

## Introduction of the Digital Gaming Relationship

Miikka Sokka <sup>1</sup> , Kwok Ng <sup>1,2,3</sup> , Sami Kokko <sup>4</sup> , and Pasi Koski <sup>1</sup> 

<sup>1</sup> Department of Teacher Education, University of Turku, Finland

<sup>2</sup> Department of Physical Education and Sports Sciences, University of Limerick, Ireland

<sup>3</sup> Institute of Innovation and Sports Science, Lithuanian Sports University, Lithuania

<sup>4</sup> Faculty of Sport and Health Sciences, University of Jyväskylä, Finland

**Correspondence:** Miikka Sokka ([miikka.sokka@utu.fi](mailto:miikka.sokka@utu.fi))

**Submitted:** 27 May 2024 **Accepted:** 29 September 2024 **Published:** in press

**Issue:** This article is part of the issue “Digital Games at the Forefront of Change: On the Meaningfulness of Games and Game Studies” edited by Felix Reer (University of Muenster), Teresa de la Hera (Erasmus University Rotterdam), and Salvador Gómez-García (Complutense University of Madrid), fully open access at <https://doi.org/10.17645/mac.i460>

### Abstract

In recent decades, there has been a growing interest in studying the appeal of digital games. However, there is still a call for further research, especially on the theoretical and methodological advancements. Hence, a novel approach and a concept of the Digital Gaming Relationship (DGR) is presented. The DGR model is adapted from earlier work on physical activity and with the central concept as “meaning,” it provides an alternative perspective to motivation-oriented literature for the field of game studies. With this approach, the fundamental view is that each person has a varying relationship with digital games and gaming over their life span. The relationship builds on the individual’s encounters with the social world of digital gaming and its cultural meanings. In the long term, accruing digital gaming-related knowledge, experiences, and emotional connections contributes to a rich tapestry of meaning, thus creating a deep and meaningful relationship capable of shaping one’s actions, behaviors, and even identity. The framework theorizes the mechanisms of an individual’s socialization process to the digital gaming world and illustrates that the relationship with digital games includes much more than just playing them. In this article, the theoretical roots and key concepts of the DGR are introduced, and the practical applicability of the approach is discussed.

### Keywords

digital game studies; digital gaming; digital gaming relationship; video games; social world; socialization; meaning; significance

## 1. Introduction

Digital gaming is a popular leisure activity forecasted to continue to grow in the coming years (Clement, 2024a). Digital games are played by people of many ages from all over the world (Clement, 2024b), but their popularity is greatest among younger people, for whom digital gaming has become an essential form of media and a routine part of childhood and adolescence (Olson, 2010). Over the last two decades, the rapid growth of the digital gaming phenomenon has increased scholars' interest in the reasons behind their attractiveness. In addition to the structural characteristics of digital games (e.g., D. King et al., 2010), the appeal of digital gaming is influenced by the individual's motivation to play. To investigate the reasons behind digital gaming, scholars have relied on, for example, the self-determination theory (Przybylski et al., 2010), as well as developed scales to measure digital gaming motivations (e.g., Demetrovics et al., 2011; Kahn et al., 2015; Yee et al., 2012). Despite these efforts, according to Cheah et al. (2022), there is a call for further research, especially on theoretical and methodological advancements. Therefore, this article proposes an alternative approach and theoretical framework to understanding the appeal of digital gaming beyond the use of motivation.

Traditionally, hedonistic gratifications like fun and enjoyment have been characterized as the core experience and essential motives of playing digital games (Mekler et al., 2014). With the evolution of digital games, media scholars have recently drawn attention to "meaningful gaming experiences" that allow players also to experience deeper, thought-provoking, and more emotionally complex moments (Daneels et al., 2023), contrasting with hedonic experiences. Drawing on philosophical and psychological well-being research, these meaningful experiences are often termed "eudaimonic." Eudaimonia refers to "orienting toward or experiencing meaning, virtue, personal growth, and other worthwhile aspects of life" (Daneels et al., 2023, p. 1). In addition, meaning and meaningful experiences have been used by scholars when referred to as "experiences where players make connections between in-game aspects and 'out-of-game' personally relevant elements from their own lives" (Daneels et al., 2023, p. 2). Nevertheless, there is no consensual definition of eudaimonic or meaningful digital gaming experiences (Possler, 2024).

The formation of these eudaimonic or meaningful digital gaming experiences has mostly been attributed to the interactivity of digital games and their core characteristics such as digital game mechanics, narratives, multiplayer features, and game aesthetics (Possler, 2024). However, much less emphasis has been put on how player characteristics influence the formation process, although Vahlo (2018) has shown that individual players' digital gameplay preferences play an essential role in determining how much and what kinds of meaningful experiences arise from digital gaming. Additionally, other types of engagement with digital games and their culture besides active playing are rarely considered in the literature. According to Possler et al. (2023), this narrow focus on game characteristics and active play are the main limitations of current theory development around meaningful digital gaming experiences.

To extend the current line of research and address its limitations, the Digital Gaming Relationship (DGR) is introduced in this article. With the central concept of "meaning," this article provides an alternative perspective to motivation-oriented literature and a novel theoretical framework for the field of digital game studies. The DGR framework is used to theorize the formation of a meaningful relationship with digital games by emphasizing the subjective nature of digital gaming experiences. Although the significance of the characteristics of modern digital games in the meaning-making process is recognized (e.g., Possler, 2024), it

is suggested that meaningful digital gaming experiences are primarily conditioned by prior digital gaming-related interactions, underlining the subjectivity of the process. Furthermore, the DGR model takes into account interaction with digital games beyond just playing them, which is often overlooked in the literature. Although the focus is mainly on digital gaming individuals, the framework also extends its scope to external factors such as cultural norms and social influences by illustrating their potential impact on DGRs.

Ultimately, the DGR framework is a theorization of the mechanisms of an individual's socialization process to the digital gaming world and its culture. It describes how socially constructed meanings, norms, and values of the digital gaming world are internalized through interaction, and how individuals may develop "a gamer" identity by adopting behaviors, language, and attitudes that influence actions within the digital gaming world and beyond it. This article begins with an introduction to the theoretical roots and key concepts of the DGR. Finally, the practical applicability of the approach is discussed.

## 2. The DGR Framework

### 2.1. *The Social World of Digital Gaming*

The DGR framework is an adaptation of a sports sociological theory of physical activity relationship (PAR; Koski, 2008, 2015, 2017; Koski et al., 2022) to the world of digital games. Although the PAR focuses on the world of physical activity and sports, the DGR approach is based on the idea that digital gaming and the issues closely related to it form the *social world* of digital gaming, with which each individual has a different relationship that varies over the lifespan.

Human life is surrounded by numerous different social worlds and individuals are always to some extent within social worlds—participating deeper in some than in others. Unruh (1979, p. 115) defined a social world as “an internally recognizable constellation of actors, organizations, events, and practices which have coalesced into a perceived sphere of interest and involvement for participants.” Social worlds can be described as social organizations that cannot be accurately delineated by spatial, territorial, formal, or membership boundaries (Unruh, 1980). In other words, a social world is a set of actors and practices around a particular issue that can have various characteristics:

Some worlds are small, others huge; some are international, others are local. Some are inseparable from given spaces; others are linked with sites but are much less spatially identifiable. Some are highly public and publicized; others are barely visible. Some are so emergent as to be barely graspable; others are well established, even well organized. Some are very hierarchical; some are less so or scarcely at all. Some are clearly class-linked, and some run across class. (Strauss, 1978, p. 121)

In the PAR framework, Koski (2008) described how our life consists of different sectors (A, B, C, etc.), which we value with various degrees of significance (a, b, c, etc.) in everyday life, thus resulting to the Equation of Life ( $aA + bB + cC + \text{etc.}$ ). In the equation, the lowercase letters are coefficients that correspond to how meaningful the individual perceives these things to be in his or her life. The capital letters refer to different areas of life, such as work, school, family, or different competing leisure activities such as digital gaming. The Equation of Life demonstrates how different social worlds and their self-defined weight are present in everyday life. The inherent limits of human energy and time keep the equation in balance and therefore it is not possible

to put a very high coefficient on several areas of life at the same time. The idea reflects individuals' lives in today's mediatized and marketized attention economy (e.g., Webster, 2014), where humans are constantly surrounded by meaning-transmitting signals attempting to influence our thinking and actions (Koski, 2008).

Due to people's everyday decision-making in the different areas of life, the relationships to social worlds are constantly varying consciously or unconsciously over the lifespan. To illustrate this in the gaming context, in adolescence gaming can be one of the most attractive and socially popular activities in life. Yet, later on, if other things such as education, career, or family get more attention, its perceived significance is likely to be changed. This underlines the dynamic nature of the coefficients in the Equation of Life in different life stages and situations. For example, the reformatting of one's Equation of Life can be witnessed in the PAR context, as major life events such as childbirth or retirement tend to impact an individual's physical activity levels (Engberg et al., 2012).

## 2.2. Concept of Meaning

According to Koski (2008, 2015, 2017), as a foundation for his PAR framework, it is useful to consider both anthropologist Claude Lévi-Strauss's views about culture as a language and Max Weber's idea that culture is a web of meanings created by human beings. Common to both of the classical views is the idea that culture is formed of meanings. The founding ideas of the approach can be further examined with Herbert Blumer's (1986, p. 2) sociological theory of symbolic interaction and its three core assumptions:

First, human beings act toward things based on the meanings that the things have for them. Second, the meaning of such things is derived from, or arises out of, the social interaction that one has with one's fellows. Third, these meanings are handled in, and modified through, an interpretative process used by the person in dealing with the things he encounters.

Therefore, within the DGR framework, it can be suggested that the widespread popularity of digital gaming indicates that it holds meaning for many, with these meanings being socially constructed. Understanding these meanings necessitates interaction, which is the act of participation in the social world of digital gaming. For a deeper look, Ogden and Richards (1989, pp. 186–187) presented how the ambiguous concept of meaning can have up to 16 different interpretations depending on the context. Additionally, eight different senses and kinds of meaning can be distinguished as explained by Nozick (1981, pp. 574–575). In the DGR approach, meaning refers to a concept that has two interconnected dimensions: One it refers to what something means, and two, it refers to the degree of importance of something—significance.

### 2.2.1. Semantic Dimension

The first dimension of the concept of meaning in the framework is semantic, where meaning refers to language and symbolism, i.e., what something means. Semantics is an integral part of all social worlds, and the knowledge of language can serve as an indicator of an individual's level of participation in a given social world. As described by Evans and Llano (2023, p. 1), the world of digital gaming has its language:

Aside from the technical discourse that players, game streamers, and fans share about character builds, preferred move sets, and glitches, there is a set of slang that develops and grows alongside

game streamers, their play, and communities. Typically, game players tend to see these slang terms as ubiquitous, common, and nearly compulsory for participation in gaming communities.

In the symbolic interactionism theory, words and language are the most essential symbols, as language is the most important factor that enables people to function in a group and share different meanings (Lal, 1995). Symbols enable people to name, classify, and remember objects, thoughts, and images. The exchange of ideas between people would not be possible without symbols, which are interpreted in roughly the same way. Thus, the premise is also that symbols must necessarily have shared meanings, otherwise they cannot be meaningful in the first place. For example, in the digital gaming context, understanding words or phrases used to refer to specific areas of a map in a game can be a prerequisite for effective communication with other players.

Within the PAR and DGR approaches, cultural objects are also regarded as a form of language that conveys meanings and symbolism. According to McDonnell (2023), cultural objects include everything perceptible, such as artifacts in the world (books, tables, or cars), but also bodily expressions (e.g., a whispered phrase, a hand gesture, or a wink). The meaning of cultural objects for a person arises fundamentally out of the way they are defined to them by others with whom they interact, as shared interactions give rise to common objects/items with consistent meaning for a specific group (Blumer, 1986). Thus, culture objects function as a multifaceted language, and our interpretations of them are influenced by our interactions, roles, and perspectives within society. For instance, a tree has different meanings for a botanist, a logger, a poet, and a home gardener (Blumer, 1986), whereas a keen golfer and rural farmer are likely to interpret a golf club in very different ways (Koski, 2008).

In the digital gaming world, the analogy of cultural objects can be extended to the digital dimension as well. Numerous digital games feature purchasable virtual in-game items, such as character or weapon appearance features, known as skins, which exist solely within the game's digital environment. These items can hold a real-world monetary value, often determined by their popularity or rarity. Although the items typically serve cosmetic purposes and do not enhance player performance or provide an advantage, owning a particular item can signal social status associated with a certain level of experience or skill within the game (R. King & de la Hera, 2020). Thus, it can be concluded that in a given game, a given object holds meanings socially constructed on it by the community based on interactions, trends, and player experiences.

### 2.2.2. Meaning as Significance

The other dimension of meaning is *significance*, which is more fundamental in this approach. It refers to an order of priority, or a hierarchy of importance, where certain things are perceived as more important than others, i.e., more significant. In other words, it is the importance or value of something within a particular context, encompassing the emotional or cultural weight that meanings can carry. In the DGR framework, meanings are seen as the drivers of behavior and choices, determinants of the Equation of Life, and it is thus considered that meanings hold some kind of value-loading. The meanings that guide our behavior can range from superficial associations with commodities to deeper connections with our fundamental values, and they are formed by culture to a great extent (Koski, 2008). For example, owning luxury clothing pieces may have a superficial meaning related to status and wealth. In contrast, participating in community service might have a deeper meaning connected to one's values of altruism and social responsibility. The prioritization may also stem from personal memories or emotional attachments to specific objects or activities, or it can involve social signaling,

where ownership of certain items or adherence to particular behavior signals belonging to a specific group. This underscores the social nature of the intricate interplay among personal, social, and cultural factors that influence everyday decision-making. Choices are shaped by societal norms, peer influence, family values, and broader cultural contexts. Moreover, Koski (2017) described how meaning is characterized by the fact that it usually appeals to both reason and emotion at the same time, which is familiar to advertising professionals. For example, in car marketing, the different characteristics of a product are shaped into meanings and mental imagery that guide the buyers' choices. As a result, it is typical that the decision to buy a car is not based on reason alone.

Both dimensions of the concept of meaning in the DGR framework were reflected in the previous explanation of the Equation of Life, where the perceived significance of a particular social world is considered one of the primary determinants that influence individuals' decisions on how to allocate their time and energy among various social worlds. This view interconnects the two distinct dimensions of the concept of meaning together in the framework, suggesting that the resources individuals invest (such as time and energy) yield not only an enhanced understanding of meanings but also an increased perceived significance for the given issue. Conversely, if meanings remain unrecognized initially, their significance cannot be perceived. Years of dedicating resources to a specific activity and accruing knowledge, experiences, and emotional connections contribute to a rich tapestry of meaning. Consequently, this fosters a profound and meaningful relationship that shapes one's actions, behaviors, and identity.

Meanings are encountered in interaction with a social world, where the context in which the individual encounters the meaning stimulus is essential. For example, *an ace* has significant value in both Poker and Counter-Strike, although it refers to different things depending on the context. In both situations, the meaning of an ace needs to be first encountered and recognized to be able to understand it. An ace in Poker refers to a special card that has dual value, in Counter-Strike, an ace refers to a situation where one player defeats all five players of the opposing team. Hence, an ace has semantic meaning as well as significance within the two games. In Poker, the ace's flexibility and high value make it a cornerstone of strategy and gameplay, whereas in Counter-Strike it typically guarantees the team a round win and economic advantages to the following round, as well as personal glory. By playing amongst themselves or by watching others, a person could also learn some other details regarding an ace. In Poker, receiving an ace is a matter of chance. In contrast, getting an ace in Counter-Strike usually requires a substantial amount of personal skill highlighting the meaning of technical-tactical details in the performance, such as timing and crosshair placement. The understanding and recognition of these technical-tactical details' significance may then influence behavior, such that if the person tries to learn and incorporate them into their repertoire through practice. Thus, the cycle of interaction continues, and new meanings are again encountered and perceived, further strengthening the web of meanings in the social world of Counter-Strike.

To summarize, it is important to emphasize that within this framework, individual meanings alone may not be sufficient to shape behavior, but usually require a robust web of many meanings around the same issue. A single meaning may have a central role, but ultimately, the sum of the meanings around a matter or phenomenon is decisive. Moreover, both the recognition of meanings and their perceived value often depend on how they are related to the meaning structures already adopted earlier in life (Koski, 2017). In other words, people with backgrounds in team sports would enjoy playing digital games that include similar kinds of meaning characteristics (competitiveness, sociality, and tacticity). Whereas individuals

with artistic backgrounds could primarily find resonance with digital games including creativity and aesthetic expression.

### **2.3. Formation of a Meaningful DGR**

Today, digital gaming is a globally established pastime, with the first digital gaming experiences typically occurring already during childhood. This is when the first peeks at the social world of digital gaming occur, through playing, watching, and engaging in digital gaming-related discussions. These early interactions initiate the socialization process, exposing individuals to the meanings, symbols, beliefs, norms, expectations, and values associated with digital games and digital gaming. Like acquiring a new language, cultural meanings of digital gaming can also be learned and internalized.

Koski (2017) divided the meaning-making process into seven stages: (a) Encountering meaning, (b) perceiving meaning, (c) recognizing meaning, (d) reflection in relation to a set of meanings already adopted, (e) linking new meaning to already adopted ones, (f) possible emergence of meaningfulness, and (g) possible reinforcement of meaningfulness. An example of digital gaming could be a person who tries to play a football digital game for the first time (encounter). After becoming familiar with the digital game's features (perceiving meaning), the person realizes it is possible to play with their hometown club and control its players (recognizing meaning). Controlling the hometown club resonates with the person, due to the earlier experiences with the club in the sports context (reflection to meaning). By playing the digital game, the person becomes part of their favorite team, makes key decisions to guide the club to success, and gets to know more details of the players and the opposing teams as well (linking new meaning). The person soon becomes aware of how this has enriched their past experiences (emergence of meaningfulness) resulting in increased perceived significance of the digital game and the hometown club (reinforcement of meaningfulness).

The meaning-making example underlined how the new internalized meanings resonated with the individual's interests, identity, and already adopted meaning structures—and thus formed as significant. Due to the perceived significance, the football digital game isn't just a game among many others; it represents the connection with the hometown football club. This can influence behavior as the individual is likely to spend more time playing, invest in digital gaming equipment, or participate in digital gaming communities. Increased investments of resources (time, energy, money) provide additional encounters with numerous meanings of the activity, such as learning the meaning of tactical decisions to be successful, the thrill of competition, the joy of achievement, and the sense of community with other digital gamers. The cycle continues as the individual engages in more interactions. Years of playing and mastering digital games might develop a deep understanding of their mechanics, strategies, and the social dynamics within the digital gaming community. This accumulated knowledge and experience enhances the perceived significance of digital gaming in their life. The initial encounter may even have been coincidental, but it has since evolved into a meaningful activity that provides a sense of accomplishment and belonging (see Przybylski et al., 2010).

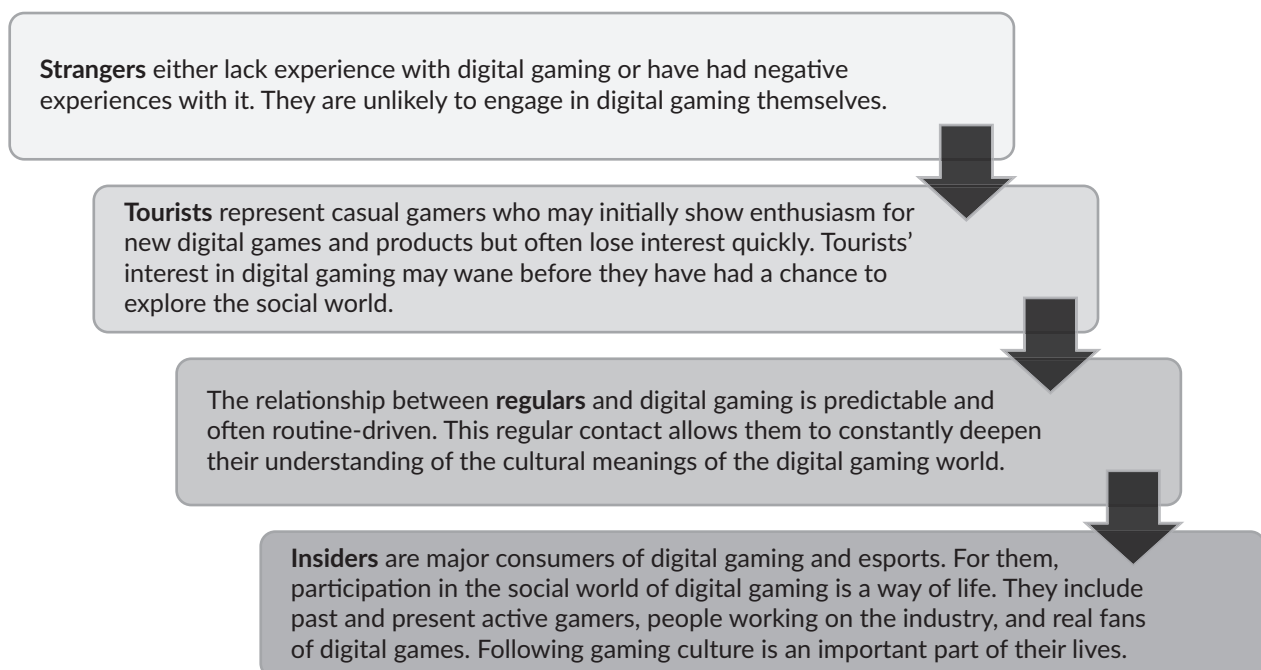
The meaning-making example also illustrates how the DGR framework differs from the general motivation ideas. It is known that motivation can vary in short periods (Recours et al., 2004), but the meaning approach is particularly focused on the long-term formation process rather than on short-term decision-making that can be highly situational and rapidly changing by nature. As experiences and knowledge of meanings



accumulate, the relationship with the social world of digital gaming gradually deepens. The depth of the relationship impacts both the prominence of digital gaming in an individual's life and the intensity and longevity of the relationship (Koski, 2017). Furthermore, deeper immersion in a particular social world enhances one's recognition and understanding of its meanings (Koski, 2008). These ideas are supported by studies indicating that the perceived significance of physical activity correlates with both the quantity and intensity of physical activity (Koski et al., 2022; Koski & Tähtinen, 2005; Koski & Zacheus, 2012).

To delineate the extent of involvement in a particular social world, Unruh (1979) devised a classification system that comprised four levels: strangers, tourists, regulars, and insiders (Figure 1). Strangers represent the most superficial level of participation, approaching the social world with suspicion or prejudice and unable to discern its meanings. Tourists, displaying curiosity and a short-term interest, engage more actively than strangers but typically maintain a fleeting relationship with the social world. Regulars are fully immersed participants who engage actively and are familiar with the cultural meanings of the social world. Insiders, the most dedicated participants, not only engage deeply but also contribute to the creation and maintenance of the social world with its meanings. At the latter level, the social world significantly influences various aspects of life, including identity formation.

The deeper levels of engagement in this approach share parallels with the concept of being a fan, defined as a loyal, enthusiastic, and passionate admirer of an interest who shows devotion and appreciation for it (Reysen & Lloyd, 2012). Additionally, other parallels include the importance of identification on a personal level (fanship) and on a collective level (fandom) in the socialization process. Furthermore, fans and insiders alike are not just passive consumers; they actively participate in activities and discussions related to their interests, thereby building and shaping their respective cultures socially from within.



**Figure 1.** Depth of participation and knowledge of the social world of digital gaming. Source: Adapted from Unruh (1979).



## 2.4. *The Constituents of the DGR*

While playing digital games can be considered a central source of meaning, interactions with various other aspects of the digital gaming world are also seen to shape the relationship. In other words, this framework considers that the meanings associated with digital gaming can be encountered and internalized, even if the individual does not necessarily play the digital games themselves. For example, interactions with the social world of digital games and their meanings can occur through parenting or work, where digital gaming-related meanings are encountered. It is therefore suggested that digital gaming can be perceived as significant, even if an individual rarely or never plays them. Focusing solely on digital gaming individuals would exclude the vast number of people otherwise engaged with digital games and digital gaming in their lives. Furthermore, this is relevant to the core idea of the framework that everyone has a varying relationship with digital gaming.

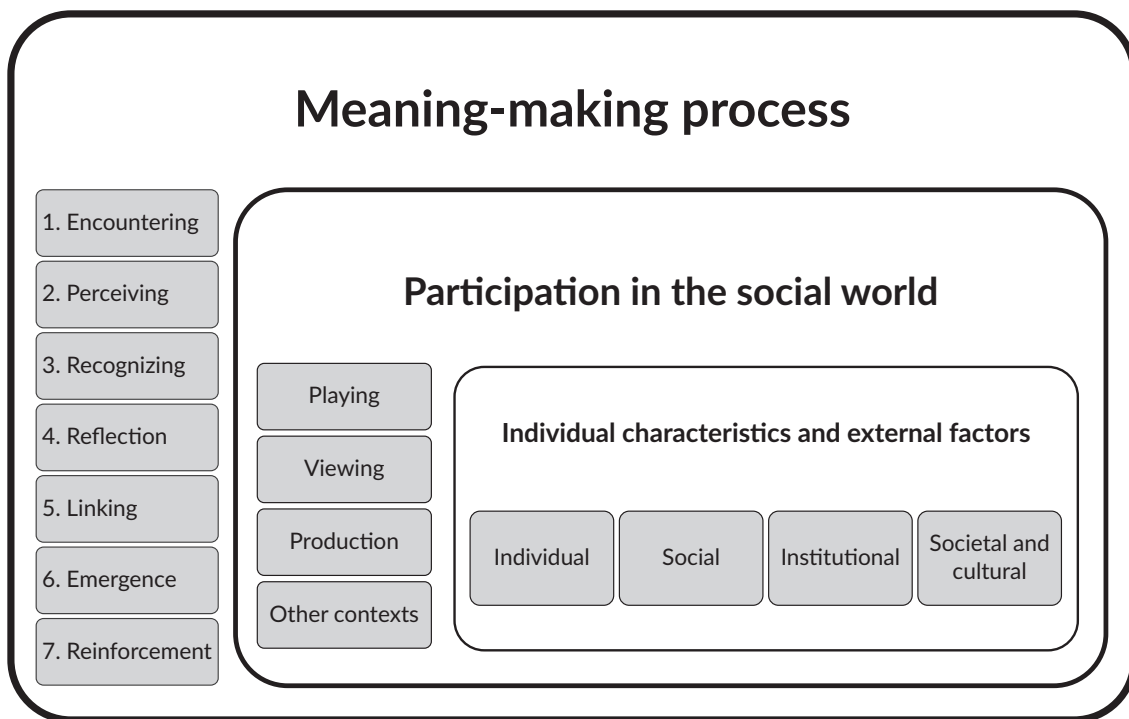
Therefore, not only personal digital gaming but also other attitudes and behaviors toward digital gaming culture, which are often less recognized in the literature, are incorporated into the framework. The DGR's holistic approach encompasses individuals' knowledge and perceptions of different facets of digital gaming culture, such as interest in following digital gaming-related brands, players, and influencers on social media, as well as watching competitive digital gaming known as esports and any other digital gaming content. Additionally, the DGR encompasses the production of digital gaming culture, consumption behaviors related to digital gaming, and the integration of digital gaming-related meanings and content into other areas of life. The constituents are not mutually exclusive, but they allow for a comprehensive approach to exploring the interaction with the social world of digital gaming and its meanings.

Following Koski's (2008, 2015, 2017) PAR model, the DGR is also expressed in practical actions in four different areas: (a) personal digital gaming, (b) following digital gaming culture; (c) production of digital gaming culture, and (d) digital gaming culture in everyday life. Personal digital gaming (a) involves playing digital games on any platform. Following digital gaming culture (b) refers to the consumption of different digital gaming-related content, such as videos, live streams, news, reviews, forums, or literature. A popular type of consumption today is viewing other's digital gaming via media or on-site, which typically includes tutorial videos, live streams or recordings of competitive digital gaming events, content related to professional players, or simply normal people playing various video games. Production of digital gaming culture (c) encompasses activities that facilitate digital gaming, such as coaching, mentoring, moderating, and organizing events. It also includes content creation related to digital gaming, such as digital gaming videos, streaming, literature, or educational material. An example of producing digital game culture is hosting a game night with friends. Digital gaming culture in everyday life (d) refers to integrating digital gaming-related aspects into non-digital gaming areas of life and consuming digital gaming-related products and services. This includes purchasing and using merchandise and incorporating digital gaming expressions and terms into other contexts. Examples could be Fortnite-inspired dances or the use of digital gaming slang in the school environment. Additionally, digital game culture can influence identity formation, as the values, attitudes, and meanings associated with digital gaming may impact an individual's decision-making in everyday life.

Due to the socially constructed nature of the approach, each of the four areas is seen to be influenced by individual characteristics and external factors. A similar idea about the factors influencing actions was illustrated in Takeuchi's (2011) study, where cultural, institutional, interpersonal, and developmental forces shaped children's access to and interest in technology. In the DGR framework, this influence mechanism is

demonstrated by applying Rovio and Saaranen-Kauppinen's (2014, p. 23) model of socialization to physical activity within the digital gaming context, which comprises four levels: individual, social, institutional, and societal and cultural.

At the individual level, people are viewed as biological, psychological, and social entities, influenced by factors such as personality, personal needs, and life circumstances. For instance, factors such as personality traits (de Hesselde et al., 2021) or disabilities (Baltzar et al., 2022) may play a significant role. This is followed by the social level, which encompasses friendships, peer groups, and other close communities. In the digital gaming context, the attitudes of peers (Amialchuk & Kotalik, 2016) or parents (Van Petegem et al., 2019) toward digital gaming can be influential and shape one's relationship substantially. Subsequently, the institutional level encompasses different community institutions and groups, including work, education, and political and religious organizations. At this level, an example could be policymaking (Ashton, 2019) or actions of various governing bodies (Thiborg, 2009) related to digital gaming. Finally, the societal and cultural level encompasses ideologies, values, social norms, and attitudes. At this level, broader trends such as the development of digitalization and digital infrastructure (McCauley et al., 2020) can serve as an example. A summary of the different practical actions of the DGR and the four levels of contextual factors that influence them are visualized in Figure 2, which binds up the DGR framework.



**Figure 2.** Formation of a DGR and its constituents. Source: Adapted from Koski (2008, 2017) and Rovio and Saaranen-Kauppinen (2014).

### 3. Examples of Interaction With the World of Digital Gaming Through the DGR Lens

Next, four example profiles are presented to summarize the DGR framework and illustrate its scope in practice. Each profile describes different levels of engagement and the perceived significance of digital gaming. The examples provided are imaginary; however, they are designed to closely resemble plausible

real-world situations, illustrating complex and the way more or less meaningful DGRs exist. Readers can use Figure 2 to help detect from the examples how individual characteristics and external factors have impacted relationships' development, and the various ways of participation in the social world of digital gaming. In addition, the examples describe how the depth of a DGR can vary at different stages of life.

The first example is Kai, whose relationship with digital gaming can be described as superficial and almost non-existent. Kai's personal and friends' interests lie elsewhere. Kai might also live in a country or culture where the lifestyle, values, or social infrastructure simply do not make digital gaming accessible. Kai may have heard about digital games or seen others playing them but may not have any first-hand experience. Due to the lack of experiences and interaction, Kai is not familiar with the meanings related to digital gaming and does not recognize the brands or characters in the world of digital games or cannot understand the digital gaming-specific vocabulary and gestures. In other words, Kai is a stranger to the digital gaming world, making it very unlikely that Kai could have meaningful digital gaming experiences either.

The next person is Robin, an adult whose childhood home never had any digital gaming devices, largely due to a conscious decision by their parents. Robin remembers sometimes trying out some digital games, for example, at friends' houses, but their free time was filled with other hobbies. At Robin's current job, there is a lot of interaction with children, many of whom are very curious about digital games. Robin discusses digital games with children regularly, but rarely agrees to try them out. At the workplace, training sessions on the theme have been organized for staff, which has increased their understanding of the phenomenon. However, Robin remains reluctant to spend free time playing digital games, but does follow the results of a younger relative's esports team on social media. Robin is a tourist of the digital gaming world, who only occasionally visits the social world of digital gaming. The relationship with digital games is not very meaningful, but it exists because Robin encounters, notices, and sometimes even recognizes the meanings associated with digital gaming through work and family.

The third person is Chris, who was not exposed to digital games and did not encounter their meanings as an adolescent. Chris used to compete at the national level in motorsports when younger, but nowadays has mainly settled for the role of spectator. One day, Chris and a friend got to try out a modern racing simulator, which immediately brought back nostalgic memories of Chris's own racing years. The experiment turned into a regular hobby, first with a friend and later at home, when the necessary equipment was purchased. This acquisition has also been enjoyed by Chris's child, who is passionate about digital racing and practices diligently. Chris could be considered a regular in the digital gaming world and is particularly aware of the characteristics of the different digital racing games, their tracks, cars, as well as the evolution and features of the equipment available for simulation purposes. The hobby of digital gaming is shared not only with a friend but also with Chris's own child, whose leisure time activity is enabled by Chris. In addition, the pursuit of personal records, competing, and the use of previously acquired car-related know-how seem equally important aspects of this meaningful leisure time activity.

The last example features a person called Alex, who reflects a so-called insider, whose relationship with digital gaming is active, as it is often part of everyday life and even identity. Years of experience and thousands of playing hours have led to a broad and diverse range of meanings. Alex's relationship with digital gaming began to build during childhood, with games played alone, with siblings, friends, and perhaps even with parents. The standard of living and the digital evolution of society enables Alex to access games not only at home but

also at any time, for example on a smartphone. During Alex's youth, some of the first own-generated money was likely used on something digital gaming-related. Local Area Network events might have been participated in, where peers around the shared interest were met and spent time with. From the events, fan merchandise or textiles were acquired, that were later worn with pride at school and on other occasions too. Over the years, Alex met plenty of new people while participating in digital gaming. There were frequent interactions with friends that formed a core group, with whom the relationship included activities outside of digital gaming as well. Performances of favorite pro players and esports teams were closely followed and were a common topic of discussion. Alex explored and studied digital games' tips and tricks by watching videos and reading forums. The release of the latest versions of favorite digital games was usually an eagerly awaited event, preceded by a lot of hype and speculation. Whenever it was possible, Alex spends most of their free time on digital gaming activities over numerous other options. Alex has a deep and meaningful relationship with digital gaming, which manifests itself in action on many levels.

#### 4. Applicability in Practice

The idea of adapting the PAR approach to the digital gaming context was initially proposed as an unpublished thesis in Finnish (Sokka, 2021). Based on those preliminary ideas, the utility of the framework has been applied in practice in a few publications. First, Meriläinen (2023) stated how the approach helped make sense of young people's engagement with digital gaming in both research and practice contexts and suggested some developments to it. Then, Meriläinen and Ruotsalainen (2023) utilized the framework to explore how different aspects of digital gaming actualize in young people's lives, and how various features of digital gaming culture participation come together to form their experience. Following these works, similar qualitative settings that utilize the DGR approach could provide significant knowledge on the issues that can be otherwise challenging to measure. For example, exploring the details and differences of perceived significance of digital gaming between various player segments could provide valuable details of the complex roles that games may play in different individuals' lives. Although meanings and significance are primarily associated with positive intentions and thoughts toward digital gaming, potential barriers to involvement could be studied too with the help of the DGR, similar to the PAR approach (Koski et al., 2022). Meriläinen's (2023) reported barriers included overwhelming competitiveness and toxic digital gaming communities that acted as distancing forces from playing digital games. Furthermore, by analyzing the personal and external factors presented in the DGR, new insights could be gained into how cultural, geographical, socioeconomical differences, as well as family and peer dynamics, may influence players' DGRs over their life spans. Such research could also illuminate the issue of gatekeeping and other discriminatory acts that have been observed in the digital gaming world (e.g., Passmore & Mandryk, 2020).

To extend the applicability to quantitative settings would require significant developmental work regarding suitable measures. The challenge of the operationalization of the meaning approach lies in the subjectiveness and complexity of meanings, which can require trade-offs between comprehensiveness and practicality when designing a scale. An option could be to adopt similar questionnaires that have been used with the PAR (see Koski et al., 2022; Koski & Tähtinen, 2005; Koski & Zacheus, 2012) and test if they are suitable to the digital gaming context. Another option in the future could be to try adapting tested and comprehensive digital gaming motive scales to the meaning approach, such as the Motivation to Play Scale (Holl et al., 2024). The Motivation to Play Scale was based on a literature review and started with over 1,000 items. The final scale ended with a reliable and valid questionnaire with 58 items in a 10-factor structure. With a stable scale, DGR's central

hypothesis of a positive association between digital gaming time and the perceived significance of digital gaming could be tested, as it has been done in the PAR context (see Koski et al., 2022). A potential continuation of this would be to compare meaning profiles across different player segments, sorted by factors such as age, cultural background, and preferred digital gaming platform or genre.

The initial reason to adapt the physical activity-based PAR framework to the digital gaming context stemmed from experiences and observations followed by an idea that physical activities and digital gaming activities may hold similar meanings (e.g., to compete, socialize) for people. This idea calls for further clarification and investigation at this stage, although some observations along the same lines have been made in previous literature. Vahlo (2018) argued that digital gaming, player-game interaction, and ways of experiencing digital games are not fundamentally different from traditional non-digital games, but represent manifestations of the same phenomenon. Moreover, according to Turtiainen (2022) sports and physical activities are linked to digital games in several ways, but she also notes that despite this, they are often considered as separate phenomena and commonly contrasted in debates.

The nascent idea of shared meanings between the two activities also continues the discussion around the displacement hypothesis (e.g., Lizandra et al., 2019), which suggests that the use of modern technologies such as digital games results in the displacement of less active leisure activities, thus potentially missing out on the well-known health benefits of physical activities. Asefi et al. (2024) explored the displacement hypothesis in their study by identifying five themes for preferring digital games over physical activities among male gamers. These included game characteristics, game space, game outcomes, peer pressure, and accessibility. Given the potential detriments to well-being that declining physical activity and increasing (mostly sedentary) digital gaming activity levels of youth may have (e.g., Hygen et al., 2022), the relationship between the two topical phenomena should be investigated more closely. Attention should be paid especially to adolescents, who are known to be active digital gamers. However, only one-fifth of adolescents globally met the recommended level of physical activity (Guthold et al., 2020). To further study the connections between physical activity and digital gaming activity in adolescents' lives, the joint framework of DGR and PAR could provide a fruitful starting point. Appropriate measures require developmental work first, but exploring the perceived significance of physical activities and digital gaming activities side-by-side could contribute to a deeper understanding of this timely issue.

## 5. Conclusion

Understanding the appeal of digital gaming is crucial for professionals in many fields. Moreover, theories increasing understanding of digital games, and their culture are also increasingly relevant to understanding wider media production and use (Chess & Consalvo, 2022). This article presented a novel approach to interpreting and understanding individuals' complex and varying relationships with digital gaming. It also illustrated how meaningful relationships with digital games can include much more than just playing them. Furthermore, the mechanisms of an individual's socialization process to the digital gaming world and the surrounding culture were theorized. The current literature on meaningful or eudaimonic digital gaming experiences draws on philosophical and psychological well-being research, whereas the DGR is rooted in the sociological perspective of symbolic interactionism which provides insight into how players build significance in their digital gaming experiences through social interactions within the game world. The two perspectives share similar conceptualizations, with eudaimonic digital gaming focusing on the objective

outcomes that enhance well-being, and the DGR exploring the subjective process of meaning-making. For future studies, the DGR approach provides a comprehensive framework to explore and analyze various player segments. Moreover, with the joint theoretical background with the PAR approach, it could be used to gain insight into the roles of physical activities and digital gaming activities in people's lives. To extend the framework's use and further test its applicability in quantitative settings, developmental work regarding suitable measures should be conducted.

### Funding

This work was supported by the Finnish Ministry of Education and Culture project funding: OKM/84/626/2022:646988

### Conflict of Interests

The authors declare no conflict of interest.

### References

- Amialchuk, A., & Kotalik, A. (2016). Do your schoolmates influence how long you game? Evidence from the US. *PLoS One*, 11(8), Article e0160664. <https://doi.org/10.1371/journal.pone.0160664>
- Asefi, A., Dehghani, H., & Shafieeyan, M. (2024). Exploring the reasons for preferring digital games over physical activity games in adolescents: A qualitative study. *Journal of Adolescent Health*, 75(1), 133–139. <https://doi.org/10.1016/j.jadohealth.2024.02.031>
- Ashton, G. (2019). Four ways in which politics are influencing esports. *The Esports Observer*. <https://esportobserver.com/four-ways-politics-esports>
- Baltzar, P., Turunen, M., & Hassan, L. (2022). Popular accessibility settings in digital games: What accessibility settings do players with disabilities use and need? In M. Turunen (Ed.), *Academic Mindtrek '22: Proceedings of the 25th International Academic Mindtrek Conference* (pp. 359–363). ACM. <https://doi.org/10.1145/3569219.3569335>
- Blumer, H. (1986). *Symbolic interactionism: Perspective and method*. University of California Press.
- Cheah, I., Shimul, A. S., & Phau, I. (2022). Motivations of playing digital games: A review and research agenda. *Psychology & Marketing*, 39(5), 937–950. <https://doi.org/10.1002/mar.21631>
- Chess, S., & Consalvo, M. (2022). The future of media studies is game studies. *Critical Studies in Media Communication*, 39(3), 159–164. <https://doi.org/10.1080/15295036.2022.2075025>
- Clement, J. (2024a). *Number of video game users worldwide from 2019 to 2029 (in billions)*. Statista. <https://www.statista.com/statistics/748044/number-video-gamers-world>
- Clement, J. (2024b). *Share of internet users worldwide who play video games on any device as of 1st quarter 2024, by age group and gender*. Statista. <https://www.statista.com/statistics/326420/console-gamers-gender>
- Daneels, R., Vandebosch, H., & Walrave, M. (2023). “Deeper gaming”: A literature review and research agenda on eudaimonia in digital games research. *Technology, Mind, and Behavior*, 4(2), 1–13. <https://doi.org/10.1037/tmb0000108>
- de Hesselle, L. C., Rozgonjuk, D., Sindermann, C., Pontes, H. M., & Montag, C. (2021). The associations between Big Five personality traits, gaming motives, and self-reported time spent gaming. *Personality and Individual Differences*, 171, Article 110483. <https://doi.org/10.1016/j.paid.2020.110483>
- Demetrovics, Z., Urbán, R., Nagygyörgy, K., Farkas, J., Zilahy, D., Mervó, B., Reindl, A., Ágoston, C., Kertész, A., & Harmath, E. (2011). Why do you play? The development of the motives for online gaming questionnaire (MOGQ). *Behavior Research Methods*, 43, 814–825. <https://doi.org/10.3758/s13428-011-0091-y>



- Engberg, E., Alen, M., Kukkonen-Harjula, K., Peltonen, J., Tikkanen, H., & Pekkarinen, H. (2012). Life events and change in leisure time physical activity. *Sports Medicine*, 42(5), 433–447. <https://doi.org/10.2165/11597610-000000000-00000>
- Evans, S., & Llano, S. M. (2023). Tryhard with a vengeance: Meaning making and boundary keeping on twitch. *Journal of Electronic Gaming and Esports*, 1(1), 1–7. <https://doi.org/10.1123/jege.2022-0042>
- Guthold, R., Stevens, G. A., Riley, L. M., & Bull, F. C. (2020). Global trends in insufficient physical activity among adolescents: A pooled analysis of 298 population-based surveys with 1.6 million participants. *The Lancet Child & Adolescent Health*, 4(1), 23–35. [https://doi.org/10.1016/S2352-4642\(19\)30323-2](https://doi.org/10.1016/S2352-4642(19)30323-2)
- Holl, E., Sischka, P., Wagener, G. L., & Melzer, A. (2024). The motivation to play scale (MOPS)—Introducing a validated measure of gaming motivation. *Current Psychology*. Advance online publication. <https://doi.org/10.1007/s12144-024-06631-z>
- Hygen, B. W., Belsky, J., Stenseng, F., Steinsbekk, S., Wichstrøm, L., & Skalicka, V. (2022). Longitudinal relations between gaming, physical activity, and athletic self-esteem. *Computers in Human Behavior*, 132, Article 107252. <https://doi.org/10.1016/j.chb.2022.107252>
- Kahn, A. S., Shen, C., Lu, L., Ratan, R. A., Coary, S., Hou, J., Meng, J., Osborn, J., & Williams, D. (2015). The Trojan player typology: A cross-genre, cross-cultural, behaviorally validated scale of video game play motivations. *Computers in Human Behavior*, 49, 354–361. <https://doi.org/10.1016/j.chb.2015.03.018>
- King, D., Delfabbro, P., & Griffiths, M. (2010). Video game structural characteristics: A new psychological taxonomy. *International Journal of Mental Health and Addiction*, 8, 90–106. <https://doi.org/10.1007/s11469-009-9206-4>
- King, R., & de la Hera, T. (2020). Fortnite streamers as influencers: A study on gamers' perceptions. *The Computer Games Journal*, 9(4), 349–368. <https://doi.org/10.1007/s40869-020-00112-6>
- Koski, P. (2008). Physical activity relationship (PAR). *International Review for The Sociology of Sport*, 43(2), 151–163. <https://doi.org/10.1177/1012690208095374>
- Koski, P. (2015). Liikunnan merkitykset. In S. Kokko & R. Hämylä (Eds.), *Lasten ja nuorten liikuntakäyttäytyminen Suomessa: LIITU-tutkimuksen tuloksia 2014* (pp. 27–32). Valtion liikuntaneuvosto. [https://www.liikuntaneuvosto.fi/wp-content/uploads/2019/09/Liitu-raportti\\_2015.pdf](https://www.liikuntaneuvosto.fi/wp-content/uploads/2019/09/Liitu-raportti_2015.pdf)
- Koski, P. (2017). Liikuntasuhde ja liikuntakasvatus. In T. Jaakkola, J. Liukkonen, & A. Sääkslahti (Eds.), *Liikuntapedagogiikka* (pp. 83–109). PS-kustannus.
- Koski, P., Hirvensalo, M., Villberg, J., & Kokko, S. (2022). Young people in the social world of physical activities: Meanings and barriers. *International Journal of Environmental Research and Public Health*, 19(9), Article 5466. <https://doi.org/10.3390/ijerph19095466>
- Koski, P., & Tähtinen, J. (2005). Liikunnan merkitykset nuoruudessa. *Nuorisotutkimus*, 23(1), 3–21.
- Koski, P., & Zacheus, T. (2012). Physical activity relationship during the lifespan. In J. Kivirauma, A. Jauhiainen, P. Seppänen, & T. Kaunisto (Eds.), *Social perspectives on education* (pp. 367–386). Suomen kasvatustieteellinen seura.
- Lal, B. B. (1995). Symbolic interaction theories. *American Behavioral Scientist*, 38(3), 421–441. <https://doi.org/10.1177/0002764295038003005>
- Lizandra, J., Devís-Devís, J., Valencia-Peris, A., Tomás, J. M., & Peiró-Velert, C. (2019). Screen time and moderate-to-vigorous physical activity changes and displacement in adolescence: A prospective cohort study. *European Journal of Sport Science*, 19(5), 686–695. <https://doi.org/10.1080/17461391.2018.1548649>
- McCauley, B., Nguyen, T. H. T., McDonald, M., & Wearing, S. (2020). Digital gaming culture in Vietnam: An exploratory study. *Leisure Studies*, 39, 372–386. <https://doi.org/10.1080/02614367.2020.1731842>



- McDonnell, T. E. (2023). Cultural objects, material culture, and materiality. *Annual Review of Sociology*, 49, 195–220. <https://doi.org/10.1146/annurev-soc-031021-041439>
- Mekler, E. D., Bopp, J. A., Tuch, A. N., & Opwis, K. (2014). A systematic review of quantitative studies on the enjoyment of digital entertainment games. In M. Jones & P. Palanque (Eds.), *CHI '14: Proceedings of the SIGCHI Conference on Human Factors in Computing Systems* (pp. 927–936). ACM. <https://doi.org/10.1145/2556288.2557078>
- Meriläinen, M. (2023). Young people's engagement with digital gaming cultures—Validating and developing the digital gaming relationship theory. *Entertainment Computing*, 44, Article 100538. <https://doi.org/10.1016/j.entcom.2022.100538>
- Meriläinen, M., & Ruotsalainen, M. (2023). The light, the dark, and everything else: Making sense of young people's digital gaming. *Frontiers in Psychology*, 14, Article 1164992. <https://doi.org/10.3389/fpsyg.2023.1164992>
- Nozick, R. (1981). *Philosophical explanations*. Harvard University Press.
- Ogden, C. K., & Richards, I. A. (1989). *The meaning of meaning*. Harcourt Brace Jovanovich.
- Olson, C. K. (2010). Children's motivations for video game play in the context of normal development. *Review of General Psychology*, 14(2), 180–187. <https://doi.org/10.1037/a0018984>
- Passmore, C. J., & Mandryk, R. L. (2020). A taxonomy of coping strategies and discriminatory stressors in digital gaming. *Frontiers in Computer Science*, 2, Article 40. <https://doi.org/10.3389/fcomp.2020.00040>
- Possler, D. (2024). Video games as meaningful or eudaimonic experiences. In M. Powers (Ed.), *Oxford Research Encyclopedia of Communication*. <https://doi.org/10.1093/acrefore/9780190228613.013.1485>
- Possler, D., Bowman, N. D., & Daneels, R. (2023). Explaining the formation of eudaimonic gaming experiences: A theoretical overview and systemization based on interactivity and game elements. *Frontiers in Communication*, 8, Article 1215960. <https://doi.org/10.3389/fcomm.2023.1215960>
- Przybylski, A. K., Rigby, C. S., & Ryan, R. M. (2010). A motivational model of video game engagement. *Review of General Psychology*, 14(2), 154–166. <https://doi.org/10.1037/a0019440>
- Recours, R. A., Souville, M., & Griffet, J. (2004). Expressed motives for informal and club/association-based sports participation. *Journal of Leisure Research*, 36(1), 1–22.
- Reysen, S., & Lloyd, J. D. (2012). Fanship and fandom in cyber space. In Z. Yan (Ed.), *Encyclopedia of cyber behavior* (pp. 292–300). IGI Global. <https://doi.org/10.4018/978-1-4666-0315-8.ch025>
- Rovio, E., & Saaranen-Kauppinen, A. (2014). Liikunta arjen armoilla. In E. Rovio, A. Saaranen-Kauppinen, & T. Pyykkönen (Eds.), *Liikuntakynnyksen yli—ohjelmista ihmisen kohtaamiseen* (pp. 13–25). Liikuntatieteellinen Seura. [https://www.lts.fi/media/lts\\_julkaisut/impulssit/imp\\_28\\_netto\\_korj270114.pdf](https://www.lts.fi/media/lts_julkaisut/impulssit/imp_28_netto_korj270114.pdf)
- Sokka, M. (2021). *Digipelisuhdetta määrittelemässä: Mikä pelipalvelimilla vetää puoleensa?* UTUPub.
- Strauss, A. (1978). A social world perspective. In N. Denzin (Ed.), *Studies in symbolic interaction* (pp. 119–128). JAI Press.
- Takeuchi, L. (2011). Kids closer up: Playing, learning, and growing with digital media. *International Journal of Learning and Media*, 3(2), 37–59. [https://doi.org/10.1162/IJLM\\_A\\_00068](https://doi.org/10.1162/IJLM_A_00068)
- Thiborg, J. (2009, June 15–17). *eSport and governing bodies—An outline for a research project and preliminary results* [Paper presentation]. Kultur-Natur, Konferens för kulturstudier i Sverige, Norrköping, Sweden. <http://muep.mau.se/handle/2043/10746>
- Turtiainen, R. (2022). Liikunta, urheilu ja pelaaminen. In U. Friman, J. Arjoranta, J. Kinnunen, K. Heljakka, & J. Stenros (Eds.), *Pelit kulttuurina* (pp. 197–218). Vastapaino.
- Unruh, D. (1979). Characteristics and types of participation in social worlds. *Symbolic Interaction*, 2, 115–130. <https://doi.org/10.1525/si.1979.2.2.115>

- Unruh, D. (1980). The nature of social worlds. *The Pacific Sociological Review*, 23(3), 271–296. <https://doi.org/10.2307/1388823>
- Vahlo, J. (2018). *In gameplay: The invariant structures and varieties of the video game gameplay experience*. UTUPub.
- Van Petegem, S., de Ferrerre, E., Soenens, B., van Rooij, A. J., & Van Looy, J. (2019). Parents' degree and style of restrictive mediation of young children's digital gaming: Associations with parental attitudes and perceived child adjustment. *Journal of Child and Family Studies*, 28(5), 1379–1391. <https://doi.org/10.1007/s10826-019-01368-x>
- Webster, J. G. (2014). *The marketplace of attention: How audiences take shape in a digital age*. MIT Press. <https://doi.org/10.7551/mitpress/9892.001.0001>
- Yee, N., Ducheneaut, N., & Nelson, L. (2012). Online gaming motivations scale: Development and validation. In J. A. Konstan (Ed.), *CHI i12: Proceedings of the SIGCHI Conference on Human Factors in Computing Systems* (pp. 2803–2806). ACM. <https://doi.org/10.1145/2207676.2208681>

## About the Authors



**Miikka Sokka** is a PhD student at the university of Turku, Finland. He is a project researcher of the PAGA study, funded by the Finnish Ministry of Education and Culture. His current research focuses on individuals' relationships with digital gaming, as well as connections between physical activities and gaming activities in peoples' lives. These are also the themes of his doctoral thesis, which is currently in progress.



**Kwok Ng** (PhD) is a senior research fellow at the University of Turku and is the lead researcher for the PAGA study, funded by the Finnish Ministry of Education and Culture. He holds joint posts at the Physical Activity for Health Research Centre, Health Research Institute, Department of Physical Education and Sport Sciences, University of Limerick, Ireland, as well as the Institute of Innovation and Sports Science, Lithuanian Sports University, Lithuania.



**Sami Kokko** is a professor of health promotion in the faculty of sport and health sciences at the University of Jyväskylä, Finland. He is a principal investigator of the National Health Promoting Sports Club study and national school-aged physical activity behavior study. His main research interests are settings-based health promotion, especially in sports club settings, and physical activity/sports-related topics. His publications have contributed not only to science, but also to health and physical activity promotion policy and practices.



**Pasi Koski** is a professor of physical education at the University of Turku, Finland. Koski's versatile research covers different aspects of sport, physical activities, and physical education from sociological and cultural perspectives. One of the main areas has been sport and physical activities of young people. His list of publications includes over 300 items, and his contributions have been published in 10 different languages.