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Ludologic design and augmented reality. The game experience in *Pokémon Go!* (*Niantic, 2016*)

Aarón Rodríguez Serrano [CV] [http://orcid.org/0000-0002-3858-1045] [https://scholar.google.es/citations?user=93KnFQEAAAAJ&hl=es] Profesor Investigador Contratado Doctor. Universitat Jaume I (España) serranoa@uji.es

Marta Martín-Núñez [CV] [http://orcid.org/0000-0002-9473-1183] [https://scholar.google.es/citations?user=aOMC9rAAAAAJ&hl=es] Profesora Ayudante Doctor. Universitat Jaume I (España) mnunez@uji.es

Samuel Gil-Soldevila [CV] [orcid.org/0000-0002-4711-6268] [https://scholar.google.es/citations?user=rzMaEj0AAAAJ&hl=es] Personal Investigador en Prácticas. Universitat Jaume I (España) ssoldevi@uji.es

Abstract

Introduction: The main objective in our research is to identify the narrative and ludological processes between the *Pokemon Go!* players, the most relevant "augmented reality" video game till now. **Methodology:** We applied a socio-metric tool validated by different professionals to 332 gamers selected with a non-probabilistic but incidental strategy. **Results and conclusions:** The results reveal that we can´t find a correlation between the previous narrative knowdlege of the *Pokémon* universe with the perception of the ludofictional processes of the game. The insights of the gamers are more connected with the mechanics, rules and objectives of the game by itself. Our research contributes by the proposal of a new tool for measuring the quantitative inputs of the ludological perceptions. At the same time, we propose for the first time a quantitative research based on the game habits of an augmented reality product.

Keywords

Video Games; Augmented Reality; Ludology; Narratology; *Pokémon Go!*

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Contents

Traducción realizada por **Aarón Rodríguez Serrano** (Universitat Jaume I – España)

1. Introduction

Our paper will analyze the narratological and ludological perception of *Pokemon go!* (Niantic, 2016), using a quantitative methodology. The object of our study shows several problems, both in textual and contextual aspects –there has been a huge amount of noise developed by the *mass media*, studied in different papers (Baranowski, 2016; Serino, Cordrey, McLaughlin, & Milanaik, 2016). We think that it´s necessary to develop a brief quibble about the limits of our study and some concrete methodological aspects.

In the present time, *Pokemon Go!* is an open text: every month we can find new technological modifications (new patches) and some of the ludological characteristics are continuously changing. We have been working since the first version available in Spain (15th of July of 2016) to the 0.45.0 version, activated on the 7th of November of 2016.

This volatily of the object of study is a classical characteristic of each video game as a *postmodern text* (Rodríguez Serrano, 2014). In fact, the main idea of the game –using the *augmented reality* as the main strategy to raise a ludological universe (Azuma, 1997)-, means that the software must include necessarily the option of be rebuilt and updated. We agree with José Antonio Planells (2015) and his works about the construction of virtual worlds: trying to analyze a concrete virtual universe means, in the first place, to understand the concrete ludological processes of meaning. Our research tries to response to two classical issues of the *Game Studies*. In the first place, we ask ourselves about the relations between classical narrative and the virtual worlds –or, in the other words, the difference between "structured narratives" and "emergent narratives". Secondly, we will study the gamer´s perception of the ludological elements (rules, objectives, items, gameplay).

In the first place –the relations between classical narrative and ludology-, our paper follows the classical argumentation between Murray (1999) and the several academics joined around the *Game Studies* journal (Juul, 1999, 2001). The different points of view were focused around the several uses of narrative elements in the game experience. It´s true that now we can work with complex and interesting hybrid systems (Frasca, 1999, 2003; Pérez Latorre, 2012), but we think that the inner nature of *Pokemon Go!* can show new aspects about the importance of the plot, the characters and their concrete functions on the gameplay. Furthermore, our analysis will use a quantitative methodology based on statistical descriptions. It´s a new scope that will help use to complete the mentioned studies –mostly based on a qualitative methodology based on textual analysis.

In the second topic – the perception of the ludological aspects-, we follow two complementary systems of indicators. In one hand, the taxonomy developed by Navarro Remesal (2016), which proposes a systematic classification of rules, mechanics, objectives. In the other hand, we find very useful the classification developed by Siabra Fraile (2012), which uses the second Wittgenstein to understand the virtual worlds using three different categories: *characters, items* and *objects*. The combination of both systems helped us to create a new tool, which, as we will show in the next epigraph, was tested rigorously.

Both areas of study were summarized in four concrete objectives of research:

1) We want to know the concrete profile of the *Pokemon go!* gamer: gender, educational level, weekly time of game…

2) We want to understand what is the concrete influence of the previous knowledge of the *Pokemon* universe on the gamer experience – we will take in account the tv serie, the movies and the previous games developed in other platforms.

3) We want to identify the concrete perception of the gamers about the concrete tools used on the design of the game: objectives, motivations, and challenges…

4) We want to explore the main causes of the dropout of the game, specifically in the gamers with a high level of engagement.

2. Methodology

2.1. Sample and data collection procedure

In order to select a correct sample we decided to focus our research on a concrete target: expert gamers with a huge knowledge of the game mechanics. We were able to find those gamers developing an incidental sampling during December of 2016. The sample was created analysing three different communities of gamers:

1) Twitter groups (Officials and non-officials) in every Spanish region with more participants.
2) Telegram groups devoted to the game with more activity in each region
3) Facebook groups (non-officials) in every Spanish region.

Every chosen participant posted, at least, three notifications about the game in his/her personal space during two weeks. Those messages included information about the game (news, patches, quizzes…) and comments about the mechanics of *Pokémon go!*

Finally, we chose 332 subjects who fulfilled the selection process and accepted to take part in the research. We created an on-line formulary, registered and treated by the SPSS 24 software.

2.2. Data collection tool

Our research works as a sociometric experiment – "based on a significant activity for the subjects" (Gaitán Moya & Piñuel Raigada, 2010: 207). That guided us to create a questionnaire with close questions, so we could guarantee good levels of univocally, pertinence and relevance. We took in account several designs applied to new technologies and education educación (López Gómez, García García, & García Guardia, 2012; Pérez-Escoda, Castro-Zubizarreta, & Fandos Igado, 2016). In the first place, we create a validation phase (Alvira, 2011), with the collaboration of ten academics (four from *Media studies*, four from the video game design, two of methodologies in communication) from four Spanish universities (two state universities and two private universities). They were asked to give us feedback, and afterwards, they helped us in reaching the whole sample of gamers. At the same time, we made a public presentation of the tool in a specific congress during February of 2017.

The tool is divided in three different blocks (*Table 1*). They were designed with different variables connected with the objectives of the investigation that we had mentioned before.

Table 01. Measured variables. Areas of interest and items

Area	Item
1. Profile of the *Pokémon Go!* Gamer	01. Educational level
	02. Gender
	03. Hours of game per week
II. Relevance of the narratological level of the game	01. Relation with the previous animes of *Pokémon*.
	02. Relation with the previous videogames of *Pokémon*
	03. Perception of the lack of inner narrativity in *Pokémon go!*
III. Perception of the gameplay and the lack of interaction with other gamers	01. Perception of the objectives
	02. Perception of the challenges
	03. Perception of the issues in the gameplay
	04. Perception of the bonuses of the game.

The first block (connected with the *Objective 1*) allow us to create a brief identification inside the sample of two basic and classic quantitative characteristics: the level of the education and the gender of the gamer. Those two indicators will help us later to develop concrete statistic tests. At the same

time, the third item will help us to understand the main causes in the dropout of the game for the most experienced gamers. We will use it to clarify the results on the *Objective 4*.

In the second block, we will focus on the argumentation between narratology and ludology, as it was explained on the introduction of the paper. It´s connected with the *objective 2*. We have worked with high-skilled gamers, with a long experience and a great engagement for the game, so we think that this block is going to be relevant in order to understand their previous experience with the Pokémon universe (Lahti, 2016). We have divided the information between two previous collections of texts: in the first place, the original *animes* (series and animation movies) (Bainbridge, 2014; Geraghty, 2015) on the *Item II.01*. In the second place, other games and other resources connected with the transmedia experience (Bainbridge, 2014; Geraghty, 2015) on the *Item II.02*. Finally, on the *Item II.03* we try to explore if the experience of the game was less interesting for the lack of concrete narratological plots.

In the third block, we will focus our attention on the game mechanics to understand the relations between objectives, challenges, bonuses and deficiencies. Those four parameters will offer a map of the virtual universe that will help us, as we will see, to understand how the game play works. They will help us to understand the *objectives 3 and 4*.

The nature of the variables and the kind of data that they will offer, recommends a classical approach with the descriptive strategic tools.

3.1. Results
3.1. Gamers profile

The first block shown us that most of the gamers had higher studies. We made the measure of the information using a closed scale that covered since the undergraduate school to the postgraduate level. Our group (N=332, SD= 1,532) shown a higher concentration on current university degree students (F_3=103, 31,0%), and on gamers with their postgraduate studies finished (F_5=120, 36,1%). At the same time, we must consider that a lot of gamers were teenagers and pre-teenagers (F_1= 73, 22%).

In addition, men dominate the gender of the gamer´s community. We can find a 75,3% of male gamers (N=250) and only a 24,7% of women (N=82). If we cross both items, the most interesting data shows that the higher concentration of women is located over the postgraduate rank (N=32, 39%), more than in the degree rank (N=23, 28%), and pointing a strong difference with the high school female gamers (N=1, 1,2%) and the elementary school female gamers (N=14, 17,1%).

About the habits during the game, we can find a high level of engagement. If we follow the statistic mode (N=101, 30,4%, SD=1,277), we find that most of the gamers play more than five hours each week. This is coherent with the selection of the sample, but at the same time, shows an interesting point: we are working with high skilled gamers –they spend a lot of time playing and discussing about the game on social networks-, but we can find also a high rate of people who dropout the game. 18,1% of the participants (F_5=60) decided to quit the game after spending hours and hours

playing. It´s a high rate of abandon: we can compare it with other gamers who only play a couple of hours each week (F_2=69, 20,8%) or four hors each week (F_3=65, 19,6%). It seems unusually high for the characteristics of the chosen sample. We will return to this indicator.

3.2. Narratological factors on the *Pokémon Go!* Experience

We tried to measure the relevance of the narratological elements of the games following a double strategy. In the first place, we evaluated the previous knowledge of the animation series and the motion pictures connected with the game (*Item II.2).* After that, we analyzed the previous knowledge of other games located in the *Pokémon* universe (*Item II.2*). The previous *Pokémon* games, by the way, showed a more complex and elaborated narrative construction.

In the first case, 75% of the participants (N=249) were followers of the series and the movies. In the second case, a higher number of the gamers (76%, N=251) were experienced gamers in other *Pokémon* games. If we cross both tables, we can see that there was a strong connection between the people who played the games AND followed the series (67,4%, N=223). At the same time, we found another strong relation of gamers without any previous experience of the *Pokémon* universe (16,6%, N=55). We can see the whole picture in the next table:

Table 02: Items II.01 and II.02 – Narratological experience of the skilled gamer of *Pokémon Go!*

			Playing other games		Total
			Sí	No	
Following the series	Yes	N	223	26	249
		% Following the series	89,6%	10,4%	100,0%
		% Playing other games	89,2%	32,1%	75,2%
		% of total	67,4%	7,9%	75,2%
	No	N	27	55	82
		% Following the series	32,9%	67,1%	100,0%
		% Playing other games	10,8%	67,9%	24,8%
		% of total	8,2%	16,6%	24,8%
Total		N	250	81	331

	% Following the series	75,5%	24,5%	100,0%
	% dentro de Jugar otros Pokémon	100,0%	100,0%	100,0%
	% del total	75,5%	24,5%	100,0%

When we asked explicitly about the relevance that they gave to a concrete lineal plot in the game –or the absence of it (*Item II.03*)- we found very different results. 39,2% of the gamers (N=130) felt worried about the lack of narrative inside *Pokémon go!*, but the 60,8% (N=202) were not worried at all.

In any case, in a second phase, we have tried to apply a χ^2 test without good results. There is not a clear correspondence between the first indicators (*II.01* and *II.02*) and the third one (*II.03*). We can´t accept that the fans of the series ($p<0.05$, $\chi^2=0.37$) nor the fans of previous videogames ($p<0.05$, $\chi^2=0.22$) were detecting clearly the lack of narrative as a main problem of the game.

3.3. Perception of the game dynamics

The last block was organized around the perception about the role of each one as a gamer: the motivations, challenges, failures, bonuses… This is the complete result of the results obtained with our tool:

Tabla 03: Game Play Indicators

Area		Amount	N
Objectives (SD=0,822)	Capture new pokemons	83,7	278
	Fight against other rivals	8,4	28
	Train in the gym	0,3	1
	Evolve the pokemons	7,5	25
Challenges (SD=0,88)	Find new pokemons	74,1	246
	Rise the level of captured pokemons	9,9	33
	Rise the level of the main character	10,5	35
	Win new achievements	5,4	18
Problems of the game (SD=2,013)	Gamers can´t exchange pokemons	28	93
	Gamers can´t fight between themselves	18,1	60

	The main character is not very customizable	2,1	7
	It should be easier to find new pokemons	18,1	60
	The fighting system is not very complex	12,3	41
	There must be more kinds of Pokémons	17,5	58
	There must be more kind of bonuses	3,9	13
More useful bonus (SD=1,37)	Pokéballs ultra	10,2	34
	Incense	5,4	18
	Lucky egg	21,7	72
	Lure modules	8,4	28
	Incubators	54,2	180

In the first place, we can see that objectives and challenges seem to work in a similar level –with a Standard Deviation inferior to 1 en both cases. At the same time, the concentration of the results point in both cases to the relevance of the capture of new Pokémon (*III.01* 83,7%, N=278 and *III.02* 74,1% N=246) as the main interest in their experience of the game. About the main failures of the game, seems more difficult to trace a clear solution – there is a lot of dispersion inside the sample. We can suggest, in any case, that most of the gamers felt disappointed about aspects connected with the interaction between human participants (F_1 28%, N=93 and F_2 18,1% N=60) and with, again, the different options related to capture Pokémon (F_4 18,1%, N=60 y F_6 17,5% , N=58). Finally, in the bonus field, we can trace a strong concentration in two concrete items: the lucky eggs (F_3 21,7%, N=72) – used, mainly, to rise the level of the main character- and the incubators (F_5 54,2%, N=180)., used mainly to find Pokémon who are in other geographical, distant zones.

4. Discussion and conclusions

After analyzing the data, we can now propose a deeper reading of the different aspects of our research. We will follow the objectives mentioned on the first part of our paper.

About the *profile* of the gamer (Objective I), we can detect a relevant amount of men over female players. That is aligned with other studies developed in our field (Aierbe-Barandiaran & Oregui-González, 2016; Chicharro Merayo, 2014), and shows the lack of equality in the habits of consumption (Coyne, Jensen, Smith, & Erickson, 2016; Ricoy & Ameneiros, 2016). At the same time, we are analyzing a game which is only available in mobile phones, so our research is coincident too with other studios who point to the preference of the young players for that kind of platforms (Bond, 2013; Madhuri, Olsen, Sigsgaard, & Kheifets, 2016).

About the second objective, connected with the narratological parameters, we can see that the gamer usually knows by heart the Pokémon universe. However, and we find this indicator truly relevant, all that experience was not really relevant in order to avoid the massive dropout of the game. After the failure of the χ^2 test, we can propose that the gamers were not really interested in recover the Ash story, but in the contrary, the most interesting thing was the novelty related with the augmented reality applied to mobile phones. That would put in crisis the topic about the nostalgia as the main reason for playing the video game, making it slightly different to other "retro games" (Márquez, 2012; Planells, 2013).

The third objective points to the building of the game play. Now we can easily see that the main reason for keep on playing was the capture of new pokemons. That action was more interesting for the users that others such as fighting, training, raising the level of the characters or even getting some concrete bonuses. Obviously, that means that the useful life of the game is dramatically restricted for its own dynamics. Before the upgrade of December of 2016, the game only allowed the capture of 150 different kinds of elements, and most of them were connected with concrete geographical areas. The game promised a quick rotation of the creatures –the so-called *nest rotation*-, but it doesn´t seemed to work well. There is a huge gap between the most relevant mechanics –*capture* ones (*III.01* and *III.02*)-, and the perception of the most relevant failures of the game –*lack of new pokemons* (*III.03*) and the items connected with that actions such as the *incubators* (*III.04*).

That is confirmed too by the forth objective of the research, focused on the main problems of the game and the factors connected with the massive dropout of it. We will focus now on the perceptions of the gamers that left the game. The result can be easily traced in the next table, built with the statistic mode:

Table 04: Game play indicators in connection with the gamers who left *Pokémon Go!*

Indicator	Statistic mode	Amount	N
Objective	F_1: Find new Pokémons	75%	45
Challenge	F_1: Find new Pokémons	86,7%	52
Problems in the design	F_1: The players can´t exchange Pokémons	28,3%	17
Bonuses	F_3: Incubators	33%	20

As we can see, the high concentration on the two first indicators shows clearly that the gamers were truly interested on the capture of new pokemons. They didn´t felt enough motivated to keep on playing.

Finally, we have tried to offer a complete and coherent picture of the ludofictional process around *Pokémon Go!* . We can conclude that is a simple game, easily enjoyable for people of all the ages due to the simplicity of the mechanics, but it fails when it comes to engage the gamers. The main

problem seems situated on the secondary mechanics of the game –training and fighting, specifically-, and the absence of interaction between human beings. At the same time, we can see that the design of the bonuses and the items is clearly irrelevant.

Logically, our research will be completed and augmented with other studies on our field, including possible changes related with the updates of the app or maybe with the comparision with other games developed for mobile phones using augmented reality. In any case, we think that our methodological tool will help us in the future to evaluate, in a simple and ordained way, the ludological and narratological elements of the portable games, so we hope to go on working in the same line during the next years.

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