Online Casinos: The Addiction Under Control

Role of Web 2.0 and re-documentarisation.

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Abstract—**In this work, we will consider how to design and implement tools or Information System based and enriched by a semantic search engines to the forums in the world of online gambling (articles, tutorials, etc.) supporting both textual and semantic expressions. On the basis of this new approach, based on neuro-economic field, we will look on addiction using neuroscience and game theory in order to construct an efficient Information System that takes into account the expectations and attitudes of players.**

Keywords-online; gambling; addiction; neuroeconomy; game theory; information system.

I. INTRODUCTION

For a long time the game became a regular and acceptable part of our society. For most people, gambling is a social activity that is fun and entertaining. Besides the casino, companies insist on this aspect to indicate that this is primarily a leisure activity. But for others, gambling problem cause a real addiction phenomenon similar to drugs: they become uncontrollable and the game is no longer a choice for them [1]. Studies on the game take into account gambling behavior including those conducted by the casino companies. Recently a study of gambling problem in France shows clearly that this problem is growing, with more than 600 000 players may be considered as presenting a risk of addiction or considered as addict [2].

The online game is a new element in our modern society, creating a new type of players and new audiences. The challenge today is to consider the broad issue of addiction to online gamers and bypass techniques possible to ban it. It is now quite possible to manage the technical aspect of changing IP address or credit card during elicitation for gambling anonymous IP addresses to be managed by operators. The issue of access of online gaming raises new questions that are less marked for classical casino.

We will see in this paper that we can bring in new sight on addiction problem using neuroscience approach and how to design a new scheme in re-documentarisation of forums that permit to detect an addictive player and to orient him to a medical space, where his problem can be treated.

II. THE ADDICTION PHENOMENON

The addiction to gambling has always existed. It has been described by writers such as Dostoïevski in "The Player" [3]. This problem affects the mental health of some players [4]. It has been studied in some U.S. cities that focus on spaces for whose playing become an important issue for residents [5]. Gambling problems often co-occur with mental health problems, chemical dependency with drug use and of course this affects the family, generating legal and financial problems. This can lead to suicidal behavior with acting out often observed especially when the player has lost all hope of settling the quagmire in which he began by referring to the phenomenon mentioned above.

The behavior of these so-called addictive games players was the subject of several sociological studies, both in behavioral terms [6] and from few years the contribution of neuroscience [7]. Several studies on psychological factors in a rational point of view of addiction exist in the literature [8].

The question of how to handle this problem is essential, we believe that to understand the path of decision, we should look to the issue in terms of neuroscience or neuro-economics, not only in psychological terms.

Thus, the problem arises from the classification of the addiction. Look so far where are focused the addiction, our society consider that it is mainly clinical, although studied in a particular context. It should be noted that the factor game can also be cultural, social or ethnic like in Chinese or Jewish communities [9]. However no study shows the prevalence of gambling addiction except in a population of a certain socio-economic with a lowest wages where research shows sometimes the extreme behaviors, leading to games to match with words addictive behavior.

The reasons why people play to game and why they can becomes addict in general are poorly identified. They can be numerous and varied [10]. Several ideas were discussed, as a social acceptance within a group, the enrichment, a painful event in the life that lead to emotions such as anger, depression, anxiety attacks [11], the desire to test his luck in the game and the excitement of such gaming experience motivated by reward and highlighting the role of dopamine [12].

In general, it seems that the main reason that pushes the people to play, is the desire to win and the denial of loss. The gain is considered as a success, corresponding to the development of self-esteem and recognition by others [13]. To encourage the people to play, the barrier of the loss is now filled by some online operators with an offer of free play at first to lead the player into the game space [14].

Presumably some games are popular because they are based on socialization, real or virtual like for the poker free online website Zynga [15]. In addition, poker is largely diffused in the broadcast on several television stations, ant it suffers a major craze, leading to highly addictive attitudes. The addiction to poker is very specific. It can be considered as dangerous because the game can be considered by the players as a rational game; the success depends therefore from the capacity of players and less from chance.

III.   NEW GAME MODALITIES FOR NEW ONLINE PLAYERS

The spectacular development of Internet and mobile telephony has accompanied the new forms of online gambling. Many video games are evolving in the "network" space. The MMORPG (Massive Multiplayer Online Role Playing Game) a networking player system, with significant numbers of players, can now collect up to several million participants. For most of them, these games usually require expensive subscriptions. Mobile telephony also facilitates the appearance of no new quizzes via SMS.

This type of contest mainly aimed to the youngest, offering prize money, new forms of gambling and other subscriptions and downloads dramatically increase the risk of negative consequences (costs, isolation, disinvestment of daily living) for the affected population: adolescents and young adults and large consumers of new technologies [16].

The family aspect can play an important role in the emergence, development and maintenance of the pathology of the game [17]. It is the same on the social learning model, acceptance of the game at the social level, leading the player to understand the game as a normal social activity as it is approved by the legal system.

The attitude of the player as an individual is marked by the traditional social behavior through learning, modeling and maintenance of socially acceptable behaviors and attitudes. The family can be the basis of the driving game, since children often play cards with the family to indicate its acceptance as a normal social activity or when they encouraged to play with other kids [17].

The genetic factors were studied and showing the existence of such a phenomenon of addiction situations with twins. A detailed study of identical twins living together or separated was conducted on 155 twins [18]. However, this study leaves out some aspects that can influence the behavior of players due to the environment of the players or their personalities.

The sociological aspect is the overriding factor. Indeed, in the social model the player tends to enhance the game, because it is less complex and could bring a reward, social and financial value in the gain.

A player will have a form of recognition through his player activity by operators in a form of marketing strategy.

This sociological aspect of escape from the complexity of the social model contributes significantly to the pathology of the game [19].

There is now a neuroscientific approach to the phenomenon of addiction, which encourages new explanations. Indeed, several authors have identified this approach that appears to be an interesting way for understanding the phenomenon of addiction [20].

IV.   NEUROSCIENCE, GAME THEORY AND DECISION CHOICE

This approach can help to renew the study of the issue of addiction. First neuroscience has made considerable progress with brain imaging. Until now the traditional approach treated human behaviors by game theory of Von Neumann and Morgenstern [21] revisited by J. Nash [22].

Indeed, players can easily understand that they are in a situation of asymmetric information and a non-cooperative game. However the player is master of his choice which tends to maximize its usefulness in the game. This utility is either an economic or the well-being.

The second category does not fall within the scope of this investigation. This is a customer, also sought by the operators of casinos coming to play with the primary objective of leisure. The first type of clientele would be subject to the risk of addiction because the main objective is the gain factor or optimization of utility. It is so ironic that this customer led to addictive client because the loss does not seem to be a hindrance to the game

Why do players become addictive even though they are so inconsiderate? In general, in the economic model of the individual player, the choices are for most of them rational. The concept of rationality was originally developed by Von Neumann and Morgenstern.

This first model was useful to explain the economic and social situation at some point although the model assumes a perfect environment result from the theory of general equilibrium. This environment requires a perfect symmetry of information system and cooperation between agents.

Indeed, in economy of goods or services, or other areas in perfect competition, the equilibrium is defined by an economic agent who chooses a solution which does not damage that of another agent. This also requires an atomistic market namely n-players market.

We thus see that the situation resembles to the game in which the agent makes a choice that necessarily depends on the choices of others agents but for which he has perfect information.

The issue of well being or welfare provided by this act depends on the decision taken by other actors. The situation in the middle of the game appears in a model where sharing information is asymmetric. The operator has information that the player does not control, yet it should discriminate on the game where the player participates.

Indeed, although the overall rate of redistribution is known by the players, and it is not known at certain time during the game, whatever the game, the payout of the slot machine in question or another game where player hopes in

a prospective approach to optimize his utility function by building more.

From a mathematical point of view, for a player to be in a position to optimize his choice, he should know all the players participating in the game, the rules of the game and the information available to the other players, which may seem useful in a poker tournament for example, and individual preferences.

When the player enters in a physical place, some of these elements will be respected.

For online game, little is known, since the choices are totally made in the total absence of known parameters. This creates a climate of uncertainty, which puts the player in a prime position where he accepts himself the lottery concept.

When the outcome is certain, the choice may lead in our sense to an addictive situation, harmful in economic terms. The action is not related to a gain or loss of money, it is also the case when the player participates in a recreational activity.

The utility theory gives a first explanation for this type of attitude in an uncertain environment as the factor of utility is based on the calculation of hope, that ignoring the decision himself and especially his attitude versus the risk.

It is recognized that most agents are risk averse from the work of Allais [23] and Ellsberg [24]. The question of the decision based on the expected value of utilities has already been asked in the past and it is clear that the expected value is justified in the long run if the game is repeated several times.

Von Neuman and Morgenstern make a response stating that the election is made by considering the value of each share and this is the obvious choice as risk aversion, it is still necessary that each set leads to a result independently.

We can imagine that the addict player is not risk-averse or ignore all of the parameters of the game in its mathematical form.

Risk is defined by a given situation as the objective probability corresponding to a lottery known result, like the game of roulette at the casino or a roll of the dices that the area is classified as uncertain when the outcome is uncertain as game of poker, slot machine, the result of a "football game". John Nash provides an answer to this question by stating that the players do not cooperate, through the example of prisoner's dilemma because they may be placed in information asymmetry. This new approach allows then to explain some forms of choice that we can operate which are optimal in terms of choice or expected utility because we can be devoid of useful information. Lack of resources (knowledge, understanding, etc.) or time does not collect useful information and, consequently, the utility bill is not at its maximum, but at its best. We can have also a behavior leading to a losing attitude or utility or sometimes to a negative attitude

The neuroscientific aspect has been also clearly demonstrated by several works, as seen before. Van Holst et al. showed that brain areas are activated specifically in the case of gambling, that can be said at risk of addiction specially, the ventral tegmental-orbito frontal cortex [25].

V. VARIOUS TYPES OF PLAYERS

The world of gamers is not an uniform medium. To build an efficient Information system, it is useful to study the general typology of the players. We must not ignore that there are still subtypes namely women where there is evidence that online gambling is like visiting a shopping site, namely a place of socialization [26]. We must consider the category of young people who remain vulnerable to this type of offer [27].

We see that the sociology of players is widely diffused and cannot conceive the intermediation via a general purpose tool, but an "agile" tool that can adapted to the type of players according to the subcategory.

The player is usually acting individually thinking that he can maximize his welfare function, based on beliefs in giving assumptions about the state of the world and the potential usefulness of each of the possible consequences. This is what he hopes calculate but beliefs and superstitions are subjective in nature.

All these questions can be studied nowadays in a new way that takes into account the cognitive approach rather than collective societal behavioral approaches such as fads, but on an individual basis.

This new sight helps to understand the concept of how decision may be irrational, and especially to understand the mechanisms that push players to act this way. In opposite, the rationalist approach indicates that difference in beliefs between the players can be explained solely by differences in their level of information

VI. IMPLEMENTATION OF AN ONLINE INFORMATION SYSTEM

Training and education seem also necessary that the implementation program for information on how to react and to prevent gambling problems.

In the case of online games, we will need to act via the web interface since the player is isolated from the place of game where all the aspects we have mentioned exist. The existence of the semantic web would be useful to the extent that we could reconstruct the behavior of the player participation in forums which would be included in the online game site where registration is required.

Indeed, the player was registered by duty on the gaming physical place; it will be thus invited to participate in the forum. It may be encouraged by forms of rewards for participation in this forum. For example, they can be invited through a scoring rate of participation, or the development of voucher on the co-branding, *i.e.,* Drinking offers.

On the other hand, for the development of Information system (IS), the main difficulty in creating semantic operators is linked to the fact that the corpus will not be considered as mere undifferentiated text books because their constitution involves a number of criteria of homogeneity as well as contrast on the quality of the ontology.

It will be assumed to constitute a representative set of productions, where each community could develop its own ontology, is difficult. Indeed, this may cause the constitution of ontology with a low level of use; it is the risk of the

purely social approach, since players can develop specific ontology that is very specific to their own point of view of the world of games, *i.e.*, "*j'ai pris une gamelle*" where in French "*gamelle*" may means "*loosing term*" or *a plate.*

In order to enhance the usability of this ontology, we will look to the constitution of this type of little formal ontology to the status of the data as well as the place of the expert in the reconstruction of corpus via a more developed ontology, which will be designed in this IS. This will define the role of tools in extraction of terms.

We will also propose the practices and the uses to the player that feed the Information System by analyzing in depth their methods and practices research and selection of documents, and their methods of treatment of these documents to insert them in the Information System

The goal is to reach an automated process of alert following automatic extraction of knowledge from texts related to the game. This is in order to automatically extract knowledge concerning the specific terms of the addiction from texts, with a derived method of automatic processing of language similarly to other domain [28].

This will define a tool which would broadcast information to the owners of the sites of online games on the model of information systems for the detection of the signal and the management of knowledge in addiction.

When addictive behavior is detected, a quiz may be sent to the player which will measure the risk of the player to addictive behavior and especially in order to better take in charge this risk and to maintain the spirit of leisure.

The objective targeted in this work is purely informational, because it is the basis of the correction of these phenomena in our connected society that increasingly appears and which primarily affect the most disadvantaged social populations (unemployed, resigned, etc.)

We need to bring elements of knowledge to the operator to provide the finest and most complete information of very low granularity to the players who are no longer in a position to make or to choose among a lot of decisions possibilities to fit their best utility factor.

We can be optimistic if we base our approach on the result of Polemarchakis and Geanakoplos [28] that players will eventually find consensus between them indicating this fundamental result: agents however fails necessary the same consensus than if they had directly communicated all their information. The main result is that this situation does not continue always. Indeed they indicate this major result that the agents can't disagree forever.

A Re-documentarisation for forum in online casino website

Usually the specialists organize the document according to a classical model, a summary, an index and eventually put it in certain categories. In a certain way, when the work is made by a specialist and the writer of the document is a professional, the task can be easily made. However, the problem of forum is that the language is likelihood different and the automatic extraction of a semantic scheme or metadata can be slightly different for the attendance. This may causes a very weakest information level finally and is

not exploitable by the specialist of game addiction in our case.

The re-documentarisation can appear in this situation as a good approach to correct these biases [30]. Indeed, the methodology base is to reconfigure the document with creating annotation or new metadata in order to put the document in a right category.

Zacklad et al. [31, 32] has shown that participatory spaces and forums that fall within the socio-semantic web are likely to structure the documentation process associated with collective governance issues. This may be seen as a key to create an enrichment tool to help specialists to better assist the players against the risk of addiction.

CONCLUSION

This work is a prospective paper under progress and is related to the appearance of the legal online game in France that creates today important phenomenon of addiction.

Parliament proposes control measures but this remains inefficient despite this goodwill.

It is clear that this control will not be exercised if the operators themselves don't put in place the online forums with a continuous and automated process that permit the analysis to detect the so-called players with addictive behaviors.

We are looking forward how to implement to re-documentarisation tool in a casino website space. We are also looking for the best ontology that leads to a better guidance in direction of the players, towards specialized sites or to custom monitoring in order to eliminate addictive behavior.

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