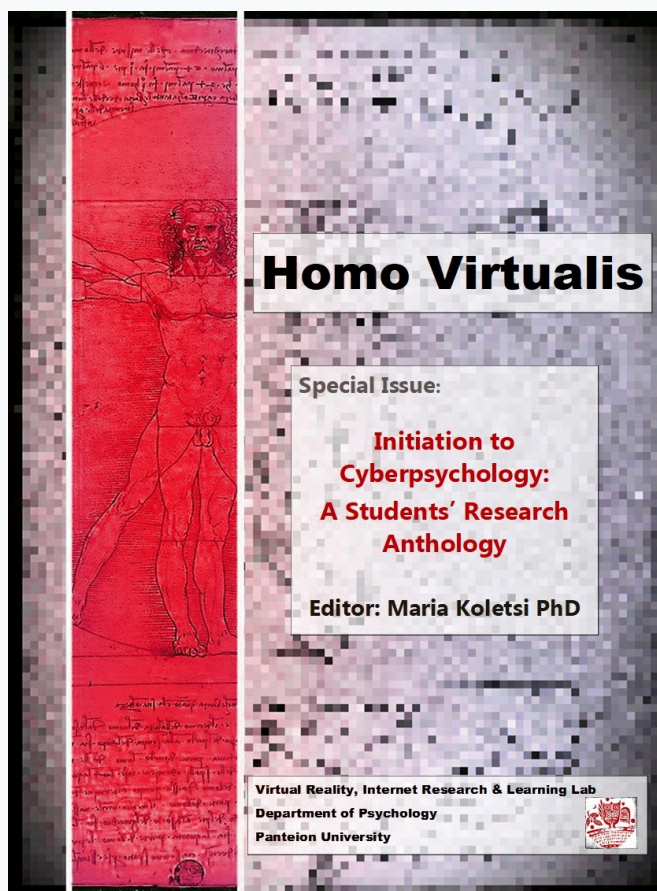


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## The social representation of internet gaming disorder in the Greek population

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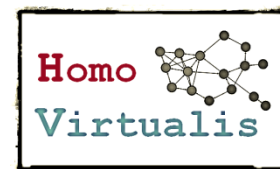
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## The social representation of internet gaming disorder in the Greek population

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**Abstract:** The aim of this paper is to study the social representation of Internet Gaming Disorder. For this reason, 286 adults, both male and female, 18-69 years old, participated in the research. The selected method is the free association technique. Underlying assumptions are: On one hand, a strong representation was not expected, given the fact that this disorder has been acknowledged only for the last ten years in the scientific field. On the other hand, addiction is expected to be the central nucleus' main element. Results confirmed the above assumptions. Indeed, addiction seems to be the core's main element. Furthermore, "Social isolation" and "Technological means" stood out as main peripheral elements, due to their relatively high frequency. In addition, results suggest that the representation has not yet fully emerged, confirming our first hypothesis. Finally, we must keep in mind that this new concept needs further study. Therefore, alternative proposals and methods for future research are proposed in the last section of this paper, in order to take a broad view of this subject.

**Keywords:** Social representation, free associations, Internet Gaming Disorder

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## **The Social Representation of Internet Gaming Disorder in the Greek Population**

The internet has infiltrated our daily lives, not only as a tool, as it was possibly perceived in its early years, but also as a place in which our lives expand and evolve offering new possibilities and fewer restrictions. Nowadays, what we call cyberspace, virtual reality, internet, is a part of everyday life, an extension of our communication, entertainment, and working environment. Cyberspace as a transitional space, an extension of one's psyche (Barak & Suler, 2008) and the multiple identities one creates in it, are an expansion of one's very existence. The space of image and virtual reality are main reference points and create what Baudrillard (1998), and other influential theorists of the 20th century, called "Hyperreality", a key feature in the postmodern era.

In this new regime of existence, trying to integrate the fictional into reality in an innovative way, it was a matter of time until new ways of indulgence and interaction emerge for the human being. Humans are undoubtedly able to act and communicate by using new, groundbreaking methods within virtual reality environments. Furthermore, nobody can deny the fact that online gaming has infiltrated our lives, especially those of young people, the ones belonging to generation Z, or even those that belong to the millennial generation (Dimock, 2019).

### **Internet Games**

When talking about "Internet Games" it is easy to understand that we are referring to games developed on the internet or generally in the cyberspace, in virtual environments. It is a form of entertainment that can offer various opportunities for information and interaction. However, it could also lead to problematic behaviors and situations. The term "internet games", as far as the disorder of engagement with them is concerned, is not quite right, as some theorists have pointed out (Lemmens & Hendriks, 2016). To be more precise, it has been observed that problematic behavior may also occur in games that do not require internet connection. It is possible that the term "Video/Computer games" and, therefore, "Video/Computer Gaming Disorder" may be a better description of the phenomenon than the current one, at least for now. Albeit those, in this paper, the term "internet gaming" will be used in order to avoid any confusion. It is also important to note that online gambling is not included in this disorder (American Psychiatric Association [APA], 2018).

It is crucial to differentiate between gaming as a social activity and gaming as a solitary activity. Perhaps, as a solitary activity [a classic example of such form of gaming lies in role-playing games, also known as MMORPGs (Massively Multi-played Online Role-Playing Games)] it fulfills different desires compared to those fulfilled by a more social and interacting game (Multiplayer Mode) (Harley et al., 2018). It has been also shown that different games have different levels of involvement, depending on their type (Laconi et al., 2017). The different levels of involvement are defined by quantitative

data, such as the number of hours spent in front of the computer. They are also defined by qualitative data, such as the players' feeling of "existing" in the game or experiencing an engrossment in an imaginary environment with which they interact through technological objects. That qualitative nature of deeper involvement describes that the sense of screen's mediation is quickly forgotten, and the player experiences the game in a very direct way. That phenomenon is widely observed in MMORPGs. The feeling of absence of the medium (screen) between the player and the game's world as well as the imminent engrossment in the virtual world, could cause someone to neglect basic everyday needs. Needs, like caring for physical hygiene and adequate nutrition, getting enough sleep, or even ignoring physical pain (especially on the shoulders and neck) caused by the faulty posture in front of the computer (Shi et al., 2019).

On such basis, there is also a breeding ground to greatly satisfy the motive of "escape", which means that, for a while, players forget the problems and issues, that may concern or stress them. They forget that they, also, exist outside the game, in what is traditionally called "reality" or the outside world. As a matter of fact, various studies have shown that the use of games for distraction is a main motivation associated with problematic involvement with online games (Buono et al., 2020; Király et al., 2015; Laconi et al., 2017). It can be observed a tendency of the players to forget short-term problems, they are concerned of, as a result of their engagement in internet gaming. Those problems refer both to the present (e.g., daily needs and physical pain) and to the past (e.g., memories of past, traumatic events over their life). Having those things in mind, it could be assumed that Internet Gaming Disorder (from now on will be referred as "IGD") is, in fact, a dysfunctional coping strategy for stress; stress is avoided by escaping the reality within which stressful factors are present.

Internet Gaming Disorder seems, also, to be correlated with depressive symptoms (Laconi et al., 2017) and low self-esteem, (Schmit et al., 2011). In this case, of course, more research is needed in order to, somehow, verify whether this disorder is being used as a defense mechanism or if the depressive symptoms are caused by spending extended periods of time playing internet games. An interesting finding is that there is no significant difference between the correlation of IGD with "heavy" games, like MMORPGs, and other more relaxed and carefree one, like "Candy Crush" (Laconi et al., 2017). So, the part that these more "innocent" games play in IGD should not be underestimated. On the contrary, these games should be studied among the "usual suspects" (MMORPGs, e.g., shooters). This finding reinforces the belief that it is not the type of game that can directly predict an increased risk of developing IGD; motivation and desires that are satisfied through these games are the ones able to have a predictive power.

Engaging in online gaming is specifically motivated by six factors: competition, challenge, social interaction, diversion, arousal, and fantasy (Sherry et al., 2006, as cited in Harley et al., 2018). Most of these motives seem mainly egocentric; the "diversion"

motive has already been referred to. One of the motivations that seem to correlate strongly with IGD is that of "Fantasy" (Laconi et al., 2017). It has been reported that players, who spend many hours engaged in internet gaming, like the opportunity that internet gaming offers them; an opportunity to escape reality and enter the magical world of the game. In that world, they can use their imagination to the extreme, with the only limits being those that the game sets (which are a few in games like MMORPGs). Players relax and avoid the pressure that possibly exists in more social games in order to have a good performance (Harley et al., 2018).

The possibility for extensive use of imagination through technology, on a very practical and realistic level, makes possible for persons to lose their identity in the real world and, instead, create many others, with the only limitations their creativity and the rules of the game. That is mostly observed in games expecting from players to create their Avatars ["an [image](#) that [represents](#) you in [online games](#), [chat rooms](#), etc. and that you can [move](#) around the [screen](#)" (Cambridge Dictionary, n.d., Avatar Definition)] in order to wander in the game's imaginary world. This character is created, by the players, at the beginning of the game using their imagination. It could be said that Avatars are a kind of a virtual Gestalt (see also Lindley, 2002), a whole virtual personality in the virtual world, that derives purely from human imagination. One's imagination thrives inside the game and manifests in this form, which presents consistency, beginning, and finality.

It could be said that Avatars are something of a "mirror" for the person that creates them. In that mirror, one's imagination (and not their body) is being reflected. Based on Jacques Lacan's (as cited in Johnston, 2018) mirror stage, Avatars could be a virtual manifestation of the Ideal Ego, an idealized form of the self, based on players imagination. What is of a great interest is the discussion about the authenticity of the self that one promotes in the real world and whether the selves created in an internet game's imaginary world, are close to one's "true" (or at least ideal) self. Anonymity and loss of real human contact save the person not only from stress but also from the need to adopt -what would traditionally be called "social"- roles, because they appear in specific social contexts, under the regime of specific ideologies, following rules and norms. Let's think of a person that is kind in social interactions, likable to those around them, taciturn, temperate, and not ostentatious. Now, let us assume that that person creates an in-game character that could be described as sadistic and enraged towards either other players interacting with them through their Avatars, or NPCs (non-player characters). What was just described as an example, it has been described nicely by Slavoj Žižek "Paradoxically, it is the very fact that I am aware that, in cyberspace, I move within a fiction, which allows me to express in it my true self" (Žižek, 2009, para. 16).

The fact that one exists in an imaginary world, inside the game, creates the "veil" that a person needs to manifest a deeper desire. Through technology, that desire is clearly observed, despite its innermost character. The game, by being a myth, a fairytale (Atsalákē, 2018) placed in the virtual and not in the real world, could be giving the

person the opportunity to express their true, deepest desire. They feel free of the social norms that try to restrict behaviors that are aggressive, offensive, and not fitting to the society. In the virtual world, which has been widely described as fake, not real, foolish, and intended purely for fun and games, the individuals find the incrustation needed in order to express parts of their personality, that could not be expressed in other contexts.

Through that issue, the mistake that is probably made, while trying to examine IGD using only quantitative measures, becomes evident; in these games, persons find themselves in a completely new world that differs greatly from the one they were in, until that moment. It is highly important to understand, through further research, what desires are being fulfilled through certain actions and behaviors of a player. Therefore, these new behaviours, which emerge in the games' surreal environments, could be detected, through the development of a, mainly, qualitative method. That is the reason why this paper was so motivation-centered and desire-centered up to this point; because that is where the deeper reasoning for problematic occupation with internet games might be identified.

So far, fantasy, diversion and the desires that pertain to the self, have been discussed; but games can also fulfill social goals. To be more exact, it appears that games like MOBAs (e.g., League of Legends) and MMORPGs (which have already been mentioned), are being used for social purposes (Laconi et al., 2017). These types of games offer great opportunities not only for social interaction, but also for cooperation with people that are complete strangers, friends or just acquaintances.

More extensively, as far as role-playing games are concerned, three of their features have been found to make them extremely appealing (Atsalákē, 2018); the first of these characteristics is the "flow", which is used to describe the continuous nature of the game; the fact that there is no specific end in the process. The second one is "engrossment", which describes the ability of these games to keep the player interested because of the ever-increasing provision of in-game goals that can be achieved. The third and last of those features is "telepresence", which describes the feeling of game concentration to such an extent that the person feels like being inside the screen, where the action of the game takes place. These features create the perfect conditions for the individuals to unfold their fantasy, to attain diversion (if they need to) or to be engaged in social interaction in ways they had never even imagined before.

## **Literature Review on IGD and Therapeutic Interventions**

The Internet Gaming Disorder has not yet found the empirical evaluation and analysis that it has hoped to find in order to be officially accepted as a disorder in the Diagnostic and Statistical Manual of Mental Disorders (DSM), which, for many, acts as a guide to evaluate and understand mental disorders within the clinical setting. The need to further evaluation and research on IGD is pointed out in the fifth edition of

DSM, stressing the necessity to coherently understand this disorder, with diagnostic criteria, verified through empirical research (APA, n.d.).

There has been an exact list of criteria that have been considered to be appropriate for diagnosing IGD: preoccupation with gaming, withdrawal symptoms when gaming is taken away or not possible, tolerance, inability to reduce playing, giving up other activities or loss of interest in previously enjoyable activities, continuing to play games despite the existence of problems, deceiving family or others about the amount of time spent on gaming, the use of gaming to relieve negative moods, risk or loss of jobs or relationships due to gaming (APA, n.d.).

Different attempts have been made (Petry et al., 2014) to approach and evaluate these criteria and the same diagnostic criteria, proposed by APA, have been heavily criticized (Griffith et al., 2015). There is a need to critically evaluate and understand the factors proposed as representative of this specific disorder and the special conditions and contexts within which these criteria may appear. For example, we know that preoccupation with internet games has become extremely popular, mostly for younger ages. It has become an essential everyday activity that can be used to communicate and entertain oneself. In addition to that, the existence of e-sports (games that can be played in a professional setting and way, with professional players) creates a context of preoccupation that is very similar to the one existing for traditional sports. Thus, an extended preoccupation with internet games in everyday life could be seen as problematic, while they are used as a hobby or as an entertainment, through an extended preoccupation with e-sports. An analogy to what has been happening with traditional sports (for example discussing for hours for our favorite team or for the one we think is the best).

Király and colleagues (2015) mention that we cannot yet be certain of our ability to officially categorize IGD as a disorder. It is dangerous to characterize it as an addictive behavior because it adds extra difficulty in our attempt to make further research on the topic and it creates a dynamic for abusive use of the phrase into the future. As mentioned before, the preoccupation with internet games is being constituted by other factors that have not yet been largely examined. Terms as "addictive behaviour" confine and complicate the deeper understanding of the meaning behind that preoccupation, especially when it is being considered problematic for the persons and those around them.

The influence of the literature on substance abuse disorders is considerably large on the suggestion of the criteria, as well as on the creation of an appropriate therapy and intervention programs for the people suffering from IGD (Rodriguez et al., 2017). It is crucial that efficient and effective therapeutic interventions should be developed for people that suffer from IGD. However, it is reasonably understandable that such a demand is being hard to satisfy, considering the problems of conceptualization and comprehension that exist on the many factors related to IGD.

Making a case of the therapeutic procedures that are being applied on people considered to suffer from IGD with a relative degree of confidence, research results show that it can be accomplished through Cognitive Behavioral Approaches on carefully organized therapeutic interventions (Hans et al., 2019). Other research (Zajac et al., 2019) shows very ambiguous results, based on some specific CBT interventions that cannot give credit to the challenge of effective therapeutic outcomes, even when the short-term effectiveness was measured. Despite the existence of some promising results, it is crucial that more research, with larger samples, is needed so that these issues can be properly discussed with a certain degree of confidence. Yet, another issue that seems not to have gained enough research spotlight, is the long-term effectiveness of the therapeutic programs that they have been, already, applied (mostly CBT programs). As a result, uncertainty hovers over the absence of relapses and setbacks on the process for a good long-term therapeutic outcome, despite the short-term therapeutic effectiveness of the intervention (King and Delfabbro, 2014). Long-term therapeutic effectiveness, through psychosocial interventions, could possibly be developed by gaining further understanding of the criteria and the comprehensive body of the IGD, as it is described on DSM-V.

In addition to the CBT programs, that have been already discussed, there is also research on psychoanalytic therapeutic approaches for people that are diagnosed with IGD. The approach of Serge Tisseron (as mentioned in Atsalákē, 2018) is of great interest. This approach attempts to understand IGD as something different than an addiction to internet games; instead, a much more innovative approach is being adopted. The therapy is based on a common ground shared by the therapist and the patient on the internet game, in which both parties participate. A therapist-patient discussion works as a way of exploring the events that transpired in the video game environment. It is of notice that a different approach is being adopted both on the disorder itself as well as on its treatment. The desire that these games fulfill, is becoming the focus of our attention during the therapeutic process. According to Tisseron (2008, as mentioned in Atsalákē, 2008), the character (the Avatar) of the game is the "royal road" to recovery.

Taking into consideration that IGD is diagnosed primarily on younger ages, (and here it must be pointed out, again, the need for a valid and reliable evaluation of IGD due to the conceptual problems that have already been mentioned), it is reasonable to understand that a systemic approach with a focus of attention on the family has the potential to present strong treatment results for people that are diagnosed with IGD. Despite that, hitherto, a very small body of research has attempted to evaluate therapeutic interventions of such kind (Zajac et al., 2019).

Finally, it should not be forgotten that the long-lasting preoccupation with video games is not dependent on the individual alone. Shi et al. (2019) emphasize that environmental and interpersonal influences can constitute, along with personal desires and needs, the main reason behind the emergence of attachment on internet games

for some people (carrying the dynamic to evolve into what is categorized as IGD). The pressure from peers to occupy yourself with internet games (as a hobby) (interpersonal pressure) and the inducement from the design of these games and the excitement that they can easily and quickly offer (environmental pressure) represent an example of some, non-exclusively personal, factors that can push people into long-hour preoccupation with an internet game, maintaining the focus of their attention.

### **Social Representations Theory**

The Social Representations theory is a core theory of utmost importance in the field of Social Psychology; a theory primarily represented by Moscovici. The concept of social representations was first introduced by Durkheim in 1898 (as cited in Mantóglou & Melétē, 2013, p. 41), who regarded them as a collective cognitive system, reflecting all the aspects of social reality. However, Moscovici, (1961; 1976, as cited in Mantóglou & Melétē, 2013, p. 44) revised the concept of social representations, granting them a dynamical role as a product of the interaction between the individual and the environment. According to that role, a social representation is not just an immovable, fragmented, symbolic piece of knowledge, but rather a representation of a relationship of exchange and influence. Both the natural and social environment are depicted inside the mental world of the individual, influencing their beliefs and thoughts, while social representations actively define the way they behave, comprehend and shape reality. Moscovici assumed that social representations are an independent, psychological entity of their own, representing the society, a society of constant change. He also named them "social" not only because they are common for most population groups, but also because they shape the individual actions of the people, influencing and giving meaning to their social relationships and roles.

The concept of social representations has been studied by several other significant social psychologists and theorists. Abric (1987, as cited in Mantóglou & Melétē, 2013, p. 45) defines social representations as a dynamic, internal, mental process, according to which the individual reconstructs and interprets the reality they live in. Two years later, in 1989, Jodelet (as cited in Mantóglou & Melétē, 2013, p. 50) approached social representations differently; she defines them as knowledge cultivated by experience, cognitive schemata, manner of thoughts and behaviour. According to Jodelet, we accept and replicate that knowledge in every form of social communication; a knowledge which is common for the society, as a whole, and fundamental for the conformation of social reality. According to Doise "a social representation consists of the centralization of our knowledge, in a world of values socially organized in a hierarchy, a result of the asymmetrical positions the individuals and groups possess in the social field" (Doise, 1990, as cited in Mantóglou & Melétē, 2013, p. 51).

A social representation, functions as a spherical and cohesive way of perceiving the representational object by an individual or a group. Moscovici believes that every social representation is a social-cognitive structure, whose components are defined as

the sum of sentences, reactions and estimations, comprising a world which he himself named "universe of ideas". Every "universe of ideas" consists of three dimensions. The first dimension is called "information" and is defined as the qualitative and quantitative level of knowledge that the individual possesses with regards to a social object and refers to the organization of the knowledge concerning that object. Secondly, "social attitudes" are psychological structures, challenging to change, that greatly influence the general opinion the individual has about the social object, meaning if they are well or ill-disposed towards that object. The third and final dimension is the "representational field or image"; it is a structure, responsible for the connection between the elements of the social representation and the organization and hierarchy among these elements. It points us "towards the idea of the image, the social model of sentences that refer to a specified side of the representational object" (Papastá mou & Mantóglou, 1995, p. 25). The organization of the "universe of ideas" depends on the social-psychological identity of the individual, as well as on a society's value system. Consequently, the three dimensions of this universe influence the organization, the contents, and the meaning of the social representation. Therefore, in accordance with the same representational object, it is easy for differences to arise between the social representations of individuals from different groups or even within the same group.

Regarding the formation of social representations, Moscovici advocated that the social representation of an object is shaped via two processes: objectification and anchoring; these processes take place in the context of a relationship of ceaseless interaction between the individual (psychological) and the society (social) (Moscovici, 1961; 1976, as cited in Mantóglou & Melétē, 2013, p. 56). During the process of objectification, the abstract and immaterial is objectified and takes the shape of an image, a word, an object. The concepts are converted to real, concrete schemata and become familiar. Initially, the individual decides which of the available information, regarding the representational object, are useful and consistent with their personality, as well as with the rules, the values and the ideology of the group to which they refer to. Hereupon, information is embraced by the individual in order to shape a cohesive, coherent whole which allows them to view the representational object in a specific and selective way. This whole, called the representational core, becomes the reality of the object, originating from a mere reflection in the individuals internal, mental world, which in turn will define the attitude, the estimation and the behavior of the individual (Jodelet, 1991, as cited in Mantóglou & Melétē, 2013). The whole process of objectification is empowered by the language, as the oral and mental naming dictates boundaries and specific attributes to the objects. In this way, the individual mildly participates in their structuring (Katerélos & Mantóglou, in press).

Apropos of the process of anchoring, "the new information and scientific knowledge is defined in the field of doing" (Moscovici, 1961; 1976, as cited in Mantóglou & Melétē, 2013, p. 61) and is incorporated into the pre-existing cognitive system of the individual (via the assimilation and integration of the new into the already existent). The process,

in order to be consistent with one's present opinions and interests, aims for the new information converted to useful knowledge, resulting in the creation of new behaviors.

The emergence of a new social representation is a process dependent on various social conditions that affect the cognitive system. The lack or decay of the information is because an individual can possess a limited sum of information; the result is that the individual is not able to judge the representational object correctly. Additionally, the focus of attention of the individual, which is the degree of their involvement in specific aspects of the social environment, binds the pre-existent views and assessments. Furthermore, the pressure to conclude, namely the need to be always prepared to have an opinion, a position on any issue, perhaps for reasons of frugality in relation to the natural or oral thought or the thought that focuses on communicating, leads the individual in the passive repetition of poised, conventional answers.

Following several research, Moscovici, in his book "La psychanalyse, son image et son public" (as cited in Mantóglou & Melétē, 2013, p. 66), studied the influence of communicating systems on the social representations. There are three communicating systems: a) diffusion aims at the transmission of common and essential knowledge, free of personal attitudes and sentimental prejudices by the one transmitting the information (emitter). The ulterior motive is the production of discourse, not action, b) in propagation, on the other hand, the observed messages, that are conveyed, are structured and incorporate the social values and rules of the emitter, c) propaganda is the most extreme form of communication. Its base lies in conflict. When a representational object threatens the cohesion of a group, the latter reacts by repeatedly transmitting messages in a dogmatic way with the intention of eradicating the threat via the creation of a powerful, collective social representation.

Regarding the internal structure of social representations, Abric (1987, 1994, as cited in Mantóglou & Melétē, 2013, p. 92) proposed a dual system of organization. According to that system, a social representation consists of a central core, composed of elements that are common for the members of a group, elements that originate from the code of values of the group, its history, and its social and ideological background. Those elements represent qualitative information, important for the members of the group; information that is firm and rigid. Contrariwise, the peripheral system consists of elements that originate from the unique experience of every individual with the representational object and cause the variety and diversity between individuals about social representations. These peripheral elements are flexible, changeable and unique to every social representation.

Every social representation is born, stabilized, mutated and eventually dies. As structures, both firm and changeable, rigid and flexible, it is possible for a social representation to undergo changes regarding the content and internal structure. However, something like that is challenging, since the social representations resist external pressures and can maintain their internal balance and organization, keeping stable the cognitive world of the individual. However, when an environmental change,

or rather a change in the relationship between the individual, the object and the environment, is so intense that cannot be neglected or incorporated into the already existent social representation, then the cohesion and content of the social representation is reshaped. Flament (1989, as cited Mantóglou & Melétē, 2013, p. 78) believes that when social reality contradicts the reality of a social representation, the representation evolves or reshapes itself. Namely, when a central element is challenged or a new element enters the central core, then the social representation is at risk of collapse and of total reconstruction. In contrast, in the peripheral system the presence of various elements or the incorporation of new ones is allowed, if the central core remains unaltered. If the new elements can be justified and rationalized, no change occurs; however, if a breach, resolved in an initial stage, arouses, it is possible for the elements to progressively invade the central core. This way the social representation will be eventually altered.

In conclusion, social representations as a cohesive whole of assessments, opinions, and information, aid the individual to interpret social reality and guide their behavior. According to Abric (1994, as cited in Mantóglou & Melétē, 2013, p. 75), social representations are dynamic products that define social relationships and behaviors, ensuring four basic functions; the cognitive function is comprised of the apprehension and interpretation of reality by the individuals through social representations. Additionally, cognitive function is comprised of the creation of a common reference framework that facilitates the communicative relationships between individuals. Regarding the identity function, social representations cultivate and safeguard the identity of an individual or group and contribute to the preservation of their individuality, uniqueness, and positive self-image. The function of orientation is associated with the role of social representations as a set of rules and social bonds and with their instructional function for individual behaviors and relationships. Finally, the causal function allows the post hoc rationalization and justification of behavior or/and attitude towards a representational object.

### **Social Representations, the Internet and New Technologies**

The theories making up the theoretical context of Social Representations can be of great use if we decide to apply them on the Internet and on the understanding that people have about the internet; in other words, the way that people construct the concept of the Internet inside their mind. Recently a big metanalysis and literature review was conducted by Moreira et al. (2021) which aspired to shed light on the ways that the social representations paradigm can be used in order to conduct research on the Internet, as well as the ways the Internet itself is represented in the social mind. That paper pointed out five major research areas under the social representations' theoretical spectrum in relation to the internet, from the quality of life, mobile culture, and education, to the internet as a moving representation and the way the internet is represented on different-aged populations. The investigation of new technologies

under the scope of the social representations theory has not seen much light until some recent research presented in that paper. The results across the studies showed differences in the ways that the internet is represented between different social groups; social groups with different characteristics and identities between them.

In general, "the internet appears as a mean to communicate, gain knowledge, have fun and express oneself" while at the same time it is also represented "as a dangerous and scary environment that threatens liberty or simple living and increases the need to rely on one's group to resolve the uncertainty generated by the flow of information" (Moreira et al., 2021, p. 1.19). The same authors outline three different agendas in which the internet can be explored within the social representations paradigm; a) Social Cognition, with research focusing on the ways that the internet users domesticate new technology, b) Social Identity and c) Intergroup relations, with research focusing on the ways that the representations of the internet and other technological advancements differ between different social groups. However, in this case it is specifically noted that, while exploring and producing results for this agenda, we might, at the same time, reinforce the differences that exist between the different social groups and create new stereotypes or even strengthen the already existing ones. This should act as a warning of a need for extreme care when exploring the social representations in this thematic and research agenda context. At last, we have the agenda of social thinking in times of big data.

Two research prospects stand out in this specific agenda: At first a need to research the social representations of those new concepts arising with the big data and their analysis (big data, data mining, machine learning to name a few) and at the same time there is a need for research to be conducted on the way that we perceive organized information from those new technologies (Moreira et al., 2021). Algorithms themselves can and should be researched from a social representations' standpoint, as concepts that evoke specific feelings and thoughts for different social groups.

The word algorithm itself can be a whole field filled with different and vast social representations between different social groups. The Algorithm itself is not just the code, but it is a notion that is part of our social life and discourse. The notion of the Algorithm carries authority, certainty, precision, and objectivity (Beer, 2016). The notion of the Algorithm carries social power and that is something that should be explored with the social representations thematic.

### **Purpose of This Study**

According to a publication in the Canadian Journal of Psychiatrists (Borges et al., 2021), Internet Gaming Disorder has been acknowledged only for the last ten years. More specifically, it was added in DSM-5 in 2013 and was approved by ICD-11 in 2018. Many clinical pieces of research have been conducted, most of which identify its diagnostic criteria (APA, n.d). However, no studies have been conducted regarding the Social

Representation of Internet Gaming Disorder, having in mind that it is a new concept in the scientific field.

The purpose of this research is to shed some light on the social representation of Internet Gaming Disorder of the Greek population. Although a strongly structured representation is not expected by the sample, it is an attempt to communicate this concept to the public and find out more about the emerging representation (Moliner et al., as mentioned in Mantóglou & Melétē, 2013, p. 109). The main hypothesis is that addiction will arise as the central nucleus' main element. This hypothesis is based on a variety of articles that report addiction in relation to Internet Gaming Disorder (Przybylski et al., 2017; Ko, 2014). At the same time, diagnostic criteria, such as tolerance and withdrawal, are linked to addictive behaviors.

## **Methodology**

### ***Sample***

A sample of 286 volunteers was recruited, consisting of 185 female (64.7%), 99 male (34.6%), and 2 non-binary individuals (0.7%) with a mean age of 30 years. The target population consisted of adult Greek citizens (age >18) and the sample was collected through convenience and snowball sampling. Participants received a web link through social networking platforms, which redirected them to a website on the google forms platform featuring the survey's questionnaire.

### ***Method***

To study and analyze the social representation of IGD, the free association technique was employed. In this technique, participants are asked to react to a stimulus word (in this case Internet Gaming Disorder) by stating words or phrases that spontaneously come to their mind. Their answers are determined based on two criteria; the criterion of the number and the criterion of the type of responses (grammatical and semantic constraints) (Dany et al., 2014). In this research, participants were asked to produce 3 words or phrases without setting any additional restrictions. Specifically, the instruction given was as follows: "Please write down the first 3 words or phrases that come to your mind when you hear the term "Internet Gaming Disorder". The reason why the above technique was chosen lies in the fact that, according to Abric, the spontaneity and the lack of control that characterize this method, provide the ideal conditions so that underlying concepts and elements of the social representation can emerge. These latent elements would be difficult to detect through a lengthy interview (as cited by Ferrara et Friant, 2015). According to De Rosa (1988), the free association method is suitable for eliciting the core elements of a representation, whereas more structured techniques, such as questionnaires, are proving to be more capable of identifying its peripheral elements (as cited in Dany et al., 2014). As it has been already mentioned, IGD is a new concept in the field of psychology and its social representation has not yet been thoroughly studied, so this technique seems to be

ideal. Finally, the data gathered through free-word association are collected and analyzed faster and more coherently (Jung et al., 2009).

Regarding the data analysis, the method used, originated by Verges (1992), requires the calculation of the frequencies of occurrence of the participants' word-answers and considers their appearance ranking (as cited by Wachelke and Wolter, 2011). This technique is grounded in crossing the two criteria mentioned above, which enables a distinction to be made between central and important structural elements of the representation and other, less important ones. Frequency of occurrence provides access to the quantitative centrality of an answer, which reflects how pervasive and frequent the answer is in the population under study (Dany et al., 2014). In contrast, the rank of occurrence is a more qualitative criterion (Lo Monaco et al., 2017), as it provides us with indications of how important the participant deems the correlation between response and stimulus word. According to Verges (1994), this technique is based on the theory that the core elements of a social representation are more prominent and prevalent, therefore they are more salient in memory, due to their strong association, and are mentioned first (as cited by Lo Monaco, 2017).

The cross-checking of the frequency of occurrence criterion with the rank of appearance of a word allows us to construct a double-entry table, with four cells. In general, the cell containing the elements with the highest frequency and those listed lower in the appearance ranking is more likely to represent the organizing core of the representation, in which the most central and prominent elements occur. The words or phrases clustered in the cell with the lowest frequency and cited higher in the rank are considered the peripheral elements of the representation. Finally, the two remaining cells contain the participants' responses constituting the peripheral zone of the representation; these are the elements that add to the representation the ability to be transformed and adapted to new information (Verges 2005, as cited in Dany et al., 2014). The responses collected through the free-word association technique were examined and analyzed in terms of their semantic load and incorporated into comprehensive clusters so that the main coherent concepts composing the participants' social representation could emerge.

### ***Materials***

The data gathered from the Greek population were analyzed using the IBM SPSS Statistics 26 software program

### ***Ethics***

A text on the objectives and context of the survey preceded the questionnaire administered and reassured participants that anonymity and confidentiality of the demographic data collected (gender and age) would be maintained and that only the research team would have access to the data.

## Results

The data analysis showed the existence of a prominent central core whose only element is “addiction” (cell 1) (Table 1). As shown in cell 4 of Table 1, there is an abundance of peripheral elements concerning IGD’s social representation. However, the ones that stand out due to their relatively high frequency are the categories “Social isolation” and “Technological means”.

To be more precise, in the category of social isolation, phrases that indicate one’s absence from social activities are included. Such phrases are “distancing from friends”, “no socialisation” and “loss of social relationships”. As for the category of technological means, words that refer to the technological equipment that is used by gamers are included. Some of the more frequent words in this category are “computer”, “screen” and “PlayStation”.

**Table 1: Greek population’s representation of Internet Gaming Disorder.**

	Low Ranking	High Ranking
High Frequency	Addiction (216, 1.35)	
Low Frequency	Time-consuming activity (33, 1.71) Game’s type/name (18, 1.85) Obsession (17, 1.58) Positive feelings (12, 1.90) Introversion (5, 1.60) I don’t know (3, 1.00) Habit (3, 1.33) Responsibility (2, 1.35)	Social isolation (87, 2.17) No answer (73, 2.56) Technological means (55, 2.05) Young age (35, 2.25) Other problems (23, 2.21) Anger (22, 2.25) Exacerbating physical health (22, 2.65) Violent behaviour (21, 2.20) Other psychological problems (21, 2.25) Problem (16, 2.05) Mental illness (13, 2.07) Stupefaction (12, 2.08) Danger (12, 2.59) Not interested in other activities (11, 2.20) Anxiety (10, 2.00) Game terminology (10, 2.3) Escape from reality (10, 2.50) Neglect (9, 2.10) Waste of time (9, 2.44) Virtual reality (9, 2.89) Decline (8, 2.00) Modern times (7, 2.43) Unproductiveness (7, 2.57) Doubts about the existence of phenomenon (6, 2.00) Gaming conditions (6, 2.40) Discoordination (5, 2.40) Optimisation (5, 3.00)

Losing track of time (4, 2.75)  
Surveillance (3, 2.00)  
Effect (3, 2.00)  
Money (3, 2.60)  
Degradation (3, 2.67)  
Boy (2, 2.50)  
Aloneness (2, 3.00)  
Hobby (2, 3.00)  
Abuse (1, 2.00)  
Insidious (1, 2.00)

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*Note.* The numbers in brackets refer to the frequency and ranking of the answers respectively.

As shown in cell 4 of Table 1, the second most frequent peripheral element is “No answer”. As it is described in the “Methodology” section, the participants were asked to write down the first three words or phrases that come to their mind when they see the phrase-stimulus. The element “No answer” describes the absence of element(s) in some questionnaires. By further examining only those questionnaires that were submitted while incomplete (41 in total) it was determined that 41% of the respondents had written down only one word, and that word was “Addiction” -the only element that this paper finds belonging in the central core of the social representation. Moreover, 15% of those incomplete questionnaires was answered by people who doubt the existence of IGD and another 7.5% of them belong to people who responded by saying that they don’t know what the question refers to (see “Doubts about the existence of phenomenon” and “I don’t know” in cell 4 and cell 3 of table 1, respectively). Lastly, in 36.5% of those questionnaires, the participants answered with either one 3-word phrase, which is equivalent to one element, or with one word and a 2-word phrase, which is equivalent to two elements.

As for the potential change zones (cells 2 and 3), it is interesting that cell 2, which normally contains words or phrases with high frequency and high ranking, does not contain any elements as far as this research goes. No words or phrases from our data fulfilled those criteria. On the other hand, cell 3, which contains words or phrases with low frequency but high ranking, includes the following elements: “time-consuming activity”, “game name/type”, “obsession”, “positive feelings”, “introversion”, “habit”, “responsibility” and “I don’t know” (Table 1).

## **Limitations / Discussion / Recommendations for Future Research**

### **Limitations**

The conclusions from this research are various and important. It is preferable to start with the limitations because, that way, the interpretation of the results will be more accurate.

### ***Sampling Limitations***

The first of these limitations is about the sampling technique that was used. To be more precise, as it has been already stated, the method used is convenience sampling, based on recruiting available participants (Babbie, 1998/2018) who then bring new participants (snowball sampling). Convenience sampling is not generally recommended because "it does not allow us to have control over the representativeness of the sample" (Babbie, 1998; 2018, p. 356). Furthermore, snowball sampling is suggested when dealing with special targeted populations, who are hard to be tracked down (Babbie, 1998, 2018), which is not the case in this research. In a few words, it cannot be supported for sure the representativeness on the Greek population, in our sample and whether the results of this research can be generalized.

### ***Reliability and Validity***

Since the technique used to collect the data is the free association task, it is not possible to run tests for reliability (internal or external). These tests were developed to check the reliability of questionnaires and, therefore, can't be applied here. In other words, it is not sure if the research can be repeated and bring the same results and that depends on the effectiveness of the sampling method (Galanákēs & Pezērkiánídēs, 2019). The same, of course, applies to validity tests. Albeit those limitations, free association task is employed in research in the field of social representations, due to its ability to differentiate between core and peripheral elements (Tavani et al., 2009) and is presumed to be a very important technique to gather data for social representations, according to Abric (as cited in Piermattéo et al., 2014, p.3).

### ***The Impact of Covid-19 Pandemic***

One last limitation lies in the fact that the research was carried out during the Covid-19 pandemic. The pandemic has not only affected every aspect of our lives but has also subjected us (regularly and for large periods of time) to mandatory lockdowns. Research (Ko & Yen, 2020; King et al., 2020; Paschke et al., 2021) results have shown that gaming and the gaming market have reached a peak since the beginning of the pandemic not only in the US, but also in Europe and Turkey. It is possible that the pandemic and its psychological impact on people as well as the increased interest in gaming during Covid-19, have affected the social representation of IGD, even temporarily.

### **Discussion**

Moving on to the discussion of the results, it is worth mentioning the role that the free association technique plays. As it was presented in the "Methodology" section, the free association technique was used -apart from its value for researching social representations- because the topic has not been thoroughly researched. Since the

topic is relatively new in the bibliography, it was assumed that its social representation has not yet fully emerged. In this phase, according to Moliner et al. (as cited in Mantóglou & Melétē, 2013, p.109), a variety of opinions is present and permanent knowledge about the representational object is not required. The hypothesis was that on the core of the representation there would at least be present the element of addiction.

The results of the research come to an agreement with the above, since the one and only core element was found to be "addiction" (cell 1) (Table 1). Furthermore, the periphery (cell 4) consists of an abundance of elements (37 to be exact) and there also are 8 elements in the potential change zone (cell 3) (Table 1). One possible way to interpret these findings is by assuming that the participants, indeed, seem not to have been developed a social representation of this phenomenon. To begin with, the variety of opinions is reflected by the number of peripheral elements and elements in the potential change zone. These elements are organized around the only core element, that is addiction. A representation like that one is weak, and it can change easily, so it is only logical to assume that it has not yet been fully developed. After all, the fact that there is a core presence, even if it is consisted only by one element, does not contradict this assumption. Addiction may be brought up because of the word "disorder" and not the representational object itself.

The fact that the second most frequent peripheral element is "no answer" (cell 4) (Table 1) is also worth mentioning. As it has already been reported in the "Results" section of this paper, 22.5% of questionnaires that did not provide 3 items, refer to people who either had doubts about the existence of the phenomenon (15%) or did not know what IGD is (7.5%). Therefore, it is somewhat expected that they would not write down 3 items either due to disbelief or ignorance. A suitable way to interpret the 36.5% of questionnaires who either consisted of one three-word phrase (one item) or a two-word phrase and a word (two items) would be to assume that the participants did not read the instructions carefully and, thus, did not fully understand what was asked of them. Finally, 41% of those incomplete questionnaires only consisted of the core element (Addiction), which may indicate that those participants have yet to formulate a representation about IGD, and don't have much information about it, therefore writing down only the core element.

Of course, on the other hand, another explanation that is fitting is that the findings were formed that way due to a sampling error.

### **Recommendations for Future Research**

Even though this research sheds some light on the Social Representation of Internet Gaming Disorder, more systematically research is needed in order to fully understand it and to be able to support that we have the full "picture". Moreover, the repeatability of the results (if exist) will ensure their reliability (Galanákēs & Pezērkiánidēs, 2019). A

research agenda concerning the way that people represent this disorder in their mind should include studies conducted by a variety of research methods, preferably with more participants of all ages.

As for future research, it would be interesting to examine if there are any differences in the way that IGD is represented between different groups of people. Future studies could approach this idea by examining whether people who spend time playing games online have a different social representation than those who are not entertaining themselves that way. Another hypothesis that could be examined is whether people of different ages have different representations as well, because the younger ones get more in touch with the internet as they grow up. Could one's familiarity with the internet become a differentiating factor regarding the social representation of IGD?

Finally, it would be interesting to see whether one's negative (or positive) representation of the internet itself correlates with an equally negative (or positive) representation of IGD. It is possible that one's extremely negative opinions about the internet could manifest themselves in their representation of IGD. We may well be able to predict the negativity with which one represents IGD by examining their representations about the internet.

### ***Research Methods***

All the parameters that were reported above could be examined using the same technique used in this paper, which, as said earlier, is the free association task. They could be also examined by making use of other techniques. Some of the most fitting methods are presented below.

**Verbal Association Task (VAT).** The first of these techniques is the verbal association task. This specific technique is supported in many pieces of research (Danny et al., 2015; Ernst-Vintila et al., 2011; Jung & Pawlowski, 2014, 2015; Mäkiniemi et al., 2011; Lebrun, 2014; Mouret et al., 2013; Piermattéo et al., 2014) and is appropriate for researching social representations (Lo Monaco et al., 2017). In summary, according to La Monaco et al. (2017), participants are called to write down the first words or phrases (usually up to 3-5) that come to their mind when they hear or read X (X being the phenomenon whose representation is under study). Participants are then asked to organize those words in a hierarchy (e.g., from the more important to the least important). Essentially, the difference between VAT and the free association task is that in VAT participants rank their answers, whereas in the free association task they don't.

**Questionnaire of Characterization.** Another method for researching social representations is the Questionnaire of Characterization. According to this method, a list of words (e.g., 15 items) is presented to the participants of the study. Then, they are asked to choose a value between -2 and +2 (zero included) and attribute it to an item based on how important they think that is to their representation. Moreover, La Monaco et al. (2012) suggest that this technique allows Correspondence Factor

Analysis to be conducted. This allows the formulation of centrality hypotheses for subgroups by considering social anchoring (Lo Monaco et al., 2012).

**Attribute-Challenge Technique (ACT).** ACT is amongst the most efficient method in researching social representations and, in fact, was the first method to provide a systematic, scientific way to indicate the structure of social representations (as cited in Lo Monaco et al., 2017, p.12). Lo Monaco et al. (2017), proposed that this technique tests the non-negotiable, core elements of the representation, without which the representation would fall apart (Moscovici, as cited in Lo Monaco et al., 2017, p.12). "Widely used, it has been considered the most effective way to reveal the structure of a social representation" (Flament, as cited in Lo Monaco et al., 2017, p.12). Lo Monaco et al. (2017) explains that for this technique the double-negative principle is used and can predict if the lack of links between the element of the representation and the phenomenon whose representation we are trying to determine (first refusal) is not acceptable (second refusal) or acceptable (absence of second refusal). If there are no links between the phenomenon and the element, and that fact is not acceptable for most participants, then this element belongs to the central core of our representation.

## Conclusion

It's of high importance that more research should be conducted on this specific matter and that the researchers should not only use the free association task, but also a combination of the other methods suggested in this paper. That way, while the social representation of IGD stabilizes as people gather more information about the phenomenon (Mantóglou & Melétē, 2013), future research will provide a more complete understanding for IGD in the light of social representations theory.

The current research can be a first attempt to understand the way that common sense comprehends and symbolizes the meaning of IGD. This knowledge can be of great use in order to understand the stigmatization of people who appear to be suffering from this disorder. Moreover, it can be of great use in order to understand people who, for other reasons, exhibit signs of extensive preoccupation with online gaming. Once we understand that stigmatization, we would be, possibly, able to organize more suitable and, therefore, effective informative programs in order to achieve two important goals: on one hand, fight the stigmatization of people who truly suffer from the disorder and, on the other hand, avoid describing a negative "picture" for people who just spend large periods of time playing online games. By identifying what elements constitute IGD in common sense, for example, "Addiction", a core element of the representation found in this research, it could be possible to avoid over-using the term.

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