Game environments

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Report

Seven Levers for Social Change through Games: From

Settlers of Catan to *Autonomía Zapatista*

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Abstract
Games have an ambivalent relationship with reality. On the one hand, playing allows us to simulate ordinary life situations without their consequences. On the other hand, playing makes it possible to imagine new worlds. Games train us for real life and help us to create new scenarios. For these reasons, we believe that games can act as levers for social change. In this report, we analyze two very different board games, *Settlers of Catan* (1995) and *Autonomía Zapatista* (2021), at seven milestones in their development (context, purpose, design, production, distribution, play, and expansion) to highlight their possibilities as tools for social change. Finally, we offer this methodology of analysis, the keys of Game-Based Revolution (GBR), to assess the transformative potential of other games, both analog and digital.

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Games have an ambivalent relationship with reality. On the one hand, we play in our spare time once our basic vital needs are already covered. Therefore, games could be understood as something unimportant and dissociated from reality, something that happens outside the real world. On the other hand, we play to recreate interesting situations – whether real or not – that help us in our personal and social

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development. Thus, games serve to develop logical, mathematical, communicative, emotional, manipulative, logistical, etc. skills that can be transferred to the real world.

As Sicart (2014) says, *playing is being in the world* allows us to understand the reality around us: who we are, the way we relate to each other and how we exercise our humanity. Understood in this way, games are able both to present reality in order to understand it and to redefine it in order to transform it, e.g., the game *Freedom: The Underground Railroad* (2012) explains the abolitionist movement in the US. The game *Commonspoly* (2015) for example questions the neoliberal privatization model by proposing a culture of cooperation that fosters the common good.

Still, nowadays there is an ongoing debate whether a game stops being a real game when it offers an added benefit beyond entertainment. In this report, we explore whether games are capable of transforming society, regardless of the purpose of their creation, as we understand that all games have this capacity. Our analysis is twofold: first, we discuss how games exist within a context and are therefore defined by a model of society, and second, we describe how games are able to shape society during the whole process from the initial idea to the table where they are played. To do this, we dissect each of the stages of a game, from its creation until it fulfills its objective of being played, and we study how each of these stages becomes a lever for social change. The aim is to have a basis for analysis that can be used by researchers, creators, and professionals in each of the stages to discern how the game they have in their hands affects society, and whether it is doing so in a positive or negative way.

Considering this approach has many aspects in common with another concept that uses games to transform society, namely Game-Based Learning (GBL, see Söbke,

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Bröker and Kornadt 2013, Labrador 2020), we called it *Game-Based Revolution* (GBR).

Games as Levers for Social Change

Games, considered as cultural creations (Harris 1993, Catalán 2018), have an intention and consequences. Through them, we can perpetuate the status quo without questioning the social inequalities inherent in the current -and past- dynamics of production and consumption, or, on the contrary, we can create new alternative realities where such relational dynamics do not or cannot occur.

When Winner (1980) questions the politics inherent in artifacts, he states that technology is not autonomous, external or independent of its social context. By asserting that the issues that unite or divide people are found not only in political institutions but, less obviously, in tangible structures of steel and concrete, wires, semiconductors, nuts and bolts, Winner emphasizes the context in which such technological advances occur and the consequences of those advances. Bringing these ideas to the world of games, both the social context in which their development is situated (i.e., the way they are designed, edited or distributed) and the possibilities of play and expansion that each game allows (e.g., a game whose basic actions are to move and attack in a closed scenario vs. another game that allows virtually any interaction on modifiable elements in an open world) are inherently political.

The context in which a game is developed can mark both its subject matter and the mechanics that lead to specific game dynamics. Thus, the recent global COVID-19 pandemic has led to the proliferation of designs inspired by this theme (Su et al. 2021), despite the fact that board games such as Pandemic (Leacock 2008) and its

multiple expansions and variants had already dealt with this same theme in depth. With the clear purpose of training and recruiting potential troops for the US Army, the video game *America's Army: Special Forces* (2002) takes advantage of the degree of immersion provided by first-person shooter (FPS) games to teach standard weaponry and basic army tactics in a variety of missions similar to those that take place in real life. As we can see, the context and intentionality of each game cannot be dissociated from the society in which it is played.

With regard to the design of the game itself, the MDA model (Mechanics, Dynamics and Aesthetics) by Hunicke, LeBlanc and Zubek (2004) helps us to analyze it by differentiating between game mechanics, dynamics, and aesthetics. Mechanics are the rules of the game and the systems that support those rules (i.e., in a board game, they would be in the rule book, while in a video game they would be in the data and algorithms necessary for the game to work). Dynamics represent the interactions of those who play with the mechanics, i.e., the mechanics in motion, reacting to the decisions and actions of those who are playing. Finally, aesthetics refer not only to the final look and feel of the game, but also to the game experience or emotional response evoked by the player (a game with identical mechanics and dynamics can be very different if the aesthetics evoke the rescue of victims from a fire, the looting of treasures in a dungeon or a 100% abstract interaction, see Blessing 2020). As we will explain later, the design of each game is also situated in a particular social context in which mechanics, dynamics and perceptions interact to enable or enable one type of game and not others.

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When we shift from understanding the game as a cultural creation to the game as a product of the cultural industry (Catalán 2016), we must also situate its production and distribution. A game that is produced respecting labor agreements and using

environmentally friendly raw materials and means of production has a very different political significance than a similar game that has been produced without taking these issues into account. The same happens with their distribution, since opting for local production that reduces emissions from the transport of goods in the case of physical games or for free distribution licenses in the case of digital games has obvious political implications beyond the games themselves.

Games designed to promote social change can raise awareness of complex issues, empower, and make visible underrepresented collectives, and rethink social realities that involve situations of injustice or oppression. The great power of play is that all this happens in a safe space: Huizinga's *magic circle* (1949), in which we are allowed to make mistakes and take risks as part of the experience, relate to other people to devise and experience new scenarios, act as if and make decisions that involve other realities.

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The study of literature and our experience in the field of games from the areas of training, creation, management, promotion, criticism, and use has allowed us to be aware of the impact of games on society. These insights urged the need to develop a framework for analyzing this issue, which is still unbeknownst. Considering the growing number of games available, as well as the increasingly visible footprint they are beginning to leave on society, such an analytical tool is becoming more and more necessary. Modern board games manufacturing is a relatively new industry, and it is therefore not too late to lay the foundations based on ethical principles for the whole process.

When developing a game to promote social change there is the dilemma of wanting to explain situations of social injustice in order to make them visible, raise awareness

or empower the groups involved, or to promote dynamics of social change that propose alternatives to current social realities.

Through this approach, it is possible to dissect the whole game development process into self-conclusive stages with their own particular characteristics that can be analyzed independently. Each of these stages enables a lever for social change, i.e. a way where the people involved in the game development can impact society in a positive or negative way. Regardless of the political or transformative nature of the board game's theme, it may be the case that a board game has a positive impact on society not because of its theme but because of the materials used to make it or its distribution network.

The following section describes the process of creating a board game and has been divided into seven stages. It explains how each of them can act as a lever for social change.

Seven Levers for Social Change through Games

As mentioned previously, there are several moments when games can serve as a lever for social change. In this section, we provide some thought-provoking questions for each of these moments, as well as examples of each case.

A) *Creation context*: Games are created in a specific context. Not only do authors have their own knowledge, ideals, and biases, but also they are immersed in a cultural, economic, political, and social environment that establishes their way of thinking about their creations. A game that strives for social transformation must reflect the society in which it is made, pointing out facts or thoughts that are unethical or

socially dishonest, and not perpetuating those that hold society back. This lever should answer questions such as: does the game respond to the current status quo or zeitgeist? Does the game take advantage of current concerns to try to influence society?

Example: The board game *Ladrillazo* (2017) reflects and questions the real estate bubble that burst in 2008 worldwide.

B) *Purpose*: What is the author's intention in creating the game? Even in the case where the creator's intention is only playful, the use of a certain narrative, characters, historical moment or situations of violence, among many other factors, can influence its purpose. This also happens in abstract games where the shape of their pieces, colors or sizes can have a significant impact. Representation, inclusivity or psychomotor needs are fundamental to what the author demands from the players. In the case of games designed for a specific purpose, this effect is accentuated. There are different degrees of how a game can transform society depending on the creator's purpose. A game can be informative, educational, accusative, vindicative, and many other different purposes. This lever should answer questions such as: does the game intend to transform society? Does the game intend to reflect, raise awareness, question, criticize or propose alternatives to situations of social injustice?

Example: *The Landlord's Game* (1903), a precursor of *Monopoly* (1935), was designed with the purpose of spreading the liberal ideas of the economist Henry George. Unfortunately, the version that became popular left out the collective objectives that the original idea included.

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C) *Design*: Design is never innocent. Mechanics will cause players to collaborate or compete, to be an easy or complex game to learn, to last long or short, to eliminate players during the game or keep them all the time, and a myriad of other ways to profoundly alter the feel of the game. Dynamics will lead to hoarding or sharing, attacking or helping, destroying or building, subjugation or rebellion. Aesthetics will be designed to gain trust or fear, generosity or envy, love or resentment. Social change, or at least the perception of change, will be determined by how the game is designed. This lever should answer questions like: Does the game include mechanics that generate dynamics of transformation and change? Are there collective objectives that can be solved through positive interdependence among players? Are non-zero sum dynamics generated? (i.e., the gain of each player does not necessarily depend on the loss of another player, but the result can arise from collaboration between them).

Example: *Refugio* (2021) is a cooperative game that reflects the migratory journey of refugees and in which it is necessary to collaborate to achieve a common goal (reaching Europe, in addition to obtaining asylum for one player). The very design of the game generates cooperation dynamics that encourage to play thinking collectively.

D) *Production*: A board game is an idea turned into cardboard, wood or plastic. Unlike other types of games, board games need physical support. The materials used have a strong economic and social impact, not only because of the energy needed to manufacture them, but also because of the distribution chain they need to be part of the game. Some materials are more sustainable than others. In addition, the location of the factories, the manufacturing system, the inks, woods or plastics used, the storage and waste management, etc., all influence the impact of the game. The

carbon footprint of a game should not be greater than the benefit of its design. Moreover, the storage room needed, its durability, or the potential allergic reactions of the materials are aspects that directly affect the players. This lever should answer questions such as: Are working conditions being respected to produce the game? Are environmentally friendly materials and means of production being used? Does this game require worldwide supply chains to be manufactured?

Example: The board games made by Troquel Games, e.g., *El Tesoro de San Borodón* (2019) are produced trying to respect labor conditions, to bet on work and family conciliation, to generate local wealth and to take care of the environment through a production with recycled materials and the elimination of single-use plastics.

E) *Distribution*: Game authors and publishers are spread all over the world. Indeed, this cultural diversity is one of the most enriching aspects of the game industry. However, the same happens with the board game manufacturing processes. In most cases, producing a game involves just a few factories around the world in order to reduce production costs. This physical distance between design, production, and sales requires big transport networks that cause pollution, waiting times, impossibility of reaching certain territories, monopolies in warehouses that prevent other games from being distributed, and other situations that will affect both the planet and the players, who may find some board games extremely expensive or impossible to be purchased in their area. This lever should answer questions such as: Is local production of games prioritized to avoid job relocation dynamics and transoceanic transport? Are monopoly situations in distribution being avoided (i.e., games only available in one sales platform)? Is it a digital version of the game available where physical distribution networks cannot reach? Is it possible to distribute of the game under free licenses (Creative Commons BY-SA or similar)?

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Example: The board games *Moon* (2019) and *Archers de Nand* (2020) were produced in Spain but they also were distributed digitally in PDF for the whole world under a Creative Commons Attribution-Share Alike license.

F) *Game*: The physical game and the gaming experience. Apart from having a good time, we should analyze what is the game eliciting to the players? While playing the game, players can also be learning about the history of feminism, how an irrigation system works to improve crops, how an indigenous community is managed, the evils of capitalism or the benefits of recycling. But the game should also influence the relationship between players, such as fairness in roles and behaviors regardless of the origin of each player, a sense of security, the abolition of prejudice, leisure time availability, equal immersion regardless of physical or mental abilities, or free and open dialogue regardless of race, age, culture or sexual orientation. In addition to all these benefits occurring spontaneously, the game should encourage reflection and awareness that those situations are happening. This lever should answer questions such as: Are there situations of injustice during the game that can provoke reflection, awareness, criticism or proposal of alternatives by players? Is it possible to reflect social diversity during the game? Does the game allow those who have fewer economic resources or can dedicate less leisure time to participate in situations of equality?

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Example: The pirate game *7th Sea* (2016) clearly states that when it comes to defining your character, in the world of Théah there were not as many prejudices as in 17th century Europe and women can be pirates, swordswomen or any heroic role that a European of that century would consider masculine, and the same goes for their sexual orientation.

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G) *Expansion*: As it happens with other cultural works, board game authors usually want their games to remain unaltered when published (from their imagination to the public), and enforce this by law. However, this is not always the case. Copyleft or Creative Commons licenses allow modifications to be made to the original work with the permission of its authors. Beyond the legal aspect, a game, depending on how its previous levers are defined, can be more or less modifiable, adaptable to other narratives, contexts or needs. The impact of the game on society also depends on how the game can be expanded, whether in its narrative, mechanics, dynamics or perceptions. This lever should answer questions such as: Can the game be expanded and adapted to new realities? Is the creation of versions adjusted to new contexts encouraged? Is the expansion of the original functionalities of the game, its mechanics, dynamics or perceptions allowed? Is it necessary to hack the game to expand/adapt it or are mechanisms available to facilitate this?

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Example: The game [*d0x3d!]* (2012) about the dangers of computer attacks on online privacy is an authorised re-implementation of the well-known board game Forbidden Island (Leacock 2010) and redistributed under a Creative Commons Attribution-Non Commercial-ShareAlike license.

From *Settlers of Catan* to *Autonomía Zapatista*

In this section we analyze two board games through the seven levers for social change perspective explained above. We chose *Settlers of Catan* (1995) for being the greatest exponent of modern board games, and Autonomía Zapatista (2021) for being a board game specifically designed with a political purpose.

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Settlers of Catan

A) *Context*: the game is set on the fictitious island of Catan where different settlers exploit its resources to build villages and roads.

B) *Intention*: Although there is an intention to move away from reality, the dynamics that occur on the island are very similar to those that happen in classic economies. Although the island of Catan is fictitious, this way of exploiting resources and occupying territories could be reminiscent of colonialist dynamics.

C) *Design*: The design was carried out individually by Klaus Teuber (1995). While the game incorporates trading mechanics that can benefit both sides, it is a game in which players compete with each other to control the areas of resource production. The island is capable of generating unlimited and random resources, which does not correspond very well with what happens in the real world. Despite this, negotiation skills are critical to winning the game. In this sense, capitalist dynamics are reproduced in which possessing resources not owned by the other players puts you in a strong position to negotiate and be able to reach very beneficial commercial agreements.

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D) *Production*: Since 1995, *Settlers of Catan* has sold more than 24 million copies worldwide. Despite many of these copies have been produced by German and American companies, the manufacturing has been carried out in countries such as China where labor and environmental legislation is more lax than in other parts of the world.

E) *Distribution*: As mentioned above, the high number of copies sold of this game encourages the use of economies of scale and transoceanic distribution which leads

to a significant carbon footprint. As far as copyright is concerned, Catan GmbH is a company with a revenue of millions of euros selling licenses to publishers of board games, video games, books and merchandising, so it does not consider distributing its intellectual property under free licenses.

F) *Game*: During playing *Settlers of Catan*, no player is eliminated from the game and usually all players have an impact on the state of the game even if they are far from winning. However, alliances can be established between players that discriminate against other players. The game represents the classic dynamics of natural resource exploitation and territory control. There is no reflection or criticism about this type of dynamics and what social and environmental consequences they provoke.

G) *Expansion*: *Settlers of Catan* is a game with a large number of expansions. Many of these expansions are set in historical and social contexts that enable reflections on ancient Egypt, the Roman Empire or the Incas. Likewise, the enormous popularity of the game has led to the proliferation of hundreds of unofficial fan-made expansions available in forums such as Board Game Geek.

Autonomía Zapatista

A) *Context*: The moment of creation of the game is marked by two events: first, the main motivation of the creation of the game, the 2021 *Journey for Life* visit of the Zapatistas to Europe, second, the global context of the worldwide COVID-19 (SARS-CoV-2) pandemic. While the first event required the support of European Zapatista solidarity collectives, the second event is not reflected in the game, although it did affect the game's creation and production processes.

B) *Intention*: Initially, various initiatives were proposed with the aim of raising funds for the Zapatista Tour. The creation and subsequent commercialisation of the game was one of them. Moreover, there is an intention beyond the economic income itself, as the game is aimed to be used to spread the message of the Zapatista tour. The game has a clear intention: to explain Zapatista principles and values, and design decisions are made based on this intention.

C) *Design*: The game design team was comprised of several people in Spain, Mexico, Chile, and Italy. As mentioned above, decisions about the mechanics were made with a double focus: 1) to transmit Zapatista values, and 2) to create a fun game that shows the people involved in Zapatista autonomy.

The objective of the game is to collaborate to jointly build Zapatista autonomy in a small simulation of the autonomous territory. To achieve this, the 13 Zapatista demands (land, work, food, housing, health, education, independence, democracy, freedom, information, culture, justice, and peace) must be fulfilled, following the seven principles of *commanding by obeying* (obey and not commanding, represent and not supplant, descend and not ascend, serve and not be served, convince and not conquer, build and not destroy, propose and not impose). However, it will not be easy: paramilitary groups, government plans, megaprojects and natural disasters make the road difficult. As we can see, *Autonomía Zapatista* does not propose a new reality, but rather tries to make visible and explain the efforts of these communities to achieve their autonomy with dignity and justice.

Autonomía Zapatista is a cooperative game in which all players will try to achieve the objectives together. Dice placement is the main mechanic of the game. Each die represents a person who collaborates in the achievement of Zapatista autonomy.

During the game, it is necessary to cultivate the land, build houses and community infrastructure, train the promoters, fight against threats, etc. Each of these tasks implies a specific combination of dice, so it will be common that the different people playing will have to help each other to accomplish these tasks (as we can see, the mechanics encourage the occurrence of collaborative dynamics that represent well what really happens in a community of this type). In addition, when the necessary die value is not available to perform any of the tasks, it is possible to combine any red die value (women) and black die value (men) to represent the missing value. This symbolizes the strength of Zapatista women and men collaborating to achieve any value (once again, the mechanics at the service of the dynamics in accordance with the theme to encourage the collaboration of men and women in all the tasks). In the same way, the *otroa* card represents the people who change gender in the community and allows the mechanics to make explicit situations that sometimes occur in the communities and that can enrich them.

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D) *Production*: The production of the game has been made in Spain and several places in Latin America to minimize transportation and take advantage of local resources. This caused some versions of the game manufactured in Latin America to be slightly different from those manufactured in Spain. For example, the main board showing the different parts of a Zapatista *caracol* (i.e., an organizational region of the Zapatista autonomous communities) is made of cardboard in the Spanish version while in the Latin American version it is made of cloth.

E) *Distribution*: The game took advantage of the existing networks of contacts between Zapatista solidarity collectives to distribute the copies throughout Europe and Latin America. In order for the game (and its message) to reach as many places as possible, a network of translators has made the rules available in 17 languages. In

addition, the game is available in print and play format under a Creative Commons BY-Share Alike license.

F) *Game*: During the game there are many events that explain the situations that a Zapatista community faces. In addition, the objective of the game is to achieve the 13 Zapatista demands collectively. All of the game's situations serve to reflect on Zapatista autonomy from a practical approach.

The game gets a group of people to fight for an hour for the Zapatista demands. As we have discussed previously, during the design process Zapatista values and principles are present not only in the cards (embedded learning), but also in the mechanics that produce reflections around issues such as the impact of having strong networks in education or the consequences of international brigadistas supporting the cause. The core mechanic (cooperative play) underpins the idea that the Zapatista struggle, like many others, is based on the collective, not on individual strengths.

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G) *Expansion*: Although it does not yet have any expansion, its open license allows derivative works by third parties. The game can be expanded in two ways: 1) to modify the Zapatista game itself adding new events or situations and 2) to serve as inspiration for other similar games.

In the last pages of the rule book there is a *write your own rules* section that encourages you to *modify*, *invent*, *dream* and *organize* your own rules. In other words, the game proposes a space to be modified since it is the community itself that has to decide its own limits and demands based on its needs and values. Therefore, we believe that this game fits what we call Game-Based Revolution, since players can re-appropriate the game and use it as a space for generating new initiatives.

On the other hand, the spirit behind the project not only does not limit expansions, but also encourages them by publishing the game under a free license. The game can serve as an inspiration for other similar games, encouraging a remix culture.

Conclusions

There are many moments in the process of creating a game in which social change can be fostered. In this report we have presented an analysis methodology that not only takes into account the theme or game mechanics but also the intentionality or production of the game or its distribution, among other aspects. In an economic context where global companies carry out large marketing campaigns, it could be the case that a company publishes a game with a social theme but that has been produced in countries where labor rights are not respected or distributed by means that damage the environment. The Game-Based Revolution that we propose takes a look at all aspects surrounding the creation of a game and how each of them can contribute to social change. We encourage the use of these seven levers for social change during the creation of serious games that encourage reflection on the different political and social realities that exist in the world.

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