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Temporalities in Digital Games – A Brief Archaeology

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Abstract

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The purpose of this article is to analyze the relationship between digital games and temporality based on the relationship between the technological elements that establish the relationship between player and game. From an arbitrarily established chronology, it is proposed to associate three generations of digital games, each with its respective way of dealing with the value produced by the player, namely: expenditure (arcade), investment (console and PC) and capturemobile games). For this, the analysis of the mobile version of the SimCity franchise is made, comparing some of its features with its PC version.

Keywords

digital games, temporality, SimCity, mobile.

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Introduction

Based on media archaeology, this study proposes an approach to technologies that modulate time in digital games. We think, along with Jussi Parikka, about “a materialism of processes, flows and signals instead of ‘just’ hardware and machines”¹, being this one of the merits when the scope is given under the evaluation of a media archaeology. We propose an alternative to the approach that seeks to reassemble its history, linear and forked, shared by the advertising discourse, specialized media, and avid consumers of entertainment, which focus on the incremental evolution of digital game technology. These advances, even resulting in greater sophistication in the player’s experience, as for example in images with higher resolution, simultaneous interaction between players from anywhere in the world connected to the internet, and complex calculations for the operation of rules in a match, are far from the small logics that condition the way in which the attention and the routine of the player is captured.

Considering the time of the player as something in dispute between publishers highlights the eminently micropolitical² character in evidence in contemporary times. The differences between habit and addiction, or between casual and hardcore activities depend on how much time is intensively and extensively spent. In fact, the very possibility of imagining it as something to be spent or invested connotes its productive nature, whether in terms of wealth and value, whether in desire and subjectivity. Far from disregarding the objective behind the production of any digital commercial game, which is profit, time is something both perceived and produced by the relation with the web of technologies in which the subject is captured. The technologies of interest here often have a single and simple function, such as an arcade. However, the effects they produce are diffuse and

1 Jussi Parikka, "Operative media archaeology: Wolfgang Ernst's materialist media diagrammatics", *Theory, Culture & Society*, 28/5 (2011), 55.

2 Connolly writes, “By micropolitics I mean such techniques organized and deployed collectively by professional associations, mass-media talk shows, TV and film dramas, military training, work processes, neighborhood gangs, church meetings, school assemblies, sports events, charitable organizations, commercial advertising, child rearing, judicial practice, and police routines. It is not that every institution is exhausted by micropolitics, but that the micropolitical dimension of each is potent because of the critical functions the institution performs in organizing attachments, consumption possibilities, work routines, faith practices, child rearing, education, investment, security, and punishment.” (20-21). William E. Connolly, *Neuropolitics: Thinking, Culture, Speed*, (Minneapolis, Minnesota University Press, 2002). It is interesting to note that the techniques listed by Connolly do not belong solely to the capital or to the State, but also to smaller scale institutions.

unrelated to the purpose for which they were designated. Such effects focus both on the game design that structures a game and on the way in which players are going to invest in their entertainment, being generally indifferent to a certain genre or type of game. As will be argued below, it is the reverse: it is the technologies that can restrict or encourage a particular aesthetic and playful exploration of a digital game. As has been said, unlike the generations of hardware that successively make room for more new and potent ones, composing linearly evolutionary steps, the technologies to be approached in this article are never completely overcome, but are expressed as trends, submerging at a given time to later emerge again.

Hence the possibility to address machines of such heterogeneous nature, and at first contextually so far apart, such as a token and a line of code. Thus, we think about a continuum of techniques whose appearance, disappearance, and changes become apparent according to certain business models and provisions of the audience in question. Therefore, we will not necessarily talk about technologies that give visibility to products from companies such as Microsoft, Sony, or Nintendo. We will emphasize fragments of technologies that, although far apart both in the way they work and the purposes for which they were implemented, are close regarding their effects on the player. More precisely, we approach the effects on the experience of temporality of such technologies, which are subtly incorporated in the everyday life of the player by their surreptitious use.

Incorporation is here taken in its broad sense: while it is absorbed in the memory and in the affections of the player, a technology attaches itself to their body, either as prosthesis or as a parasite, or something in between. Needless to say that these changes are always something in progress, since different habits and practices rearrange subjects in their cognitive and motor aspects. Concerning time, such rearrangement involves the productive and perceptive capacities that emerge from the relationship with a technology, so that this dimension no longer has the hard flow marked on systems such as the quartz clock or the translation of the Earth. Time, both resource and means to the relationship between players and their machine, becomes something subject to divisions, recombinations, and accumulations.

Thus, reductions such as “waste of time” or “pastime,” although submitting digital games to a value judgment regarding other activities and media, have an important residual meaning for the analysis we propose. According to Kristoffer Gansing, “media operate according to a micro-temporality which is processual and

event-based rather than historical and discursive”³. Thus, the arrangement between the light that pervades frames of a movie that moves in a cinema projector is an example of the movement of a specific reality of this media. Understanding the operation of this media and playing with the limits of this reality implies the effort of operators, as was the case of Dziga Vertov. Nothing more suitable for an approach on digital games, since their appeal is mostly in the user-machine relationship mobilized by their web of proceduralities.

1. Business models and their technologies

For purposes of objectivity in the argumentation of this article, we chose an arbitrary and generalizing division of three moments in which we associated a particular business model with a corresponding technology. Despite offering an initial panorama, such division does not exhaust the various ramifications and specifics that the digital gaming market took over the years.

1. a. – Arcades and their tokens

The first manifestation of digital games' marketing and of their circulation as mass entertainment came about with the advent of the arcades, which include at once the audiovisual apparatus (monitor and speakers); the components of information storage and processing; the control(s), where players enter their commands; in addition to the devices that receive tokens or credits. As we all know, these are large and expensive machines, each with a single game, making its individual ownership impracticable. They stay connected all the time, while the facility that houses them is open. One can play them when the player enters tokens, and each of them guarantees the opportunity to play matches, usually in the form of “lives” or “continues.” In games where it is possible to face other human opponent, inserting tokens is the means to challenge them, so that the loser loses their time to play for the winner.

Despite this description being trivial, one can deduce some generalizations that guide an understanding of how the relationship between user and game in arcades takes place: a) if the tokens ensure an opportunity to play, until the player is defeated or defeat the game, the faster this session is, the more tokens tend to be sold. Hence, for example, rounds of 99 seconds in fighting games or inflexible

³ Kristoffer Gansing, "The Transversal Generic: Media-Archaeology and Network Culture", *The Fibreculture Journal*, 18 (2011), 97.

countdown in racing games; b) unless exceptions, these games are only available during business hours, when the malls, bars, and arcades are open. One plays, therefore, when the city is awake, and, more precisely, when one is free from work or school; c) this also shows another factor of these places, that they are open spaces for the free movement of consumers. Players are personally in these places, and, even without knowing each other previously, they can play together.

Considering the rhythms delimited between the open and the closed of establishments with arcades and between the matches with their beginning and end, the token is an object with central importance. Along with the file connected to the system of the arcade machine, it establishes an indivisible temporality to the beginning of a new game. The same can be said about the content of the game: it is fully ready to be discovered by the players, as long as they resist the progression of difficulty. It literally makes palpable a strict equivalence between a certain amount of money and the access to the game. Hence the trend of games that challenge the cognitive-motor capacity of players, requiring quick reflexes and not rarely the memorization of the game events, thus presupposing a repetition of trial and error, and, of course, a lot of token consumed in this process.

Thus, the business model around an arcade ends up establishing distances from a dual temporality, since the availability of the machines depends on the hours of operation of the establishments, unrelated to the will of the player, in addition to the tokens the machine swallows, presupposing relatively short matches, and with the progress always back to square one at the end of a game session. The other distance, more obvious but not less pertinent, is spatial. The player must move out from home, school, or the workplace, to have access to these machines and to use them. Therefore, these places are limited with a strict purpose, marked by the opposition between where one lives and where one is entertained, disciplinarily organizing the player's experience (as this does not depend only on the will of the player, but also on the operation the arcade establishment – whose business model depends on the circulation of tokens –, as well as the possession of money proportional to the number of matches one intends to play).

1. b. – Consoles: control of time and memory

Although there is no contextual distance large enough, nor a substantial technological leap to separate arcades and consoles in terms of generations, the popularization and consolidation of consoles took place after the arcades. This does not mean the latter had become obsolete, but that the enjoyment of digital games opens to new possibilities when they start to inhabit new environments and transit

in new ways.

The individual history of the innovations to be presented below belongs to an era in which it was a challenge to make military technology palatable to the domestic consumer. Several actors, such as Jerry Lawson, Wallace Kirschner, and Lawrence Haskell, despite not being immortalized in film biographies such as their contemporaries, were true geniuses and pioneers in the consolidation of consoles. However, we do not intend to stop in the meander between invention and inventor, but to explore some of the consequences that small advents, such as the pause button and the static random access memory, had on the player's temporality. These are separate features that, despite being taken for granted in virtually any digital game in the past two decades, have been gradually implemented and brought subtle and profound changes to the way a game is played. The very fact that they are far from a discussion and analysis of digital games, as if they were obvious constituent elements of them, reiterates their unthinking absorption and the need for greater endurance.

The ability to stop the progress of a game from a button in the joystick was introduced in the creation of Jerry Lawson, the Fairchild Channel F. Called "hold," this button not only paused a game, but also opened options for changing parameters, such as the speed of the game. In a way, it is the ancestor of other buttons and features such as pause, start, select, menu, options, etc. In addition to the more practical utilities (but no less important), such as the possibility to go to the bathroom or answer the phone without prejudice to the performance of the player, we emphasize the originality in the possibility of negotiating the terms of the pace at which the interaction with the machine occurs. Games in which time runs nonstop, in "real time," started to be unrelated to the player's time, from its physiological (such as going to the bathroom) to its social dimension (picking up the phone, household chores, etc.). This also unfolds for new possibilities of aesthetic and playful exploration of games, since the setting of a paused game is not limited only to criteria external to the reality of the game, but becomes integrated to the very internal rules scheme, such as the display of information of the character, the handling of items they carry, and their position on the map.

More than that, the possibility to control the flow of processes running in the game implies the negotiation of its time, making the boundary more porous between the time of the game (its processes, the execution of its algorithms) and the time of the player (permeated with thoughts, emotions, and sensitivities).

While in arcades the pace of the game is dictated unilaterally by the machine, on the consoles the possibility of pause puts that pace under the prerogative of the player. The separation between consoles and games, which started

to be encapsulated in ROM cartridges (or CDs, depending on the region and time in question) has consequences about the places where one plays and the pace of game sessions. The most obvious one is that it is no longer necessary to leave one's home to a place with arcades. Instead, the owner of a console just has to buy a cartridge or rent it. Casual visits to stores and rental stores started to be an alternative to access the games, while the place of enjoyment was no longer public, but the living room, the bedroom, or any other room that included television, console, and player. Therefore, people began playing them in private places, alone or with an inner circle of people, such as friends or family.

Without limitation of tokens or strangers to dispute their permanence in the game, lives and “continues” stopped having the monetizing function of the arcades. This is not to say that the linear progression of difficulty ceases to make sense or is abandoned. On the contrary, it remains today in most of the games released, so that the challenge of a game gains new meanings. When playing Super Mario World⁴ in an SNES console, the only risk when there are no more lives for the Italian plumber to resume his journey by stage is to restart the game from the beginning. The penalty in for not corresponding to the rules of the game was no longer converted to tokens (i.e., money), to be felt only in the time of progress lost. In addition, it became possible to change the settings of many parameters of the game, such as level of difficulty, number of lives, and duration of a phase or round. Thus, the premise of short rounds ceases to be the only possible, and games with narratives and mechanics that require a continuous and dense time investment start to appear for consoles and computers. We also highlight that, isolated from the polluted soundscape that is characteristic of establishments with arcades, games for consoles and personal computers begin exploring types of expressiveness so far impossible, from the association between architecture and lighting, and noise and silence, as is the case of Doom⁵ and Myst⁶.

Not by chance, it is also at this time that adventure and role-playing games emerge, with narratives that last for hours, but also with puzzles impossible to be solved in a few minutes. Playing begins to unfold in a contemplative, slow activity. With more time for the apprehension of a given system of rules, they become more complex, beyond the hitbox logic present in games such as Space Invaders (Taito, 1978) and Double Dragon (Taito, 1988). If dodging enemy attacks and having a good

⁴ Nintendo (1990). Super Mario World. USA: Nintendo

⁵ id Software(1993). Doom. USA: id Software.

⁶ Cyan Worlds (1993). Myst. USA: Cyan World.

notion of ballistics are skills required until today, they start to share space with others more subtle and persistent, such as the development of quantitative attributes (hit points, strength, intelligence) of a character, as well as the equipment and accessories that they find in the course of an adventure. This would not be possible without the implementation of another technology, the static random access memory (SRAM).

While in arcades the time can be generalized in the short interval between the beginning and the end of a few minutes, saving the progress on the RAM of the cartridge (and of the memory cards that came after) extends the duration of a match sometimes indefinitely, as is the case of city simulators. It is precisely in the act of storing user performance that playing ceases to be just a cost, as it is in the arcades, to be also an investment. Thus, with the possibility of saving the progress, a match is not doomed to end when it reaches the state of “game over” or the machine is turned off, so that its results are no longer self-contained. For example, the progress that Link, in *The Legend of Zelda*⁷, makes in his journey is recorded in the machine.

In cartridge games, the progress, be it in later stages or in a character with more powerful attributes and accessories, becomes a “sunken cost,” since the time invested to achieve the desired game state is irretrievable. In arcades, what is left of the effort undertaken by the player is precisely out of the game, in the satisfaction of overcoming the game and in the recognition that others have of the feat achieved. Even the score screen, a germinal manifestation of a RAM, is only relevant when one knows who owns the initials of the score.

In the case of consoles equipped with RAM, and, by extension, personal computers, recording the state of the game endow it with a continuous and cumulative character, ready to be resumed after any interruption. Thus, while in arcades the byproduct of the interaction with the machine is only on the side of the player, with their reflexes and reasoning improved as they incorporate the algorithms of the game; with the RAM in the scene, it collects another byproduct, this time in the form of data.

In short, considering only these two advents, namely, the pause available in joysticks and the RAM in cartridges, there is a radical change on the temporality that emerges from this interaction. By occupying the players' home, the prerogative to spend time playing is entirely theirs, and no longer of the hours of operation of the arcade, thus starting to permeate (and create) gaps in everyday life for such enjoyment. The pause feature allows such gaps to be broken down into smaller sizes

⁷ Nintendo (1986). *The Legend of Zelda*. USA: Nintendo.

or enough to fit in the small activities that intersperse the player's life, interrupting a game session. The RAM, in turn, rearranges these gaps, placing them in continuity when a game goes through deeper disruptions, as when one turns the console off or reaches the state of "game over."

1. c. - Expensive, free, and in-the-palm-of-your-hand games

The business model comprising freemium games results from adaptations and survival strategies that the digital gaming market was forced to adopt before systemic changes arising from technologies that were consolidated from the mid-1990s. Taking only as example the communication between computers, since TCP/IP communications, local area networks (LAN), to servers that make up the Internet, it would be possible to extensively analyze the paths taken in games with multiplayer interaction, from the game design adopted by the developers to the formation of habits, communities, and cultures of players. This shows the systemic character composed of human and non-human agents (i.e., publishers, touch technology, communities in forums, 3D modelers who live in developing countries, servers, and the list grows with each new agency), affecting both production and distribution, as well as the consumer market. The proliferation of piracy and of modding communities are two symptoms of the effects arising from communication networks between computers and their users. Publishers and developers are no longer the only agents capable of producing and distributing content. It can be said that part of the innovations in game design responds to these changes, so that mechanics of difficulty progression, availability of tools for the player to act in a match, and ways to compete and cooperate arise, rise, and decay according to the available technologies and ways of monetization in vogue.

Thus, in the same way that technologies such as file, RAM, and pause button are not confined to a particular type of game or hardware platform, the ones of monetization in freemium games are widespread in several types of games and platforms. However, it is believed that they have greater synergies with mobile devices because of specificities that characterize these devices and help explain their dissemination. Therefore, as was done with arcades and consoles, it is worth outlining such features.

If from arcades to consoles there was a movement toward the private space of the player, from consoles and personal computers to mobile devices, this movement goes in the direction of the users' body. More than being always with them, these devices are always on and connected to the internet. In addition, if compared to the devices that preceded it, users are sensorially stimulated in other

ways, and often without their request. Thus, it is common that the day of a smartphone user is punctuated by alarms in the form of sound and vibration, warning them of updates on social networks, emails and messages received, and, of course, events in the games. Yet another feature worthy of note is the ability that its user has of performing several tasks at the same time. A match of Candy Crush can be played while one expects an email, to be interrupted by a phone call and be resumed after noting some information in a notes application. A smartphone user tends not to have idle time, because the wait can always be filled with other activities available in the applications. In fact, this is an idiosyncratic character of this device (and to some extent, of the societies that live immersed in digital networks and gadgets).

It is also worth noting that the combination of touch technology, portability, and computing capacity allow its use in places and situations where often any activity would be unworkable, such as in the tiny space of a crowded train or in the interstices of idle time that are part of a given work routine. Of course, we are not seeking to equate a same activity in the context of a user of smartphone with contexts without smartphones or other devices and infrastructures. Listening to a song on a jukebox with a stereo device in a living room is totally different from listening to a song by in-ear headphones in a noisy subway corridor. The same goes for any other activities such as reading, chatting, and playing: the verbs remain the same, but the subject that results from this activity is certainly another.

Such mobility is strongly linked to the ubiquity of the internet. Provided that users have access to a Wi-Fi or a 3G connection, they are always close to the server to which they can request information such as websites, music, or games. We highlight here the influence of this in two aspects: first, that players have at their disposal an unprecedented amount of games to be legally downloaded and played, even considering only the free ones; second, more fluid access and mobility allow new ways of monetization, which, in turn, start to extract values from players in more subtle ways. What is unique in this business model is that this extraction is not exclusively carried out in terms of money, but of the capture of the players' gestures and habits, transformed into metadata and accumulated in big data. We also highlight the complementary character of these two values, metadata and money, since the capture of the former, by mapping behavioral trends of the user-consumer, produces more effective tools for extraction of the latter.

Thus, the following analysis will seek to clarify some of these extraction tools that, concomitantly, manifest themselves in a specific temporality.

2 – SimCity BuildIt: Contemplative administration

The analysis of the object in question matters by comparing it with its versions in the platforms that came before it. The object is *SimCity BuildIt*⁸, the mobile version of the famous city simulator. In its original version, the scope of the game revolves around the administration of a city. The player, in the role of mayor, is responsible for delimiting the territory in areas (residential, commercial, industrial, and agricultural), providing the basic infrastructure elements (electricity, water, streets, and roads). Performed these procedures, the city starts to bloom, with houses, industries, cars circulating, as well as the income obtained by the tax charged from its residents. Thus, an optimal allocation of resources allows the mayor to invest more money in more sophisticated urban projects, so that there is not necessarily a final goal in the game, but rather a continuous enjoyment, following the bottom-up logic of the city. Considering the description previously made about the time of the console, *SimCity* benefits from the provisions given by this platform: it is played alone, one uses the time considered necessary to administer the city, including pausing and saving a game session.

It is interesting to note that, in older versions of *SimCity*, the only recourse that can be accumulated is money, whether collected from taxes, whether from cooperation agreements made with neighboring towns, which are part of the game algorithms. However, even with a sizeable amount of money, a successful city depends on the player's effort to properly distribute the zones, invest money in the required infrastructures, aiming at synergies that improve the indicators of administration. The waiting time for the decisions to take effect is non-negotiable. That means it flows in a linear and uniform fashion (one can speed up the time, but this statement is still true, given that the events of the game also accelerate, requiring a faster response from the player). The central mechanics of *SimCity*, from its learning to its domain, requires trial and error, and, above all, patience.

2. a. – Anxious administration

Despite having the same premise of earlier versions, *SimCity BuildIt* brings a completely different experience. The emerging growth of the city gives way to a more modular planning, by inserting one residence at a time, leading to the repetitive task of accessing the residential constructions menu, choosing the type of

⁸ Electronic Arts (2014). *SimCity BuildIt*. USA: Electronic Arts

residence one wants, and dragging it to the exact place desired. The conditions for a good planning to take place are still linked to the positioning between residences, public services, and industrial pollution. Such positioning, however, starts to take place individually, building by building. Each residence, factory, and other buildings are chosen on a menu with individual and specific models, as opposed to their random appearance by the zoning mechanics from previous versions. The unlocking of more advanced buildings occurs by the progression of XP, i.e., experience points given to the players when they advance the residences and do upgrade them in the city, making them able to accommodate more residents.

Money remains the main “creative matter” to invest in the city. However, the *SimCity BuildIt* player has to deal with two types of currency: *Simoleons* and *Simcash*. If the flow to *Simoleons* is more abundant and persistent, being the prerogative to build, *Simcash* reveals the main mechanics of capturing the player’s desire: according to the tutorial available on the home page of Electronic Arts, “it can be used to “lubricate” the hands of contractors (among others) to accelerate things a little bit.”⁹

Despite players starting with a modest amount, and earning more when reaching certain milestones of progress, it is considerably more scarce than *Simoleons*. Not incidentally, one can buy *Simoleons* with *Simcash*, and *Simcash* with real money. This hierarchy of currencies and the irreversibility of exchange (since one cannot exchange *Simoleons* for *Simcash*, let alone *Simcash* for real money) shows the scope of *SimCity BuildIt* and freemium games in general: obtaining value from the money and the time of the player. We also mention that, in addition to these two currencies of the game, for the players to build houses and services such as police and fire departments, they must have from raw materials such as wood and nails to glass, shovels, and hammers. Their production and gathering are made manually by the player, in factories that are unlocked as the player progresses and gains XP, and, depending on the degree of sophistication of the material, its

9 *SimCity BuildIt* – The new Mayor's guide to *SimCity BuildIt*. (Retrieved January, 2018, from <https://help.ea.com/en-us/help/simcity/simcity-buildit/simcity-buildit-new-mayors-guide/#goldenkeys>. Access on Oct. 18, 2018). The quotes used in “lubricate” are symptomatic. Considering that the player assumes the role of a mayor, “lubricating” is very close to “greasing” their hands, i.e., getting an advantage or favor in exchange for money. Thought along with the explanation given by Electronic Arts, such mechanics maintains a certain analogy with corruption-related practices. Particularly in the Brazilian contemporary context, whose politics is permeated with public works condemned to be ruins and scandals of corruption involving contractors and infrastructure companies, there is a silent tension on the mechanics in question. The anxiety of advancing in the game and the enjoyment in completing a particular step justify the “shortcut” money can buy.

production can last from a few minutes to a few hours. Such wait, of course, can be mitigated by paying with *Simcash*.

This article does not intend to address the ethics of a game design that is presented to players as free¹⁰, to slowly let them with the infernal alternative between surreptitiously and incrementally investing their time or spending substantial amounts of money¹¹. We aim to address the temporality that this monetization model produces on the player. Such as the token submits fun to the rhythm of work-rest and the articulation between pause-SRAM makes the boundary between the player's time and game time more porous, one of the effects of monetization in freemium games for the mobile platform spreads its logic and appeal to a smaller scale, so that a *SimCity BuildIt* player is in an ambiguous position of never fully playing, while never stopping playing. The waiting time between one and another goal, and the warnings players get in their devices when these and other events are completed or available, put them on a constant waiting to get back in the game and continue building their city. Unlike versions in previous platforms, *SimCity BuildIt* players are warned on their smartphone or tablet as if getting a message from someone, calling them back to the game to not waste time in idle production, i.e., to be productive.

Final considerations

From approaching this specific technological environment, we could observe a reciprocity between technological innovations and the more efficient ways of extracting value from them. Such extraction is not technologically determined, neither by the resulting forces composed by agents of the digital gaming market, but by the tension between the emergence of new subjectivities that a technological appropriation produces and the channeling of the players' desire to certain uses of these technologies. Thus, if at first new technologies have a destabilizing potential regarding current practices and habits, they are gradually turned into a tool so that

¹⁰ On this we recommend "A Game Player's Manifesto," written by Richard Garfield, a game designer made famous by the game *Magic: The Gathering*. According to him, "if you are playing a game for next to nothing – or free – and you find out people are spending thousands, or tens of thousands, or in some cases hundreds of thousands of dollars, there may be a problem." (Available from <<https://www.facebook.com/notes/richard-garfield/a-game-players-manifesto/1049168888532667>>, access on Oct. 8, 2018).

¹¹ The biggest package of *Simcash* for sale, of 8,500, costs R\$ 364.99, accessed in Dec. 10, 2018. It is worth noting there is no purchase limit imposed on players.

the only relationship with their users restricts them to the role of consumer. It is from this tension that new forms of working overtime emerge. More than a subjective experience on something that is supposedly given and unchanging, we believe that the three moments described in this article show ways in which rhythms and frequencies are modulated, producing distinct temporalities.

In a broader scope, the concept of modulation acquires an important role for understanding the different relationships that one may take as a player-user. Modulation, according to Gilbert Simondon, “consists in the establishment of an energetic regime [...], molded continuously and perpetually variable”¹². If the French philosopher is concerned with an ontology about the technical processes involving matter and energy, we believe it is possible to extend this reflection to the intersection between human and machine temporalities. Because if the first initially involves physiological rhythms, agricultural cycles, and socially agreed upon routines, and the second is impregnated with engine revolutions per minute and cycles per instruction of the processors, this is not about taking them as independent categories. The functioning of a human body, for example, is intertwined with techniques and technologies that regulate its needs, desires, and potentialities, in the same way that a technology unrelated to a politics or culture in which its users are inserted is unthinkable. A body, therefore, is never finished, but always in process, always affecting and being affected by other bodies, by other forces.

One can note, in the three moments exposed in the first point of this article, an ambivalent movement on the body of the user-player: as the devices where the games are executed approach it, there is an opening of contexts that provide a specialization of enjoyment and more spaces to play. Thus, if frequenters of arcades have only that type of place as an opportunity to play, users of consoles start attending the places that sell and rent games, shifting the place of enjoyment to their home and the house of their acquaintances. Users of mobile devices, in turn, if with internet access, can transit anywhere by the sections of the servers where they download their games. Thus, modulation is not only at a specific time of relationship with a digital game, but in all its experience accumulated in this activity, and may include digital games in the traditional sense, but also their corruptions and variations, such as gamification, advergaming, serious games, etc. According to Yuk Hui,

¹² Gilbert Simondon, *L'individuation à la lumière des notions de forme et d'information* (Grenoble, Éditions Jérôme Millo, 2013): 46-7.

The logic of modulation does not only operate through infrastructures such as networks, but is rather embedded in all types of apparatus (for the purpose of data collection, recommendation, restriction). This means that as digitisation has pervaded into different institutions (be they local or international enterprises, government or non-governmental organisations) it has made the operation of algorithm central to any form of governance.¹³

As a consumer of signs and producer of information on oneself, a change in material support and infrastructure implies changes about the rhythms that are established along with the games. A Brazilian player born in the 1980s, for example, may have experienced from the insertion of tokens to the numerous countdowns of freemium games, passing in different records of flow of time. Modulation, in this case, would be the capacity of this player in adjusting to the different technologies that produce these temporalities.

Thus, you can think of them as deposits of uses and potentialities of these technologies, each of which with their specific temporality. This means that the technological fragments exposed here eventually create and rearrange: rhythms such as the pause; times-pasts such as the information stored in SRAM; and times-futures manageable by the collection of metadata from the *mobile* player. Similarly, we propose that the first moment, with its tokens and lost progress, has the predominance of an *expenditure*; in the second moment, the rhythm of the game can respect the rhythm of the life of the player, and with the possibility to save the progress, the game becomes an *investment*; the third moment, in turn, can be characterized in terms of *capture*. We reiterate that it is not a matter of thinking them as linear stages, each with their beginning and end, but as trends that may overlap each other, be reappropriated in different ways, or fall into decay and disuse. Competitive games, with their self-contained matches, carry with them something of expenditure to the extent that, once the match is finished, the player collects nothing inside them. However, their final result can translate into ranking the players, which comes from the accumulation of victories and defeats stored on the server of a game and involves an investment on the part of the player. In persistent reality-based games, such as MMORPGs, investment prevails over expenditure, since every progress made by the player is stored in experience points, equipment, relationships with other players, currency of the game, etc.

Capture, in turn, deserves special attention. In addition to being the most

¹³ Yuk Hui, "Modulation after Control", *New Formations*, 84/85 (2015): 85.

recent mode approached in this article, it does not compete with expenditure and investment, but articulates them on the users in a more intricate, even intimate, way, making them the object of an unprecedented extraction. As a symptom of the post-industrial capitalism, its archetypical worker is always “on hold,” that is, always open to the most diverse requests: from new ways to make time more profitable to the availability for their free or unproductive time to be interrupted. It does not matter whether such interruption is the result of a friend’s message or of a reminder that some production of some material in *SimCity BuildIt* was completed, but that this disruption stirs up users to consume and produce information with their eyes and fingers. In games and applications where these interruptions are automated, one can infer that the user’s attention starts to be algorithmically managed. Algorithms, in turn, do not operate from an informational empty space, but calculate with the data provided by the users themselves, who make their applications receptacles of metadata about their routines, habits, and tastes. Capture, therefore, presupposes a temporality that can be modulated, that is, capable of assuming higher or lower rates of acceleration, of circular shapes such as the process of “maturation” of items and chests to be collected, linear shapes such as between the beginning and end of a match, fragmentary shapes such as the attention focused on a game session that can last from minutes to hours.

Also, a capture model has an ambiguity in its operating mode. Unlike arcade players, who depend on the operation of the establishment, in addition to the availability of the machine they wanted to play, and the owners of consoles, who need to be in a place with the device installed on a television, the flexibility offered to the users of mobile devices gives them at first a freedom to play when and where they want. Such freedom, however, is submitted to logics such as those conditioning the player’s progression, the content offered to them by time and money invested, and the ranking of the players with the greatest aptitude for such investments. If players, with the freedom they have to play, for one day forget or decide to refrain from the game, they are soon notified that there is a treasure chest waiting to be opened, a city waiting to be governed. Regardless of the success in these attempts to retain the audience, it should be noted that, in a model of capture, the time of the game (but also of any other application) ceases to be only that of active participation, to become that of the waiting to be called. If with the pause of the consoles the game time started to be adapted to the player’s time, in the freemium games of mobile devices this relationship is reversed: for the game to be an activity that engages the players, their time must be adapted to the game. This inversion becomes even more serious when considering the information the players provide, which can be refined to create profiles of its users, adapting the functioning of the game according to their habits and preferences. This process points to a fine control

of the time and attention of users.

In fact, regarding this last point, one can inquire how the production of temporalities affects the time in its historical sense. If a revolution proposes the hope in the future from a rupture with a certain way of counting days, months, and years, as in the case of revolutionary France or in the first decades of the Soviet Union, what to think of a contemporaneity that seeks meaning in the end of the great narratives, as was diagnosed by Lyotard? The more users depend on their devices to make the boredom of their work and the hard time of a crowded train bearable, the more they deliver their wants and needs, in the form of information, for the production of predictions and trends. This opens a horizon of possibilities for types of extraction of information custom-made for each user, subjecting them to a fine control over their attention, their willingness to remain playing, and their propensity to spend money. We ask, finally, what are the possibilities for a future to take place, if the intangible elements that are in its heart are increasingly being mitigated by the feedback between prediction algorithms and users who provide the variables for their operation. Such questioning is the point where politics and entertainment meet, the latter being less and less a reproduction of the working time to become a productive category waiting for a definition.

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