Abstract— In this article it is argued that the player’s experience in playable spaces and game environments is related to his/her autonomy into the emergent platform in terms of narrative and fiction. Player’s are able to experience multiple situations and to collaborate for the progress of the platform itself. This article presents some transmedia experiences such as Uncle Roy All Around You (Blast Theory, 2003), Why So Serious? (Warner Bros., 2007), Heartlands (’Ere Be Dragons, Active Ingredients, 2007) and Playing with Poetry (Gouveia et. al, 2010).

Index Terms— “ARGs”; “interactive fiction”; “playable media”; “serious games and game design”; “transmedia experience”.

I. INTRODUCTION

This article argues that digital games\(^2\) have the power to develop playable fiction and narratives that will work to clarify the involvement that we have with the media.\(^1\) These participatory platforms allow for an emergence of participatory culture where we confront the collapse of distinction between a wide range of areas (arts and design, programming, narrative and fiction, among others).

In this article we research the contribution of numerous areas that can stimulate a wide perspective in game design in terms of theory and practice. It is argued that digital games appeal to spatiality and corporality and are rooted in physiological and psychological mechanisms anchored in repetitive and automatic action [3]. Giving more or less emphasis to specific contexts and denying the importance of spatial and corporal factors, the relationship between the device and gamers bodies and experiences, seems less interesting to us than exploring the playable space in an interdisciplinary manner through several points of view. It is our belief that it is best to study the digital games market and the products it produces than allow it to be contaminated by our own bias. In this context, we try to understand the techniques used in the conception and design of these projects as well as study their participatory structures\(^3\). These techniques may include the player’s opinion as representative of the design team audience, may resort to the culture of prototypes or use strategies centred on the participant in which the evaluator does not participate in the design but instead evaluates the prototypes beforehand. Finally, some games use the creation of personas as a method to simulate audiences where an archetypal player is created that incorporates the desires and needs of the game’s potential audience. These fictitious personalities help to contextualize and centre the creative process and allow for the product’s centralisation in a specific market niche, by developing different products for different personas [5]. Opening the interactive structure to numerous participations and contributions can help to design a more inclusive platform in

\(^1\) Article written as part of a research track for Movlab, Motion Capture Lab in Lisbon in Universidade Lusófona de Humanidades e Tecnologias.

\(^2\) The terms digital games or artefacts are adopted to identify the different platforms: “arcades”, home or portable consoles, computers, mobile phones, but also playable spaces and contexts that involve online and offline spaces, installations and complex environments.

\(^3\) Digital games allow for an emergence of participatory culture where we confront the collapse of distinction between a dominant culture (the game industry) and a subculture of players. This aspect clearly distinguishes the consumer of digital games from the film and television audience [4].
digital space. Content produced by players themselves is introduced (cf., for example, the playable experience *playing with poetry*, 2010, from the author of this text, where players can send their photos and poems to the digital environment).

II. ALTERNATE REALITY GAMES (ARGs)

The interactive fiction generated by *Alternate Reality Games* (ARGs), i.e., games that involve a group of people in the construction of a fiction or mixed reality where players online interact with players offline, is a good example of these inclusive strategies [6]. We can also think about locative media and play that use mobile phones in city environments, in a performance where many players have to collaborate to generate the work, most of the times responding to *sms* messages and using their bodies [1]. In this context, the narrative is generated in real time by various participants and is normally anchored in the physical world, allowing for a mixture and convergence of the online environment with a reality residing in offline space [6].

The convergence of spaces and technologies in this media mix atmosphere promotes mixed narratives in a *geek* aesthetic [7] using messages and calls generated and transmitted by mobile phones, producing online spaces by computer, captured from 2D and 3D software, printing graphical impressions on T-shirts and posters aligned with performances and actions of actors and musicians, where comics, and anime (animation) are created, emerging in tandem with fan pages on programs like *Facebook*, *Twitter*, *Last FM* or others. Digital games become communicational, hybrid spaces that arise from the interaction between multiple participants, a *transmedia* experience [6].

In the ARG *Uncle Roy All Around You* [5] (Blast Theory, 2003) online players and players in the streets of London, who are guided by an interactive map generated from online interactions, collaborate to find a secret place during a short span of time. Players may use photographic or video cameras, audio and text messages, and must work together for sixty minutes until they find Uncle Roy, who is hidden somewhere in a secret location. The ARG *Why So Serious*? [6] was created in 2007 by 42 Entertainment in partnership with *Warner Bros* to publicize the film *The Dark Knight* (Christopher Nolan, 2008) and for the purpose of involving fans of the Batman comic strip saga and films in an interactive fiction that relied on the creation and production of more than 30 websites. The created plot starts in *Batman Begins* (Christopher Nolan, 2005) and finishes with the third film. In this online fictional space, which transports us directly to a Gotham City in the permanent throes of gang warfare, the players must find various objects in particular places in America (e.g. decorative cakes with mobile phones inside and pizzas placed inside sophisticated design boxes) or in other cities around the world (retro-style suitcases with bowling balls and mobile phones inside them). This ARG may also be considered as an aesthetical *transmedia* experience with viral game play that involves the players in an open, dynamic fiction, which can be seen as an additional marketing campaign.

Game design identifies and creates an experience that is forged for a certain audience. In the ARG *Uncle Roy All Around You* the purpose was to create a fiction that could involve ICA (Institute of Contemporary Arts in London) public. In the ARG *Why so Serious?* the main purpose was to generate digital content and to sell tickets for the movie

![Fig. 1 – Brincar com a Poesia [Playing with Poetry] homepage produced by Pedro Suspiro and players interacting in the library space and in a thematic park / project concept, design and coordination by Patricia Gouveia, 2010 (www.brincarcomapoesia.net).](image-url)
première. In *Brincar com a Poesia* [Playing with Poetry], a project designed and created by the author of this text, the main purpose was to invite players to go to certain urban environments in Oeiras, a city nearby Lisbon / Portugal (a public library and a thematic park with a collection of sculptures representing Portuguese poets) and to explore, during one month, Portuguese poetry. Players had to solve eight puzzles in real world and answer questions online and after that they received short videos and audio files each time they found the right answers. At the same time they could explore eight flash games (on-line and on a multimedia facility) and audio installations, made with sensors, inside Oeiras municipal library. Players were invited to post photos and to write poems and at the end of the project they won more active practice than interpretive involvement but it is a distinct one. Playing requires the decoding of structure or systems: the player must overcome levels or understand the architectural organization, solve puzzles or dominate enemies and make strategic plans, understand the time of events and dominate players or NPC’s (Non-player characters). In *Brincar com a Poesia* [Playing with Poetry] NPC’s were real people who helped players in material space. NPC’s were not artificial intelligence bots. Each game genre has its own type of interaction. Playability is a cybernetic organism, and the player is a *cyborg* who lives in subjective harmony with the machine [8] but in this specific case the relation between players and the cybernetic system were mediated by humans. The term playability alerts us to the cybernetic nature of the game experience and introduces us to how this form is generated sensorially. Playability makes it impossible to separate the subject who interacts from the object of interaction and allows us to perceive the process that takes place when a game is played, the activity that is produced in time as a result of the involvement of the subject with rules, objects and activities of the game [9]. In *Playing with Poetry* players received a library map and they had to interact with people in the library space to find out where the installations were to be able to answer eight questions online.

Simulation presupposes acts of design that transform the player's experience in different manners, some are casual and sportive (the Nintendo Wii style) and others are more permanent and involve transformative knowledge (ARG style). In some cases, for example, with Nintendo Wii games, digital simulation manipulates and controls the player’s actions, imposing repetitive and automatic logics, an incessant *play it again* where reaction and participation may adopt two conceptions of interactivity: an immersive (as passive interpretation) and configurative (active and manipulative) agency. The experience of immersion through playability is characterized by configuration (avatar, player house or world, etc.). The cybernetic circuit and displacement in real time in cyberspace assumes the agency between subjects and objects in the process of playability. Accordingly, the simulated world presents a procedural representation as a fundamental human-machine interface. We access simulation through this procedural form of representation and from its world of rules. These rules are inserted in a continuous process of interaction which transforms narrative tools on cognitive maps that the player explores dynamically.

It is considered that there is an evident connection between perception and action and that when we play we “feel our own

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7 Some real physical problems can emerge with game play experiences: tendinitis, persistence of images in the retina, spinal pain, etc. In this sense, it is necessary for us to consider the relationship of the player’s body with various interfaces and technologies. We must consider the player’s material condition and the manner in which this is related to the accessories that are used to play: controls, mouse or *wiimote*, steering wheel, screen, video camera, among other possibilities [10].
body extending into the virtual environment through a kind of virtual tool-use, the other activates our own motor system as a response to observed motor patterns” [11]. In this context, according to Gregerson & Grodal, there is flexible and increased incorporation where the self-receptive system (affective, emotive and motor experience) encounters a functional division between a “vision for action” (the where/how of a spatial vision) and a “vision for perception” (related to the form and colour). The type of perceptive and cognitive learning is therefore an anticipatory type where the motor schema is associated with vision for action and is only really realized in the body as, for example, in the case of tennis.

While the tennis player has access to dynamic forces, to the weight of the racquet and the ball, in Nintendo’s Wii console players encounter a total absence of feedback from force. We then may conclude, with Gregerson & Grodal, that there is an incongruent motor realism where one of the tennis match’s aspects will be retracted in a reliable manner while the other is completely missing. We may consider that the processes of schematic movements are activated but the sense of agency and the transfer of agency to the virtual space may be a severe amputation that the digital games propagate [12]. Since force is necessary for real life but seems to be absent in these games, the proprioceptive and somatosensory stimulus suggests a kind of physical phantom.

The capacity to generate emotional situations in digital games and play may condition the story's plot and promote more interesting and “live” architectures from an artistic point of view [13]. Through biofeedback sensors, the player may see data mapped, such as his/her pulse, heartbeat and bodily perspiration and through actuators may encounter virtual creatures that respond to that data. MOCAP (Motion Capture) capturing systems can also contribute to robustly inserting participants’ movements in the game system. The development of software for mapping brain activity during the performance of some game play tasks allows for digital views of the player’s brain while he or she is involved in various activities such as playing digital games, taking part in sports, among other possibilities. This type of research may contribute to a better understanding of the problem of perception, emotion, cognition and motor action in training and can help us to perceive the distinction between interpretation as simulation, belonging to film, photography and fine arts, among other arts, and a more configurative form of interaction that appeals to emergent movement and systems, from games and interactive play systems.

Juul [14] considers that there are six conceptual possibilities to think about the concept of narrative in games and play. Therefore, we may adopt six different options: i. narrative as presentation of events (literal and original sense of the words “telling a story”); ii. narrative as a fixed, predetermined sequence of events; iii. narrative as a type of sequence of specific events (ordered chronologically, by causality, etc.); iv. narrative as a specific subject (human or anthropomorphic entities); v. narrative as any type of fictional plot or world; and, finally, vi. narrative through the way in which we give meaning to the world.

In this context, narrative is in itself a fundamental way to organize perceptions, emotions, cognitions and motor actions that may be very useful for thinking about what is happening with human action in the world of procedural images present in digital games and play. Sensory narration is replete with its own linearity of movements in action. The narrative as a story of senses depends upon the plasticity of action [15].

Digital games and play are emotional experiences and emotions depend upon assessments processed by players in relation to their objectives and beliefs. Emotion also implies recognition by the game play protagonists of an event as significant and even the will to respond with an action that implies a physiological change. According to Järvinen, we ought to focus upon the nature of playability as an aesthetic experience that includes effects which have to do with sensory and cognitive aspects. As such, “the aesthetic nature of play experiences – whether it involves performing, appreciating the design and composition of game characters and environments,
or being fascinated with the simulated minds of game characters – is an important aspect of antecedents of pleasure and eliciting conditions for emotions in games” [16]. The question posed is the following: how is the aesthetic stimulus distinguished from the day-to-day stimulus? We may argue with Järvinen that the magical circle, present in the game play spaces, leads us to a type of experience of emotional aesthetic nature where the practical uses are submitted to an intrinsic motivation for training new things. The design of the aesthetic stimulus in games must be more inclined to design the player experience and should consider less functional aspects, even being able to use the most varied resources, namely, graphics, discourse, text, visual and sound effects, music, among others.

According to Tronstad [17], the visual appearance of virtual personas is associated with performance and the capacity of the avatar to execute actions. In this context, we may consider that the form in which we perceive a person is associated, in digital play spaces, with his/her graphical representation and vice versa, whereby appearance is related to that person’s capacity to react in digital space but also according to the form in which humans interact with it as system participants [18] as part of the game design. Two different types of narrative identification are suggested in a continuum, namely, one affective and the other cognitive. Taking a purely rational perspective is part of one extreme while emotional contagion, as an affective phenomenon that makes us laugh when we see another person laugh, is at the other extreme. True empathy occupies a position at the centre of this continuum considering that this is a dynamic phenomenon that is anchored in aspects of incorporation associated with emotional contagion as well as the assumption of a position or perspective inherent to the cognitive process. Both elements of emotional and narrative incorporation are necessary for the experience of empathy, which may cause several types of involvement: fictional, experience or aesthetic evaluation and/or self-reflection.

Aesthetic experiences generate imaginative (fictional) empathy. In challenges posed by human-machine interactions, aesthetic experience is an experience of flow, i.e., condition of trance, concentration, in which the player's body seems to perform and react automatically, in a perfect form, without true consciousness or interference. It is suggested that the concept of flow is appropriate to describe how the game play may be understood as a specific aesthetic experience considering that it is difficult to apply traditional aesthetic theories to games and play, given that these differ from other aesthetic objects because they require creative inputs by players in order to be consummated. In the state of flow, the character appears to the player in the aesthetic sense as an ephemeral companion, a sensual presence. Paul Ricoeur's concept of narrative identity is useful, according to Tronstad [17], in that it helps us to understand how the identity of a person is developed, for example, in a role-playing game. Tronstad cites Ricoeur in saying that what we understand as our identity resides in the stories (told and untold) of our lives as well as our actual experiences based upon which we interact with the world. We build and discover our identity in the appropriation that we perform from a possible story about our life. In terms of genre, the role-playing games live out of an accentuated form of coherence and realism. Coherent narratives and realistic representations are part of the aesthetic conventions of RPGs in formal terms, but this aspect only speaks of the form but not of the content, which is far from “realistic” since it often transports us to a mythical world, a fantastical space where anything is possible, like in the case of the ARG Playing with Poetry that allow us to play with poems or ask us to write poetry.

In RPGs our characters are clearly separate from the player's own body, even when they respond to our actions, and for that reason we emphatically identify ourselves with them. We need this notion of the “other” so that we may identify with the character since the identification emerges only with someone or something outside ourselves but characters clearly function as our masks [19]. While in out-of-character playability, the function of character is only a tool to represent ourselves and our actions. In the case of RPGs, we are dealing with a different type of interaction. As such, we take into

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Fig. 3 – Brincar com a Poesia [Playing with Poetry] library map and t-shirts.
account different forms of interaction and agency, one, only present in first-person games where the “I” appears represented on the screen through extensions (steering wheels, mice, tangible interfaces, etc.) and, other, which is present in third-person interactions normally associated with the figure of an avatar or character on the screen [20] [21]. Finally, a second perspective, “You are on a maze...”, a mix of rules and play that sometimes merge first and third perspectives in a more open platform [22].

Interpreting and understanding the way in which aspects related to playability in human-machine interactions can let us understand how motor action is related and interconnected and may be fundamental for generating emotional situations in procedural images present in digital games and play. This field of study may help us to understand questions related to the narrative component, the aesthetics of simulation and the complexity of human-machine interactions in a way to promote “living” forms of fiction. The use of biofeedback sensors, where the player can see data mapped from his or her body, may contribute to a more robust performance of artificial creatures and encourage more realistic interaction from the perspective of movement and bodily action.

IV. CONCLUSION

In this article it is argued that the player’s experience in playable spaces and game environments is related to his/her autonomy into the emergent platform in terms of narrative and fiction. The player’s own body encounters the matrix created by the designers and he/she is able to experience multiple situations and to collaborate on the progress of the platform itself. Game and play complex systems can arise mechanisms of human action and cooperation. Through heartbeat cycles, the human heart registers the time of the experience in the player's flow. The cycle of the computational memory clock defines explorative and available space where participants may act. In a wealthy walk through the city the player of Heartlands (’Ere Be Dragons)9 (Active Ingredients, 2007) use mobile technology coupled with a sensor that mimics the heartbeat of the participants and from it creates a virtual world. This project, conducted in partnership with the Sports Institute of London, explains, as an example, the future of the rising market of games for mobile phones and shows how this technology can involve social issues such as health in an innovative and playful way. This projects aims to develop a combination of game and play associated with learning the practice of sustainable sport drawing attention to the complexity and recombinant transmedial experience [“viva!”] [Digital Aesthetics as a transmedial approach to digital game design]. In Understanding Digital Games, ed. J. Rutter & J. Bryce, Sage Publications, London, 2006, pp. 129-47 [p. 135-43].

Using Heartlands players can make physical exercise, build a digital world, create a landscape using their heartbeat and interact with other players on the board of the virtual city. In this context, participants are invited to "start playing games with their heart." They can find green and flowery landscapes or deserts and the main objective is to maintain a constant speed and healthy way to stay in motion and accumulate points. Generally "the idea is to encourage people to explore their surroundings and learn about their health in a playful process."

Active ingredient is an English interactive media company that explores experiences that respond in real time to the surrounding environment. Through Biosensors and affective computing, in partnership with the Mixed Reality Lab at the University of Nottingham, artists and engineers create projects for mobile phones that take advantage of the heartbeat, text messaging, location and interaction of several players. These strategies can also take into account the creation of videos and interactive movies that can be spread over several platforms. After this journey through different perspectives and possibilities of study in digital games research we conclude that these are artefacts that require interdisciplinary complexity and an inclusive and open way of analyse.

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