Bugaboo: A Spanish case of circulation and co-production of video games

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Abstract: Melanie Swalwell has discussed how ‘locality has largely been left out of game history, at least until recently’. Moreover, much of the research and literature about the still young history of video games has been conducted following a cult of celebrity mostly concerned with highlighting American and Japanese perspectives. Swalwell, discusses ‘the great historic diversity of contexts and games to play with’, and considering that technological innovation is a multi-centred complex process—not the linear progression depicted in many writings—this article focuses on the specific context of the early eighties in Spain, in a decisive moment wherein personal computers began to reach markets, even though information on how to program them was confusing and difficult to access. While both, programming and gameplay are sometimes described as solitary or antisocial activities, this paper explores the landscape of Spanish computer games in the early eighties through a case study of the Spanish computer game “Bugaboo (The Flea)” programmed by Francisco Portalo and Francisco Suárez, ironically, released before in the UK (in 1983) rather than Spain. By following the traces that this game was leaving behind (even before it was programmed), I will show the performative potential that this game had, first of all, as a way of tinkering and learning among enthusiasts and practitioners onto how to master micro computers and, afterwards, becoming a digital commodity as well as a bargaining chip in the negotiations to distribute Amstrad micro computers in Spain.

ABOUT THE AUTHOR

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During the last two years, Ignasi has attended and participated in different international meetings, conferences and seminars related with his more recent research lines and publication purposes. This also includes a six months stay last year (2015) as a visiting scholar in the School of Informatics and Computing at the Indiana University, in Bloomington (USA). More recently, he organized different round tables in the “Institute for Catalan Studies” in Barcelona, aimed at presenting the history of videogames beyond its entertainment and technical features.

PUBLIC INTEREST STATEMENT

Video games are commonly viewed as technology for digital entertainment that involves individual—and sometimes isolated—encounters and practices with computers, consoles and other devices to play with. Notwithstanding this, the article offers a historical overview of a Spanish computer game programmed in the early 1980s to prove that video games were, from the beginning, more than simple entertainment or individual practices performed within private spaces such as the households. Besides this, videogames were also a much broader social activity including, but not limited to, interaction and tinkering with computers, commercial negotiations, collaboration and sharing of information, and a great diversity of relationships that made users in their households more active.

Ultimately, this research helps to shift discussions away from the impact of videogames on people and instead present them as consumer products that were playfully used as an appropriate entry to the world of computing.
Subjects: Communication Studies; Computer Science; History of Engineering & Technology; Humanities; Information Science; Media & Communications; Media & Film Studies; Social Sciences; Technology; Video Games

Keywords: game history; video games; microcomputers; computerization; playfulness; programming languages; circulation; co-production; video games in the 1980s

1. Introduction

From the sixteenth century to the eighteenth century, the cabinets of curiosities and wonder rooms became common in Europe and, in turn, anticipated the modern museum by housing, storing, studying, organizing and exhibiting objects (Guins, 2014). These spaces included selected varieties of plants, minerals and animals, mostly coming from up-to-then unknown territories that were being explored and exploited. Most of the cabinets of curiosities were promoted by different natural philosophers, physicians, apothecaries, clergy or aristocrats, all of them strongly convinced in the true action of possessing the nature through methodological classifications and epistemological names of the objects and animals collected (Pardo-Tomás, 2010).

Hence, by collecting, classifying and, eventually, exposing such wonders in the pursuit of, among other things, the act of being contemplated by a different myriad of publics and audiences, soon such spaces reached reputation and provided social prestige to their owners. As José Pardo-Tomás notes, “the arrangement within the cabinet is what provides order towards the accumulation of specimens, a placement that is exploited to create a type of knowledge [...]” (Ibid., p. 30).

Although video games are still a novel field of study, some historians, whether amateur or professional, are committed to presenting game history from the point of view of the possession and classification of digital devices as the only way of producing knowledge from the past. Therefore, these technologies are contemplated as new marvels to be collected and catalogued only for the purposes of preservation and visualization as “digital artifacts”.1 This, in turn, makes it difficult to identify them as one of the cultural artifacts most technically complex, intellectual, provocative, ethically challenging and politically contentious products in contemporary society (Conway & de Winter, 2015, p. 3).

Most of the time, we have access to information coming from the early successful commercial video games and entertainment devices to play with, such as Pong, Atari, Pac-Man, Magnavox Odyssey, Nintendo and so on (Meda-Calvet, in press). In this context, once game historians have identified these main primitive electronic games and entertainment devices, they often make use of an inherited “taxonomic instinct” (Pardo-Tomás, 2010, p. 43.) in order to map them on to an imagined evolutionary timeline that identify key global moments in the past along with their charismatic figures such as Ralph Baer or Nolan Bushnell (Take the following references as examples of such an approach: Sullivan (1983), Herman (2001), Kent (2001), Burnham (2001), Wolf (2008), Donovan (2010). As Raiford Guins puts it, “such linear narratives for writing game history doom us to these ‘in the beginning’, predictable approaches that, instead of helping to organize knowledge, actually foreclose on its production. Timelines rarely accommodate deviation in their graphic renderings of the past; by their design they can depict only a simplistic forward motion” (Guins, 2014, note 1).

Regarding this, I have experienced it in person when visiting some retrogaming events that have been taking place in Spain for the last three years. Once I got within such electronic “wonder rooms”, as a visitor I had the feeling of being acquainted with a past where old devices and primitive video-games displayed on the screens were the only and decisive actors that rocked the past. Beyond the nostalgic effects experienced by the audiences willing to travel back in time, such events are also a manifestation of the importance that still has the act of “collecting” what is around us, not only as a way of preserving the old technologies and digital material to keep them away from oblivion, but also as spaces that represent the way we create knowledge and recognition from the past.
Notwithstanding this, I borrow the question put by Raiford Guins in his book *Game After*: What research materials and subjects are constitutive of game history, and equally vital, consulted for constructing game history? (Ibid.). In this sense, Erkki Huhtamo criticizes the uniformity of the reigning historical works on games and their writers’ reliance on the chronicle era of game history, where amassing and organizing data takes precedence over interpretative assessment (Huhtamo, 2005). Game history, Huhtamo claims, is conveyed in a “remarkably uniform fashion, built around the same landmarks, breakthroughs, and founding fathers (not a word about mothers!)” (Ibid., p. 4). In this regard, Raiford Guins highlights what Henry Lowood introduced in the *IEEE Annals* “History of Computer Games” special issue: Pong was television technology, not computer technology (Regarding this issue, see also Baer, 1977). And as Lowood cautions, “These mischaracterizations of Pong reflect a natural, if perhaps, careless, assumption about the dawn of the video game” (Lowood, 2009, pp. 5–19, quoted in Guins, 2014, e-book).

Bearing all this in mind, it is therefore necessary to emphasize the valuable contributions—usually forgotten—of other very different actors such as politicians, programmers, designers, hobbyists, practitioners, gamers and fan communities in their local contexts and everyday practices. By giving voice to these myriad other subjects, we reveal a diverse set of activities and roles that collectively contribute to the shaping of videogame technology, gaming practices and even the gaming industry in their respective local spaces. Indeed, as Nathan Ensmenger points out, “if our goal is to move beyond individual acts of invention toward a more inclusive understanding of the ways in which computing technology intersects with, influences, and is influenced by other social, economic, cultural, and political systems, then we need to move beyond our focus on a tiny minority of pioneers who are, almost by definition not representative” (Ensmenger, 2011; Rankin, 2014).

In this sense, a recent published book *Video Games around the World* (Iwatani & Wolf, 2015) shows us that there already are some interesting studies and game researchers that work through such local spaces. As Mark J.P. Wolf says in the introduction of this book, “much of video game history (and for that matter, history in general) depicts enduring struggles between opposing forces over time, as well as the effects that produce and are produced by these tensions. [...] These forces largely determine the shape of an industry and the games it produces” (Ibid., p. 6). Additionally, this book presents the beginning of video games in terms of important and controversial binary concerns such as “Indigenous production versus Foreign Imports”, “Legitimate industry versus Piracy”, “Mainstream industry versus Independent productions”, etc.

Although we could argue here that binary oppositions are artificial—Carroll Pursell highlights that the story of computer games is full of ambiguities, often posed in terms of binary choices (Pursell, 2015), at least it allows us to recognize video games as something more than mere code that permits them to be played, but as history, organization and social relationships made tangible with competing agendas and unintended consequences (Ensmenger, 2009; Hepler-Smith, 2014). Furthermore, Rebecca Slayton points out that rather than asking primarily how and why technology changed, we may ask who persuaded others of the need for change, how collective identities and ideologies were created or contested in this process, and how computing has provided novel tactics for challenging dominant power structures (Slayton, 2008).

Even though I have mentioned before that Pong, could initially be more television technology than computer technology, this statement might be slightly different depending on the chosen period for analysis. For example, video games in Spain in the early eighties had not started as a regular consumer market wherein anonymous clients bought products following the law of the supply and demand (Meda-Calvet, in press, note 6). As David Graeber points out, “the world does not really consist [...] of a collection of discrete objects, that can then be bought and sold, but of actions and processes” (Graeber, 2008). At the beginning, video games were also a pastime and a computer hobby linked to playfulness among amateurs, hobbyists and practitioners, before it became an entrepreneurial and profitable sector. In this sense, the diffusion of video games in the eighties cannot be
separated from other important episodes related to the arrival of the early home computers and game consoles and, consequently, the study of computing and their social spread in the eighties becomes important too.\(^2\)

What follows is a historical description of how a digital object as the Spanish video game “La Pulga” (it was called “Bugaboo, (The Flea)” outside the country, “Bugaboo” hereafter) created by Francisco Suárez and Francisco Portalo (Suárez and Portalo hereafter) in 1983, largely entails most of the issues discussed above. Moreover, I will show that this game in particular has also epistemological agency\(^3\) and thus, it tells us why game historians should be going beyond the “chronicle era”, breakthroughs and founding fathers pointed out before, in order to build a most robust understanding of the young history of video games. As Bruno Latour claims “we have to accept that the continuity of any course of action will rarely consist of human-to-human connections or of object-object connections, but will probably zigzag from one to the other” (Latour, 2005, p. 75). Hence, this paper proposes to abandon the artificial divide between social and technical “dimensions” (Ibid., p. 88.), and to follow the traces that Bugaboo was leaving behind, even before it was programmed. Through this, we will see the performative traits that this game had, first of as a way of tinkering and learning among hobbyists and practitioners onto how to master a micro computer at the beginning of the eighties and, afterwards, becoming a commercial product as well as a bargaining chip in the negotiations of the distribution of the early home computers in Spain.

2. Bugaboo did not appear from vacuum: game programming as a social practice
At the beginning of the eighties, Spain as well as other European countries were living a decisive moment whereby computerization through the early home computers was partly accelerated and prompted by interventions from media institutions, the political establishment and public debates about its social consequences (Skinner, 1992, pp. 195–196). In addition, advertising and the national press and audiovisual media became powerful means that portrayed the appearance of a supposedly necessary and unstoppable “computing revolution” (Meda-Calvet, in press, note 6). It was during this period that the idea of computing literacy as a basic requirement of civil engagement also begins to emerge as this was also the case in other national territories and markets. For instance, in Great Britain in the early Thatcher years, wherein a heavy promotion of information technology was taking place, with the BBC launching a Computer Literacy Project in 1981, with broadcasts, books and training courses to familiarize newcomers to this technology (Sumner, 2012). Neil Selwyn argues that the Thatcher government, along with the UK IT industry, created an economically and politically driven concept of educational computing which persists today (Selwyn, 2010).

Although the uptake of computers during this period differs from country to country, Joe Baxter-Webb argues that writers from different national contexts generally agree on the centrality of game programming to their respective hobbyist computing scenes (Baxter-Webb, in press, p. 76). One point of similarity in cross-cultural research, he says, is that hobbyists did not always view games solely as objects of leisure and entertainment: games were often seen as a way of demonstrating the technical possibilities of microcomputers and as learning tools for programming. Furthermore, the home production of games was a practice which provided proof of coding skills and was, therefore, evidence of a type of technicity (Svelch, 2013). Regarding this, Melanie Swalwell claims that “games were often a key reason why people purchased or otherwise acquired a computer […]. Digital games are significant in the histories of both home computer and amateur coding” (Swalwell, 2008, p. 193).

I will show in the following sections that Bugaboo was programmed on this basis too, even though, as Portalo acknowledges, computing was an unknown field in the country at that time: “In Spain, computing was meant to manage the marks at school, banking accounts and employee payrolls. Basically, computing was very much about office automation, despite the prior and non-significant existence of some similar industrial processes” (Portalo Calero, 2014). And he adds: “Everything coming from computers was rejected. […] Those were devil’s machines […]. Please note that our experiences and references were, for example, movies such as 2001: A Space Odyssey (Kubrick,
1968) in which a computer went mad and took control over the ship's crew" (Francisco Portalo Calero, interview by author, 2 July, 2014.).

Concerning his early experiences with computers, Portalo likes to highlight how “Pong” was, indeed, one of the first bright encounters with the possibilities of computing:

Pong came suddenly into our lives. This was the arcade machine that we all saw in bars, and it really opened a new world to discover because you could move something on a television screen. [...] I was a fifteen or a sixteen year-old-boy by then, and looking at it moving around was for me the first encounter with a video game [...] and with electronics.4

In the same vein, the British novelist Martin Amis described in 1982 the “invasion” of these new machines as follows:

In Earthling coffee shops, bars, fast food stops, pizza parlors, record marts, in Texan airports, Bengali hotel lobbies, Scandinavian eros centres, Parisian nightclubs, on Greenwich Village street corners, in ice-creams parlors, dentists’ waiting rooms, uni-sexual boutiques—and in the trans-global amusement arcades where pallid addicts loiter and dangle like mutated bats—you can behold the fizz and flash of a million star wars, close encounters, invasions of the body snatchers, nights of the living dead or incredible shrinking men: all of these occurring before our own eyes. [...] There is no doubt: the space invaders are already among us. (Amis, 1982, pp. 15–16)

Such experiences may be seen as examples reinforcing Bruno Latour’s proposal of abandoning the artificial separation between social and technical dimensions (Latour, 2005). In fact, Portalo—and Martin Amis in a much more personal and novelistic manner—are describing a particular period in which the arrival of new technology as well as the related social interactions were deeply intertwined processes. For instance, the advent of the Sinclair ZX81 and its successor the ZX Spectrum, both created by the British “Sinclair Research Ltd” headed by the engineer and entrepreneur Clive Sinclair, supposed a significant change for many hobbyists and enthusiasts in Spain: “the ZX81 put computing within the reach of individuals. [...] It fired our imagination, and our conversations in bars began to rotate around everything we might do with these small machines” Suárez says (Retrogamer, 2011, p. 41).

As stated in the previous section, the relationship between games and computer programming is difficult to disentangle. In this regard, the future authors of Bugaboo and some others in the country were gradually increasing their interest on the possibilities that micros left open as soon as they reached the markets.5 Until then, most of the enthusiasts, hobbyists and practitioners could only manipulate and tinker with computers by having access, for example, to big rooms in colleges where a few huge and expensive electronic computer machines controlled by punched cards were confined (Meda-Calvet, in press, note 6).

At the start of the 1980s though, the availability of cheaper computers supposed that (some) people in Spain could begin to program at home. Moreover, the microcomputers had a variant of the BASIC programming language,4 which was available to the user once the computer had loaded. BASIC was a great entry-point for beginners but, as Baxter-Webb reminds us, “programs written in it ran much more slowly than those written directly in machine code” (Baxter-Webb, in press, p. 72). The machine code language allowed many programmers and coders in the eighties to set instructions executed directly by the computers and helped to improve their performance (Meda-Calvet, in press, note 6). Thus, most games and software of the era were not written in BASIC but in assembler. Additionally, most users could load software such as computer games from tape cassettes or floppy drives.

Initially, Suárez had a little knowledge of the programming languages such as BASIC gained whilst studying physics at Seville, in the late seventies. Concurrently, Portalo’s first experience of coding
dated back to 1975, when, as a student at the University of Extremadura, he used an early programmable calculator to simulate a bouncing ball. Nevertheless, it was through learning to program in machine code that Portalo and Suárez could fully exploit the memory (RAM) of the early micros and thus, they got a remarkable execution speed from them. As Portalo admits,

The knowledge that we both [Suárez and Portalo] gained from the machine code [...] was the key element for the making of Bugaboo. Videogames, at least those that presupposed a certain degree of action, interact actively with the user’s stimulation, that is, they also work in real time. That would not be possible with any other programming language such as BASIC—which also came with the ZX Spectrum microcomputer—, given that the clock speed of first computers was not enough. (Portalo Calero, personal e-mail, 27 January, 2016)

All these changes were not created from vacuum, nor were they monopolized and deliberately brought by entrepreneur geniuses willing to launch new and most powerful machines to hit the markets. As David Skinner claims, “consumption plays an important mediating role between private and public worlds. Goods are ways of making sense of and participating in a wider public culture” (Skinner, 1992, p. 102). Thus, I argue that Bugaboo has to be studied as a bid to participate in social worlds, rather than being taken as a simple commodity to be played in an isolated room. In fact, this section suggests that most of the changes in a period when no one was really sure what computers could do (Kirkpatrick, 2004, p. 9), were also possible due to different social practices carried out by some practitioners, hobbyists and users interacting and tinkering with the new computers in different spaces and for many different purposes. As Michel de Certeau put it, consumers produce through their signifying practices some trajectories that “trace out the ruses of other interests and desires that are neither determined nor captured by the systems in which they develop” (de Certeau, 1984, p. 28).

3. From learning to entertaining: playing with the issue of control

As I already commented in the previous section, Suárez and Portalo soon had realized that BASIC language was far too slow for their purposes: “We created our own rudimentary development environment which allowed us to manually enter into memory the zeroes and ones that made up our routines. This was pure machine code programming”, Portalo says (Retrogamer, 2011, p. 41). Regarding this, Portalo adds that his brother came across the book *Z-80 Microprocessor Programming & Interfacing. Book 1* (Nichols, Nichols, & Rony, 1979) which proved to be very helpful given that programming tools at that time “were not bad, but they did not exist” (Portalo Calero, 2009, p. 10). With all this, Suárez and Portalo found out that it was possible to enter within the machine and manipulate visually its outputs, and this is how the idea of programming games came up (Portalo Calero, interview by author, 2 July, 2014).

Suárez began to apply those parameters and assigned them an asterisk with the aim of getting them move around the screen. This is how the flea was born: the combination of performing simulations on physical processes; the initial exploration of computers; and, finally, realizing how much fun it was following those leaps. And he had the brilliant idea of turning all this into a video game. Afterwards, we began to work with the machine code and this was also fundamental. (Ibid.)

Until then, Suárez had been interested in graphic arts as well as orbital drawings and astronomy issues that involved planets and their movement. Notwithstanding this, by joining forces with Portalo around a project on the uses and better understanding of the Sinclair ZX81, Suárez directed his newly acquired knowledge of the machine code to more playful purposes. For example, he produced versions of Hangman and Mastermind for the Sinclair ZX81, as well as an original title, which required the player to guide a little asterisk stranded at the bottom of a staggered mineshaft to the surface in the lowest number of jumps (Retrogamer, 2011, p. 41).

Furthermore, Suárez admits that Bugaboo was not the product of extracting numerical data and specific coordinates with a computer, but the result of trying to explain to his brother how a parabola
could be formed: “Eventually, on seeing my results, I decided to incorporate a character which performed that movement” (Portalo Calero, 2009, p. 11). Hence, such leaping asterisk was turned into a flea (Figure 1), and this is how the main character of the game was computerized.

In a certain way, this bears a resemblance to the hacker culture analyzed by Sherry Turkle, when she pointed out that “people are not ‘addicted’ to test piloting or race-car driving or computer programming. They are addicted to playing with the issue of control. And playing with it means constantly walking that narrow line between having it and losing it. Computer programming offers this kind of play, and it is a part of the hacker culture” (Turkle, 1984, p. 210).

The flea was, by then, this little asterisk at the bottom of a cave shaped by staggered sides and the game was about taking the insect out by using the fewest possible number of jumps. Besides this, the control mechanism was highly unusual for a video game programmed in the early eighties: the movement of the flea, which was incorporated from the complex equations behind parabola that Suárez had been working through, was determined by how long the player held down the left or right button. Thus, the amount of time within which the player was pressing a button was decisive to decide the power of the flea’s leap. Until then, most of the existent video games were only provisioned by controls right, left, up and down. According to this, Portalo highlights that “arcade machines offered two possibilities: movement and shot, with two or four push-buttons for the former, and one for the latter. And Paco [Suárez] came up with such idea that enabled this game to get more information from each pulsation, by counting the time that the player was holding down the key” (Portalo Calero, 2009, p. 11).

At this point, we can appreciate how far Portalo and Suárez first encounters with Pong arcade machines are from this little asterisk and, yet, how decisive were each of the traces so far left behind by their activities. As Bruno Latour notes, “No amateur ever alternated between ‘subjectivity’ and ‘objectivity’ […]. No engineer ever distinguished the assembly of people and the assemblage of parts, so why explain things as if society and technology had to be kept separate?” (Latour, 2005, p. 240).
4. Making the virtual possible: Bugaboo is developed into a commodity

In the spring of 1983, Suárez sent Bugaboo to Indescomp—one of the main importing and retail companies of software and peripherals for the ZX81 in the country—and the game rapidly caught the attention of its managing director, Jose Luis Domínguez (Retrogamer, 2011, p. 41). Shortly afterwards, Suárez received a call from the company and he was informed that not only did the corporation want to publish this game for the ZX81, but it would pay him to develop this for the successor microcomputer model, the ZX Spectrum, released under great expectation in Spain the following year (Meda-Calvet, in press, note 6). Eventually, Suárez decided to move to Madrid and began to work on a Spectrum update of Bugaboo. Meanwhile, his friend Portalo went to Madrid as well and soon after José Luis Domínguez offered him work collaboration on Bugaboo side by side with his friend Suárez. In this sense, Portalo points out that “I was utterly bowled over by his [Suárez] initial work on Bugaboo for the Spectrum” (Retrogamer, 2011, p. 42). Yet, before Portalo accepted the offer, he also admits that he was amazed to realize how wrong he was to think that there would be many programmers knowing machine code language for the Zilog Z80 microprocessor in Madrid. In fact, this was a very rare and uncommon computing skill among users and enthusiasts in the country back in the early eighties (Portalo Calero, 2009, p. 11).

The huge increase in memory and processing power that the machine offered, allowed the basic concept of the game to be greatly developed, though it also presented new challenges for Suárez to contend with, such as “color clash,” which turned out to be the bane of a Spectrum coder’s life (Retrogamer, 2011, p. 42). Nevertheless, he was highly persistent and learnt much about the internal quirks of the machine in order to get Bugaboo come true. Portalo was familiarized with the new machine too, and began to work on the score display, the clock and what would become the “jump meter”. He admits that “I was used to tinker with the ZX81 and its 16 K memory expansion and every time that this microcomputer got an unexpected physical movement, it crashed. Thus, ‘that’ [technology used at Indescomp] looked like high technology to me” (Portalo Calero, 2009, p. 12). Simultaneously, Suárez focused on getting the scrolling routine to be as smooth as possible. This work, along with the aid and support from the technical team at Indescomp, steadily improved the game throughout its making process. “Every day, Suárez achieved more spectacular and colorful effects, giving La Pulga [Bugaboo] a different dimension from the games which regularly reached us from England”, Portalo says (Retrogamer, 2011, p. 42).

Portalo also started a storyboard draft (Figures 2 and 3) for the animated opening sequence which not only did pretend to ease the pain for the long tape loading that ZX Spectrum users had to stand whenever they began to play with this microcomputer, but also it should familiarize them with Bugaboo’s narrative story into which they would later become active participants (Portalo Calero, 2009, p. 12). As Portalo notes, “I imagined I was working on a film, hence my credit on the title screen as providing ‘Special Effects’”. And he continues, “Even before the game starts, it absorbs the player in a story in which he is the protagonist. It was the precursor of the ‘video stories’ or ‘video adventures’ which have evolved since the dawning of the digital era” (Retrogamer, 2011, p. 42). See Figures 4 and 5 to visualize and compare the handcraft credit screen of the game turned into its final digital design.

At this point, José Luis Domínguez decided to find an English name for this game because it was meant to reach the UK’s market first due to the fact that the ZX Spectrum had not yet been released in Spain in the fall of 1983. In this regard, José Luis explains how Bugaboo’s name was finally chosen: “My brother and I sat down and thought: bug is an insect, a sort of bedbug, and a flea may be one too … boo is something kind of weirdo, definitely, a bug-boo. Therefore, ‘Bugaboo’ sounded funny and they liked it in England”. Far from being an anecdote, I found this story worth mentioning here because it enables us to see how important commercial decisions that were made at that time, such as choosing a video game’s name, turned out to be overly simplistic, so to speak. That reinforces the importance of acknowledging and highlighting the everyday life practices and daily routines in all kind of social spaces and collective decisions due to their spontaneous and very often unplanned character forgotten in the traditional literacy approaches:
So, too, there is generally more logic in a phrase than in a discourse, and more in a single discourse than in a succession or group of discourses; there is more in one special rite than in a whole religion, in one point of law than in a whole legal code, in one particular scientific theory than in the whole body of science; and there is more in a single piece of work executed by one workman than in the sum total of his performances. (Tarde, 2000, p. 76, cited in Latour, 2005, p. 243)
The game was completed in October 1983 and finally released by Quicksilva in the UK as “Bugaboo (The Flea)” (Figure 6), though it retained its original title of La Pulga in Spain where Investrónica, a Spanish import-export and computer manufacturing company, handled the publishing by the end of this same year (Portalo Calero & Mena Nieto, 2015, p. 103). From then on, this game was known, mostly, by the narrative story created to enrich the game itself beyond its playable features. That was the story of a mission to a strange blue planet in the Almat-1 sector of space. Bugaboo was sent to investigate the hitherto unknown planet and see if he could determine the cause of the strange life-sign readings detected. However, upon landing on the planet, Bugaboo accidentally fell down a hole leading into a large cave inhabited by a yellow flea-eating pterodactyl that had a strong desire...
to eat Bugaboo. Therefore, if Bugaboo did not want to die eaten by the pterodactyl, it had to escape from the cave using the power of the leap that was programmed long before Bugaboo was actually a video game, as described above. For example, the time when Suárez was teaching his brother how to trace a parabola by creating an easy-to-use software in a computer which simulated oblique launches (Relinque & Fernández, 2015, p. 16).

5. Bugaboo beyond the screen: circulation and co-production

After Bugaboo was released in the UK, it immediately caught the attention of the public and was somehow a surprise because of its technical and visual traits (Portalo Calero & Mena Nieto, 2015, p. 103). For example, Portalo and Suárez recall seeing a review of their work in Home Computer Weekly magazine. Even though this was somewhat lukewarm write-up (Figure 7), the young programmers were overjoyed to be featured in an international magazine’s cover (Figure 8).

Gradually, more reviews from the UK games press reached Bugaboo and these were increasingly positive. It became a slow-burning hit, with users and game critics alike warming to its charms. Of significance was that Bugaboo reached the higher position on the top 20 hits elaborated by the prestigious magazine Your Computer (Your Computer (1984, p. 54). See the reference in Portalo Calero and Mena Nieto (2015, p. 103)). As Suárez points out, “We felt great happiness as we began...
to receive good reviews from the British media. [...] To be successful in the country that cradled the Spectrum was a source of pride” (Retrogamer, 2011, p. 43.). Moreover, the game also drew attention for its Spanish background:

Figure 6. Original cover for “Bugaboo”, Quicksilva, November 1983.

The first unusual thing about this game is that it isn’t a British program. Authors Paco & Paco (“Paco” is a shorter Spanish version’s name of “Francisco”) are Spanish and Quicksilva are hoping for more games from them in the future. That shouldn’t be any problem as far as popularity goes—Bugaboo the Flea is going to be a big hit. Not only is it beautifully drawn and animated, but the colors on the screen are as burningly bright as has ever been seen on the Spectrum. [...] I think that together with Ant Attack, Quicksilva have come up with the two best games of 1983, and as far as arcade games for the Spectrum go, they could well be the best of 1984 too. [Crash (1984, pp. 15–16). See the reference in Portalo Calero and Mena Nieto (2015, p. 103)]
Bugaboo was recollecting excellent reviews in the UK and achieved important sales figures (Portalo Calero, 2009, p. 15). In spite of the difficulties to find references and reliable statistics that bring us the exact number of video game copies sold at that time—there was neither legislation on patents nor image copyrights in software products in the early eighties—, some sources suggest that Bugaboo could have sold 20,000 copies after its first week in the market (Portalo Calero & Mena Nieto, 2015, p. 103). Indeed, Bugaboo was a sales hit in both, the UK and the Spanish markets (Ibid.).

A review picked up from the Spanish magazine *Conocer (la vida y el universo)* [Knowing: life and the universe] published in 1984, may be taken as guidance:

> If this is not the first Spanish video game, at least it is the first one in having succeeded outside the country. Recently presented in England, it has been a best-selling game, regardless of the difficulties that the current overcrowded market of videogames brings out. The authors Paco Suárez and Paco Portalo—pioneers in the new wave of Spanish videogame designers—pretend to break up with classic space invaders and other war-games. The result is *The Flea*. [*Conocer (la vida y el universo)* (1984, p. 24). See the reference in Portalo Calero (2009, p. 35)]

At this point, I would like to argue that we are seeing in this section neither a computer software simulating oblique launches, nor the story of a game that occurs in a blue planet in the Almat-1 sector of space. Instead, we see now how all these previous traces leave room for others without having abandoned Bugaboo as object of analysis in neither case. This suggests that such game was constantly negotiated, transformed and, thus, “co-produced”12 by many other actors and objects aside from Portalo and Suárez. In this sense: was not Pong a significant nonhuman actor once Portalo saw it in a bar? Were not programmable calculators and micro computers other valuable objects too? And what about sources such as published books onto how to program in machine code language? Did not they allow them to achieve programming skills in some manner? And was not of great relevance the episode when Suárez taught his brother how to trace a parabola? And how did José Luis Dominguez find out an English name to replace the Spanish version of *La Pulga*? By giving voice to all these actors and practices, we are also reinterpreting and defining what exactly this game was: was it software?; was it an entertainment activity?; was it an educational tool?; was it commercial business?. “Against the legend that says that all things that become universal are true, an obstinate and opposing fact arises once again: it is only because they circulate and become spread throughout the globe that they turn out to be unbreakable and invincible” [Pimentel (2010, p. 120); with regard to the circulation of knowledge and science as a form of communication, see also Secord (2004, pp. 654–672)].

In this last section, we are following the traces that Bugaboo left behind once it began to circulate beyond the walls of Indescomp. By doing so, this game multiplied its visibility and thus was also reinterpreted and got transformed over time, as I showed above through the opinions of some reviews. Furthermore, Bugaboo was commercialized in many other countries and with other names,
depending also on the computer models that this game was programmed for (Portalo Calero & Mena Nieto, 2015, p. 103). Bugaboo was released in the United States in 1984 for the computers Timex Sinclair 2068 and Commodore 64 (Portalo Calero, 2009, p. 19).

Soon after, Indescomp was seeking to get the rights of the distribution of the Amstrad computers in Spain. Meanwhile, Portalo returned to his home region of Extremadura and Suárez stayed with Indescomp and set about to turn the ZX Spectrum software into an Amstrad CPC 464 version (Portalo Calero, 2009, p. 18). At this moment, Bugaboo was also important beyond its entertainment uses. The game played an important role in the negotiations that Indescomp kept with the British electronics company “Amstrad”—founded by Alan Michael Sugar—in the sense that, as Portalo says, “thanks to Bugaboo, Indescomp achieved the distribution of the Amstrad computers in Spain” (Portalo Calero & Mena Nieto, 2015, p. 104). José Luis Domínguez had just gotten a sizeable order.
from one of the most important department stores in Spain, El Corte Inglés, concerning the provision of computer hardware to sell to the general public in 1984 (Lluis Vela, interview by author, 26 November, 2015). Once José Luis Domínguez closed the deal with El Corte Inglés, he decided to travel to England with the aim of meeting with Alan Michael Sugar to negotiate the acquisition of the distribution in Spain. Then, what was the role that Bugaboo played in all this? Here is José Luis Domínguez’s take of the story:

I achieved Amstrad by means of Bugaboo [...]. I went to Alan Sugar and told him: “Look, I have this game”. And he immediately told me: “How much do you want for it?”. And I said: “nothing, I want the Amstrad’s distribution in Spain”, and that was it. Bugaboo did not actually make me rich. Instead, I used it as an introduction to Amstrad. Bugaboo was a very novel and addictive thing at that time, and whomever I showed this game felt overwhelmed. Bugaboo has given so much to me because it enabled me to turn Indescomp into the Amstrad Spanish branch, which sold 20.000 million pesetas a year and so I left the video games sector and focused on selling hardware equipment, which was what I had always wanted to do. (Portalo Calero, 2009, p. 18)

Notwithstanding this, some sources sustain that José Luis Domínguez was not received by Sugar the first time and left either a Bugaboo cassette or a larger catalogue of video games in his office. Upon looking at the game, Sugar accepted to meet Domínguez and so negotiations began.14 It is clear, as suggested, that Bugaboo was relevant as a “bargaining chip in negotiating the arrival of the Amstrad CPC 464 in Spain” (Lluis Vela, interview by author, 26 November, 2015). And the deal was also possible because this game was programmed to run with Amstrad computer models at a time when these machines required, more than ever, of software to find a place in the market (Ibid.). Afterwards, through the deal between Domínguez and Sugar, Bugaboo was released with the name “Roland In The Caves” for Amstrad models and launched at the same time as the machine, between 1983 and 1984. Moreover, Suárez notes that the game “was one of the key factors for Indescomp to subsequently become Amstrad Spain” (Retrogamer, 2011, p. 43).

Eventually, Portalo stresses the relevance that video games such as Bugaboo had in the early and mid-eighties by recognizing that “Pong was a turning point between hardware and software industries. Here, in Spain, it also occurred with video games: there was no creativity among software designers until the arrival of the early video games. [...] Bugaboo was, in my opinion, a turning point for the software industry in Spain” (Portalo Calero, interview by author, 2 July, 2014).

6. Conclusions
Video games and their locality still remain a relatively under-researched area within a game studies approach. And even though Bugaboo topped the charts in both Spain and Britain (Thomas, 1990, p. 148), this case study does not pretend to be an example solely for the acknowledgement and recognition of the game and its creators within an evolving international scene. Otherwise, we would be only scratching the surface in terms of what we can really learn and communicate from the history (or histories) of video games.

In this sense, by presenting this case I intended to go further, first of all, than the traditional studies regularly stuck on the chronicle era of game history that uniquely highlights American and Japanese viewpoints. Secondly, I also stressed the necessity to understand games history within a more general history of computing. According to this, the spread of video games in the eighties as well as the arrival of computing and the early micros are interwoven processes that cannot be fully understood separately. Most of the time, playfulness and programming computers went hand in hand, and consequently the study of computers and their social spread also becomes important and cannot be ignored by game researchers. Lastly, this case also warns us against conceptions and misinterpretations that consider video games and home computing to be merely the sum of individual decisions to buy and sell them. As David Skinner puts it, purchase is only one stage in the process of home computer consumption and, thus, consumption should be understood as a process
(or series of processes) rather than simply the act of purchasing goods (Skinner, 1992, pp. 240–241). Consequently, Bugaboo also shows us the significance of the previous and later stages beyond its creation exactly when the computer game industry turned from a friendly and more creative expression into a standard and rationalized business of large companies.

Bugaboo is not another story of a particular commodity product meant to entertain some youngsters back in the eighties. As it has already said elsewhere, video games should be understood as something more than programming code that allows them to be played. Leisure, as Garry Crawford states, is not separate from the rest of society but rather part of wider social relations (Crawford, 2015, pp. 571–592). Therefore, our interest must be turned towards what Nelly Oudshoorn and Trevor Pinch analyzed by means of the role of users in the development of technology in general: how users consume, modify, domesticate, design, reconfigure and resist technologies (Oudshoorn & Pinch, 2005). Unfortunately, this is the sort of historical attention that game studies have not largely tackled yet and what this case tries to convey in order to fill this gap.

In conclusion, by including all these other aspects we may start raising questions that overcome the traditional frameworks that had been explaining the past of videogames only in terms of collection, contemplation, preservation and classification. Video games were also involved in complex processes of computerization, automation, political legislation, marketing, advertising, new vocations and opportunities, frustrations, programming languages, resistances, conflicts, legitimate and illegitimate users, fanzines, magazines, fan communities, etc. This list might be boundless. Far from discouraging game researchers and historians of science and technology, we should embrace it as a new area to explore: video games within their local contexts.

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Cover image
Source: Portalo Calero (2009).

Notes
1. This concept has been taken from the work of Bogost (2007).
2. To learn more about playfulness and the gap concerning the universal expectations of computers and the way users playfully created a practice that often contradicted the designers’ intentions (see Alberts & Oldenziel, 2014).
3. The idea of objects having agency has been taken from the extensive and useful work provided by Latour (2005).
4. Ibid. Regarding issues involved in “playing Pong”, Baxter-Webb claims that it might prompt a consideration of how it was made, but it was impossible to actually produce a clone program of Pong without undisturbed access to a microcomputer (Baxter-Webb, in press, p. 76).
5. It is worth noting that despite the rising popularity of the early home computers, they still remained as luxury consumer products, and challenging one popular perception of the machine as a curiosity or short-lived fad. See more in Baxter-Webb (in press, pp. 71–99).
6. Regarding programming languages, in the 1970s and early 1980s when home computers came along, BASIC language did as much as anything else to make them useful. For example, this language was used by programmers not only for the solving of math problems and doing simple simulations but also playing games, which many people came to consider as the language’s defining purpose. See more on Time (2014).
7. For a further discussion of the impact of BASIC on the accessibility of programming, you may also see Campbell-Kelly and Aspray (2004). See also a genealogy of the language metaphor in programming in Nofre, Priestley, and Alberts (2012).
Packard 25) by the “Escuela de Ingeniería Técnica de Badajoz” [School of Technical Engineering in Badajoz] to reward a previous work of theirs carried throughout the 1975–1976 academic course.

8. Besides this, Portalo has recently admitted that the game was not released for the ZX81 computer because, as José Luis Domínguez acknowledged, “software for the ZX81 was no longer profitable at that time” (Portalo Calero, 2009, p. 11).

9. This was an 8-bit microprocessor designed and manufactured by Zilog, Inc. It was widely used in microsuch as the Sinclair ZX81 or the ZX Spectrum. For further information, see “Wikipedia. Zilog 280. Retrieved April 13, 2016, from https://en.wikipedia.org/wiki/Zilog_280.”

10. The early ZX Spectrum models were not well suited for gaming from a technical standpoint. They lacked an interface that could directly connect to most joysticks, its sound was limited to a simple beeper, and its display suffered from “color clash” which caused screen colours to get mixed up in animations. See more about this issue in Lean (2014).

11. Portalo Calero (2009, p. 13). Portalo explains too that he thought it was José Luis’ secretary the person who came across ultimately the final name of “Bugaboo” in an English dictionary.

12. I borrow this concept of co-production from Bruno Latour and his analysis of the beautiful case of the Kodak camera studied by R. Jenkins in which he shows how social theory could benefit from history of technology. See more in Latour (1991). See also Oudshoorn and Pinch (2005).

13. “Peseta” was the name of the official Spanish currency before adopting the current “euro” in 2002.

14. Lluís Vela, interview by author, 26 November, 2015; Julián Fernández, interview by author, 21 January, 2016; Emilio Jiménez, interview by author, 26 January, 2016.

15. To see different covers of the Bugaboo game version for the Amstrad CPC464 model, see ComputerEmuzone (1983); Retrieved 29 April 2016, from http://computeremuzone.com/ficha.php?id=76&pg=cover&l=es&sec=remakes.

Corrigendum

This article was originally published with errors. This version has been corrected. Please see Corrigendum (http://dx.doi.org/10.1080/23311983.2016.1208904).

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