Serious Game: just a question of posture?

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Abstract
This article explains the difference between a large variety of Serious Games and tries to propose a classification to understand this type of video games. We explore the connection between the goal of the game designer, the objective of the game and the posture of the player. Finally, we explore how we can create some serious game to make corporate communication or educative programme.

Introduction
Great numbers of Serious Games are proposed in various fields of application like health, army, education or communication... Facing this diversity, are we really in the presence of various categories of Serious Games or is it just a variety of fields of application? If this is the case, which are the elements being characterized by each of these categories and which is the part of marketing of each variety?

In the first part of this paper, we will introduce elements that characterize a Serious Game and thus index five big categories. In the second part we will estimate the relevance of these different categories and lead a reflection to see if transmitting a message by a Serious Game is just a choice of posture that the creator of the application or the mediator tries to get adopted by the user. In fact, in some special circumstances, the players, especially the children, don't have a direct access to Serious Game, but the game might be introduced by an adult, according to Vygotsky’s theory. For example, at school or in a youth center, the child does joint activities or mediated activities. (La Ville, 2005).

1 HOW TO CHARACTERIZE SERIOUS GAME?
In its article "From Visual Simulation to Virtual Reality to Games", Mike Zyda proposes the following definition for Serious game: “A mental contest, played with a computer in accordance with specific rules, that uses entertainment to further government or corporate training, education, health, public policy, and strategic communication objectives.” (p. 26) In other words, the vocation of Serious Game is to invite the user to interact with a data-processing application whose intention is to combine at the same time teaching, training, communication, or information aspects, with ludic mechanisms based on video game. The purpose of such an association is thus to give attractive shapes or plots (Game) to didactic contents (Serious).

Zyda indexes a broad range of the applications concerned with Serious Games as David Michael and Sande Chen do also in their book “Serious Games: Games that Educate, Train, and Inform” (2005). In this enumeration, it is important to raise a major distinction between the applicability concerned with "health", law and order, or engineering and the categories of intentions such as “Communication Strategy” or "Education". The fields of application are too many and too subjective to be able to build a resistant typology contrary to the categories of intention which are simpler to identify and to formalize.

We propose 5 categories to classify the Serious Game: Edutainment, Advergaming, Edumarket game, Political games, and Training and simulation games.

1.1 Edutainment
The ambition of an edutainment is to transmit knowledge or training by a ludic approach. The game “Auto junior” from the French multimedia magazine “Mobiciel” n°6 of October 1998, (editions Milan-Presse interactive) (playable on the website www.ja-games.com), invites the user to drive a car. The objective is to reach an open air cinema while respecting the Highway Code and being careful about speed. The game thus proposes a random series of tests (avoid an elk which crosses the road, not to cross a solid white line, stop at the halt sign…) which insist on a rule to respect. Each mistake is given an explanation and punishes the player by drawing points away from his driving license. The faster the player will drive, the more he will be exposed to the traffic accidents. We are facing a game whose scenario is made to give an educational message: to drive prudently by paying attention to the speed and to respect the Highway Code. This game is classified in the category of edutainment products.

This game’s production and realization constraints require to find an equilibrium between the “educative” and the “ludic” components. The game aspect can easily get the upper hand hiding all educative or informative aspect. In the same way, the too strong formative aspect brings the product closer to a quizz. The users are not taken in and they reject the product (Kellner, 2006)

Figure 1: Auto Junior (Editions Milan/Ja.Games – 1998)

In the line of this paradigm, the MIT and the University of Wisconsin joined to develop a research program named “Education Arcade” (http://www.educationarcade.org). The two terms

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"Education" and "Arcade" are put here together to emphasize the idea to conceive education systems built on great ludic principles.

1.2 Advergaming

"Ponkey Bong" from the website www.spirou.com, presents two characters, Parker and Badger, created by Cuadra and published by Dupuis Editions. In this video game, the player controls Parker and has to deliver his friend Badger. This one is attached on a rocket ready to take off! An angry site foreman, who looks like a gorilla, located at the top of a metal structure, throws barrels which roll along the various scales (fig.1). The gameplay of this game parodies "Donkey Kong" imagined by Shigeru Miyamoto (Nintendo) in 1981 (fig.2). The objective of "Ponkey Bong" is here to transform a game into a tool of communication: to make the children play with the two characters of comic strips. This type of Serious Game, called “advergaming”, is based on the “ ludic culture” of the players. The idea is to release them from the training of the game play so that they are focused on the peripheral elements. We are in the same situation as an add for children where peripheral elements become more important because the narrative structure is quickly taken in.

Figure 2: Ponkey Bong (Editions Dupuis/Ja.Games – 2002) and Donkey Kong (Nintendo/Miyamoto – 1981)

The video game “Sportura the game” http://www.sporturalthegame.nl/public/testrit.php (Nonoche.com, 2004) plunges the user into a race car game. The goal is to be the fastest.

Brougere, in “Jouer/Apprendre” defines ludic culture as “a combination of procedures which make game possible” (p 106). He writes about a “personal ludic heritage […] young adults remain marked, for some of them, by videogame which belongs to their culture, their story. They discovered it during childhood, but many of them kept it in their personal ludic heritage” (p 113). Brougere evokes the young adults audience but “that can be applied to all the players socialized through videogames practising and who would share perception and action habits coming from common ludic paradigms” (p 8).

![Figure 3: Sportura the game (Nonoche, 2004)](image)

The required reasoning is similar to a process largely used in the cinema, “the placement of products” (Galician, 2004). This term indicates the positioning of brands, logos or even products in the scenery of a videogame. In all the phases of play thus appears a Seiko watch and the road is strewn with posters pointing out this brand. The back number plate of the car is used to display the name of an automobile magazine. Lastly, on both sides of the game are posted the whole of the partners’ logos which allowed the production of this title (fig.3). The exact term used by the communication agencies to indicate the placement of products in a videogames is “in-game advertising”. This marketing concept can be pushed a little further and become interactive. In the MMORPG (Massively Multiplayer Online Role Playing Game) Everquest II, there is now an option to order true pizza pies to Pizza Hut Company online!

1.3 Edumarket games

This section gathers applications with an educational purpose, or at least applications aimed to make its users (especially children) sensitive to an educative message through video games. This different way of communication allows to change children’s sensitivity, in order to help them having a better understanding of social stakes. For example, these social stakes can be durable development, school orientation, labour market, humanitarian aid… Edumarket games are tools aimed to communicate on a video game

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1 Personal translation by authors
basis while integrating an educational aspect.

For example, in this section we can find the game called Food Force (www.food-force.com), released by the United Nations in 2005, freely downloadable on Internet, with country-specific translations (Italy, France, Poland, China, Japan,...), and which is intended to make children sensitive to humanitarian missions made by the United Nations in their daily fight against starvation. On the website, we can find a special area for teachers, in order to help them building teaching lessons aimed to strengthen children’s knowledge by complementary activities linked to the theme of this Serious Game.

1.4 Political games
In the first level of the video game "Darfur is Dying" (http://www.darfurisdying.com), the user is a child from Darfour who must go and seek water for his family. On his way, he crosses dead animals and must avoid being captured by the militia (fig.6).

The goal of this Serious Game is to denounce in a direct way the problems which currently strike Darfour. Gonzalo Frasca, a researcher at the Center for Computer Game Research of the IT University of Copenhagen, Denmark, calls this kind of video games "Political games".

![Figure 4: Food Force – Introduction](image1)

![Figure 5: Food Force – Example of game](image2)

![Figure 6: Darfur is Dying (MTV Networks On Campus Inc)](image3)

This title features six different mini-games, each representing a different aspect of the humanitarian aid, linked to a global objective: help a disaster victim area to recover. These games show the difficulties encountered by the different humanitarian workers. Each game is introduced and explained, including problems and game rules, by a 3D character seeming to come straight from a video game, such as Lara Croft.

When the mission is over, a short movie looking like a journalistic report shows real images of the tasks pictured in the game. When the global mission is over, the player can check his ranking on an online score table. The score table is of course intended to invite the player to improve his or her performance, but also helps to develop a reflexion about the community of players who devote themselves to "Food Force".

- By modifying the rules of the game: For instance, "Antiwar Game" (http://www.antiwargame.org) prevents the player from winning if this one adopts the tactics which lead to the victory in a traditional videogame: to develop a powerful deterrent force, or to pile up many resources... Here on the contrary, these strategies lead on to the defeat or a state of stagnation. To make progress,
military budgets will have to be replaced by social
development in the end.

✓ By transforming the graphics and sounds of the game,
following the example of advergaming. For example, the
patch "Velvet-Strike" (http://www.opensorcery.net/velvet-strike) allows players
to tag the walls of the Counter Strike FPS (First Personal
Shoot), with pacifist graffiti.

These two aspects are not exclusive. There are patches, which not
only modify the graphics or sounds of the game but also modify its
rules. That’s called Mods, abbreviation of Modifications. For
instance "Escape from Woomera" (http://escapefromwoomera.com) is a Mod added to "Half-Life", a futuristic FPS (Sierra
Studios/Valve Software), to transform it into a refugee camp called
Woomera which really exists today and which is located in the
south of Australia. The objective is to make the player sensitive to
the problems of the asylum seekers in Australia and to take a
critical look on the solutions applied by the government.

The website Sklunk which devotes a file to the diversion of the
videogames (http://www.sklunk.net/Detournez-the-plays-video)
indexes a whole of political games. It is striking to note that out of
about fifteen games presented, eleven denounce violence or war.
Knowing that many commercial titles mobilize this principle in the
gameplay, it is also a militant act to want to modify the structure of
it; we even think that it is a form of reductio ad absurdum and the
provocation which encourage to act.

1.5 Training and simulation games

The most famous Games in this section are “Sim city”, “The Sims”
and “Flight Simulator”. These applications allow the user to build
and look after a virtual city, a virtual family, or to fly virtual planes
based on real physical models.

The purpose here is not to win, but simply to have fun or to reach
some "user-generated objectives", as Frasca explained in the second
chapter of his thesis "Videogames of the oppressed: Videogames as
a means for critical thinking and debate". He first reminds us that
the Le Diberder Brothers define simulators as a virtual world,
where attention to detail is a major feature, and with no clear
objectives stated. The lack of objectives allows the user to switch as
he wants from a playing purpose, called "paidea" (according to
Roger Caillois's taxonomy) to a gaming purpose with precise rules,
named "ludus".

Frasca takes the example of "Flight Simulator" in which no
precise objectives are stated. The player can enjoy "free-flight"
(paidea) or decide to reach an imaginary aim such as flying under a
bridge without crashing himself (ludus). Frasca concludes with the
following: "The designer might suggest a set of rules, but the player
has always the final decision."

Figure 8: The Sims 2 (Maxis/EA)

Figure 9: Flight Simulator 2004 (Microsoft)

2 JUST A QUESTION OF POSTURE?

2.1 Reduction of the number of Serious Games’ categories

In the first part, we have identified five categories of Serious
Games: Edutainment, Advertainment, Edumarket game, Political
games and Training and simulation game. When we analyse
the nature of the first four categories, we realise that the method used to
conceive them always consists in diverting, not in an exclusive
manner, either the rules or the "cosmetics" as Chris Crawford says
(graphics and sounds) of the video games. We also notice that these
four categories share the same purpose that consists in delivering a
message. Finally, it seems that it's only the very nature of the
message that makes the difference between these first 4 categories.
At a formal point of view we are thus in front of the same
collection and the target is to deliver a didactic message or
information. Only the latest category of "Training and simulation
games" seems to be distinguished by relying exclusively on
simulations which are cut out to pass down a knowledge first of all,
leaving the player free to choose the way he wants to proceed.

It is also important to notice that simulation games such as the
other categories of Serious Games have a system of values. The
psychiatrist and doctor, Director of the Marmottant Hospital in
Paris, Marc Valleur denounces the Sims as having consumerist
values from North America. The richer one player is, the more
friends he has. Actually, being wealthy make the social activities as
well as the relationships easier between the actors in the game. But,
Will Wright, the author of the Sims has made a place for money
like Molière in The Miser. Money is a part of our Western Society
and has its own function. It makes relationship “smoother” between
people (Kauffman). It thus makes the exchange easier, even though
it "decreases and simplifies" the very nature of the relationships. Starting from this analysis, the questions show that a simulation could also be a support for the distribution of a message.

2.2 The message diffused by a simulation game
For Frasca, in Sim City, a simulation videogame, the user builds his own rules and objectives. For instance, to develop the largest, the smallest or the richest city but also to set fun challenges like deciding to make the most aesthetic city. However, we remain here exclusively within the framework of the game. For Genvo, to play is also a choice of posture that the user adopts. Indeed, by using Sim City, a trainer fixes the objectives in adequacy with a teaching progression, the player adopting a posture of learning, according to the context defined in the set objectives; for instance, to understand and to analyse the reactions of a population if the city does not have any shopping centre, or to observe the impact of road infrastructures ill adapted to the economic development of the city.

Thus, it is very simple for a user to switch from the paid to the ludus, but also from a ludic posture to a didactic posture with a simulation. As Brougex explains to us in "Jouer/Apprendre" by using the concept of "frame" developed by Goffman (p.45), to adopt a choice of posture depends on a context within which the use is (home, school, institution...), if the user is alone or not. All of these notions are also mentioned by Katie Salen and Eric Zimmerman and regrouped in one of their three "primary schemas" named "Culture" (p.102 to 105).

If simulation can take an educational function, it also can take an advergaming function. For that the game designer just has to introduce advertising posters or commercial products into Sim City. To introduce video reports on the trades of town planner, architect, mayor to each annual balance sheet for example would make it possible to bring an Edumarket game dimension to Sim City... Lastly, for the political aspect the game designer just have to add tags or political posters on the walls or to introduce situations of play around poverty (homelessness, unemployment, excessive debt). The incidence of the user’s political choices makes it possible to insufflate some not disguised criticisms on the policy of urbanization and economic development currently carried out by the rich countries. Board games like “Tiers Mondopoly” (Orcadess Editions) come from the same reflection.

Consequently, we can deduce that a simulation can diffuse all types of messages and objectives like video game does, according to the posture that the user chooses to adopt and to the ingredients (rules and design) which the game designer decides to introduce in the “world”.

2.3 Can the video games permit to train like simulations?
We have just seen that simulation can diffuse a message as well as the first four categories of Serious Games founded on videogames. At this step the added value of simulation would be, if compared to the video game, to offer a training to the user. This thus leads us to know if the video games can do the same.

The answer is obviously related to the posture that the user decides to adopt with his video game. If the video game is essentially an invitation with ludic, Michael Stora in his book "Guérir par le virtuel", explains to us how he uses video games as a therapeutic tool to cure a child’s behavioural troubles. It is here necessary to insist on the place that the adult occupies within the relation which is established between the child and the video game: He is engaged in order to modify the intention and the posture of the child player. In the same way, Shawn Williams tells us in his article « Learning the gaming way » (The Escapist, n° 59), how video game is used daily by his wife, who has a degenerative disease, to preserve her health. The video game thus offers the same properties as simulation.

Thus, we can conclude that Serious Games are composed of two main categories defined as follows:

- First Serious Games, based on simulation which present a “world”, with its ‘rules’ and where there is no objective imposed by the application.
- Second, Serious Games, based on video games which propose a “world”, with its “rules” and implemented objectives that the user has to reach.

To diffuse a message and to let the user the choice to adopt ludic, didactic or training posture are possible with the two categories that we have identified, the fields of application being similar.

2.4 To implement objectives, is it an added value to spread a message?
We have just identified in 2.C. that the difference between the two main categories of Serious Games lay only in the presence or not of objectives implemented in the application. Now, the question is to know if the presence of objectives laid down within an application constitutes an added value to spread a message or not.

An experiment carried out in September 2006, in collaboration with the Vortex team of the Toulouse Institute of Computer Search (IRIT) makes it possible to lay down some orientations for future research. Within the framework of the centenary celebration of the discovery of Garges’ cave, three multimedia devices were set up. The idea was to present to the public, through this numerical process, the inaccessible places or restricted areas in order to preserve the cave.

The first device is a simulation which invites the user to locate and raise the layout of various animals on the wall of the cave. The device is composed of a multimedia table on which a video is projected representing the wall of the cave where engravings illustrating the animals are tangle up. The user, thanks to a light pen, draws the contour of some animals which he has to locate first. To accompany him, an organizer guides his browsing and gives explanations (fig.10).

The second one is a traditional computer connected to a video projector which presents a simulation in three dimensions of the hands’ sanctuary. The user can look at each recess thanks to a spherical panoramic that he can move with a mouse. Here, an organizer is present too, to explain the vocation of the numerical set and to comment on the pictures (fig. 11).

The third one is a multimedia video game whose goal is to invite the player, in less than 3 minutes, to locate and draw with a mouse one animal’s contour on the same wall of the cave that is presented in the first numerical set. The effigy of the animal is permanently presented on screen. Here there is no organizer in charge of explaining the contents and the rule of the game (fig. 12). However, when an organizer was present, the users only questioned this one about how to play.
During the day, we interviewed three twelve-year old children, having used the three numerical sets, in order to collect their perceptions and their feelings. Concerning the first device, the spectacular dimension, to draw with a light pen, is arisen in an obvious way. Concerning the reception of information, the children are able to enumerate the animals that they had recalled. The children were fascinated by this imaginary and futuristic activity. The technology generated by itself a ludic and emotional dimension which resulted in a gathering around the set. Even some seniors have approached chairs. The performance of the volunteers who came to draw was a true show for them (fig. 13). The second set was mainly described by the explanations given by the organizer. The children explain the vocation of the device and the nature of the pictures displayed. The global intention and the organizer’s remarks are well restored. As for the multimedia video game which represented the third set, the children described it only with the ludic challenge which it proposed: "In this game, you have to recall the animal’s shape before it is too late!" The children neither evoked the name of the animals that they had to draw nor formulated questions or comments about the difficulties that the scientists had to face when they listed all the shapes on the real walls.

These three devices highlight that the simulation accompanied by an organizer more often invites the user to adopt at first a didactic posture. Conversely the game, especially without an organizer,
naturally invites the user to adopt a ludic posture. In this context, according to the way in which an organizer or a teacher wishes to diffuse his message, it directly influences the users’ posture. Thus the mediatised activity takes a different experiential dimension.

A short term memorizing is effective in the experiments one and two, which lets us think that the presence of a mediator reinforces the potential trainings around Serious Game. This assumption is under evaluation in our current search on Edumarket Games.

2.5 Beyond posture, some marketing aims to take into account

The challenge for the industrialists or the institutionalists who wish to use Serious Games as marketing strategy or communication tools, is to manage to offer products which take into account a child’s educative and also playful environment. The objective is then to manage to develop products corresponding to the cultural referents of the aimed market. To reach such a goal, it is necessary to go beyond the mere integration of its brand in the existing game play. A heavy adaptation of the original concept can’t be avoided because of a different sociocultural context. This process implies a complete transformation of the product by teams understanding as well the cultural stakes as the technological challenges linked to the game and to the brand. It is the only way for the industrialists to be able to settle on markets on a long-term basis and to avoid emergent resistances from consumers who are more and more aware and critical about new advertising strategies.

The implication of both the educative relation and the pleasure dimension corresponds to this wish to build a clear understandable message. This specificity reinforces the idea that the marketing action’s main line lies in the experiential dimension of consumption (Hetzal, 2002) and of use (Kline, Duer-Witheford, and De Peuter, 2003). Pleasure of telling and acting, confrontation to challenges, interactivity and narrative liberty are communication lines widely mobilized and prepared in advertising campaigns using serious games.

However there are limits in this search for efficiency and result in a communication policy. The attitude towards the brand aspect takes us back in a wider way to the consumer’s perception aspect. The individual mustn’t be trapped in market logic at the risk of creating forms of resistances. It is then necessary to build well-balanced pluri-media strategies that respect one of the major stakes of society today: provide the consumer with the “keys” of consumption practice and help him to understand things behind offer and the consequences of his choices, that is to say educate the individual to consumption. This doesn’t mean to inculcate him in unquestionable behaviour ways (such product rather than such other) but rather to help him to build a common reference of skills, that is to strengthen the resources that can be called up when he meets the product and its graphics. Thus Serious Game as a communication tool has an importance in diverting and educative principles, even if the posture choice remains unknown for the user in the end.

CONCLUSION

The reflexion in this article has allowed us to discover that there are two kinds of Serious Games: Those based on the Video Game proposing a target that the player has to obtain, and those based on simulation without a special aim. This fact lead us to consider that the different categories of Serious Games being indexed up till today don't find their foundation within a formal constitution, but are a part of a choice of position that the game tries to transmit to the player, by representing "a world" governed by rules as well as graphics and sounds in accordance; The player is always the one that decides about the position to adopt about using the Serious Game.

In order to get to know whether it is better to use an application with available aims, we consider for the moment that the player will at first appreciate to play if the targets are implemented but if they are not, he will get a didactic or training posture. The impact of the distribution of the message is probably depending on how this way is used at the beginning by the game designer or the mediator.

At last we have seen that above all the question of position has to be taken into account when you will construct a strategy of communication with Serious Games. This implies to give "keys" to the user to teach him how to apprehend a Serious Game better over time and to discover its performances.

In that way a Serious Game is a fundamental challenge within modern societies because it reveals ideological models that are hidden and it shows the ambitions of society. This dimension also asks the question about the responsibility of the creators of games because the activity is significant and has a lot of meanings.

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