Processing Play; Perceptions of Persuasion

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ABSTRACT
This is a theoretical position paper exploring a projecting of the paradigm of dual process modeling of perception onto the perception of "play". In this process, a model is proposed that sheds new light on the understanding of how "play" is understood, perceived and processed by the player. The paper concludes with a discussion on what implications the model can have on play analysis, game design and the understanding of persuasion through play, a.k.a. persuasive gaming, serious gaming, advergaming etc.

Author Keywords
Theory, Persuasive Gaming, Dual Process Modeling, Media Consumption, Play

INTRODUCTION

This is a position paper propositioning a model about how play is perceived and processed. It examines the dual-process theories of social psychology [3,5,6,7,8,12,16,20], in particular the heuristic-systematic Model [5,6,7,8] to find to what extent that dual-process theory can increase the understanding of how perceivers think about the play situation in general; and the persuasive-game play experience in particular.

Games are a physical and mental artefact; play is a state of mind surrounding and related to the artefact of a game. The new proposed model takes into account the rise of play emanating in the players´ mind, when approaching the game.

The point of departure is that we live in a media cluttered society [22, 27], which negatively impacts the efficacy of all forms of persuasive messaging, as people in their capacity of target groups put up filters against persuasive communications. Also as Stenros, Montola & Mäyrä [26] has observed, the dichotomy of play/serious, and leisure-time/work-hours that has defined perceptions of the rhythm of daily life since industrialization is becoming less and less naturally given. Cross media experiences such as for example reality-TV, and "Lonelygirl15" challenges that dichotomy of ordinary versus play, with play entering into the domain of the ordinary.

Such a development has an impact on advertising, and other forms of persuasive communication, to the degree in which those domains are entering into the domain of the playful [14, 27]. That underlies a need for an approach that brings together the domains of play and persuasive design, as the model presented in this paper does.

While activism such as adbusting [15] and Space Hijacking [25] plays with advertising and persuasive communications, so does advertising and persuasive communications play with the public by appropriating play to the intrinsically goal oriented activity of advertising and persuasive communications.

When play and advertising and persuasive communications are on gradual conjunction with each other, then playfulness becomes the state of mind sought after by the advertising strategist.

However; even if much is known about how persuasion is perceived, and some is known of playfulness is perceived, little is known of what happens in the mind of the perceiver when playfulness and persuasion blend in one experience.

Should such a state of mind be understood, such understanding would go some way towards guiding a designer of advertising and persuasive communications, towards more persuasively efficient productions.

However; measuring the mind-state of play is notoriously difficult but dual process cogitation can be measured [16], so one approach to measure play and playfulness may be through the impression play makes on dual process cogitation. To clarify, it may not be certain that the state of play *is* in itself a valid measure of modes of dual-process cogitation.

It is more likely that the state of play might make an impact on the dual-process cogitation; that can be measured, versus non-players and so we get a secondary measure of play through the impression play has made on dual process cogitation.

Such a measure may not be the end-all to the issue of measuring play, but it could be a valid step on the way to anchoring measures of the state of play.

THE MAKING OF PLAYFULNESS

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A player that plays a game goes through a number of cognitive and practical motions before even starting to play the game. Those motions can be influenced in part by the game design, made by the designer, and in part by the category and character of the game. However category and character of the game is a subjective measure individual for each player-soon-to-be [22]. Both factors impact the cognitive motions the player-soon-to-be goes through before play has started, the extrinsic ones (game design) and intrinsic ones (categorization [22]). The sum of those motions are the initialization of the play-state of mind.

Inspired by Goffman's´ concept of "keying up" Stenros, Montola & Mäyrä state that Goffmans´ concept can be applied to a player moving between a state of play and a state of the ordinary (un-play) [26]. That can also be a way to formulate a description of the initialization of the play-state of mind.

For this paper the terms "play" and "game" refer to the two intertwined, but still different terms in the seminal work where Roger Caillois [4] defined "*Paida*" - free play and "*Ludus"* – formal play, as the endpoints on a scale. One point on the scale is "Ludus" an organized "game-ish" form of play, which defines winners and losers. Ludus is not to be read as being a game. Rather, Ludus is to be seen as the play emanating from a formalized and rather restrictive form of a game. Paidia; the opposite end of the scale in relation to Ludus is a freer form of play that does not define any winners or losers and is more self-reliant than it relies on the rules imposed by the game.

The key distinction separating Paida from Ludus is the element of structuring, categorization and acceptance of the system of rules [4]. Rules are not an actual part of the play; instead since rules shape play, rules are an antecedent to play. Since rules define an action as Ludus and rules shape play, rules are an element of both play and game design, and can be discussed as such, e.g. [2,4,10,11,18,24].

THE DUAL PROCESS MODEL

The fundament for the dual process model is to that there are two ways in which humans perceive a situation. When we have a high need for confidence in our understanding of a situation humans process the perception of such a situation through logical and conscious thinking based on a desire to take in and understand the full spectrum of characteristics of that situation This is what is called the *systematic Route,* running from first perception of the situation, through systematic processing, to decision-making about what to do and feel next.

In all other cases when both the need for careful understanding and evaluation of a situation is less pressing; the processing of a situation is done through the *heuristic Route*. In those cases humans are not bothered to pay attention to any objective merits of a situation; instead we perceive the situation and pass judgement on it through various surface characteristics previously stored in memory.

The systematic route is more cognitively strenuous, so people will tend to use the systematic route only when the issue at hand has a modicum of personal relevance. Measured over time, the heuristic route to perceptions, decisions and judgements, will be the route most commonly taken, if no other reason than at least for reasons of cognitive economy.

The system of the heuristic and systematic judgements is not a bipolar binary situation. It is a fluid continuum described in the *"sufficiency principle"*-construct of the model. The sufficiency principle states that in the human mind there is an ever ongoing tension between on the one hand, the tendency towards cognitive economy, pushing the mind towards heuristic processing and on the other hand the wish to feel safe in ones´ perceptions and judgements of situations, which pushes the mind towards systematic processing [5,6,7,8].

For any given judgement based on a perception of a situation, -whether play situation or non-play situation - the sufficiency principle proposes a continuum of judgemental confidence along which two critical points lie; one designating perceivers´ *level of actual confidence*; the other indicating the *level of desired confidence*. Perceivers will strive to have the two points meet. [5,6,7,8].

When studying how people perceive persuasive communications and situations the dual-process model has found considerable use in analyzing and predicting the effects of persuasive messages. A large number of studies have been made validating the dual process model on and through studies of advertising [3,16], but to the authors´ knowledge no study has been made on dual process modelling of the play situation, whether it be play engendered by a persuasive game or play engendered by a pure entertainment game.

Like the terms Paida and Ludus define a continuum between free play and formal play, the sufficiency principle of the heuristic-systematic model defines a continuum between systematic processing and heuristic processing.

In the context of dual process models, it suffices to say that at the moment game driven play commences, the game player has invested a not insignificant amount of cognitive energy learning the *rules*. That is a task that can be considerably eased by cognitive mechanisms of category considerations and heuristics; which can be a

partial explanation for the popularity of genre games [23]. But still, before a (persuasive) game has even started, the player (message recipient) has invested cognitive energy *learning the rules* .That process that can be postulated to have an impact on the points of confidence on the sufficiency scale.

THE PROPOSED MODEL CHAPTER 1: – *PERCEPTIONS OF PLAY*

As mentioned no study has so far answered how the permanent tension between the level of actual confidence and the level of desired confidence; when induced by play impacts the processing of the play situation, and by extension to the processing of the game-induced persuasion in persuasive games. This paper initiates such a study.

Both the sufficiency principle of the heuristic-systematic model and Caillois´s conceptual opposites of "Paida" and "Ludus" can be conceptualized as sliding scales. That is a quality that can be used to postulate a diagram with the sufficiency Principle on for example the X-axis, and the Paida-and-Ludus scale on the Y-axis. The result would be fig. 1.

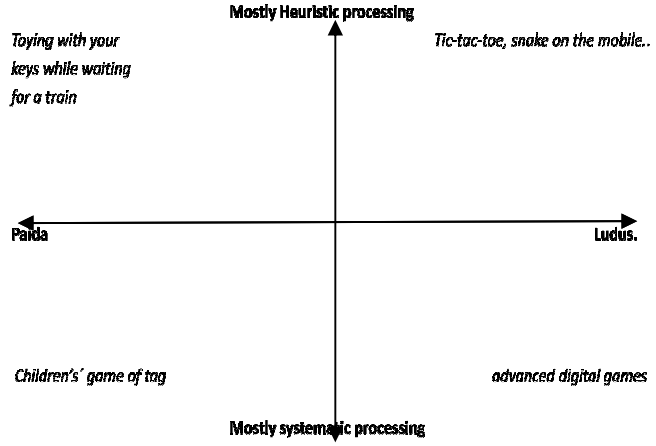


Fig. 1; the heuristic-systematic model/Caillois diagram:

To flesh out the results a bit, one instance of each position is plotted into fig 1.

In the diagrams´ upper left hand corner of "Paida+heuristic processing", fits actions that are playful and unorganized, spontaneous, freeform in every way. These actions would also be actions that are well known, and considered to be of little importance, with correspondingly low points of confidence on the sufficiency scale. An example matching this whole configuration of qualities could be for example toying with your keys while waiting for a plane or a bus.

In the diagrams´ upper right hand corner of "Ludus + heuristic processing" is fitted actions that are organized, performed while subjecting to rules, very much playing a formalized game, but still actions that are well known, considered to be of little importance and accordingly defined by an easy match between [a low] desired level of confidence and actual confidence. Such actions could be playing an archetypical while still strongly rule bound game as e.g. Tic-tac-toe, or playing Snake on a mobile phone.

In the diagrams´ lower left hand corner of "Paida+systematic processing", is fitted actions that are absorbing, that require considerable amounts of judgements based on the objective qualities of a any instant situation, while still being playful and unorganized, spontaneous, and freeform in every way. An example could be children playing a game of "tag".

The final quadrant of the diagram in fig.1 , the bottom right hand corner of "Ludus+systematic processing" is the quadrant where can be fitted activities that are absorbing, that require considerable amounts of judgements based on the objective qualities of any instant situation and also organized, done while subjecting to rules and very much playing a game. This is where we find the prime-brand digital games of today, games that have computer assisted rule keeping systems, enhancing the quality of subjecting the player to the rules of the system, and also rules that are so intricate that they can and must engender considerable amounts of thought. If a dimension of novelty is added to into the mix of qualities engendering effortful and conscious thought (this since it has been hypothesized that novelty will have to engender thought [23]) then pervasive games can be found here in this quadrant.

What we have found find is that the well researched sufficiency principle of the heuristic-systematic model of social psychology and the somewhat less researched Paida and Ludus continuum of Caillois´ play theory can be mapped onto each other.

That admittedly somewhat abstract finding opens up for a play theory that is both grounded in the field of dual process theory and can be mapped onto game design, bridging the two.

Just to clarify; Fig 1 shows the concept of the play activities in a Platonian ideal state A playing individuals' growing degree of skill would move a play activity along the sufficiency scale, from systematic to heuristic, the significance of which is to follow.

The factor of the admittedly rather abstract notion of "*degree of Ludus/Paida*" on the scale in fig 1 can be dealt with and concretized by baking and introducing the construct of; "*subjectively perceived complexity of a game*".

That construct consists of the degree of complexity of rules of the game + any subjectively perceived quality of novelty of the game [23]; both are qualities that can be postulated to lower the perceived level of confidence in the play situation and henceforth heighten the need for confidence-in-judgements, in the terms of the sufficiency scale. If that is put into a diagram, then it can be illustrated as in fig 2:

The diagonal line in fig 2 shows, that the less a game is subjectively perceived as complex *(= little need for confidence-in-judgement on the sufficiency scale=the drive towards cognitive economy wins),* the more the play is going to be processed heuristically. And conversely the more challenging the game is subjectively perceived to be, *(= a high need for confidence-in-judgement on the Sufficiency scale=the drive towards confidence-in-judgement wins over the drive towards cognitive economy)* the more the player is going be driven into systematic processing.

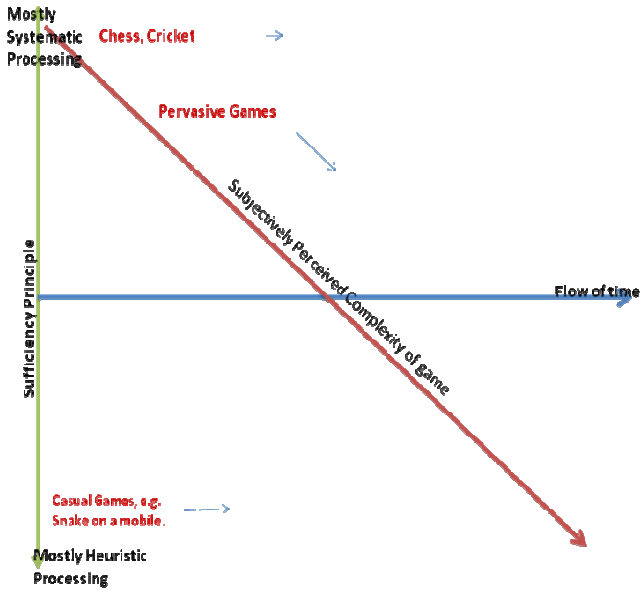


Fig. 2; the sufficiency/complexity diagram:

This relationship can support both evaluation and design, e.g. a game that immensely complex (e.g. in the author´s opinion *Cricket*), can be postulated to have a larger degree of dedicated fans than casual fans.

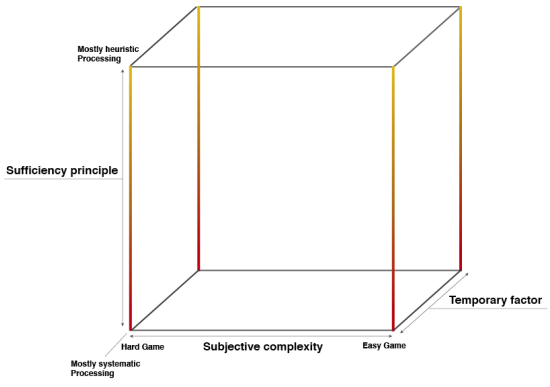
At this level of concretion a relationship starts to appear. A relationship stating that; the more a game is subjectively considered complex *[=Ludus + degree of novelty]*,-> the more the experience of playing it will be processed according to the systematic Processing´ of the heuristic-systematic model, with the following consequences for categorization [23] and the following retention [5,6,7,8] of the perception of the play experience.

This leads up to the prediction that:

a) The more a game is subjectively considered complex, the more the perceptions of the experience of playing it will be formed according to the systematic mode of processing. This since the challenge of learning the rules, and understanding the category of the game will lead to a heightened point of equilibrium on the sufficiency scale.
b) A player approaching a game will go through a process of first systematic processing then, depending on the subjectively experienced complexity of the game, gradually raise the point of sufficiency on the sufficiency scale, in order to accommodate the learning of the rules, and then, after having learnt the rules, recede on the sufficiency scale to more heuristic processing, as the rules are learned and for example a modicum of "flow" [9] or similar concept takes over.

These predictions can be moulded into a model with subjectively perceived complexity on the X-axis, the sufficiency Principle on the Y-axis and temporal factor on the z-axis. The result would be as in fig.3

Fig. 3; the sufficiency principle/time-factor diagram:



So far this model can give;

- Indications to for example improved product development of playful experiences, by linking game *complexity+ novelty*, and degree of usage, to the modes of processing and retention as measured by the heuristic-systematic model.

- Theoretical Expansion of the heuristic-systematic model by linking it to perceptions of play, engendered by game products.

THE PROPOSED MODEL CHAPTER 2:–*PERSUASION IN PLAY*

The roots of the heuristic-systematic model lie in persuasive-message design research. Most of the heuristic-systematic model has been developed around how different designs of messages are perceived, [3, 16]. To fully achieve the theoretical development-potential of viewing games through the perspective of the heuristic-systematic model, it is therefore necessary to add a dimension of game-induced persuasion to the new proposed model.

Adding a dimension of game-induced persuasion to the proposed model will tell us not only how the play experience is perceived but also how the context of the play experience will be processed by the player.

When that context is advertising or some other form of; communication-designed-for persuasive-intents then adding such a dimension of game-induced persuasion to the model will tell us how that advertising or communication-designed-for persuasive-intent will be processed thereby bridging the divide between the domain of the dual process modelling and the domain of play analysis.

The Z-axis; the persuasion axis

Worth noting at this point before adding in persuasion to the model is that the element of persuasion in a persuasive game can take many shapes for review see [28]. The topic of mapping aspects of game-induced persuasion has also been touched upon by Winkler & Buckner [32], and Zeller [34]. Wise et al, [33] have launched the idea of topical relevance, and have found a covariance between topics of a persuasive game and topics of the persuasion.

Topical relevance can go some of the way towards being a basis for the persuasion axis in the expanded model. What is needed in order to fully build the Z-axis of the model though, is to view the relationship between persuasion and game as a sliding scale. On one side of the scale are cases where the persuasion is incidental to the play induced by the rule structure of the game, hence likely to lead to heuristic processing. On the other side of the scale are cases where the persuasion is systemic to the play induced by the rule structure of the game, and henceforth co- processed with the rules of the game i.e. leading to systematic processing.

To clarify on the one end of the scale, e.g. dynamically inserted in-game advertising can be found, on the other end is found games where persuasive message and game are one, e.g. Conqwest [17], Rexplorer [31], Frequency 1550 [21] Such a system has been presented; [28], which can serve as a base for an axis of persuasion on the new proposed model.

In the previous we have seen that there can be a connection between the subjectively perceived complexity of a game and the balancing points of the sufficiency principle [fig 3]. By collapsing flow of time into the construct of subjectively perceived complexity of game, and instead adding in the construct of the sliding scale of; degree of conjunction of message and game, a new cube diagram can be drawn up postulating how the sufficiency principle, the subjectively perceived degree of game complexity and novelty, and the conjunction of message and integration [28] relate to each other in a new model.

PRESENTATION OF THE PROPOSED MODEL

Here is presented not only the final model, also some examples will be plotted onto it, to illustrate the concept.

The cube diagram has three axises:

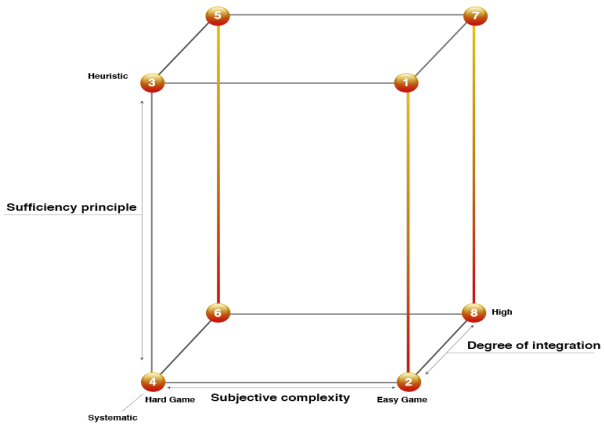


Fig.3 The proposed model; with the eight extreme ends numbered

- The X-axis is still the subjectively perceived complexity of the game; and the following

impact on perception and retention of the play – experience, as mapped out by the tradition of dual-process modelling [the Y-axis].

- The Y-axis is still the sufficiency principle of the heuristic-systematic model showing the character and degree of processing of the play situation.
- The Z-axis is now instead the degree of integration of message and play [28], showing if the processing [Y-axis] what of it there may be, [X-axis], is devoted towards the message or the game.

A cube has eight corner points that define the extreme ends of the cube. In the diagram the eight extreme ends would be as follows:

Corner point 1*("Casual coffee break corner")*; Y=Little effort needed to reach sufficiency + X=little game complexity and novelty + Z=low integration.

For example: "*Tropicana Smash*" [29], postulated outcome; heuristic processing of play, heuristic processing of in-game message, and substantial potential of separate processing of game and message, due to the ease of playing the game, and the incidental character of the message.

Corner point 2; Y= *("Well known but tough")* Considerable effort needed to reach sufficiency + X=little game complexity and novelty + Z=low integration.

For example: the levels of Counter strike Condition Zero that contain advertising; postulated outcome; systematic processing of play, due to the immersive nature of the game, heuristic processing of in-game message, and high potential of separate processing of game and message, due to immersive nature of the game and the incidental character of the in-game messages.

Corner point 3; Y= *("New & Casual")* Little effort needed to reach sufficiency + X=high game complexity and novelty + Z=low integration

For Example; the Facebook game "Mafia Wars" postulated outcome; heuristic processing of play, due to the casual nature of the game context, heuristic processing of in-game message, and substantial potential of separate processing of game and message, due to the incidental character of the persuasive messaging.

Corner point 4; Y=Considerable effort needed to reach sufficiency + X=high game complexity and novelty+ Z=low integration

For Example product placements in a pervasive game, postulated outcome; systematic processing of play, heuristic processing of in-game message, and potential of separate processing of game and message, due to the complexity and novelty of playing the game, and the incidental character of the message.

Corner point 5 *("Soft news")* ; Y= Little effort needed to reach sufficiency + X=high game complexity and novelty + Z=high integration

For Example Frequency 1550 [21] or Rexplorer [31]; while both are serious games that are fully integrated into *being* their messages,[Z-factor] they both *appear* to have a casualness and ease of play that despite their novelty [Y-factor], therefore can be postulated to not cause a heightened need for confidence on the sufficiency scale. So systematic processing of play, systematic processing of in-game message, and little potential of separate processing of game and message, due to the ease of playing the game, and the integrated character of the message.

Corner point 6; Y= *("Revolutionary Action")* Considerable effort needed to reach sufficiency + X=high game complexity and novelty + Z=high integration

For example; Power Agent, [13] Power Explorer [1], Conqwest [17], all persuasive games that does impact relations and/or cause heightened levels of excitement; postulated outcome; systematic processing of play, systematic processing of in-game message, and little potential of separate processing of game and message, due to the ease of complexity and novelty of playing the game, and the integrated character of the message.

Corner point 7; Y= Little effort needed to reach sufficiency + X=little game complexity and novelty + Z=high integration

For Example "Volvo –Strongest Truck" [30] postulated outcome; heuristic processing of play, systematic processing of in-game message, and little potential of separate processing of game and message, due to the ease of playing the game, and the integrated character of the message.

Corner point 8; Y=Considerable effort needed to reach sufficiency + X=little game complexity and novelty + Z=high integration

For example Disney "Virtual Magic Kingdom"; or the Pirates of Caribbean MMORPG, postulated outcome; systematic processing of play, systematic processing of in-game message and little potential of separate processing of game and message, due to the ease of immersing in the game, and the integrated character of the message.

CONCLUSION & IMPACT

This proposed new model is a map merging the domains where dual-process modeling has explained and predicted how perceptions of situations and experiences are

perceived; and the domains of play theory and game design.

This map has so far only been theoretically tested, and is in need of empirical validation. Still drawing a model such as this one has a value in that it brings thought from a new area into game design.

Drawing a map like this is an addition also to dual process modelling since that paradigm is taken into a domain where it has not previously been applied, which generates hypotheses that can be supported or rejected in fieldwork,, and increases the explanatory power of dual process modelling by taking it into the domain of the ludic. In that processes the play-experience designer gains insight into how the play experience is perceived and processed and what the place of the "play"-induced situational perceptions has in a marketing strategy.

For the practising game- and event designer, applying dual process modelling to the analysis of the design of playful products is worthwhile, since doing so will give an understanding of how the experience is perceived, partly due to the intrinsic qualities of the ludic product, partly due to the qualities the designer chooses tho give the product.

FURTHER RESEARCH

As mentioned this map has so far only been theoretically tested, and is in need of empirical validation. Such work is underway, primarily as prototype-based field experimentation, where constructs and items that have been validated in the field of dual-process modeling will be brought into the domain of the ludic.

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