Quilting the meaning: gameplay as catalyst of signification and why to co-op in game studies

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ABSTRACT

In this paper I propose a unifying perspective on meaning-making based on the assumption that signification in digital games is mainly produced through the cognitive & interpretative processes involved into gameplay. More exactly, the gameplay will be intended as series of sensorimotor acts and cognitive tasks that act as a catalyst and hub between semantics, narration, aesthetic, interactions & mechanics. This will be done with an interdisciplinary case analysis of *Brothers: a tales of two sons* and *Papers, Please*. My goals are two. The first one is to offer a deeper perspective on how complex contents, like brotherhood as a value and migration as a topic, dramatically depend on the cognitions triggered by playing that act as signifiers for interpretations on all the different layers of meaning. The second one is to contribute in laying the foundation of a unified perspective of meaning.

Keywords
signification, cognition, semiotics, gameplay, brothers, papers please

INTRODUCTION

The problem of messages conveyed by digital games has always been central, and mainly because of social issues about them. Indeed, digital games have always been at the center of a great debate about their cultural value and social impact. While for some they were violent and dangerous, for others they were just distractions. While for some they produced meaning like art (Crawford, 1982) for others they were its exact opposite. While for some they were ideological machines (Bittanti, 2005, 10) and *Tetris* could be read as a new form of criticism (Murray, 1997) for others digital games couldn't talk about serious matters.

Still, all these claims needed some proven analytic methodology to find evidences about the presence, or absence, of those "contents" and about the way in which games could, or couldn't, influence the user by conveying some kind of message. Because of this, in the years, many tried to give some answers about the general possibilities of meaning-making in digital games. Understanding *how* contents were conveyed and *how* digital games could be meaningful became a main interest and a central problem both for the whole game studies (Mäyrä, 2008, ch4) and for the academia.

In the years, many different aspects of meaning-making in digital games have been studied: the relevance of aesthetics (Niedenthal, 2009), the narrative impact of various forms of design (Dillon & Howe, 2003) up to sound design (Collins, 2008), the differences and similarities between digital games and other media like music (Hamilton, 2013; Hart, 2014), cinema (Nitsche, 2008, 83-106), comics (Pelliteri & Salvador, 2014, 202) and theater (Fernández-Vara, 2009; Laurel, 1991), the linguistic mechanics and *effect of sense* production (Meneghelli, 2007), the narrative content and the social implications of representation in digital games (stereotypes about gender, ethnics, etc.), the author-player-system relationship and dialogue (Molina, 2002), the consequences of interactivity and co-creation (Banks, 2002) opposed to other medias where the user function is mainly interpretative (Eskelinen, 2001), the hypertextual structure of digital games as a medium itself (Landow, 2006) that allow semiotic specific (Maietti, 2004) and unique (Vandendorpe, 1999) operations on the meaning, the gameplay as live-narration with the interactive storytelling perspective (Crawford, 2005) and concepts such as the *ludonarrative dissonance* (Hocking, 2007), the possibility of game mechanics to convey messages (in games like *Braid*), the meaningfulness of the play as time-structured experience (Lindley, 2004), the mechanics as a main way to produce meaningful emotions (Järvinen, 2009) the cognitive consequences of the player's interaction with the game as systems of rules as in the concept of *procedural rhetoric* (Bogost, 2007), the meaning as result of the player's free dialogue with rules (Sicart, 2011) the effects produced by the different actions required to play (Jenson & de Castell, 2009) through physical engagement (Westecott, 2009) and interactions with affordances (Pinchbeck, 2009), the embodiment and experiential metaphors involved in play (Rusch, 2009; Begy, 2011), the relevance of the social and cultural context for meaning (Mäyrä, 2007), the agencies (Bizzocchi & Tanenbaum, 2012) and *strategies* (De Certeau, 1980) of the players that can (and love to!) break (Donaldson, 2017) or create new rules (Bittanti, 2008, 202) and create alternative narrative interpretations (Ramirez & Saucerman & Dietmeier, 2014), and we could even cite the impact of learning processes (Gee, 2007) triggered by games and theirs benefits (from creativity (Parker & Galloway, 2016) to multitasking (Eichenbaum & Bavelier & Green, 2014)) and much more.

As it's easy to see, the meaning-making problem is something across all disciplines and at the center of many debates, debates that are not only about the problem of meaning itself but also about emotions, cognitions, behaviors and much more.

However, despite the quantity and quality of many researches, we still do not have a common theory of meaning in digital games. What we have is an archipelago of theories, each of which look at a specific aspect of both games and meaning. These theories could be categorized in many ways, but for the purpose of this paper we will note here that they can usually fit into one of two groups.

On one side, we have many studies about the meaning based on the assumption that to understand the content and messages of a game you need to watch at the screen and to participate in some narration by "reading" the game and making interactive choices that will produce a story (Ryan, 2006) intended as a series of explicit interpretable events. Even the gameplay is thought relevant for what it can show, and even the body engagement is considered as part of a deeper logical narration (Meneghelli, 2011). From this perspective we can find mostly answers about how narrative, aesthetic and linguistic mechanics can determine both narration and have cognitive effects "going from purely emotional responses to highly elaborate interpretations" (Bundgaard, 2010, 5), and the concept of narration itself is "transformed" to the point

that it includes all the interactive, trans-medial (Ryan, 2001 & 2004) and nonverbal elements of the game.

On the other side, we find studies based on the assumption that games are not mainly "narrative" by rightly noting that "we use narrative for everything" (Juul, 2001) and that the true content conveyed is not an explicit one. Of course, those works do "not reject narrative" (Gonzalo, 2003). but, still, from this perspective the meaning-making problem is not about the abstract explicit and "narrative" content of digital games because this exact content is first and foremost conveyed by the game as an interactive system. Consequently, the fundamental aspect of the meaning making depends on the inner mechanics of both games (such as the competition (Ferri, 2011)) and digital texts (such as the procedural content produced from a matrix and algorithms (Ferri, 2007) resulting in ergodic texts (Aarseth, 1997). From here we find also studies about the *experience* of the player and how "meaning and significance arise through the player's activation and negotiation of images, objects, events, and so on, in specific situations of challenge" (Jenson, J. & de Castell, S. 2009) as well as studies that are not about how digital games convey messages but about what the players do (Bartle, 1996) with the possibilities and what drives them to do so from a psychological point of view (Triberti & Argenton, 2013).

To sum up, let's just think of how immersion in a game can be looked from the point of view of narrative strategies, or of the main avatar appearance and identity, or by focusing on the camera angle and linguistic person used when he talks, or by looking at the perception through visuals and music effects (Sanders, T. & Cairns, P. 2010), or by referring to the circle of play situation (Huizinga, 1946), or justifying it by looking at the core mechanics, or explaining it with mirror sensori-motor aspects involved (Lindegaard & Grodal, 2008), or by a common emotional state between player and character shared through a certain pace of actions (Zagalo, N. 2017). The firsts aspects rely on a player's conscious interpretation of explicit content, the other ones do not.

This two groups certainly reminds us of the old "narratology vs ludology" categories and are undoubtedly linked to a certain kind of "content vs formalism" or "language vs phenomenon" perspective, but at the same time they are something much more complex and nuanced. Furthermore, although distant they are nonetheless all valid.

Thus, in the end everyone seems to be right but it's pretty hard to put them together, both because they are interested in different aspects of digital games and because of the complexity and ambiguity of the concept of "meaning". But it is also very hard because of the diversity of digital games, as Ivan Venturi once said (Triberti & Argenton, 2013, 134): talking about videogames is like talking about printed paper. Indeed, none of these single theories can be sufficient alone: different kinds of games (from *Tetris* to *The Stanley Parable* and *Second Life,* from *Flowers to Goat Simulator* and *Undertales,* from *Elegy for a Dead World* to *Duke Nukem 3D* and *Farmville*) seems to have different ways of producing meanings. Lastly, as Grodal wrote: " […] no total theory of videogames is possible. Some games emphasize visually salient and/or association-rich audiovisual worlds and emotionally engaging characters, while others are highly abstract, some employ cognitively or emotionally intriguing challenges, while others prioritize physical action; some games are strongly goal-oriented and telic—others are paratelic, process-oriented, and so on." (Lindegaard & Grodal 2008, 81).

It is true that there have been proposals of analytical methods that go from the hardware to the socio-cultural aspects, however these contain claims like "All the semantic meanings of the game are secondary to the gameplay's primary ludologic structure" (Konzack, 2002) that cannot be accepted by all. On the other hand, it is true that interdisciplinary approaches to meaning-making exist, but those approaches often want to justify the idea of digital games being narrative, which is problematic. Furthermore, even when interdisciplinary works are indeed complementary (like in Rogelio & Cardona-Rivera & Michael Young, 2013.) they often still look at only one side of the meaning in a game. Finally, many attempts of conciliation between different perspectives often consists in instrumental interpretations of concepts. So even if a semiotic analysis can "demonstrate" Tetris being "narrative" (Post, 2009) this doesn't solve the original issue from where the discussion started. Another example can be the definition of "stories" by Grodal (2003) as "a sequence of events focused by one (a few) living being(s); the events are based on simulations of experiences in which there is a constant interaction of perceptions, emotions, cognitions and actions", a definition very useful to him but not from a classic narratological point of view (Todorov, 1971).

Consequently, a unified and truly interdisciplinary (Mäyrä, 2009) perspective on meaning does not exist today. But this is currently not seen as a big problem as all those findings about meaning are supposed to look at different aspects of digital games and the different levels of meaning can be studied independently with overdetermination between them being usually considered of secondary importance (Zizek, 2001, 60). So, As Aarseth wrote years ago: "How do we analyze games? It all depends on who we are, and why we do it. Scholars, gamers, critics and developers all have different needs and need for different methods." (Aarseth, 2003).

However, I think that this situation is actually unfortunate. Not because someone should have "won" the debate, but because without joining the different parts we cannot hope to find neither any specificity of digital games nor the core of their meaning-making process: it's like dropping on a table the pieces of a puzzle and pretend that it is finished. Indeed, game are interdisciplinary objects *by nature* (Mäyrä, 2009), and the meaning we experience while playing is always a syncretic and "total" one, and so this is why I consider that "joining the pieces" should now become a priority. Of course, this junction is extremely difficult because of digital games being like platypus: fitting in any category and corresponding to none (Consalvo, 2005), always breaking out of any definition because of being made with many different parts of many different media and practices (Compagno & Coppock, 2009). Moreover, different meanings given to the same words (such as narrative) by different disciplines, and metalinguistics gaps, are also a challenge. Still, I like to think that finding how all the different aspects of the meaning-making interact is possible and that it could be of great interest for both the academia and the game industry.

In this paper I will try to contribute to the birth of such a unified meaning-making perspective by focusing on a unique characteristic of games: the cognitive content produced by the gameplay that in turn allows us to interpret what is shown on the screen and to understand the deepest message of a game. I claim in fact that this is the missing piece thanks to which many different theories about meaning-making can fit together, or at least that the idea of a multi-layered and "interconnected" meaning-making process should be part of what "everyone working within the field of game studies will be expected to know about" (Mäyrä, 2009).

To demonstrate this, I will first do some observations on the signification of *Street Fighter II* (1993) and then move to the analysis of the more complex content of the games "Brothers: A tale of Two Sons" (2013) and "Papers, Please" (2013). It is important to clarify, however, that this is not a "new theory" but only a different way to look at what we already know about digital games. Furthermore, and consequently, the core idea of this meaning-making process and its demonstration are not yet the result of a comprehensive theory and proven methodology but only the starting point of a "new" approach on the study of signification in digital games. The main goal of this paper is to share this perspective hoping to undertake much more significant steps in the future.

STREET FIGHTER II AS A BASIC MODEL OF SIGNIFICATION

Let's start by an, apparently, simple question: what does a game like *Street Fighters II* tells us? What kind of story? What kind of message? What meaning does it have? We know very well that this question is not simple at all and that its answer is far from being obvious. However, at a first and very naïve glance, we could tell that it's a game about fighting and about a competition between nations and martial arts. More than that, we can say that it is not just a game "about" martial arts but very positive towards them as they are the way for the characters to accomplish their narrative goals (love, vengeance, domination of the world etc.). These characters and the reasons for which they fight are consequently also an important part of the story and can convey some messages (they undeniably propose some values). But if we now ask us *how* it does "say" that, the question become more complex. Maybe we could say that the game tells this through the words in the booklet and in the ending cutscenes, but this would imply that the whole gameplay, all the fights that are the 90% of the experience, is kind of meaningless. And, of course, we cannot accept that.

So, let's try to give a different answer.

First of all, from a semiotic point of view, by looking at the different languages (music, pictures, words but also spaces) and aesthetics (the "style" of each languages) of the gameplay we can see that they all link to what we can call a "semantic core": some identical contents which refers to fight & nations (through dresses, places, songs, characters' names, moves' names, etc.) and that there are also links to other "texts" about fighting & competition (*Shonen* anime and 80's action-movie like *Bloodsport*) that are very positive towards some values (ex: self-determination).

Furthermore, from a narratological point of view, we will see that the general plot is not only relevant from a cultural and historical point of view (it is a mirror of the post-cold war situation) but that it triggers some *screenplay* and *frames* (Eco, 1979) thanks to which each fight is also a single story (the hero vs his friend, the hero vs his rivals, a man vs a beast) that opposes the different philosophy of each martial art (the steadiness of the karate vs the changeableness of free fighting) and that those fights tells us the *topos* of the path of the hero with failures and victories through perseverance. Even HUD elements like the *life bar* contributes to this narration by allowing us to make *inferential walks* (Eco, 1979), and of course the also the endings (Fassone, 2017) are fundamental. We can also have an original story with unconventional values with an evil protagonist, or something more usual by picking Ryu or Ken.

Lastly, from a ludonarrative perspective and by focusing on the interactive storytelling, we observe two things. First that the moveset and interactive possibilities of each characters define their narrative identity (we can see that also by a semantic analysis (D'Armenio, 2014)). Second, that the meaning of the "story" is also determined by choices of the player (characters, dresses) and by how he will play the game (by the way he will combine the possibilities given). Indeed, the narration of a game can be dramatically different in the case of a player that wins using all the most spectaculars moves and in another case with a player that wins with only low kicks. The same goes for a player that never loses and for one that will never reach stage 2.

So, we can easily see that the main theme of the martial art competition and everything about the identity and values of the characters is something actively produced during gameplay and that it is determined by the different languages, the aesthetics, the main narrative plot, intertextuality, the hypertextual structure and by all the possible actions. But is this all? Do we really play and enjoy *Street Fighter* because of stereotyped characters and events? Do we really find meaningfulness in our activity of playing this game only because of what we can witness this on the screen? Do the game mechanics have no role at all?

PLAYING THE MEANING THROUGH ACTIONS&COGNITIONS

Let's do a little mental experiment and try to imagine a different way to play *Street Fighters II*. The game is exactly the same, the only difference is that each button on our pad will trigger a sequence of many moves (like low kick + high punch + flip backward, etc.). So, we now have to press only a single button every ten seconds.

What happens?

Well, on the screen the game shown would not be very different, nor the main rules, however our *experience* of the game would change dramatically. Not only in the sense that it would probably be more boring but, and this is our most important statement, the whole meaning-experience of the game would change in relation of different actions and cognitive tasks required to play.

In fact, a video game like *Street Fighter* does not only simulates visually a fight nor tells the story of fights but it also produces a mental simulation of it by requiring a certain *performance*. The high rhythm of inputs (compared to a classical RPG), the need of combination and coordination, the short-timed inferences (compared to a strategy games), the technical failure risk (choosing the right actions is not enough) and the motor learning involved are all solid example of a "fighting mental state" or we could say of a "fighting metaphor" that cannot be irrelevant.

Moreover, there is a strong link between the game "narration" and its ludo-logical construction. Indeed, what does the general narration of the game tells us? It is about characters (the logical subjects) who must win a series of contests (object for the subject to get, or in other terms *positions* and *goals*) thanks to their skills (the *how to*). And if we look at the game as experience we will see that the fictional characters and the players are exactly in the same *actantial* (Greimas, 1970) situation: the competition "told" is first of all the competition played. Even the narrative values, like victory through perseverance, can only exist here as a virtuality realized through player's doing and have some meaningfulness exactly because they can be experienced by him.

So, from these few observations we can already see and say that the meaning-making process of this game is a question of interactions between different systems: the explicit semantic content of the game conveyed through linguistics and narrative mechanics, and the cognitive content conveyed through experiential and ludo-logical inferences. In other words, there is not a single meaning of a game shown/read and then another meaning of a game played with "abstract" meaning and feelings: it is only because we can play and feel the game in a specific way that we can fully interpret the narration, and it is only because of the explicit semantic and narrative content that the game played can be a deeply meaningful experience through its rules and mechanics.

This implying, therefore, that we can both analyze the cognitive aspects triggered by the gameplay in semantic values with narrative impact and that we can analyze the narration itself in terms of non-linguistics and non-narrative semantics experienced through the gameplay. Indeed, sensorimotor actions and cognitions required for playing are at the center of a "meaning web" because they can assume any semantic values through the interactions they both depends on and trigger; acting as isotopies that can ground content and are essential for the full understanding of the meaning. This way the sensorimotor actions and cognitions are also a "method through which players make sense of an in-game world" (Nitsche, 2008) and participate in fully interpreting the contents conveyed in the different layers.

There is therefore no "bottom-up" or "top-down" order, but the meaning is conveyed as in a circle through multi-parallel *paths* that intersect and converge toward gameplay that is the catalyst and hub of what we could call "interpretative processes" in a broad sense. And these same processes act as mediators and stabilizers of the content conveyed through very different systems. So, on one hand, even primitive actions (Lindegaard & Grodal, 2008, 70) (usually studied mainly in relation to usability or immersion through motor isomorphism) can act as signifiers through the cognitive tasks to which they are related and through their emotional effects. While on the other hand, all the game mechanics and the experiences felt by the players are themselves meaningful only because (and I rejoin here the Sicart critics to proceduralism (Sicart, 2011) grounded by the explicit semantic and actions shown as well as by the narrative structure and content.

This idea can find many evidences by looking at cognitive sciences (and at the philosophical background of those researches, like the works of Merleau Ponty (Dreyfus, 1996). In fact, already in the 80's some experiments showed how a same task produced a different neural activity when an action was involved (Varela & Thompson & Rosch, 1993, 147) while more recent studies in neuropsychology have shown how different feelings are involved while playing (Isbister, 2016). Also, the embodied theory showed "how thought (mind) and action (body) are deeply integrated and how they co-produce learning and reasoning" (Scott &Klemmer. & Hartmann & Takayama, 2006) and noted the importance of performance in cognitions also in digital interactions. Furthermore, some works in the game studies have already classified the different way in which this embodiment can occur and have an impact (Melcer & Isbister, 2016). Moreover, for the enactivist and SMT theory (Degenaar & O'Regan, 2015) there can be no cognition without actions and interactions, to the point where it is exactly the interaction with an environment that enact a world and that it is only through interactions that we can grasp and understand contents. Lastly, searchers like Lakoff and Johnson showed that "mental metaphors" are both born by our interactions and the only way by which we can understand our concepts and actions (Lakoff & Johnson, 1980). It is so generally accepted that actions and

interactions have a decisive role in cognition, representation and in the meaning-making process.

Also, gestalt scholars already eleven years ago noted how "Gameplay and narrative work together towards a common goal, a macro gestalt the player experiences during a game reading" (Douglas, 2007) and the constructivism theory goes in the same direction and has been often quoted as the epistemological fundaments of interactive storytelling (Lughi, 2015). And it is also around the idea of "semiotic interactionism" (Salvini & Dondoni, 2011) that psychology and semiotics found a common ground of work to face the problem of meaning. Indeed, the idea of meaning through constant mediation and interpretation (Paolucci, 2010) between different systems is the very soul of semiotics and expressed in the concept of *semiosis*. A concept that has been of it interest also for the ludologists that created from it the "ludosis" (Mäyrä, 2008, 19). Likewise, Grodal & Lindergaard (2008, 78) went very close to what we are claiming by their intuition of a possible relation between the main theme of a game and the consequences of different way to play it, talking about "aesthetics" effects .

Finally, even if this this perspective is strongly focused on the game played it wouldn't be in contrast with the narrative analysis, on the contrary it would prove what an important literary critic like Bakhtin (1984) already said: that *the meaning is not in the concept*. Indeed, this allow us a deeper perspective both on how narrative content can be conveyed in a specific way through playing and how the game as experience can be meaningful outside of the narrative and explicit content. In other words, it can explain why and in what terms "the game is message".

So, to sum up, it seems clear that playing must be intended as a fundamental part of meaning-making in games. Not only, as we already know (Zagalo, N. 2017), the gameplay can convey key emotional contents, but it can convey also different kinds of content through cognitive processes that will both be interpreted and act as interpretant. Playing is consequently the *cooperative* (Eco, 1979) *and quilting heart* of the digital text as it is both linked to and part of the semantics, the narration, the aesthetics, the simulation, the playfulness, the logical structure and the game mechanics. Playing is the very line of the magic circle: both inside and outside two different worlds and so enacting a third one where the game is lived as a meaningful experience susceptible of conveying specific messages through a continuum.

As a matter of fact, without all the other elements it would be impossible for the playing itself to have some semantic and narrative meaning (the playing characteristics of *Street Fighter* can be similar to those of games from other genres), but at the same time we see that modifying the gameplay will inevitably have a strong impact on signification. This is true both about the game explicit content and about the more "abstract" (*endured* Meschonnic, 1970) content. It's clear that, consequently, game design (which exactly consist in creating the conditions for cognitive and sensorimotor tasks to be done by a player in front of some explicit audiovisual representation) can be thought as a metaphorical guidance of the messages conveyed. Thus, if it is obvious for each one of us that there could be no meaning without some perceptive and cognitive capacities, what we are now seeing is that it is also the experience itself that has an important part in the meaning-making: meaning *is not something we passively grasp out of a game*, but something we actively *produce* by playing it through the "nontrivial effort" (Aarseth, 1997) that is characteristic of the ergodic texts that we call games.

This of course does not mean that there is no "literal meaning" (Eco, 1990) of explicit content (conveyed through words, pictures, music and events in digital games) nor that playing cannot convey abstract content unrelated to the main explicit narration. But this shows how any content can actively become meaningful through a unique core process. Besides, it must be noted that this aspect of the meaning-making related to the mental operations of a user can be compared to what some authors have done in literature: like Proust making its reader "work" to mentally organize the timeline of narration in a book *about* time (Bremond, 1973). That is why claims about the "content" of games can't be based only on what it is shown nor by the mechanics; indeed the whole screen is mainly a *cognitive prothesis* (Fraschini, 2002; Pecchinenda, 2003) that create a common point of view (a *self*, which is exactly having a stable point of view on the world (Varela & Thompson & Rosch, 1993, 105) and allow us to *be* into the game (from which the famous immersivity), act in it and *interpret* it.

So, with the addition of the experiential and cognitive dimensions, and by thinking of meaning in terms of interpretative production and interdependency, we now have a possible comprehensive general ground of signification in digital games. But this model must now be tested by looking at how complex meanings, socially and politically relevant, can be expressed.

FIRST CASE: *BROTHERS, A TALE OF TWO SONS*

In this first case analysis we are going to see how this game propose "brotherhood" as a value and gives a certain interpretation of this concept.

Let's begin by taking a quick look at the story: when a father falls sick his two sons go on a dangerous voyage to save his life by finding a miraculous water. During this journey they help each other to face many dangers and to help many creatures. At the end of this journey the older brother falls in love with a girl that turns out to be a monster and captures them. During the fight against it the older brother saves the little, but he dies. Then the younger makes it in time to save the father.

The story itself is good but not so special, and we can find in it also references to other famous tales (like *Jack and the Beanstalk*). But it is when we ask ourselves *how* the games tell this story that it becomes very interesting.

First, the language spoken by characters is not understandable as "words" and concepts, its main role is to convey the emotional states of characters. So, almost everything in this game is told by being shown: through gameplay and cutscenes. Here again we see how the interactive possibilities define the characters identities (May & Bizzocchi & Antle & Choo, 2015): one "weak and joyful" little brother and one "strong and serious" big brother. More than that it is the gameplay that requires the two brothers to cooperate for solving problems and progressing through to the story, and so we can say that it is the gameplay (Sim & Mitchell, 2017) that mainly *shows* the brotherhood between the two characters and that also propose it as a *value* (it's how the logical Subject can get his Object).

Yet, the gameplay does not convey this meaning alone but is based both on stereotypes and reinforced by the aesthetics which show us a physically "little" brothers and their different attitudes (for example by the different colors of the hairs). But the aesthetic of the game has also another important role: introducing the player to the genre of the *fable* with the style of the artworks and of the music. And we know that the main characteristic of a fable is exactly the presence of a moral.

So, to this point, we have seen how semantics, narration, gameplay, aesthetics, intertextuality and interactive design collaborates and contribute to the meaning-making of this game, proposing a (common) social value. However, we haven't said anything new. Furthermore, it's hard to prove that we have said something specific about digital games: even in non-interactive media each character is always also defined by its shown agency on the world and aesthetics (ex: the intertextuality and symbolic aspect of the look and moves of characters in *Naruto*).

But by looking at how the game asks us to play we can find something more interesting: a content that can be understood only by playing the game. In fact, the whole gameplay is based on a sensorimotor obstruction: the need to coordinate ourselves to do the same things with the opposites hands (and cerebral hemispheres) of a same body & mind. What we have here, in both cognitive and sensorimotor tasks, is precisely a metaphor and interpretation of brotherhood. Indeed, brothers are at the same time two but ones, unique and alike, opposite and similar. And the cognitive efforts to "coordinate" such a diversity for making it act as one is metaphorically a way to express both the value and difficulty of being brothers. It is very interesting to see that the content and message of "brotherhood" is far richer and complex by playing than it is by just looking at the gameplay and at the story. Furthermore, through the gameplay the story of the player's experience is one with the story of the game: his tasks and difficulties are the same of the brothers.

To reinforce even more both the brotherhood as effect of sense and as a (positive) content is the necessity to control both the characters at the same time and the presence of an over individual camera (third person from high) that act as a prothesis. This plays a fundamental role in "being" the brothers. Once again, here, we do not just "see" brotherhood but, in a certain sense, we experience it by playing the game and this is only through this experience that we can produce deeply meaningful interpretations of the story told. This also explains very well the psychological and emotional "trauma" that occurs when the gameplay changes at the end of the game. An impact that has been noted in other works (May & Bizzocchi & Antle & Choo, 2015). Lastly, it is very important to point out the irreducibility of interactions between different systems to convey a specific message. Indeed, nor the narrative theme of "brotherhood" nor the mechanics of controlling both character at the same time can be sufficient alone, some good example of this can be *The Adventures of Cookie and Cream* (2000) or *The World Ends with You (2007).*

So, we have seen here a first example of how complex meaning and content can be conveyed. But let's try to apply this perspective to another and more difficult case.

SECOND CASE ANALYSIS: *PAPERS, PLEASE*

This second case is not only more complex for its content but also because it may seem very hard to find a link between the message of the game and its gameplay.

The first problem is here to identify "a message" in a game with many different choices and endings. Does the game say that migration is good or bad? Does it say that countries should close theirs borders? Is it a critique of communism or of today's political situation? We can all have our opinion, however it's not easy to answer to these questions. Truth is that "*Papers, Please* does an admirable job of inviting players to critically reflect on many issues salient to migration" (Orme, 2017) but talking about a "message" or a specific content in terms of values (as in *Brothers*) is very difficult and may be the wrong way to approach a game like this.

However, it is very interesting to see that many studies about *Papers, please* often talks about the presence in this game of specific themes, such as the conditions of the working class and critics to governments. But when the authors try to explain how this game can do that, the analyses are done almost entirely from a narrative point of view. The only aspect noted about the gameplay is that "In positioning players as a border control inspector, forcing them to perform the tedious tasks that are performed by immigration officials every day, players identify with the lived realities of border inspection" (Orme, 2017).

Even in papers that try a different approach, for example talking about this game in terms of procedural rhetoric, we still see that the narrative aspect of the game is still the dominant part in the meaning-making. In fact, the "processes" are still explained in terms of understanding "the dynamics relationship between the countries and the bureaucratic procedures" (Lo Yun Ting, 2017).

And a main element of the meaning-making is supposed to be that "You will have to make some decisions that will affect the rest of the gameplay. These decisions […] correspond to the idea of possibility space and the idea of process of unfolding the values, arguments and ideas embedded in the game. And, the most important aspect of the process and possibility space is: they will influence us through our judgements, evaluations, experiences and interrogation to the real world" (Lo Yun Ting, 2017).
Here again it is interesting to see that the gameplay is not ignored but looked as an instrument of identification: "With repetition of the inspection check, you start to realize yourself doing the inspection without very much conscious of yourself in checking the passport or so. You sometimes even able to know what you do next step and less conscious on your body in playing the game. Throughout the game play, you gradually learn and master the skills in making faster and this skill becomes a habit inside the body the player. As player, we gradually become kind of the immigration inspector in the real life."

Of course, we are not arguing against the fact that those elements are fundamental. However, from our perspective, something is still missing.

First of all, the aesthetics have a fundamental role in the meaning, both because of the graphical style and because of the point of view. The very "dysphoric" (for which migrants seem "ugly") and "blurred" representation of human beings is of course very inherent to the topic of migration and social perception of migrants. Then we have simultaneously a third person view and a first-person view, which is once more very inherent to the content of the game because it exactly tells us both of migration as a general and over-individual (political-administrative) fact and as a very personal concern with each single human being having his own story and reasons.

Secondly, the game's rules have also a deep impact on meaning. Each migrant is at the same time a ludic-logical opponent of the player (they make him lose precious time, they can lie, they can make him lose the game) and a helper (each migrant correctly admitted or refused grants him money for him and his family). Here again we can see two important implications: migrants perceived as both an opportunity and a risk for countries, and the self-related perspective on migration (as a player we care for them mostly for our own survival).

Finally, there is the cognitive aspect of the play. In fact, let's ask ourselves: would any performance of any "tedious tasks" have the same result? Probably not. So, we must now look deeper into these tasks. What are they really?

These tasks can be categorized in:

- Perceptive (perception is an active, interconnected and interactive sensorimotor cognitive task (Varela & Thompson & Rosch, 1993) actions of inspection of human bodies

- Semantic searches related to nationalities (names of nations, symbols, colours, cities, etc.)

- Comparisons of identity related information (names, age, work, etc.)

- Visual control of a delimited space (looking for a possible terrorist attack)

- Fast reading and fast processing of informations

- Generic single input manipulation (we play the game with our hands as we use our computers for any common task)

And now let's ask ourselves: what is the "migration" issue about? The narrative aspect of the game focus mainly on socio-geo-political aspect, however from a philosophical and anthropological point of view it is also the problem of the *acknowledgement, acceptance and control of other human beings that we perceive as diverse and that force us into comparison.*

So, here again we can find many metaphors of the "narrative topic" in the gameplay: the narrative "critics" at the generic and over individual mechanics that regulate the migrants by fast processing them are present in the gameplay itself not only as a "visual simulation" but as a series of concrete acts needed to play. Even more, we see that migration as a topic is conveyed through the interaction between some "abstract" sensorimotor and cognitive activities (Inspection, Comparisons, Approval, Control, Searches) with encyclopaedic semantic layers (Identity, Cities, Nations) and some

rules that puts the player in a very singular and dysphoric state of mind (fear, stress, anxiety, suspicion).

And all this is interpreted through a complex point of view (both third and first person) that act as a mediation for the whole narrative content to be conveyed (through words, events and aesthetics) and it is thanks to all these connections that we can identify ourselves as "the inspector" interpreting as meaningful the "tedious tasks" of a gameplay that, through its mechanics, as much as through the narrative aspects, contribute itself to the full "content" of the game.

Consequently, as we have already seen for brotherhood, the content conveyed by playing is complementary to the narrative aspect. Paper's Please simulation is deeply meaningful because the inspector-like tasks that we need to carry on are related to the topic itself and have the capacity to determine the players' interpretations of all the elements both shown and played. That also explain very well the key role of many features of *Papers, please* that are absent in other "political" games such as *Floor 13 (1991)* in which even though the player must do likely tasks (sign orders, read reports, see polls, consult archives), and does it through a first-person view, the final sense of the game is drastically different.

CONCLUSIONS:

Although in its early stage, the two previous case studies are a first example of the applicability of the approach we are here proposing to make deeper analysis of the meaning-making in digital games. An approach that rely on the collaboration of diverse perspectives to face the diversity of games by focusing both on common meaning-making processes and on the way in which different elements of meaning on a single layer can participate and influence the others to convey complex messages.

From a theoretical point of view this approach is strongly based both on cognitive studies and the interpretative branch of semiotics, but not only. Indeed, as we have seen many disciplines can both justify and explain the possibility of a multi-layered meaning structure that allows interpretations and interconnections of *interdependent* contents and messages: from the simplest perception and interaction (primitive actions) to the more complex themes of a game conveyed both by the explicit content of the game and by the deep ludo-logical structure and its interactive core mechanics. Further discoveries in these fields will inevitably benefit this approach.

From a practical point of view, this approach requires three different steps (with the order of the first two being of no importance). First, it is necessary to look at each p-action, cognitive and perceptive tasks and mechanic of the game in the most possibly detailed way in order to find the cognitive metaphorical contents involved in a player actual gameplay. We have already seen an example in our analysis of *Papers, please* where we did not stop at the description of "tedious tasks" (which are already visual interpretations of other primitive actions involved). Secondly, it is necessary to do the opposite work and ignore the mechanics to focus only on the narration, on the actions represented (ludo-narrative level) and all the explicit semantics of the game (from background music to the font of written sentences). Lastly, the most important (and "innovative") part of the work is to look at the relationship between the different content conveyed on the multiple levels, this content being conveyed both through emotions, abstract concepts, experiential metaphors and much more. A last example of this final step could be found in Grodal's (2008, 78) enlightening example of *Ico* and looking also at the relation between the p-action's cognitive task "don't let go the button" and the emotional and narrative-verbal content connected to

"not letting go a person" represented as action on the screen and coherent with the main theme of the solitude.

This last step is fundamental both in not transforming the analysis in a personal interpretation and in not falling into the "trap" of believing that the meaning lives only in the p-actions for which *Elite beat agent* (2006) and *Trauma Center* (2006*)* could almost be the same game.

In conclusion, what this approach can reveal is not only what a game is about but how does it "talk" about something: from his inner poetics up to its ideological contents. On a more general level it can explain the meaning-making in digital games both in its specificity and from a not media-centered point of view but from a broader perspective on games *tout court.* And it does that without directly looking at narrative contents to justify this nor excluding narrative based games to take in consideration the abstract content. Furthermore, because of its focusing the meaning on the actions of the player and on his pragmatic experience and production of interpretations, this approach can be used to analyze the actual play and playfulness [83] involved in the game even when his doing actually goes against the original rules. Also, this approach gives even more social and cultural value to digital games that can be seen as unique very complex experiential objects rich of memories, values, and perspectives on the world.

However, this proposal also has its weaknesses and critical points.

First, some theoretical tensions are indeed present. For example, one could notice that there seems to be a problem in both relying in semiotics and on Grodal's approach that explicitly critic semiotics (2003, 129).   The answer lies in a common misconception: semiotic is not a discipline but rather a field (Eco, 1975) and so what Grodal criticize is only one possible application of semiotics. Another example could be the compresence of both a proceduralist way of thinking and at the same time agreeing with Sicart for his critics to proceduralism. This tension is however resolved both in noting that Sicart never denied the importance of proceduralism and also by our truly interdisciplinary approach for which the proceduralist analysis of the meaning is only one part of a bigger work. Then, on a more general level, one could ask how it would be possible to join a cognitivist like approach with other disciplines that are usually opposed to it, this especially considering previous debates like the one between Bordwell and Zizek. Answering to this would require an entire paper, but for now we will just say that this approach can be thought as an attempt to study the meaning on the basis of cognitive findings but looking at what is exactly between the cognitive processes and interpretations (Zizek, 2001). There are then at least six others possible big issues:

1) This is only the beginning of a research and many questions arise. Especially: is the cognitive aspect always meaningful? Can it be negative in some cases and in contrasts with the game's narration? Are they different types, levels and kinds of quilting? Indeed, not all games look based on quilting, from *Candy Crush* to *Beyond: Two Souls,* many titles could let us think that the "quilting" is an approach only useful for "indie" or "themed" games like The Stanley Parable, The Talos Principle, Brothers, Paper's Please, Fez, Braid.

2) Embodied theory, Enactivism, Interactionism and SMT are not the same thing (De Jaegher & Di Paolo, 2013) and they are multifaceted concept that can be problematic. We only talked here about a common "general perspective" on meaning, but a deeper and less metaphorical studies of cognitive sciences is needed.

3) Many could contest that there are no empirical proofs about some main ideas, like the fact that the meaning of *Street Fighter* would change if played differently. A theory based on "mental experiments" is indeed weak.

4) It could also be contested that our approach is strongly "philosophical" and "narratological". In fact, some statements are based on questions such as "what brotherhood is" or "what migration is about?". Both those answers and this approach could be contested. Moreover, it is by giving specific names to the cognitive operations that we linked the mechanics and the game's content, but different names ("keep pressing" vs "not let go" in *Ico*) could lead to different results.

5) Both the idea of finding a digital games specificity and of a unified perspective on meaning-making can be considered "chimeras". It may seem more reasonable to not think the meaning-making as a puzzled problem and to accept that "digital games" are just too different.

6) The "findings" of this kind of analysis could be considered "obvious" *a priori* as it is highly probable that on each different level the content conveyed will always be the same or at least related to a same main "theme".

Despite all this, the real weak points that can be contested are not enough to think that such a project has no possibility of reaching its (undoubtedly ambitious) goals. Moreover, if we look at many studies about meaning making we can see that scholars have and are actually already looking for these connections between the many aspects of games, with concept such as "ludonarrative dissonance" that are a perfect example of this. However, all this is presently being done without a theoretical framework, independently, and without relying on each other competences. Furthermore, our findings could be significant for game creators and so have an applicative design value. So, to conclude, I think that this approach should be given at least a chance even only for being an opportunity to truly co-op between disciplines.

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