

7. Games as motivational triggers: features and issues

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Despite being an intrinsic part of our human nature, games became an object of scientific study only in the second half of the 20th century, when research moved from only focussing on children's play and on specific titles (such as *Chess*, a game that is the topic of hundreds of books in itself) to the study of the multifaceted and complex relationship between human beings, play activities, and the artefacts allowing them. Among the several important changes the last decades have brought to Western societies, the significant spread of adult gaming stands out as the object of interest of scholars from several fields, and raises a series of issues contemporary Design has to take into consideration. The study of games and human behaviour together with experience in Game Design provides tools capable of motivating, capturing and fascinating players; such tools are nowadays at the disposal of designers from a variety of fields, from communication to products and services. We have access to methods and tools potentially capable of influencing users beyond their acknowledgment, prompting the need to get to know them and the ethical concerns they can raise, considering them with caution and awareness of the risks of misuse.

Recent social changes in Western society – increase in mobile devices and shifts in work habits to mention some – contribute to easing the widely held stigma of adults playing games. Games have become an important element of everyday life for a significant part of the Western population, to the extent that the 21st century is being referred to as the *Ludic Century* (Zimmerman, 2014).

In the discipline of Game Studies (Mäyrä, 2008) scholars from numerous and disparate fields dialogue with each other and with the designers who deal with the creation of games in the Game Design sub-branch.

Over an immeasurable period of time, games were born out of a continuous process of evolution, reaching us through mutations that were rarely documented and remain unknown; ancient games bring us testimonies and echoes of the cultures of origin to which they were closely linked: «the study of game origins remains important, not for the purpose of reconstructing history, but for the purpose of illustrating the continuity of human nature» (Avedon and Sutton-Smith, 1971, p. 161).

Theoretical and practical research during the 20th century explored games and gameplay, contributing to the rise in attention to and awareness of Game Design. Starting between 1960 and 1970, with the rapid expansion of videogames, Game Design has grown to become a discipline cognisant of its methods, tools, potentialities and criticalities, and capable of providing interpretative keys useful for contemporary research on social issues. An ethical dimension surfaces when looking at games as means for communication and persuasion in connection with results from cognitive and behavioural sciences. Designers would benefit from a better understanding of what Game Studies can reveal about motivation, communication, users' loyalty and even addiction.

To that end, it is necessary to understand what is meant by *game* and *play*, given the many lexical ambiguities accompanying such terms. Game Studies has dealt with shaping definitions for a couple of decades, several of which can be found in literature (Salen and Zimmerman, 2004; Juul 2005).

For the scope of this chapter, a suitable definition of *playing games* – be they digital, analogue, competitive, cooperative or other forms – is the one proposed by philosopher Bernard Suits ([1978])

2005): «playing a game is the voluntary attempt to overcome unnecessary obstacles» (p. 55). Such obstacles are defined by the rules of the game with the goal of preventing players from using the most effective and efficient means to achieve ludic goals; this therefore results in stimulating inventive creativity and strategic-tactical skills. The game of *Golf* is a useful example for understanding the concept. *Golf* players have the goal of inserting a small ball into a specific hole in the ground. Rules require this to be done by launching the ball while being at a large distance from the hole – often even without direct sight – and by hitting it in a certain way with a specific kind of club. Rules, therefore, impose limitations to actions: the most efficient method to achieve the ball-in-the-hole goal would be to go to the hole and manually insert the ball in it, but by doing so players would not be respecting the rules and therefore would not actually be playing *Golf*. Limitations to action are in fact *obstacles*, as in the definition above; players decide to submit themselves to such limitations because otherwise they could not play.

The core of a game is its ruleset, which limits players' freedom of action, but that is not enough to define what a game is. A game can be considered as an artefact composed of several elements, which are well outlined by the *Elemental Tetrad* proposed by designer Jesse Schell (2008, p. 41). According to this representation system the structure of a game is made of four components: *aesthetic* (what is perceived through the senses); *narratives* (the story and narrative elements); *technologies* (the tools and materials used for its creation and functioning); and – the most interesting for the chapter – *mechanics*. The restrictions on players' freedom – rules of the game – define which actions are allowed while playing, and mechanics constitute the complexity of allowed actions, possibilities and variables composing the procedural dimension of the game, i.e., its essence. Taking inspiration from the work of designers Geoffrey Engelstein and Isaac Shalev (2020), who collected and described more than two hundred board-game mechanics, we can abstract the concept, separating it from specific types of playful artefacts: *mechanics are the building blocks of a game*.

They also contribute in different ways to players' motivation in playing a game and are a central element for the discourse on con-

temporary connection between games, life and habits.

It is nowadays established in Game Studies that the rules of a game and their implementations as mechanics constitute a powerful motivational engine that can be effective in different ways.

Two are of notable interest from the perspective of the design field: the meaningfulness of procedural rhetoric (especially in a specific kind of games designed to foster change); and the effectiveness of mechanics based on human features such as physiological responses and biases with the issues it raises.

7.1 Meaningfulness of procedural rhetoric

Games have a specific and characterising factor that is missing in traditional communication media: actual *interactivity* (Ryan, 2006; Bogost, 2007; Crawford, 2013). During the playful experience players must interpret, analyse and evaluate elements, states and circumstances in order to establish the most effective actions (among those allowed by rules) for best achieving the ludic objective. Players take tactical-strategic decisions and act on them. Game designers establish framework and conditions for game events to potentially happen, but these can occur by virtue of players' actions alone. If no one plays a game, none of the designed events ever happen. Whoever plays is thus personally responsible – given the designed game – for the outcomes of the experience, which results in being characterised by a sense of extreme involvement making it stand out in comparison with experiences generated by non-interactive works.

Games employ traditional rhetorical systems such as texts, sounds or images, but they also work through a special interactive rhetorical system called *procedural rhetoric* (Bogost, 2007). The set of possible actions that can occur in a game can be seen as a set of *possible procedures* defined by the rules to be followed to reach the game goal.

Games can express meaning not only through texts or images but also and especially through the actions – the procedures – they allow players to perform.

This peculiar rhetoric has been explored during the recent decades,

to understand how it works and can be fully employed. Among these research cases, Games for Change (G4Cs) are the most interesting ones for designers: they are games designed not only to be good and fun-to-play, but also to be capable of fostering attitudes and awareness towards critical topics of social relevance; soliciting a change of perspective or habits in players; fostering new points of view and inviting reflection on specific topics; and encouraging a growth in awareness, to facilitate dialogue among diversities (Isbister, 2017; Bertolo, 2022).

To understand how G4Cs work it is necessary to look at the transformative features of game experience. Since the first years of the current century, Game Studies scholars and researchers have been exploring the several ways games can act as change triggers (Salen and Zimmerman, 2004; Bogost, 2007; Flanagan, 2009; Bertolo and Mariani, 2014; Isbister, 2017; Antonacci, 2020; Antonacci and Bertolo, 2022). Play activity is and has been part of every human society, intertwined with rites and cultural elements. Historical, anthropological and sociological research agree on games having an important role in the various human cultures of the past. They have served a sacred function, important both for individuals and for communities; a biological function; and in the meaning they contain and carry, the spiritual and social bonds they can create, as observed in 1938 by Johan Huizinga in his seminal work, *Homo Ludens*, considered to be the starting point for the Game Studies discipline. By taking part in games, players among human societies have been unifying factors of their community, and participating in transmitting and keeping alive a sense of continuity and belonging. It was only during the changing times of the Industrial Revolution that playing games, emptied of collective and shared meaning, was relegated to childhood and considered a waste of time when practised by adults. Such diminishing notion has been fading out since the second half of the 20th century, thanks to a complex of social and economic changes including reduced working hours; the emergence of the videogame industry; and the spread of computers and mobile devices (Juul, 2010).

Research in fields such as anthropology, psychology, sociology, pedagogy, and Game Studies confirms that playing games can contribute in communicating shared values and ideas, and that, through

games, it is possible to transmit information, contribute to teaching processes, and foster change. Such a proficiency is connected to the structural similarities games share with rites, in particular with rites of passage (Huizinga, 1938; Turner, 1982; Van Gennep, [1909] 2019). In games and in rites of passage, participants enter a three-step process which temporarily suspends them from reality. Ordinary rules and roles are suspended at the beginning of the game or the rite, to be substituted by those of the gameplay/rite, and then to be returned to normality when the experience ends – a normality now enriched by the memory of what participants have been through. Such three-step structure can be observed in other activities, such as in reading novels, watching movies or attending shows. Games, however, thanks to their interactive features, can directly and personally involve players, leading to a feeling of personal responsibility in regards of play events and outcomes, as described above. At the end of the play experience, players return to reality, but they carry over the memory, not only of watching events but also – and especially – of having taken an active part in making them happen. This intensifies the efficacy of games as mediums of communication and transformation. Contemporary research on games refers to this phenomenon by viewing games as a medium capable of giving players occasions for practising their *agency* (Nguyen, 2020; Ciancia, Piredda, Bertolo, 2024).

When entering into a game of any kind, a person cannot be considered a neutral, detached and impartial being. Players bring into play a system composed of their own character, the memory of previous experiences, and most importantly their own moral and ethical values (Sicart, 2009). It is through this complex and extremely personally unique system that they would accept or refuse to act in the game – because, as previously said, to play is a free and voluntary activity which cannot be forced – and interpret its contents and rhetoric. Additionally, when players suspect or realise that an attempt is being made to change their mind on any subject, they are very likely to react by actively resisting.

In accord with these observations, research has shown that the *invitation to play* can be difficult for G4Cs. Not only do players meet the game through the lens of their personal ethics and values, but they are also unlikely to be tempted to play if the experience is going

to tackle sensitive and problematic issues or even attempt to somehow change their minds. There is an evident contradiction between critical topics usually treated by G4Cs and the desire to have fun and get away from reality which characterises the interest towards the play experience (Fink, 1968).

To design a game capable of reaching players with a goal of meaningful change in habits or awareness it is necessary to consider such criticalities. The *embedded design approach* (Flanagan and Kaufman, 2015) has been proven to be extremely effective in this purpose: game elements related to critical topics can be mixed with less sensitive ones, distracting players' attention from the game goal or making it more approachable; or metaphors can be used to mask the actual game contents during gameplay.

The design of a game requires more than the usual competences designers possess: designers usually work to make users more at ease, to facilitate their usage of systems, objects and tools, while *game* designers have to make users' experience difficult, to create obstacles that are balanced to be challenging enough, but not too much.

When the game is a G4C, as seen, designers must also be aware of an additional set of issues, criticalities, tools and procedures. Finally, it is not enough to evaluate a G4C by observing that it's fun and players liked it. To make sure that it is working as an agent of change and fulfilling its goal, it is also necessary to evaluate its efficacy by observing the experience; evaluating players before and after gameplay; asking them to fill in questionnaires; interviewing them; and, in general, using experience evaluation tools (Isbister and Schaffer, 2008).

To briefly summarise, the whole process of designing a G4C requires:

- a precise definition and understanding of the goals and topics it addresses;
- a clear identification of the intended target, which has to be described not only by the usual user-centred-design means, but also by games-related profiling tools;
- the knowledge of normal Game Design methods and of those typical of Games for Change;
- the creation of the game, through the iterative process of play-testing a prototype and applying changes accordingly to the test results;

- the design of the efficacy evaluation protocol and system, and the training of individuals who would put those in practice before, during, and after gameplay;
- the analysis of the collected data and information.

7.2 Effectiveness of mechanics based on human features

Observation of how games and G4Cs function helped to identify several mechanics and specific systems capable of effectively involving and motivating players. Results obtained by G4C research and Game Design experiences are nowadays being paired with findings from cognitive and behavioural sciences revealing several mechanisms guiding the way we think and make decisions (Kahneman, 2011; Wendel, 2020), making it possible to create more effective communication and motivation artefacts through a number of design techniques; to explore them all is outside the scope of this chapter, and three of them are described here as representative examples.

The play experience has an important place in the well-known work of psychologist Mihaly Csikszentmihályi, who in the 1970s set up a research group to verify under which conditions people declaring themselves satisfied with their lives would perceive well-being and happiness (Csikszentmihályi, 1990). An interesting aspect of his discoveries is that such perception does not depend on *exogenous* factors, such as wealth, type of work, etc. but is instead related to the ability of autonomously (in game terms: *voluntarily*) involving oneself in exciting and immersive activities of various kinds. Results show that significant recurrences emerge around specific conditions allowing or facilitating access to an *optimal state* of experience, also known as *flux*: a feeling of focus in an activity, with high levels of enjoyment. Such a state is more easily reached when the activity: i. has clear goals; ii. provides feedback to actions; and iii. remains challenging. Such conditions are easily found in several human activities, including gameplay, and are incorporated into normal good game design process. As thrilling as these results can be, they should be closely examined by the design community. The state of flow is extremely

enjoyable and the conditions facilitating it are known, and easy to design and include in games and other kinds of interactive systems. However, when this happens, artefacts can result in the misuse of research results to captivate users and induce them to spend in such systems more and more time – and money (Soderman, 2021; Antonacci and Tubaro, 2022).

A second example of how psychology and neuroscience join design in the association among game rules, mechanics and players' motivation is in the *challenge-satisfaction cycle*. When a person undertakes to face obstacles that are difficult enough to create a challenge but not so difficult as to be insurmountable (as it is the case in games that are designed that way) and succeeds in the task, their body generates substances providing a pleasant sensation of satisfaction (Koster, 2005; McGonigal, 2011).

According to game scholar Raph Koster, the fun of playing games can in fact be traced back to a physiologic gratification mechanism which, over the course of evolution, has been developed as a reaction to the risks of facing real challenges. Instead of (or in addition to) getting scared and giving up when facing obstacles, we also experience the expectation of the gratification we know, by experience, we will feel once we have overcome them.

Gratification in games can occur in several forms, and the challenge-satisfaction cycle is easily exported into non-playful artefacts as a means of motivation.

The third example is the phenomenon of *loss aversion*: «the prospect of losing something weighs more heavily in our decision-making than the prospect of gaining something» (Engelstein, 2020, p. 6). Loss aversion is a profound aspect of human psychology, widely employed in games to lead players during their decision-making process, often in situations connected with the monetizing system.

These and several other structures of the ways we think and operate have been largely used in ludic artefacts over previous decades, somehow making games a powerful testing system to evaluate their efficacy and reason on how to apply them in non-play situations. *Gamification* (Zichermann and Cunningham, 2011), the practice of using motivational triggers and mechanisms affecting decision-making in settings such as work environments and com-

merce, is nowadays firmly established and widely in use.

In conclusion, the study of games provides scientific evidence of how play experience and its mechanics can be a stimulus for change and has the power to motivate players. In combination with the results from cognitive and behavioural science reveals how the psychological mechanisms underlying human decision-making and motivation can be put to work and directed. Knowledge of these results is crucial both for those who play and for those who design.

Today's designers have at their disposal methods and tools that make them capable of influencing users even beyond their acknowledgment, a capability which must be considered with caution as it raises significant ethical concerns (Walz and Deterding, 2014; Soderman, 2021; Hon, 2022). The first step towards using such results appropriately in design is in gaining knowledge of how they work and of the potential risk of misuse.

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