the ability to be held by a hand and to hold coffee inside itself, he also perceives its gift affordance, as it was given by his daughter. This gift affordance is social, as it is given historical context for being perceived through three main series of social events: gift-giving, interactions with the daughter, and subsequent uses of the cup to drink coffee in the morning due to the gift affordance. Only by understanding the social phenomena surrounding an individual inside its econiche does it becomes possible to analyze such social affordances.

In conceptualizing Imagined Affordances, Nagy and Neff (2015) reinforce the importance of imagination in the process of creating and perceiving affordances through technological artifacts. That is, those artifacts are imbued with affordances by their creators/developers/producers according to the imagined, expected uses, which then are perceived – or not – by users of technology. On the other hand, when users interact with technologies, they also bring their imagination, expectations, perceptions, emotions, and past experiences into the process of perceiving and interpreting the affordances that arise when interacting with technological artifacts. As put by the authors, "imagined affordances emerge between users' perceptions, attitudes, and expectations; between the materiality and functionality of technologies; and between the intentions and perceptions of designers" (Nagy & Neff, 2015, p. 5). If we aim to fully understand the affordances of technologies, we need to look not only at the users and how they perceive and use technological artifacts but also at the imaginative process of creation and apprehension of those affordances.

As a direct following of Nagy and Neff's work (2015), Shaw (2017) delimits three possible uses of any given technological artifact. Those being: (1) *dominant/hegemonic use*, as the designer's and user's imagined affordances align and, thus, the usage of technology follows the intentions of use; (2) *negotiated use*, also known as possible or emergent use, which occurs

when, although designers did imbue given affordances into the artifact, they did not imagine users would recognize them and, thus, is not a necessarily intended use; and, finally, (3) *oppositional use*, that is, unexpected uses of technology, occurring when users imagine affordances that were not imagined by designers. The author reinforces that, as powers shift between users and designers, the relationship between what is oppositional and what is dominant might shift, meaning that "what counts as a dominant, negotiated, or oppositional use is intrinsically linked to who has the power to define how technologies should be used." (Shaw, 2017, p. 599). Such understanding poses interesting viewpoints when analyzing technology usage, especially in the context of marginal, emergent, and/or deviant uses.

Intrinsic to Shaw's (2017) proposition is the fact that users may or may not recognize the affordances present in technological artifacts with which they interact. This proposition is also found in most other articles on affordances but only resolved by Davis and Chouinard's (2016) theorization of the three conditions that account for the contextual variations that delimit affordance recognition: (1) *perception*, relating to what the user can identify in a given technological artifact; (2) *dexterity*, meaning the skill needed to either realize possibilities or surpass limitations of action afforded by a given artifact; and (3) *cultural and institutional legitimacy*, that is, "intersections of history, biography, and culture" that "interplay with material artifacts to shape how those artifacts afford over time, in varied situations, and relation to diverse subjects" (Davis & Chouinard, 2016, p. 246). After the user perceives an affordance, if they hold the necessary dexterity to realize it and the behavior afforded has cultural and institutional legitimacy, the authors propose that this affordance can operate through one of six mechanisms:

1. Requests: invitations made by the artifact for interacting with it in particular ways. Those are the recommended uses that the artifact implies for the user.

2. Demands: necessary interactions that the user cannot avoid if they desire to use the artifact.
3. Encouragement: when an artifact “foster, breed and nourish” certain lines of actions and forms of interactions with it, usually verbally communicated, but through its design.
4. Discouragement: paths of action that are not prohibited but are openly and clearly not intended nor desired by the artifact creators.
5. Refusal: forms of action that are not available, with which the artifact “refuses” to comply, sometimes not completely, but in certain circumstances/contexts.
6. Allowance: possibilities of action that, although present, are not actively encouraged or discouraged, but remain indifferent to whether and how the user will act upon it.

It is important to note that, the proposed mechanisms “are neither rigid nor exhaustive, but rather serve as analytic pegs that transpose structure onto subject-artifact relationships” (Davis & Chouinard, 2016, p. 242). Thus, it is possible to see variations when analyzing different contexts and phenomena. For instance, a video game console may be programed to refuse certain uses, such as installing custom software. However, this is only perceived as a refusal by those either unaware that it is possible to install custom software, those lacking dexterity to do so, or those who deem such actions illegitimate. For minority groups that know about such a possibility, have the dexterity, and deem this line of action legitimate, do not perceive it as being refused, only discouraged (Davis & Chouinard, 2016).

In conclusion, Affordance Theory implies the disruption in the determinist-constructivist dichotomy by proposing a relational theory of meaning which considers the structures of the user, the technological artifact, and the environment in which they are placed as equally important for the meaning-making process. Also, considering the concepts of Social and Imagined Affordances, give even more sustainability and depth to recognizing and

understanding affordances and how they work. In addition, considering the three conditions for the recognition of any given affordance, the six mechanisms through which these affordances interact with the users, and the three criteria for delimiting an affordance, helps us have more clarity of the concept and its workings about the individuals and their environment – and how they can vary from one another. Finally, considering the power (in)balance between users and creators of technological artifacts gives us better insight into how the process of creation and usage of artifacts impacts the process of recognition and assertion of affordances. All of that combined creates a theoretical toolbox that allows me to answer my research question by partaking in a video game journey in search of the affordances that emerge through the consumption of games and being precise in discovering, describing, understanding, analyzing, and defining them.

2.2 Affordance Theory Applied

In Science and Technology Studies, Bucher and Helmond (2018) have argued for a platform-sensitive framework to study their affordances. Such a framework should consider not only an end-user-centered approach but also all other human users of a given social media platform, such as developers, advertisers, content creators, etc. In the author's case study of the "like" button replacing the "favorite" function, they show how this new function afforded different things depending on the user in focus (Bucher & Helmond, 2018). Also of the matter is the fact that both human and non-human users afford back to the platform in various ways, as shown in the case of the "algorithmic timeline", where an end-user's timeline is sorted not by the time of posting, but by the relevance of the post. This relevance is calculated according to previous usage – likes, replies, retweets, comments – made by the end-users themselves, and, as such, calculating this relevance is afforded by the end-user to the platform, which, in return, affords them the "algorithmic timeline".

Similarly, video game platforms aggregate very different users: gamers, big or indie developers, game journalists, content creators, and advertisers. And even within those groups, there's certainly much heterogeneity – take "gamers" for instance, which can encompass gamers who like different genres, and have different gaming habits, ages, desires, expectations, imagination, prior experiences, etc. Also, video games are – and have always been – unstable objects (Newman, 2012), as they vary in versions, patches, and ports. Even more recently, newer platforms and modern consoles have allowed games to be constantly patched, updated, relaunched, remade, remastered, have DLC added, and so on. Some games have even allowed gamers early access in the form of "open betas", where players apply to play the game in late development to test the game, find errors, and even give feedback to the developers before launch. As such, the launch of a game does not mean its completion, and in the same way games afford their players, the players afford games to evolve – or, either afford the developers to manipulate the game as they see fit in relation to players' in-game behaviors.

As for consumer culture studies, Kozinets and colleagues (2021) have used Affordance Theory in their study of consumer empowerment on the Brazilian consumer feedback platform "Reclame Aqui. The authors delimit four affordances that emerge when using the platform: Discovery, Narration, Contact, and Meta-voice (Kozinets et al., 2021). Kozinets and colleagues (2021) found that these affordances both enable and constrain four of the six elements of consumer empowerment choice, voice, justice, and inclusion at the same time, while the other two, consciousnesses raising and catalysis, were never afforded by the platform in question. Considering that the author defines that empowerment "implies a strengthening or enabling, the granting of abilities, rights, or authority to perform certain acts or reach particular objectives" (Kozinets et al., 2021, p. 6), we can assert that this conceptualization aligns itself with Shaw's (2017) discussion on the power struggle in delimiting the hegemonic/proper use of technology. As such, it is expected to find similar affordances when analyzing both the

games themselves, but also – and perhaps most important – the platforms through which they are consumed and the business model through which they are created. And through this, we can better assert how the power struggle between stakeholders in the video game consumption process takes place, and who delimits the dominant and deviant usages of video game consoles and games.

Also, on consumer culture studies and focusing on digital platforms, Shamayleh and Arsel (2022) have created a toolkit for studying social media platforms. The authors followed Evans and colleagues' (2017) criteria for defining an affordance to delimit four affordances alongside their corresponding variability, outcomes, and technical features:

1. Expressive: varying in flexibility, scope, and ephemerality, these affordances relate to the ability to express oneself within the platform, which can be achieved through tweets, posts, themes, stories, and others alike.
2. Connective: these affordances vary only in scope and refer to the ability to make connections both inside and outside the platform and are represented by features such as labels and sharing options.
3. Commercial: relating to the ability to monetize the created and shared content, these affordances vary only in monetization capacity and are found in Ads managers, Twitter Social Media Studio, and such features.
4. Co-creative: relate to the ability of users, creators, and brands to co-create value/content with themselves and/or with one another, they vary in collaborative capacity, and their features are ones such as Tweet Quote and Duets and Stitches on TikTok.

Some of the affordances mapped in both cases appear akin, while others were unique. For instance, the Narration Affordance (Kozinets et al., 2021) and Expressive Affordance

(Shamayleh & Arsel, 2022) both relate to the possibility of generating self-reflexive and narrative content and sharing it with others through the social media platform. As well as Contact Affordances and Connective Affordances, also operate quite similarly, as both indicate the capacity for bridging connections and communicating with other individuals through the social media platform features. Aside from those, Kozinets and colleagues (2021) indicate two unique affordances: Discovery, related to the ability to access and discover critical information inside the platform, and Meta-voice, which are intrinsic nonverbal communicative actions that each platform gives its users. While Shamayleh and Arsel (2022) delimit the Commercial and Co-creative affordances, refereeing respectively to the possibilities of content monetization and commercialization of a page or profile from a given social media platform, and the capacity for users and/or creators to engage collaboratively to create content in whichever form. If we consider video game platforms and their vital role in the current video game consumption phenomenon, accessing those affordances and their role in video game consumption should be as important as the affordances that emerge in the actual act of playing the games – even more so, as playing games become more and more intertwined with social media platforms.

Finally, Borghini and colleagues (2021) analyze the process of attachment and detachment that consumers go through when changing their places of consumption. The longitudinal study uses data from two periods with a seven-year gap in between, and, by applying affordance theory, the authors were able to consider the process of attachment and detachment of consumers to their place of consumption, not as an internal meaning-making process, but one dependent on the environment – physical and social – that surrounded the participants and the interaction between each other. While my study does not concern itself with places of consumption itself, the authors suggest that "future research must examine how attachment forms when consumers are navigating virtual places as opposed to brick-and-mortar stores" (Borghini et al., 2021, p. 911). If I am to consider video game consumption, I must take

notice of the platforms and virtual stores through which gamers purchase and access their games, and how they attach and detach from them as well. Although this is not the focus, it is a marginal aspect of the phenomenon to be analyzed.

2.3 Video Games Studies

While still quite new, Games Studies have evolved and gradually gained more space in the last twenty years (Jørgensen & Aarseth, 2022). As an interdisciplinary area of study, it shows both the strengths and weaknesses of being so. I do not aim to encompass all this field knowledge, but by focusing on a few of the most well knows names in the field and recent publications in Games Studies, my goal is to incorporate some of the knowledge about video games into my research. In this session, I will present some of the definitions of games, approaches for studying them and the problems involved in such a process.

Juul (2005) defines a game as a set of six features that are necessary and sufficient to delimit a game, but also work on three levels. The three levels are: “the level of the game itself, as a set of rules; the level of the player's relation to the game; and the level of the relation between the activity of playing the game and the rest of the world” (Juul, 2005, p. 19). While the six features are: (1) a rule-based formal system; (2) variable and quantifiable outcomes; (3) where different outcomes are assigned different values; (4) where the player exerts effort to influence the outcome; (5) the player feels emotionally attached to the outcome; (6) and the consequences of the activity are optional and negotiable. The main argument held by the author is that games are an assemblage of rules and fiction (Juul, 2005), that is, a game is never only a set of rules that players comply with to achieve the game’s objective, nor a fictional narrative to be read, but the intersection of both where one feeds the other in such a way that a completely new and independent media format emerges. It is, then, not sufficient to analyze video games

only by the rules nor only by the fiction that composes them, but both in conjunction, through the three levels and six features, a game is defined.

As for Konzak (2002), the author delimits seven layers for analyzing video games: (1) hardware, the physical objects that enable a game to be run and interacted with; (2) program code, where the game's rules and mechanics are delimited/prescribed; (3) functionality, meaning the behaviors and responses the game has to player's inputs; (4) gameplay, the actual playing of the game in all its dimensions; (5) meaning, related to a semiotic study of signs present in the game; (6) referentiality, relating to other games and/or other media which are referenced by the game; and (7) socio-culture, related to "the interaction not just between computer game and player but the interrelationship between all participants of the game" (Konzack, 2002, p. 98) and the socio-cultural context in which they live. By viewing video games as composed of these seven layers, I can focus on each one individually, on which affordances emerge on each layer, and how each layer influences each emerging affordance. Still, Aarseth reinforces that

> while it is unfair to call his approach unpractical, its true strength lies probably in the theoretical model rather than as a practical, step-by-step formula for game analysis. The strength of Konzack's model is also its weakness: the seven separated layers, which appear to be equally important. […] Konzack's method is probably best used as an open framework, where the analyst can choose any 2-4 of the seven layers to work with, and ignore the rest. Furthermore, layers should not be seen in isolation, but probably analyzed together for best effect (Aarseth, 2003, p. 2).

As a practical solution, Aarseth (2003) proposes three dimensions that define video games: (1) gameplay, the players' actions, strategies, and motives; (2) game structure, the rules of the game, including the simulation rules; and (3) game-world, fictional content, topology/level design, textures, etc. To access knowledge about a game – in either or all its dimensions – the author suggests three main approaches: study the rules, design, and mechanics

by accessing the information on its development; observe people playing the game and/or read reports/reviews; and, finally, playing the game ourselves. Although all are valuable and competent approaches, the author states that neither of the first two compares to the richness of playing the game, in his own words: “if we have not experienced the game personally, we are liable to commit severe misunderstandings, even if we study the mechanics and try our best to guess at their workings” (Aarseth, 2003, p. 3).

In conclusion, we can assert that video games are more than merely interactive movies, and Juul’s (2005) definition brings clarity and complexity to what video games are and, thus, helps me understand their appeal, structure, and what differentiates them from other media. Konzak’s (2002) seven layers add to the definition by laying out an open framework through which video games can be analyzed, as so to better guide analytical inquiry. Adding to that, Aarseth’s (2003) work proposes another set of elements on which video games can be divided that can be merged with Konzak’s (2002) framework for a more nuanced and precise analysis of the emergent affordances when consuming video games. Finally, the author defines three forms of data collection and analysis, emphasizing the importance of playing the video games as the major, helping better solidify the proposed methodology, presented in the next session.

3. RESEARCH METHODS

My main objective with this project is to answer the aforementioned research question: *what are the affordances that emerge through the process of consuming video games?* In doing so, I aim to explore video game consumption in a novel way, encompassing the socio-material perspective brought by the Affordances Theory. To access those affordances and mechanisms, I propose to implement the Walkthrough Method, a methodology that was structured by Light and colleagues (2018), as it enables a thorough investigation of technological platforms (such as smartphone apps) and consumers' interactions with them. Specifically, the authors developed this method to address the need for a guide to study smartphone apps and investigate their functionalities, content, and possibilities of interactions for users (Light et al., 2018).

As posed by the authors, an app walkthrough seeks not to understand whether users are using apps as intended by the developers, but rather "illuminate the material traces of those intentions, and thereby to critically examine the workings of an app as a socio-technical artifact" (Light et al., 2018, p. 886) by combining Science and Technology Studies and Cultural Studies so that we can better understand both how technologies are shaped by culture, as well as how culture is shaped by technology. Although the methodology was proposed for studying apps, the same arguments that sustain its usage in this context also can be used to sustain usage in the context of video games, especially focusing on affordances, as video games are software applications themselves, and operate as digital platforms and virtual environments. Finally, Light and colleagues (2018) argue that, through the Walkthrough Method, researchers can access

> the otherwise implicit and (by design) seamless process of engaging with a digital media object – and they can give away hidden affordances and tricks (as in-game walkthroughs which can reveal shortcuts and workarounds for wickedly difficult elements of gameplay) (Light et al., 2018, p. 885).

Interestingly, the term “walkthrough” is widely used within the gaming culture, as it refers to guides – either in textual or video format – that "walk" the reader "through" a given game, showing not only the intended way for the player to reach the game's ending/goal but also – and perhaps most interestingly – the hidden paths and tricks that can be applied to either optimize or break gameplay. The proposed walkthrough can be understood as the building work of video game walkthroughs but focusing on the affordances emergent through the gameplay process.

Still, as games as not identical to apps, the method will be adapted considering methodological proposals brought from Games Studies (Aarseth, 2003; Cuttell, 2015; Daneels et al., 2022; Kłosiński, 2022; Lankoski & Björk, 2015; Schmierbach, 2009; Tanenbaum, 2021). When looking at Game Studies, the methodologies applied resemble the one described by Light and colleagues (2018) but can be seen as being called immersive methods (Cuttell, 2015) or game analysis (Daneels et al., 2022).

Daneels and colleagues (2022) try to unify the different methodological proposals from Video Game Studies in what they call The Digital Game Analysis Protocol (DiGAP), composed of seven sections composed of thirty-one items that the researcher should aim to define and go through to make a complete game analysis. From the DiGAP’s sections, I draw attention to four of them that are specifically tailored toward game analysis: Game Selection, Boundaries, Analysis Approach, and Coding Techniques & Data Extraction. In the first one, the authors delimit that the selected games should not only be described in detail, but the game selection criteria must be made clear and should be consistent in answering the proposed research question. Boundaries, on the other hand, deal with the research’s transparency regarding gameplay description in terms of date and place, platform, difficulty level, engagement level, in-game choices, and use of meta-ludic texts. Most important in Analysis Approach, the authors emphasize that the use of previously developed frameworks and dimensions – such as the ones

described in the previous session – can greatly help the analysis, as they guide analytical inquiry. Lastly, the Coding Techniques & Data Extraction session encourages the use of gameplay recording data alongside other sources – such as written notes, messages on discussion boards, game reviews, walkthroughs, and livestreams – to enrich the data, and the usage of various coding methods, if they can answer the research question. The strength of the DiGAP is its adaptability to seemingly any research on video games, which, in turn, is also its weakness: although it lays out an understandable and useful format for approaching one's research, it does not go deep enough into most of its own proposals.

On the other hand, Cuttell (2015) argues that more participatory and immersive methods should be implemented in video game studies, as they yield, firstly, an understanding of how the game is composed to structure engagement, and, secondly, a reflexive approach when analyzing game those structures through immersive play. "In doing so, this method allows the researcher to reflect upon the intersection of game structures, immersive play, and ideology, whilst also reflexively acknowledging their own emotions and position within the research" (Cuttell, 2015, pp. 63–64). Ultimately, Cuttell's (2015) proposition calls for a similar level of engagement as proposed by Aarseth (2003) but adding elements of autobiography, considering the role and subjectivity of the researcher, and calling for conscious reflexivity. In this sense, both Daneels and colleagues' (2022) DiGAP and Cuttell's (2015) immersive method call for a transparent, clear, and thoughtful description of the game analysis process.

Some of the elements in these works align with the methodology proposed by Light and colleagues (2018), as they focus on experiencing the digital environments both in a user-centric manner but also keeping the analytic/critical perspective needed in order to achieve deeper and nuanced understanding of the inner working of the artifacts of study. The main difference lies in the specific elements one might focus on when analyzing an app rather than a video game – and vice versa. Whereas Light and colleagues (2018) focus on analyzing an app's user

interface, functions and features, textual content and tone, and symbolic representation, Games Studies literature shifts the focus not only to the technical elements but also on the artistic ones that compose a game and how the game and its player interact.

By combining both perspectives, my goal is to create and apply a systematic methodology that can extract insightful information about the affordances that emerge through video game consumption with a consumer culture perspective, but also recognizes and utilizes the conceptual and methodological contributions from Video Game Studies. The chosen methodology, then, composed of playing three games purposefully selected for the research's objectives. The gameplay was recorded alongside the researcher's commentaries and reactions during gameplay. This data was then properly coded and analyzed according to Saldaña's (2016) work and in an abductive process (Reichertz, 2014; Rinehart, 2021). In the next subitems, I present more in-depth descriptions of the chosen games for the research and the criteria used for this selection, followed by the data gathering used, and, finally, the coding and code analysis process applied.

3.1 Choosing the Games

One of the most important and first decisions is deciding which games to analyze. Schmierbach (2009) comments how, in video game studies, sampling games is usually done either through random or purposeful sampling, and Malliet (2007) argues that the latter better fits more critical analysis, focusing on games that are more likely to yield more information to the research question. For Lankoski and Björk (2015) another important matter to consider when analyzing more recent games is having prior enough knowledge so that the researcher can work on "distinguishing the parts that are good candidates for analysis in terms of one's research questions" (Lankoski & Björk, 2015, p. 28). For the purposes of this research, I align myself with the purposeful sampling perspective and, as such, have taken four criteria into

account to define the three selected games to be analyzed in my study. These four criteria were created taking into consideration propositions made by the aforementioned studies, and they are: Game's Genre and Research Question Alignment, Game's Relevance in Critiques, Sales, and Influence, Game's Prior Knowledge and Mastery, and Game's Availability.

Game's Genre and Research Question Alignment is widely considered one of the most important elements of the sampling criteria (Aarseth, 2003; Cuttell, 2015; Daneels et al., 2022; Lankoski & Björk, 2015; Malliet, 2007). As a qualitative, non-positivist researcher, it makes little to no sense for me to seek statistical relevance through probabilistic or random sampling, and for the purposes of interpretative and/or critical inquiry, purposeful sampling is the most recommended route (Cuttell, 2015; Daneels et al., 2022; Malliet, 2007). Still, purposeful sampling can take many forms, such as selecting from the best-selling or more well regarded/critiqued games overall, from a selected genre, or from each of the most famous genres (Kłosiński, 2022). Although all can be valid sampling forms, Daneels and colleagues (2022) emphasize that the alignment with the research's objectives and/or questions should be the main criteria. As such, considering that the purpose of this research is to discover and describe the affordances emergent from video game consumption, it makes sense to select from games that are of a more broad and plentiful kind in terms of gameplay, rather than focused, one-dimensional experiences – which would yield specific affordances of the given genre, rather than affordances shared among many genres.

In terms of the relevance of the selected games, I chose to seek games with critical, sales and influence relevance. Critical relevance relates to the overall reception by online reviews and scores – either coming from consumers, journalists, influencers, or whomever else. Most gaming platforms have their own form of star/score ranking as well as written reviews, and gamers can express their opinions on many social media platforms in either video or written format. As compiling those would be counterproductive, the website Metacritic lends itself

quite useful: it compiles critics' reviews from various gaming websites into what is called the "Metascore" – which goes from 0 to 100 –, and consumers can express their own opinions in written and score-based format, which translated to the "User score" – which goes from 0 to 10, with decimals. Although not perfect, it is a practical and useful solution for evaluating such metric. Sales, on the other hand, are more direct and conceptually simple, and Wikipedia's List of best-selling video games (2022) is an up-to-date listing that takes numbers directly from sales figures reported by video game companies. Finally, influence is the least direct and most complex of the three and can only be accessed by observing how much of the concepts, mechanics, themes, features, and other elements from a given game are either directly copied or used as inspiration by future successful games.

Aarseth (2003) makes it clear that developing mastery over the analyzed game is critical, if the researcher aims to analyze it in a more complete, rather than superficial form. This mastery can be understood as analog to what Davis and Chouinard (2016) call Dexterity, that is, beyond perceiving an affordance, individuals need to be capable of realizing them. As such, holding mastery over the game's mechanics and features lends itself to very important in accessing the affordances present in the game. Still, it is almost impossible to master every form of play in each game, especially those focused on broadening the range of possible modes of play. As such, although the game's selected are the ones over which I hold some level of mastery, eventually some affordances might not be immediately realizable for me. And trying to build the dexterity to realize them – be I successful or not – is useful for the given objectives of this project. As for prior knowledge, although the experience of accessing a game for the first time is rich and insightful for analyzing the emergent and the dormant affordances from video game consumption, not knowing the game might also impede accessing more affordances, which is more detrimental to this research's objectives.

Finally, Availability has not much to do with theory or methodological approaches, but rather a much more cynical factor: accessing games is quite expensive. Not only is the game itself needed, but also either a console or a capable PC to run it, and the peripherals – game controller, mouse, keyboard, headset, TV, monitor, capture cards, etc. – to interact with it. Not only that, but some games are also made exclusively for certain consoles, and nowadays, most games have online functionality that – in the case of consoles – always requires a timely subscription in order to be accessed. As such, the selected games are also those already owned by myself, in platforms I have access to, and to which I can record gameplay footage.

Taking the criteria described into account, the chosen games[2] are: The Witcher 3: Wild Hunt (CD Project Red, 2015), The Legend of Zelda: Breath of the Wild (Nintendo, 2017), and Elden Ring (FromSoftware, 2022). Table 1 delimits how each chosen game aligns itself with each criterion. One extra criterion is that all three games chosen are thematically alike, that is, all three are roughly from the same genre which can be understood as "Medieval Fantasy Open-World RPGs"[3], meaning that they take place inside a fantastical world that resembles a magical reconstruction of the European middle age, and gameplay mixes the sandbox experience of being thrown into an open, living world, where players can choose their paths and adventures, with old-school tabletop RPG mechanics. Still, my goal with the selected and proposed genre for the chosen games is to focus less on the form and more on the content of the analyzed games, which allows for a better investigation of the affordances present within video game consumption. As Evans and colleagues (2017) reinforce, many studies on affordances misjudge affordances by objectives, features or outcomes, by focusing on the perceptive elements of technology rather than their conceptual, abstract meanings.

---

2 The games' content and context in-depth description can be found in the next session, dedicated only for this purpose.

3 Conventional video game genres can be quite problematic, and most definitions are contradictory and/or questionable (Apperley, 2006; Clarke et al., 2017), and this is not a discussion I aim to contribute to. As such, the proposed genre serves a descriptive purpose for the chosen games rather than a typological one.

Table 1 — Games selected and criteria alignment.

	The Witcher 3: Wild Hunt	The Legend of Zelda: Breath of the Wild	Elden Ring
Game's Genre and Research Question Alignment	All games selected are of the open-world genre, that is, the game world is composed of an open, free-roaming map that players can explore and experience in seemingly infinite order and manners. This type of game focuses on bringing variety and choices to the player rather than on specific modes of play, such as competitive, exploratory, narrative, puzzle-solving, etc. As such, from all different genres, this is the one with greater alignment with the proposed research question, being a good source for finding many affordances present in video game consumption.		
Game's Relevance in Critiques, Sales, and Influence	Won the Game of the Year awards of 2016 (McWhertor, 2016), amongst others, and is currently the 14th best-selling game of all time ("List of Best-Selling Video Games," 2022). It holds a Metascore of 93 and a User Score of 9.1.	Won the Game of the Year awards of 2018 (Plunkett, 2018), amongst others, and is currently the 26th best-selling game of all time ("List of Best-Selling Video Games," 2022). It holds a Metascore of 97 and a User Score of 8.7.	Won the Game of the Year wards of 2022 (Mercante, 2022), was the best-selling game of February and March in the USA, as well as the best-selling in the twelve previous months (LeBlanc, 2022). It holds a Metascore of 96 and a User Score of 7.9.
Game's Prior Knowledge and Mastery	With over 185 hours of game time between playing on Windows PC and Nintendo Switch, I have finished the game multiple times in different difficulties and explored different endings and both DLCs.	With more than 400 hours of game time, I have finished the game on Normal and Master mode, as well as both DLCs, and completed all but one achievement of the entire game.	With roughly 150 hours of game time, I have beaten the game two times with different endings and explored about half of the game's content and mechanics available.
Game's Availability	I already own the game on two different platforms which I can both play and record: Windows PC, through Steam, and Nintendo Switch.	I already own the game on one platform which I can both play and record: Nintendo Switch.	I already own the game on one platform which I can both play and record: Windows PC, through Steam.

Having this trio of games purposefully selected and the criteria aligning itself with the proposed research question and objectives, we shall focus now on the data-gathering process.

3.2 Data Collection

When doing the Walkthrough, my goal was to take on the role of a video game player, while still "applying an analytical eye" (Light et al., 2018, p. 891) to the process of gameplay. As Cuttel (2015) points out, "meaning-making from games, as with any text, is a negotiated and multifaceted process" (p. 62), and, as such, requires that the researcher immerses themselves into the game, and "through discussing their subjective experience of attachment and the emotions elicited by their involvement with the text, they can add another dimension of analysis to their study whilst making the research process more transparent" (Cuttell, 2015, p. 62). Thus, to perform this immersion and be able to critically analyze the data, the method calls for a two-stage approach: one revolving around playing the games themselves, immersing myself, while recording and making field notes in the form of spoken commentaries; and only then, on the second stage, coding the recorded gameplay sessions and analyzing the resulting codes.

As brought up by most methodological works in Games Studies, one of the great issues in the gameplay approach is defining how much of the game will be played (Aarseth, 2003; Cuttell, 2015; Daneels et al., 2022; Kłosiński, 2022; Schmierbach, 2009; Tanenbaum, 2021) – as even, if the game is to be played until completion, what does it mean to complete the game. Aarseh (2003) delimits that not every research requires completion, and, for my methodology, I aimed for partial completion, that is, set a goal for every game. Each goal was selected considering the scope of each game, as the path until the goal must encompass most of the mechanics, themes, and elements one would experience if the game was played until completion. Still, Schmierbach (2009) emphasizes that many studies misrepresent games and game mechanics by analyzing too little of the game, usually focusing on the earlier parts. "The further into a game researchers go, the more important contextual material would be in making sense of the sampled content during the coding process." (Schmierbach, 2009, p. 158)

In the gameplay process, taking notes and making research diaries was most of the time cumbersome – if not impossible – and ultimately breaks immersion and flow (Cuttell, 2015). To deal with this issue, I recorded both myself and the game's screen and audio while playing. This resembles a common practice in gaming culture (Wulf et al., 2020), the gameplay footage: gamers record themselves playing and commenting while gaming and either share online video recordings or stream the recording sessions live through the social media platform. But, in my case, instead of focusing on creating engaging and monetizable content, I transformed the recorded and streaming content into my field journal. Not only does this solution addresses Cuttel's (2015) point, but it also allows me to engage in practice very popular within gaming culture. The gameplay footage data is described in Table 2.

Table 2 — Walkthrough footage recording summary.

	The Witcher 3: Wild Hunt	**The Legend of Zelda: Breath of the Wild**	**Elden Ring**
# of recording sessions	*3*	*3*	*5*
Recorded time	*7 hours and 6 minutes*	*9 hours and 49 minutes*	*15 hours*

3.3 Data Analysis

After playing the games through the proposed script and recording the footage of the gameplay alongside my own commentaries, this collected data could be analyzed through a plethora of different coding methods. As the chosen basis for my analysis process, I take the methodologies for coding and analyzing codes as proposed by Saldaña (2016). The author describes the coding method as a valuable alternative when the research seeks to find patterns – which can be identified by similarity, difference, frequency, sequence, correspondence and/or causation – within qualitative data (Saldaña, 2016). As my goal was to define the emergent affordances of video game consumption, I searched for patterns of correspondence:

possibilities of action that correspond to either the technological or social environment in which the consumption takes place. In order to access those, I followed the synthesis process that links data to codes, codes to categories, categories to themes, and, finally, themes to theory (Saldaña, 2016).

The whole coding process also followed a clear abductive path. As I strove to absorb the largest amount of environmental data to be interpreted (Reichertz, 2014), the analysis was permeated by a constant back and forth between data, theory and experience. For Rineheart (2021), the abductive process involves the "researchers' immersion in and deliberate turning or moving away from the task of scrutinizing evidence to be open to possibilities" (p. 303) and, thus, the author proposes three rules to be followed: taking your time, as in not rushing the analysis and familiarization process; acknowledging informal prompts, as even seemingly unrelated interactions during the analysis period; and backward mapping, meaning to retroactively explain the data using current theorizations. Following both Reichertz's (2014) and Rineheart's (2021) throughout the coding process also meant better reconciling my gamer and researcher selves, rather than having them struggle against each other.

The first cycle coding process took place right after the last gameplay session was done. This coding was done by watching and rewatching the gameplay footage and coding it according to Saldaña's (2016) recommendation on dealing with visual data, that is, "a holistic, interpretive lens guided by intuitive inquiry and strategic questions" (Saldaña, 2016, p. 57). This proposition aligns with the recommendations by Corbin and Strauss (2015) of open coding, while still informed by theory, letting the codes emerge from the data alongside theory based understanding. In this abductive process of dyadic video analysis, chunks of the video are to be analyzed with pauses between them, which contemplated not only reflections about the coding process, but also returning to the theory in order to asses such reflections, so that the I could both codify and reflect upon the content and its codification in relation to the chosen

theory (Reichertz, 2014; Saldaña, 2016). This process resulted in a textual description of what took place in the footage in five-minute intervals, alongside a sheet delimiting which elements of gameplay took place in each of these intervals. The first cycle coding textual output lent itself very useful as it was easier to find moments and themes on such data, and only then search for the specific timeframe in the video files.

By the end of the first cycle of coding, considering that more than one coding format may arise and lend itself useful in understanding the emergent affordances of video game consumption, Saldaña (2016) recommends the usage of Eclectic Coding, so that the researcher can "transition to strategic 'second draft' recoding decisions based on the learnings of the experience" (p. 212). In doing so, I referenced both the previously analyzed theoretical background, alongside the first cycle coding results, and even went back to the recorded footage when necessary. During this phase, some adjacent methodological tools were used, such as text classification, word clouds, correlation tables and topic delimitation, which all helped to find clues in the data, which could then be further and deeper investigated.

Second cycle coding, as Saldaña (2016) defines it, has as its main goal "develop a sense of categorical, thematic, conceptual, and/or theoretical organization from your array of first cycle codes" (p. 234). In doing this second cycle, the original footage was revisited, but not in an exploratory fashion, but to inquire about the previously developed and assigned codes, in search of a higher level, a more explicatory coding scheme that moves the research further away from codes that describe the data, and towards theory building. By the end of the second cycle of coding, I finally delimited the affordance types that I shall propose, alongside two adjacent discussions: one on the agency power structure in video game development and consumptions, and the other on video game referentiality. These results are exposed in the following session and explored in the Discussion section.

4. FINDINGS

Having gathered around 32 hours of gameplay footage, coded, and analyzed, I came across five types of affordances that defined the playthroughs. In the following paragraphs, I shall delimit all five as well as point out the discussions around referentiality and power struggle over agency between players and developers.

As Aarseth (2003) recommended, I relied on Konzack's (2002) division of video games in seven layers – hardware, code, functionality, gameplay, narrative, referentiality, and socio-culture –, and I could understand how each layer contributes to each affordance. Still, it is imperative to understand that, in the same way "layers should not be seen in isolation" (Aarseth, 2003, p. 2), these affordances strongly overlap each other and should be considered together rather than individually and disconnected.

This approach made me realize that it is impossible to delimit singular, and linear connections between game features/mechanics with a specific affordance, as they interlace and interact with one another. A single element of the game can relate to more than one affordance, and one singular affordance may be delimited by various elements. Also, while similar elements relate to the same affordances between games, they can yield very different, even opposite effects on their affordances in different scenarios. It all depends on how they are implemented into the game.

It is also important to note the effect of referentiality throughout the games played. Because The Witcher 3: Wild Hunt (W3), The Legend of Zelda: Breath of the Wild (BOTW), and Elden Ring (ER) are of roughly the same genre and were released in sequence – 2015, 2017, and 2022, respectively –, it was noticeable to see how subsequent games learn from one another and how this dynamic affected my experience with each game. Each released game, in response to the players, creates fertile ground for the next ones, even from different developers, but especially inside the same genre. Because of that, if the player knows the prior released

game for a given genre, the subsequent games are inevitably compared to them, even if unintentionally.

Another major aspect that played an important role throughout the whole walkthrough was the struggle between players and developers for control over the player's actions and experience in the game. More importantly, the feeling/perception of agency. That is, games are composed of highly intentional mechanics and content, so much so, that almost every action done in the game has been previously considered during development, in some form. While in some moments I felt guided by the game, in other I felt empowered by it, even if this very feeling was intended by the developers.

In the context of video games, delimiting between hegemonic and negotiated use has proven hard without any data from the game's development. While the walkthrough data is rich enough to reveal traces of intentionality and agency left on these games and how they affect player behavior, they are clues that need further investigation. It is clear, though, that video games do not exert agency, rather, they're agentic vessels through which the developers program their intentions for the players' actions.

Finally, considering the definitions of Bucher and Helmond (2018), Davis and Chouinard (2016), and Schmidt (2007), and the criteria of Evans and colleagues (2017) to explain the five different types of affordances:

1. *Co-creative Affordances* refer to possibilities of a collaborative effort to create value that, such as in social media platforms (Shamayleh & Arsel, 2022), can occur between players and developers or between players. Unlike social media platforms, videogames do not always "provide a shared virtual space for humans to interact and collaborate" (Shamayleh & Arsel, 2022, p. 16), rather, they reside within such platforms and have connections created between them.

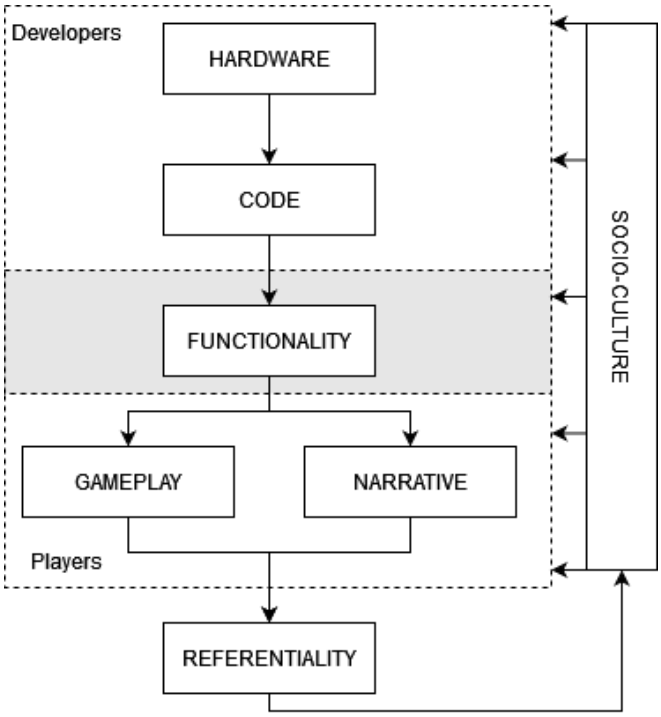
2. *Expressive Affordances* are related to being able to express oneself when consuming video games. They appear throughout the gameplay process and can be exerted without the player's awareness.
3. *Discovery and Learning Affordances* delimit possibilities presented to the player to discover and learn about the game's mechanics, narrative, meanings, and referentiality. So, they are close to *Reclame Aqui*'s discovery affordances (Kozinets et al., 2021), and they are constrained by which and how information is presented, and knowledgeable players can be exerted these affordances, despite the developer's intentions.
4. *Immersive and Incorporative Affordances* refer to how the game allows players to incorporate the played games by embodying them and immerse themselves into the gameplay experience. This experience is a unique aspect of game consumption, as these affordances might be the most ephemerous and hardest to delimit properly in terms of features.
5. *Connective and Communicative Affordances* are much like the contact (Kozinets et al., 2021) and connective (Shamayleh & Arsel, 2022) affordances found in social media platforms. They are possibilities for players to connect and communicate with one another, either from within the game world, within the game's platform, or external platforms connected to the game.

For the next sections, I shall further explain each of the five affordances in more detail, explore how they're presented in the analyzed walkthroughs, and bring supporting secondary data gathered. Throughout these descriptions, I shall also discuss the aspects of referentiality and an agentic struggle between players and developers.

4.1 Agency Power Structure and Struggle

Taking Konzack's (2002) seven layers for analyzing video games allowed me to see that agency over video game consumption has a derivative structure of imagined and realized affordances that come from the hardware layer, down to the referentiality layer. The proposed structure is delimited by Figure 1, where, on the upper part sits the realm of the Developers exerting agency, and on the bottom the Players do so. Agency exerted by developers derives from Hardware to Code and then to Functionality, where the players come in. As they play the game, Players start exerting their own agency over Gameplay and Narrative. The games then derive into Referentiality, which feeds the Socio-cultural environment, which exerts agency over both Developers and Player over the whole process.

Figure 1 — Agency Power Structure in Video Games

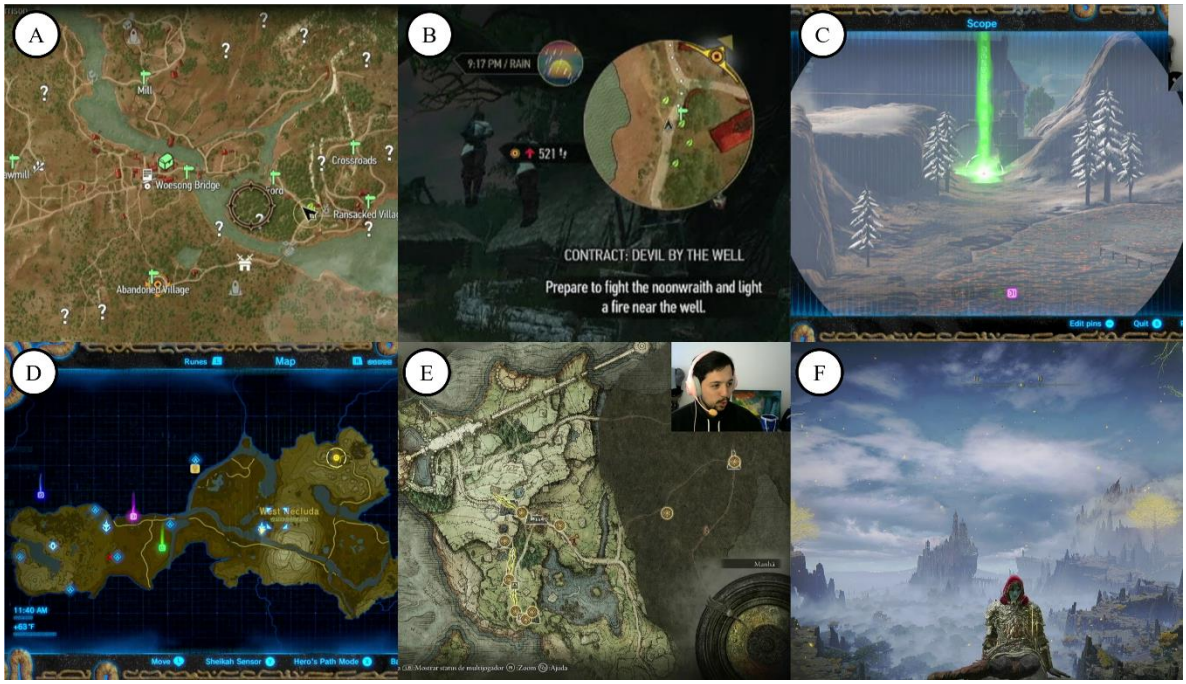


Throughout the playthroughs, I was able to recognize some of the developers' imagined affordances. The developers' imagined affordances refer to the possibilities of actions that the developers intended for the players to recognize in their imaginative process. In this sense, I categorize them into two broad formats: explicit and implicit. Explicit developers' imagined affordances are the ones that the game directly request, demand, or refuse the players, by openly explaining in (usually) textual format what the player is or is not supposed to do. In comparison, implicit developers' imagined affordances are the ones that are imbued into the games in more indirect formats, either encouraging, discouraging, or allowing the players, usually presented in non-textual formats. One clear example of such affordances and their differentiation is how the games present their world and afford exploration and discovery.

Exploring a vast world, dense with content, is a constant between the three played games. Still, how this world is presented and how exploration and discovery are afforded varies between them, from W3, to BOTW and then ER, the approach of each game is evolving from

explicit to implicit. In Figure 2 there are six cropped screenshots – A, B, C, D, and E – that will serve to exemplify this dynamic.

Figure 2 — Screenshots exemplify each game's approach to exploration and discovery imagined affordances.



In W3, the world map (A) is represented both in detail, but also has icons for all discovered and undiscovered locations where content can be found, while the rest of the map is mostly empty and has nothing of interest to be found even if explored. The game also has a mini map (B) that is always present, with icons for even more items, places, people, and objects of interest while exploring, and a navigation system akin to Google Maps or Waze. BOTW, on the other hand, allows players to discover places of interest on their own (C), by observing the land and making their own markings with the Sheikah Slate. These markings show on the map, which is highly detailed once the area's tower has been conquered, while the rest remains undiscovered. While BOTW has a mini map as well, it is optional and can easily be disabled. Finally, ER has a stylistic map (E), reminiscent of old illustrative maps from medieval times,

with less clear information, and encourages the players to analyze it alongside the world landscape (F) to decide which places to explore. ER has no mini map, only a compass feature.

While in all games, the imagined intended affordances for how the player should approach exploration and discovery are present and, indeed, delimit the players possibilities for doing so, the form through which they are represented allows for very different perspectives and reception by the players. In my case, W3's approach seemed the more invasive one, and took away my sense of wonder to discover the world, in place of a to-do list of places to go and discover, rather than an interesting and mysterious land to be uncovered. While in both BOTW and ER the places which caught my attention and where I explored were all programmed to do so, as videogames are highly intentional, I felt ownership over my decisions and kept the sense of wonder and mystery that was lost in W3's approach. It is imperative to understand, still, that these games have been launched in sequence, and are derivative of one another due to Referentiality.

4.2 Referentiality

Referentiality was found to affect the gaming experience in two major forms. First, Referentiality relates to the effects of the existing video game history over the socio-cultural environment in which games are developed. In this sense, game developers converse through the video games released, directly referencing, and building upon previous works, which in results in different affordances and implementations of affordance built into those games. Second, Referentiality delimits the imagined affordances that players bring upon their gaming experience, and those can be both gaming and non-gaming related ones. These imagined affordances directly influence the perception and realization of the actual affordances found in game.

Because the Referentiality delimited by all games previously existing – especially those in the same genre – delimits a great part of the socio-cultural environment in which games are developed, for any given game launched at a certain point, it is imperative to take in account all that which came before. In this sense, the resulting experiences, achievements, and flaws found in W3 served as Referentiality for the developers of BOTW, and both games then to ER's development. Even if the socio-cultural environment is indeed comprised of various elements other than Referentiality, this means that, as much as developers exert agency over the players through the games, the player's response to each played game exerts agency over the developers of future games through Referentiality.

Not only that, but it also exerts agency over the very player who will play the future games and either have played the previous ones or have knowledge about them. Because I have played a plethora of open-world, action-RPG, and medieval-fantasy titles in the past, most of my time playing the games was experienced in relation to the previous gaming experiences. This became even clearer as the data collection forced me to go "back in time" to play older titles – W3 and BOTW – after having played newer ones – ER. When playing previously launched games, which have already become reference for the newer ones that I am currently playing, the reverse path leads to a different perception over these older games, pending to the negative side.

Many times, during the playthrough of both BOTW and W3, I commented either that I did not remember the game being so enclosed or that ER had resolved some issues I had with the game. While my memory of playing these games, especially BOTW, have been of freeing and mysterious games, playing them after having the referentiality of newer titles diminishes the experience in these regards. And knowing that newer games have better solutions for the issues of each element makes them seem lackluster, even if they were innovative and well received when launched. It's of course hard to delimit how much of this sensation has come

from referentiality, and how much from false memories, but the almost omnipresence of referentiality in my commentaries during gameplay lead me to believe that it is much more important than memory itself.

As such, Referentiality plays a major role as a Social Affordance, built upon experiences with and knowledge about previously played games, which deeply influences the playing experience of games. While playing games of similar genres in order of launch may lead to perceiving them as always evolving, going back to previously launched titles that have become reference may lead to disappointing and lackluster experiences. It is important to note that the evolution as positive exists only as a perception, games evolve in various directions, and delimiting them as either good or bad may lead to moral arbitrariness rather than proper analysis.

It also develops many of the Imagined Affordances brought to the gameplay experience by the players. By either having – or not – a set reference of previous games played, players approach each gameplay activity imagining which affordances they might or might not encounter during gameplay. At one point during the BOTW playthrough, for example, me and a viewer of the stream discussed about being able to climb faster in the game when wearing lighter clothes. For me, this was never imagined, as such a specific mechanic is usually not present in games, whereas for the viewer, because it works so in the outside world, it was imagined working as well in game. Referentiality, then, was a major factor impacting how I, as a player, imagined the possible affordances, and perceived and engaged with the presented affordances.

4.3 Co-creative Affordances

Co-creative affordances of video games refer to the different ways players and other actors can participate in creating value around the consumption of video games. Co-creation

includes both in-game possibilities and external ones, such as the metagame (Salen & Zimmerman, 2004). These affordances allow for collaboration and value creation between players and developers, players and players, and players and external actors such as social media creators and game journalists. Such dynamic is evident in the variety of social media content related to video games, such as gameplays, speedruns, and more. In the walkthroughs, many of these forms of co-creative affordances have been found and realized.

Juul (2005) argues that games only exist when played, and therefore for video games to exist, they must have players who play them. As such, co-creative affordances are an intrinsic part of every game, as they invite players to co-create the gaming experience. Every element of the game, from the icon on the desktop to the game's story and mechanics, presents opportunities for players to participate in the creation of the gameplay experience. Still, some elements invite even more collaborative value creation, and the way they are presented also differs from game to game.

The three games I analyzed in this study – W3, BOTW, and ER – present different levels of co-creative affordances. Neither W3 nor BOTW allow for multiplayer experiences, while ER has several, such as co-op modes, multiplayer assistance with bosses, player invasions, dueling, message placement, and group formation. Through these mechanics, which were encouraged by the game in various ways during the playthrough, players can co-create unique and customized experiences. Although W3 does not allow for multiplayer experiences, the narrative of the game is still fundamentally co-created with the players through their choices in the game. In every interaction, the player is demanded to choose Geralt's – the main character – responses, which can deeply change the unfolding and outcomes of the game's narrative. While co-creation would remain intrinsic to these games even without these mechanics, their implementation creates even deeper layers of co-creative affordances for the player to act upon.

The co-creation of the metagame is also present in modern video game consumption, as seen in the vast array of online content created by specialized journalistic outlets, independent content creators, and anonymous players. These contents include game guides, walkthroughs, top N lists, and other content, which can vary in format, including YouTube videos, Twitter threads, TikTok short videos, fan-made wikis, and blog and forum posts, and in content, such as narrative analysis, gameplay analysis, game completion guides, strategic guides, tips and tricks, etc.

The online co-created materials and content about the games are essential for their own enjoyment by a larger number of people, particularly those who do not have the necessary time and/or commitment to experience the game in its entirety. While chatting with one such content creator online, he stated that

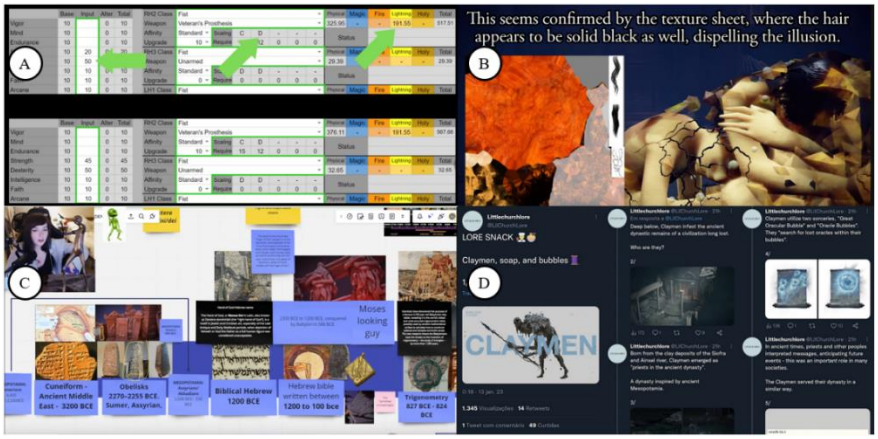
> most people, with a demanding job, a family, schoolwork, or whatever other life commitments they have don't have time to play a 100-200+ hour game, so look to creators to fill in the blanks, so they can get to the juicy bits quicker and make their time with the game more meaningful and worthwhile.

This content creator was referring to ER, and how the game demands hundreds of hours from players who want to experience all the content that can be found in the game, as well as a lot of investigative and research work. As such, metagame co-creation works not only as external, optional content that can enhance the gaming experience, but ones that guarantee full enjoyment and appreciation of the games.

From the three analyzed games, ER is the one which affords the most metagame co-creation. To name some of the creators whose content were deeply tied to my gameplay experience: *AgtJake* and *VaatiVidya* try to uncover the hidden stories of major and minor

characters of the game, as well and events that predate the game's narrative; *Queelag* (Figure 3, C) brings her knowledge about ancient civilizations, their myths and culture to analyze the game's influences and help interpret the narrative's meanings; *S41ntTr1n4* brings intersectionality and feminism in their analysis of gender representations found in the game's characters; *Fextralife* is the creator of the game's unofficial wiki, as well as creates videos showing possible character builds, weapon statistics and item locations; *Dom's Roundtable* creates guides for full completion of the game's quests, every item location, and other guides; *Chrightt* (Figure 3, A) publishes videos with in depth analysis of gear statistics, patch notes and their changes, and character build optimization guides for multiplayer combat; *ZullieTheWitch* (Figure 3, B) use hacking tools to inspect the game's asset and codes in search for clues about the game's development process; and *Littlechurchlore* (Figure 3, D) creates Twitter threads breaking down enemies, items, places and character's lore. All these co-created contents add up to the consumption experience that Elden Ring is but is only realized by the material qualities of the game that allow these types of creation.

Figure 3 — Examples of online co-created content creating value for the experiences of players.



Having a convoluted and implicit narrative, ER affords its investigation in more depth and multiple perspectives. By referencing various real-world ancient civilization's cultures,

myths, and symbology, it also affords discussions that uncover them. Having a complex system of attributes, with a large variety of weapons, armor, items, spells, and abilities that afford different playstyles – more on that in the next session – the game also affords guides and explanatory content to be created and be valuable for players. And by imbuing the most minute assets in the game with detail and care, the game also invites players with coding expertise to mine the game's data in search of these details. While W3 and BOTW also afford some level of metagame co-creation, they are far less intense and permissive.

4.4 Expressive Affordances

The concept of expressive affordances, as described by Shamayleh and Arsel (2022), refers to opportunities for "self, identity, political, affective, and creative expression" (p. 8), and the same can be found in videogames, even if through different functionalities. During my investigation, I found that expressiveness was closely tied to the presence of choices in hardware, input method, player character, play style, in-game decisions, and narrative. However, the mere presence of choices does not guarantee greater opportunities for self-expression. Instead, the implementation of these choices determined their affordances for expressiveness.

Open-world games, as simulated worlds, can invite players to approach them similarly to real life. Even fantastical settings in these games have their own logic and cohesion. For example, in W3, the player character Geralt is depicted as an overall "nice guy" who strives to do "the right thing." As a result, choices that deviate from this characterization, such as being rude or malevolent, seem incongruous, even though they are technically allowed. In contrast, in BOTW, presents the player character Link as a classic hero and only allows for "good deeds," and never allows the player to deviate from this identity. Finally, in ER, the player character is created from scratch at the start of the game and given no background, leading players to

construct their own backstory and make choices based on their own creations. For each approach, not only does the existence of choice delimits how much expressiveness the game affords, but also the contextual aspects that legitimize them (or not).

To foster opportunities for self-expression in these games, it is crucial to ensure that choices are coherent with the game world and player character and are balanced, properly rewarded, and meaningful. For instance, while BOTW has the least number of weapons, armor, and other gear, they are all serve a specific purpose. In this game, one armor set is more suited to survive inside the volcano region, and shock weapons deal more damage during rain, some weapons deal more damage against certain enemies, and so on. While the encouragement by the game to use specific gear at specific moments might seem a withholding of expressiveness, having meaningful gear allows for choice to also be meaningful. The W3 game, on the other hand, has a larger selection of gear, but it only serves to increase the player's defense stat. While heavier gear might make you slower and have more defense, and lighter gear make you faster with less defense, this is the only choice being made in the game. As the player progresses, better gear is found and changing from the old to the new is a non-choice because it only yields benefits.

Aside from meaning, viability also plays a great role in allowing expressiveness. The more complex of the system’s is the one found in ER, not only have a multitude of weapons, armor, and items, they are (almost) all meaningful and equally viable. Because there are so many play styles, attributes, status effects, types of damage, abilities, and so on, the game allows for (mostly) equal footing between them. This is further enforced by all the update patches that have been released since launch, which mostly help balance the game: making unviable weapons more viable, nerfing broken spells, and making slight alterations to damage, speed, and other elements of gameplay to foment experimentation and make all choices viable. In W3, on the other hand, while in most quests the player can choose between being selfless or

not, the reward for being selfless is always more worth it than not, making a choice a non-choice again due to the viability.

The three different approaches to gear, meaning, and viability are illustrated in Figure 4. From left to right, the figure depicts a scene from BOTW in which Link is given a women's garment from the Gerudo people, allowing him to cross-dress and enter the Gerudo Town; the armor selection screen in ER, which displays 13 base stats that vary between pieces; and the gear attributes in W3, which are primarily limited to the Armor level.

Figure 4 — Screenshots showing the different approaches to gear meaning and viability.

The notion of expressive affordances, as articulated by Shamayleh and Arsel (2022), encompasses a wide range of elements related to self-expression, identity, politics, affect, and creativity. This concept can be observed in video games through various functionalities, including choices related to hardware, input method, player character, play style, in-game decisions, and narrative. However, the mere presence of choices does not guarantee higher levels of expressiveness. Instead, the key factor that drives expressiveness is the implementation of these choices, which must be coherent with the game world and player character, as well as balanced, properly rewarded, and meaningful. In conclusion, to foster

higher levels of expressiveness in video games, it is crucial to provide players with a range of meaningful, viable options that allow for equal footing in their self-expression.

4.5 Learning and Discovery Affordances

Learning and Discovery affordances refer to the possibilities of learning new things and discovering information while playing video games. The Learning process was found to occur in two distinct ways: learning about the game, including its narrative and gameplay; and learning about the relationship between the games and the outside world, including their development process, references, and overall messages/interpretations. Discovery refers to an exploratory process through which the knowledge is acquired. Each game presents its own unique opportunities for Learning and Discovery, and their implementation varies significantly, impacting how these affordances are perceived and function.

Relating to learning and discovery about the game, both BOTW and W3 try to make sure the player learns the basics of gameplay and explores most, if not all, of the game's mechanics and systems in an introductory area before being set loose in the vast open world. W3 even presents the players with in-game encyclopedias about monsters, magic, characters, weapons, and more. In this sense, both games focus on the learning process, by explaining and presenting the players with large amounts of information, guaranteeing a full understanding of the game. Meanwhile, ER presents a very short and optional tutorial, and much fewer explanations about the game's mechanics and systems, letting the players explore the game and learn through experimentation and discovery.

While ER's approach accounts for player control over the learning process and creates a more mysterious world to be discovered, it can also be uninviting and intimidating for unfamiliar players. Both BOTW and W3 are much more approachable games, BOTW especially for not having many mechanics, while variating and iterating over the same basic

principles, and W3 by having all information organized and available, as well as the only one with a difficulty setting. By selecting any given difficulty, the player can engage with fewer systems and mechanics to progress the game, as enemy encounters are easier and can be dealt with simpler combat.

For instance, by not choosing the hardest difficulty on my W3's playthrough, I didn't need to invest in either bomb crafting or using the crossbow, two mechanics and system I dislike. Because of that, only using Potions and Oils, and optimizing the spells was enough to easily defeat most enemies and bosses. That is not to say that ER has no difficulty delimiter. But, instead of a menu selection, difficulty is defined by how the game is approached, which, in turn, is defined by the knowledge acquired about the game. Because I knew where to find powerful spells and items, and where to level up faster, I got very strong very fast in my playthrough, which made the whole gameplay experience much easier. In this sense, Learning seems to relate to the perception aspect of affordances, while Discovery relates to dexterity. Games like BOTW and W3 afford players to learn about the game's mechanics and systems, which require high perception but low dexterity to realize, while ER requires high dexterity from the players to realize discovery affordances.

The same can be said for the game's narrative, where W3 has a detailed but convoluted story, affording more learning and less discovery, while ER has an implicit and convoluted narrative that requires dexterity for discovery. The relationship between the game and the outside world is also reflected in the metagame, specifically in community-created content. ER's vast amount of such content highlights the dexterity required to realize its learning and discovery affordances, while BOTW's simpler lore and narrative afford less discovery and learning, and W3's direct approach to storytelling leaves little room for outside content. Learning and Discovery regarding the relationship between the game and the outside world work much in the same manner. We can see that when looking at a previously mentioned aspect

of game consumption: metagame, more specifically, content co-creation by community members and digital influencers. The vast amount and varying formats of such content creation for ER exemplify how much dexterity one need to realize the discovery and learning affordances laid by the game – one could argue, it was always meant to be a community effort. While BOTW has its fair share of such content, the simplicity of its lore and narrative affords much less discovery and learning, whereas W3's direct approach to storytelling and information delivery opens almost no space for outside content, as the game already presents the player with all there is to be presented.

In summary, Learning and Discovery affordances allow players to explore the richness of its content, its relation to the outside world, and about them both. While Discovery can precede Learning, it is only sometimes so. When information is displayed directly, players need only perception to exert Learning, while implicit information requires dexterity to explore and uncover the information, which can then afford learning. In terms of game design, there is no proper or better approach, but in my walkthroughs, requiring too much dexterity related to less approachable games, while not requiring any of it made me perceive the games as less intriguing and less prone to deeper Learning.

4.6 Immersive and Incorporative Affordances

Incorporation has been proposed to be a more nuanced and accurate description of player-game involvement than Immersion, the most known term in gaming environments (Calleja, 2007). From the six frames of involvement delimited by Calleja (2007) – tactical, performative, affective, shared, narrative, and spatial – all were found to affect incorporation. It was interesting to note how varying levels of involvement at different points in the games analyzed led to different relationships with each game and different format of immersion.

Tactical and performative involvement were achieved throughout the three playthroughs, but through different means, with varying difficulty, and with different results. W3 offers a full combat tutorial and extensive textual explanations of each game's mechanics and systems, affording players maximum tactical knowledge, leaving only players to realize their performance according to their dexterity. BOTW offers a description of base mechanics but leaves the players to explore, discover and learn about the more minute tactical and performative details through gameplay and experimentation, creating environments that invite for such. Finally, ER explains only the minimal input information and basic mechanics and systems, with cryptic and hidden information scattered throughout the game world, which invites the co-creation of knowledge through community learning and content creators. Because of that, W3 was the one where I could more easily achieve higher levels of mastery, followed by BOTW and finally ER, even though I had been playing ER more frequently prior to data collection.

I found that affective involvement was not always achieved. From the data analysis, it seems that this was mostly tied to the walkthrough proposal having a specific goal to be achieved in a timely manner and being in a live stream, both at the same time. Calleja (2007) relates affection with mood, and how players tend to engage with different game mechanics depending on how they feel. While all three games offer a wide range of gameplay features and content, allowing players to mostly choose what to do when they feel compelled to, having a timed and specific goal meant that I had little room for deviating from the main path. Even though most of the things I was doing in the games were activities that I enjoyed, I ended up having negative feeling about them. This happened because while the activities themselves were fun, the perception about them while being obligatory and in comparison, to other non-obligatory ones.

For example, at some point in the BOTW playthrough, I had to sneak into a ninja clan hideout to advance the story. Although the area is fun in its own way, I was much more inclined to explore and lacked the equipment to easily deal with the hideout's enemies. I even tried outsmarting the game and going around the camp, exploring the area, and reaching the final room from the back door. But the game would only allow me in if I came from the front door. At one point, after being killed by the enemies I commented:

> It's very frustrating having to do it all again… [an enemy spots me while sneaking] Oh no! No… Darn it! He saw me. [I run towards him while he calls for reinforcements] Oh, kill me already! Yeah, sure, sure... [I die in one hit] This is so frustrating!

While the frustration noted also comes from the difficulty of the area, I was constantly reminded by myself of all the other things I could be boing instead. For example, had I not been doing the walkthrough with a set goal, maybe I could have gone do other things that would help in affective involvement. Whereas, not having any other options, might have helped coping with the struggle.

Shared involvement, which relates to in-game relationships with the player character and other actors, be them other players of NPCs (Calleja, 2007), and narrative involvement can relate both to the game's presented story and plot, or to the player generated narrative through gameplay. W3 was the most successful in allowing shared incorporation with NPCs and its story. Three aspects delimited its success: the player character's – Geralt – fit in the world and narrative; the believability of the main NPC characters; how the game's narrative responds to player choices and inputs. For example, at one point, me and a viewer discussed how we felt differently about Phillip Strenger, a main character for the current questline, molded by the

choices and interactions each one had with him. For us, the in-game characters are treated almost as people, as the relationship with them is incorporated.

On the other hand, ER is the only one allowing for affective involvement with other players through the online features and involvement with the player-generated narrative, by focusing more on the player's experience over the game world and lore rather than those elements by themselves. Both the messaging system and player co-op/combat modes allow players to interact with one another, creating feelings of friendship and rivalry. Whereas the implicit, convoluted, and often conflicting narrative laid out allows players to focus more on their experience over it, than on the narrative as this element detached from themselves. All in all, each game allowed incorporation on those ends, but with very different results and applications.

Finally, spatial involvement had widely varying approaches for each game. Relating to "locating oneself within a wider game area than is visible on the screen" (Calleja, 2007, p. 252), this frame of incorporation was mostly achieved, but its result was more intense in the more recent game. In Figure 5, ER presents the player with an inaccurate and stylistic map (C) alongside clearly defined and distinguishable landscapes (D). In the same figure, W3 presents a highly detailed map (A) with Google Maps-like features (B) alongside very similar and realistic-looking landscape that is hard to navigate without constantly looking at the map. BOTW, on the other hand, presents a mixture of both and allows players to choose to see a more detailed GUI when exploring or a minimal interface to focus on the landscape. Because of that, I always knew where I was and where I was going in both ER and BOTW, having learned about the landscape, while in W3 I was constantly looking at the map and depended on it to position myself.

Figure 5 — Screenshots from W3's detailed map and navigation system and ER's stylistic map and distinguishable landscapes.

Through Calleja's (2007) proposed framework, I was able to understand how the different frames of incorporation relate to different levels of game immersion. Yet, it was also clear that different combinations of incorporation relate to different relationships with the games, as well as game familiarity has different effects on each frame.

The more familiar with a game in tactical and performative aspects, the easier it was to reach higher involvement. However, at the same time, familiarity with the game's presented narrative meant much harder involvement. Specifically, while playing both BOTW and ER, I entered a state of immersion through the gameplay mechanics and tactics, but not in relation to the game's narrative and world building. As a result, the games were approached as objects existing in the "real world", rather than as worlds in of themselves. In the following transcription from ER's first walkthrough session, I am already approaching the game in such manner:

> [while riding around and collecting Sites of Grace] One thing that I might stop and do – and it's something that I usually do while playing – is to look up how to do some things. There's an item I wanted to get that will be very important to do what I want. And I think that, what I want, basically, is to start the game well without needing much work. In the sense of having to defeat many bosses, go through many dungeons, and be able to skip stuff. I want to utilize well the tools that the game gives me. It will be very useful to get an item that I think I cannot use them, unless I wield with two hands, and this item does Bleeding Damage. Bleeding Damage is interesting, because when you make an enemy bleed, the damage is a percentage of the enemy's health, independent of your character stats. So, if you fight a strong enemy with a ton of health, you'll also deal a ton of bleed damage, way beyond what your character could do on its own. [I stop speaking to defeat a Troll and enter a ruined church]. So here we go… This place will be important so we can teleport to a late game area.

Instead of perceiving the game in its entirety, but most importantly, ignoring its narrative and aesthetics in favor of mechanics and tactics, from the very beginning of the playthrough I was playing the game focusing on a fixed strategy built on previously acquired knowledge – both from playing the game and engaging with metagame activities. However, the more intrusive narrative structure of W3 impeded me from ignoring it. As a result, even though I had the same level of familiarity over W3 compared to BOTW and ER, it was only on W3 that I achieved narrative involvement.

In conclusion, the immersive and incorporative affordances found throughout the walkthrough align in categories with Calleja's (2007) proposed six frames of incorporation. While each game presented such affordances differently, their overall goal was to immerse the

player into the game. The more freedom and agency the game entitled me the more immersive and enjoyable the experience was. Finally, familiarity with a game can have ambiguous effects on immersion. In my case, the more I knew a game, the less I engaged with affective, shared, or narrative involvement in place of tactical, performative, and spatial involvement.

4.7 Connective and Communicative Affordances

Connective and Communicative Affordances relate to the concepts found by Shamayleh and Arsel's (2022) and Kozinets et al.'s (2021) respectively. The two very closely related affordance types were found during the playthrough much in the same way as found by these authors. Connective affordances are defined as opportunities for players to establish connections with other players, while communicative affordances refer to the practices and habits of communication within gameplay and metagame activities. Even though all games present such affordances in the context of the metagame, only ER has in-game mechanics for player communication, co-op and versus multiplayer, and connecting to other players and communities of players.

Connective and Communicative affordances are deeply linked to Co-creative ones. The more players are connected and communicate with each other, the more depth and range co-creation can have. As previously stated – and depicted by Figure 6 – ER has various multiplayer mechanics which allow for player connectivity and communication: the message placement feature allows the player to read messages placed on specific points in the game map by other players (A) and leave their own messages using pre-defined phrases with blank spaces and a dictionary to fill in the blanks (B); co-op modes allow players to summon other players to enter their world and help them defeat bosses and go through dungeons, but in return become vulnerable to be invaded by hostile players (C); finally, competitive multiplayer allow players to battle each other, either invading and messing other player’s journey, or dueling against

each other (D). All those aspects are highly tied to player co-creation of value through self-narrative creation, but it can also be enhanced by metagaming value co-creation.

Figure 6 — Screenshots depicting the various multiplayer mechanics found in Elden Ring.

For instance, ER has a feature named Group Passwords. By adding a password in the multiplayer menu, players connect their world with other players using the same password, resulting in two main changes: first, messages and summon signs from in-group players have a distinct ring to be easily identified so that you can choose to follow instructions and summon for multiplayer people for your chosen group; and second, whenever a player from the group defeats the final boss, a usually rare weather effect occurs, where golden leaves fall from the sky, and the player is granted a buff on experience points from enemies during its duration. This mechanic allows members of specific communities to engage even more tightly with each other, such is the case of the previously mentioned *VaatiVidya*, who took the password “SEEKERS” for himself and his community of viewers. By adding such a password, you are sure to engage with players who follow *VaatiVidya*, share the same appreciation for ER, and hold similar perspectives on gameplay.

Games without multiplayer mechanics built-in are not devoid of Connective and Communicative Affordances. On Steam – the platform through which I played W3 on my Windows PC –, for example, I can not only track my achievements in the game but also compare them to other players who own the game. The platform also provides built-in forums for various sorts of discussion regarding the game and sharing spaces for photos and videos taken and edited by players. Those aspects of the platform which relate directly to social media platforms and their features but are nonetheless inherited to video game consumption as it happens today. In this sense, even video games without any multiplayer functionality, afford connection and communication, not mechanically but through their content.

In the case of W3, for instance, the branching storyline with varying ending for both singular quests and the game encourages players to share the different results and how to achieve them online. BOTW's indirect storytelling and uncovered content also invite players to engage in online discourses, but in lore investigation. Even if those activities are held in spaces outside the games themselves, the games were the driving force that connected those people and the very content of their communicative efforts.

Connective and Communicative affordances are deeply tied to Co-creation, as a great part of the latter is built upon the former ones. Games can present these affordances either through the mechanics they present, usually in the form of multiplayer options, or through narrative and aesthetical means which then lead players to engage in spaces outside the games. Either way, games work as a catalyst for player connection and communication.

5. DISCUSSION

The present study proposed to answer the question: what are the affordances that emerge through video game consumption? While the proposed five types of affordances I found in video game consumption do not strive to be all encompassing nor final, I believe I have achieved the objective set out. Furthermore, although I am confident that many future investigations on other genres and types of games might find variations in form, presentation, and outcomes, those differences are fundamental to affordances and would further reinforce rather than dimmish my findings.

Each affordance type follows Evans and colleagues' (2017) three criteria to delimit an affordance: (1) not being an object nor a feature of the object, (2) not being an outcome, and (3) having variability. They also encompass not only material but social (Schmidt, 2007) and imagined (Nagy & Neff, 2015) affordances alongside perceptions about the power struggle between developers and users of technological artifacts (Shaw, 2017). Some affordance types also were shown to favor either perception or dexterity (Davis & Chouinard, 2016) depending on their implementation and purposes.

While some affordance types found more directly resemble the ones found in blogs, social media, and other digital platforms (Kozinets et al., 2021; Shamayleh & Arsel, 2022), such as Connective and Communicative, and Co-creative Affordances, I found that video games present unique affordances as well. Immersive and Incorporative affordances, for example, show how virtual environments might entail much more complexity in video game format than websites or apps, creating different and nuanced relationships between the players and the game. On the other hand, Learning and Discovery Affordances might resemble those found in other virtual spaces, but take on different substance in the context of video games, especially in relation to the narrative and tactical experiences.

Theoretically, the first contribution of the present study to affordance theory was to delimit the five types of affordances found in video game consumption, a matter not tackled by previous marketing academia, although the cultural, economic, social, and academic relevance of video games. Secondly, it also identified how different presentations of similar features deeply change the resulting perception of said affordances. And finally, how these affordances are tightly bounded in virtual environments in such a way that there are no direct delimiters between features and affordances.

What Evans and colleagues define as variability, as it is possible to find different "individuals using the same features to achieve different outcomes" (Evans et al., 2017, p. 6), delimits that affordances vary in non-binary degrees. In addition to that, I found that the implementation of said affordances allows the same individuals to use the same (types of) features to achieve different outcomes. Because each game played had varying approaches to the same features and affordances, the results vary, even when I engaged with them similarly. As such, variability plays a major role not only on the player end, but on the implementation/development end as well.

The other major aspect that became apparent during the analysis of the walkthroughs was the concomitance of the proposed affordances, both in relation to the game's elements, and with each other. For example, the messaging and gesture mechanics found in Elden Ring invite players to realize and propel the Connective and Communicative affordances which, in turn, potentializes their possibilities for realizing the Co-creative affordances in either collaborative or competitive gameplay. In addition to that, the controller I chose to use during my playthrough afforded me both Expressivity and Performative Incorporation: the retro aesthetic allows me to express my nostalgic love for older games while also being precise and familiar enough to allow me to incorporate its use as the input device to perform the intended actions through the player character. These situations delimit how blurred the lines are when trying to

delimit the affordance types proposed, as well as linking features and elements to individual affordances. In this sense, the Actor-Network Theory might yield meaningful results if applied in future works.

Using Konzack's (2002) seven layers I understood the Agency Power Structure in video game consumption and how the intended imagined affordances laid out by game developers, which can be explicit or implicit, mediate the gameplay experience and the engagement and perception of the game's affordances. The structure consists of developers exerting agency through hardware, code, and functionality, which then passes on to players who exert their own agency over gameplay and narrative. The games ultimately derive into Referentiality, which feeds into the socio-cultural environment that exerts agency over both developers and players. In my walkthroughs, feeling in control and having agency over the game and the player character meant having more fun. Whereas moments in which the developers exerted their agency through the games left me frustrated, contradicted, and overall displeased. It is unclear, though, how these results might differ when analyzed with different players, games, and, perhaps most importantly, in different socio-cultural environments.

Finally, I found that Referentiality has two major effects on the gaming experience. Firstly, it relates to the effects of existing video game history on the socio-cultural environment in which games are developed, resulting in different affordances and implementations of affordance built into games. Secondly, Referentiality delimits the imagined affordances that players bring upon their gaming experience, directly influencing the perception and realization of the actual affordances found in the game. Meaning that, while developers exert agency over the players through the games, the player's response to each played game exerts agency over the developers of future games as well. Referentiality also plays a major role as a Social Affordance, built upon experiences with and knowledge about previously played games, which deeply influences the playing experience of games. Going back to previously launched titles

that have become reference may lead to disappointing and lackluster experiences, and it is important to note that the evolution of games as positive exists only as a perception. The omnipresence of referentiality in my gameplay commentaries makes it more important than memory itself, even though they are certainly intertwined. Referentiality significantly influences how players imagine possible affordances and perceive and engage with the presented affordances in video games.

While the proposed Walkthrough Method allowed me to access the "hidden affordances" (Light et al., 2018, p. 885) of the chosen video games, there are some clear improvements to be made in future studies using this methodology. Alongside considerations from video game scholars (Aarseth, 2003; Cuttell, 2015; Daneels et al., 2022; Kłosiński, 2022; Lankoski & Björk, 2015; Schmierbach, 2009; Tanenbaum, 2021), I was able to experience the proposed five types of affordance in action and delimit them through rigorous coding and analysis. Still, two main issues appeared while doing so that could significantly improve future studies if resolved.

Firstly, by coding the recorded footage in five-minute sections, many correlations between uncorrelated events came up and had to be discarded after proper evaluation. For such qualitative and non-positivist efforts, delimiting time in any arbitrary fashion – such as any number of minutes, seconds, hours, etc. – I found to be misguiding and inefficient. Instead, I would propose footage to be coded in segments delimited by events. Events can vary in duration, and even cross with one another, creating a hierarchy of events and sub-events. Such analysis would hardly fall into the same issues I found, while its own difficulties are not yet clear.

And secondly, having to comment as a way of recording field impressions made for a lot of textual data that could be coded and analyzed, which is great. But it also turned the walkthrough experience much further from how I actually play the games on my own. To avoid

misrepresenting the gameplay experience, triangulating with more data sources might help solving the problem, without losing the hands-on experience of actually playing the games (Aarseth, 2003). For example, future studies might rely on interviews before, during, and/or after gameplay sessions or mixing with netnographic methodologies such as analyzing online livestreams, engaging with player communities, and/or mining online data from player forums.

As I see, future research could build upon the current project in five ways: games with greater variety could be analyzed in search for either different affordances to be found, or even more nuanced aspect of the proposed affordance types found; different players – both gamers and non-gamers – could be considered during data collection, which could lead to different data collection methods that incorporate interviews and/or analyze those player's playing sessions; while the Walkthrough Method proposed served as a valuable way to unfold the hidden affordances embedded in games by their developers, incorporating the game developers in some form might entail different results that could either enforce or counterpoint the current findings; other research might also consider the presented findings and discussion to analyze other metagaming practices in depth, such as competitive gaming, content creation, streaming, lore theorizing and fanfic creation, video game journalism, etc.; finally, research could also bring the presented findings and discussions to context adjacent to video games, such as Virtual Reality, Metaverse, and other virtual environments overall.

In conclusion, the present study has achieved its objective of delimiting the five types of affordances found in video game consumption, and how they differ from other digital platforms. The study contributes to affordance theory, including the identification of how different presentations of similar features can deeply change the resulting perception of said affordances. Finally, the proposed Walkthrough Method allowed access to hidden affordances of video games. However, improvements can be made, such as discarding arbitrary time

limitations and improving recording methods. These findings will be useful for future research to further explore the affordances of video game consumption.

REFERENCES

Aarseth, E. (2003). Playing Research: Methodological approaches to game analysis. *Artnodes*, *0*(7). https://doi.org/10.7238/a.v0i7.763

Abbasi, A. Z., Ting, D. H., Hlavacs, H., Costa, L. V., & Veloso, A. I. (2019). An empirical validation of consumer video game engagement: A playful-consumption experience approach. *Entertainment Computing*, *29*, 43–55. https://doi.org/10.1016/j.entcom.2018.12.002

Apperley, T. H. (2006). Genre and game studies: Toward a critical approach to video game genres. *Simulation & Gaming*, *37*(1), 6–23. https://doi.org/10.1177/1046878105282278

Bassiouni, D. H., & Hackley, C. (2016). Video games and young children's evolving sense of identity: A qualitative study. *Young Consumers*, *17*(2), 127–142. https://doi.org/10.1108/YC-08-2015-00551

Borghini, S., Sherry, J. F., & Joy, A. (2021). Attachment to and Detachment from Favorite Stores: An Affordance Theory Perspective. *Journal of Consumer Research*, *47*(6), 890–913. https://doi.org/10.1093/jcr/ucaa044

Buchanan-Oliver, M., & Seo, Y. (2012). Play as co-created narrative in computer game consumption: The hero's journey in *Warcraft III*: Play as co-created narrative in computer game consumption. *Journal of Consumer Behaviour*, *11*(6), 423–431. https://doi.org/10.1002/cb.392

Bucher, T., & Helmond, A. (2018). The Affordances of Social Media Platforms. In *The SAGE Handbook of Social Media* (pp. 233–253). SAGE Publications Ltd. https://doi.org/10.4135/9781473984066

Calleja, G. (2007). Digital Game Involvement: A Conceptual Model. *Games and Culture*, *2*(3), 236–260. https://doi.org/10.1177/1555412007306206

Clarke, R. I., Lee, J. H., & Clark, N. (2017). Why Video Game Genres Fail: A Classificatory Analysis. *Games and Culture*, *12*(5), 445–465. https://doi.org/10.1177/1555412015591900

Corbin, J. M., & Strauss, A. L. (2015). *Basics of qualitative research: Techniques and procedures for developing grounded theory* (Fourth edition). SAGE.

Costa Pinto, D., Reale, G., Segabinazzi, R., & Vargas Rossi, C. A. (2015). Online identity construction: How gamers redefine their identity in experiential communities: Online identity construction in experiential communities. *Journal of Consumer Behaviour*, *14*(6), 399–409. https://doi.org/10.1002/cb.1556

Cox, J., & Kaimann, D. (2015). How do reviews from professional critics interact with other signals of product quality? Evidence from the video game industry: Interaction of professional critic reviews. *Journal of Consumer Behaviour*, *14*(6), 366–377. https://doi.org/10.1002/cb.1553

Cuttell, J. (2015). *Arguing for an immersive method: Reflexive meaning-making, the visible researcher, and moral responses to gameplay*. *6*(1), 55–75.

Daneels, R., Denoo, M., Vanderwalle, A., Dupont, B., & Malliet, S. (2022). The Digital Game Analysis Protocol (DiGAP): Introducing a Guide for Reflexive and Transparent Game Analyses. *Game Studies*, *22*(2). http://gamestudies.org/2202/articles/gap_daneels_denoo_vandewalle_dupont_malliet

Davis, J. L., & Chouinard, J. B. (2016). Theorizing Affordances: From Request to Refuse. *Bulletin of Science, Technology & Society*, *36*(4), 241–248. https://doi.org/10.1177/0270467617714944

Evans, S. K., Pearce, K. E., Vitak, J., & Treem, J. W. (2017). Explicating Affordances: A Conceptual Framework for Understanding Affordances in Communication Research:

EXPLICATING AFFORDANCES. *Journal of Computer-Mediated Communication*, *22*(1), 35–52. https://doi.org/10.1111/jcc4.12180

Gangadharbatla, H. (2016). A Comparison of In-Game Brand Placement for Active Versus Passive Players. *Journal of Interactive Advertising*, *16*(2), 117–132. https://doi.org/10.1080/15252019.2016.1208124

Gibson, J. J. (2014). *The Ecological Approach to Visual Perception: Classic Edition*. Psychology Press. https://doi.org/10.4324/9781315740218

Ham, C.-D., Yoon, G., & Nelson, M. R. (2016). The interplay of persuasion inference and flow experience in an entertaining food advergame: Consumer inference and flow in food advergames. *Journal of Consumer Behaviour*, *15*(3), 239–250. https://doi.org/10.1002/cb.1564

Harwood, T., & Garry, T. (2014). Co-creation and ambiguous ownership within virtual communities: The case of the Machinima community: Co-creation and ambiguous ownership. *Journal of Consumer Behaviour*, *13*(2), 148–156. https://doi.org/10.1002/cb.1437

Hutchby, I. (2001). Technologies, Texts and Affordances. *Sociology*, *35*(2), 441–456. https://doi.org/10.1177/S0038038501000219

Jørgensen, I. K. H. J., & Aarseth, E. (2022). Game Analysis Reloaded. *Game Studies*, *22*(2). http://gamestudies.org/2202/articles/gap_editorial_jorgensen_aarseth

Juul, J. (2005). *Half-real: Video games between real rules and fictional worlds*. MIT Press.

Kaimann, D., Stroh-Maraun, N., & Cox, J. (2018). A duration model analysis of consumer preferences and determinants of video game consumption. *Journal of Consumer Behaviour*, *17*(3), 290–301. https://doi.org/10.1002/cb.1711

Kim, S., Chen, R. P., & Zhang, K. (2016). Anthropomorphized Helpers Undermine Autonomy and Enjoyment in Computer Games. *Journal of Consumer Research, 43*(2), 282–302. https://doi.org/10.1093/jcr/ucw016

Kłosiński, M. (2022). How to Interpret Digital Games? A Hermeneutic Guide in Ten Points, With References and Bibliography. *Game Studies*, *22*(2). http://gamestudies.org/2202/articles/gap_klosinski

Konzack, L. (2002). *Computer Game Criticism: A Method for Computer Game Analysis* (pp. 89–100). Tampere University Press.

Kozinets, R. V., Ferreira, D. A., & Chimenti, P. (2021). How Do Platforms Empower Consumers? Insights from the Affordances and Constraints of Reclame Aqui. *Journal of Consumer Research*, *48*(3), 428–455. https://doi.org/10.1093/jcr/ucab014

Kuo, A., Hiler, J. L., & Lutz, R. J. (2017). From Super Mario to Skyrim: A framework for the evolution of video game consumption. *Journal of Consumer Behaviour, 16*(2), 101–120. https://doi.org/10.1002/cb.1620

Lankoski, P., & Björk, S. (2015). *Game research methods: An overview*. ETC Press.

LeBlanc, W. (2022, March 11). *Elden Ring Was Best-Selling Game Of February, Second-Best Launch Month Sales Of Any Game In Past 12 Months In US*. Game Informer. https://www.gameinformer.com/2022/03/11/elden-ring-was-best-selling-game-of-february-second-best-launch-month-sales-of-any-game

Leonardi, P. M. (2010). Digital materiality? How artifacts without matter, matter. *First Monday, 15*(6). https://doi.org/10.5210/fm.v15i6.3036

Liao, G.-Y., Cheng, T. C. E., & Teng, C.-I. (2019). How do avatar attractiveness and customization impact online gamers' flow and loyalty? *Internet Research*, *29*(2), 349–366. https://doi.org/10.1108/IntR-11-2017-0463

Light, B., Burgess, J., & Duguay, S. (2018). The walkthrough method: An approach to the study of apps. *New Media & Society*, *20*(3), 881–900. https://doi.org/10.1177/1461444816675438

List of best-selling video games. (2022). In *Wikipedia*. https://en.wikipedia.org/w/index.php?title=List_of_best-selling_video_games&oldid=1091307748

Malik, A., Nanda, A. P., & Kumra, R. (2020). Children in the digital world: Exploring the role of parental–child attachment features in excessive online gaming. *Young Consumers*, *21*(3), 335–350. https://doi.org/10.1108/YC-01-2020-1090

Malliet, S. (2007). Adapting the Principles of Ludology to the Method of Video Game Content Analysis. *Game Studies*, *7*(1), 1–18. http://www.gamestudies.org/0701/articles/malliet

McWhertor, M. (2016, March 17). Game Developers Choice Award winners led by Her Story, The Witcher 3. *Polygon*. https://www.polygon.com/2016/3/17/11251484/game-developers-choice-award-winners-led-by-her-story-the-witcher-3

Mercante, A. (2022, December 26). *2022 Was the Year Of Elden Ring*. Kotaku. https://kotaku.com/elden-ring-goty-2022-dlc-fromsoftware-dark-souls-1849925353

Nagy, P., & Neff, G. (2015). Imagined Affordance: Reconstructing a Keyword for Communication Theory. *Social Media + Society*, *1*(2), 205630511560338. https://doi.org/10.1177/2056305115603385

Newman, J. (2012). Ports and patches: Digital games as unstable objects. *Convergence: The International Journal of Research into New Media Technologies*, *18*(2), 135–142. https://doi.org/10.1177/1354856511433688

Phau, I., & Liang, J. (2012). Downloading digital video games: Predictors, moderators and consequences. *Marketing Intelligence & Planning*, *30*(7), Article 7. https://doi.org/10.1108/02634501211273832

Plunkett, L. (2018, March 22). *Surprise, Zelda Won Game Of The Year At The Game Developers Choice Awards*. Kotaku. https://kotaku.com/surprise-zelda-won-game-of-the-year-at-the-game-develo-1823977060

Prugsamatz, S., Lowe, B., & Alpert, F. (2010). Modelling consumer entertainment software choice: An exploratory examination of key attributes, and differences by gamer segment. *Journal of Consumer Behaviour*, *9*(5), 381–392. https://doi.org/10.1002/cb.325

Reichertz, J. (2014). Induction, Deduction, Abduction. In *The SAGE Handbook of Qualitative Data Analysis* (pp. 123–135). SAGE Publications, Inc.

Rinehart, K. E. (2021). Abductive Analysis in Qualitative Inquiry. *Qualitative Inquiry*, *27*(2), 303–311. https://doi.org/10.1177/1077800420935912

Saldaña, J. (2016). *The coding manual for qualitative researchers* (3E [Third edition]). SAGE.

Salen, K., & Zimmerman, E. (2004). *Rules of Play—Game Design Fundamentals*. The MIT Press Cambridge.

Scaraboto, D., Almeida, S. O. de, & dos Santos Fleck, J. P. (2020). "No piracy talk": How online brand communities work to denormalize controversial gaming practices. *Internet Research*, *30*(4), Article 4. https://doi.org/10.1108/INTR-12-2018-0529

Schmidt, R. C. (2007). Scaffolds for Social Meaning. *Ecological Psychology*, *19*(2), 137–151. https://doi.org/10.1080/10407410701332064

Schmierbach, M. (2009). Content Analysis of Video Games: Challenges and Potential Solutions. *Communication Methods and Measures*, *3*(3), 147–172. https://doi.org/10.1080/19312450802458950

Seo, Y., Buchanan-Oliver, M., & Fam, K.-S. (2015). Advancing research on computer game consumption: A future research agenda: Research on computer game consumption. *Journal of Consumer Behaviour*, *14*(6), 353–356. https://doi.org/10.1002/cb.1557

Seo, Y., & Jung, S.-U. (2016). Beyond solitary play in computer games: The social practices of eSports. *Journal of Consumer Culture*, *16*(3), 635–655. https://doi.org/10.1177/1469540514553711

Shamayleh, G., & Arsel, Z. (2022). FROM BLOGS TO PLATFORMS: CONTENT LANDSCAPE AND AFFORDANCES. In R. Llamas & R. Belk, *Routledge Handbook of Digital Consumption*. Routledge.

Shaw, A. (2017). Encoding and decoding affordances: Stuart Hall and interactive media technologies. *Media, Culture & Society*, *39*(4), 592–602. https://doi.org/10.1177/0163443717692741

Tanenbaum, D. L. G., Theresa J. (2021). At the Edge: Periludic Elements in Game Studies. *Game Studies*, *21*(4). http://gamestudies.org/2104/articles/gardner_tanenbaum

Thorhauge, A. M., & Nielsen, R. K. L. (2021). Epic, Steam, and the role of skin-betting in game (platform) economies. *Journal of Consumer Culture*, *21*(1), 52–67. https://doi.org/10.1177/1469540521993929

Trepte, S. (2015). Social Media, Privacy, and Self-Disclosure: The Turbulence Caused by Social Media's Affordances. *Social Media + Society*, *1*(1), 205630511557868. https://doi.org/10.1177/2056305115578681

Walker, D., Brocato, E. D., Carlson, L., & Laczniak, R. N. (2018). Parents' and children's violent gameplay: Role of co-playing. *Journal of Consumer Marketing*, *35*(6), 623–632. https://doi.org/10.1108/JCM-10-2017-2397

Wei, H., Wu, N., Wang, T., Zhou, Z., Cui, N., Xu, L., & Yang, X. (2017). Be loyal but not addicted: Effect of online game social migration on game loyalty and addiction: Be loyal but not addicted. *Journal of Consumer Behaviour*, *16*(4), 343–351. https://doi.org/10.1002/cb.1637

Wulf, T., Schneider, F. M., & Beckert, S. (2020). Watching Players: An Exploration of Media Enjoyment on *Twitch*. *Games and Culture*, *15*(3), 328–346. https://doi.org/10.1177/1555412018788161

Video Games

CD Project Red. (v. 1.30, 2015). *The Witcher 3: Wild Hunt* [Microsoft Windows PC and Nintendo Switch]. Digital game directed by Konrad Tomaszkiewicz, Mateusz Kanik & Sebastian Stępień, published by CD Project.

FromSoftware. (v. 1.05, 2022). *Elden Ring* [Microsoft Windows PC]. Digital game directed by Hidetaka Miyazaki & Yui Tanimura, published by Bandai Namco.

Nintendo. (v. 1.60, 2017). *The Legend of Zelda: Breath of the Wild* [Nintendo Switch]. Digital game directed by Hidemaro Fujibayashi, published by Nintendo.