

Outcome of a Paradigm Shift – New Ways for the Scientific Analysis of Online Gaming:

Implications for Addiction Research and Responsible Gaming

Research results from:



Division on Addiction

Cambridge Health Alliance, a teaching affiliate of Harvard Medical School



Status: 2013



Contents

3	Executive Summary
4	Introduction
6	Our Mindset
7	The Responsible Gaming Research Project
10	Outlook
12	The Research and its Most Important Results
17	Appendix



bwin.party is a global leader
in online gaming

We are recognized as pioneering,
innovative leaders in online sports,
poker, casino and bingo gaming.
These attributes are ingrained in our
scientific, evidence-based approach
to Responsible Gaming and safe
e-commerce – our approach is
unrivalled in our industry.

www.bwinparty.com



Division on Addiction

Cambridge Health Alliance, a teaching affiliate of Harvard Medical School



**Division on Addiction, Cambridge
Health Alliance, a teaching affiliate
of Harvard Medical School**

The mission of the Division on Addiction
is to strengthen worldwide
understanding of addiction
through innovative research,
education, and the global exchange
of information.

www.divisiononaddiction.org

Executive Summary

The Division on Addiction (DOA) of Harvard Medical School¹, in cooperation with bwin.party digital entertainment plc, has been studying long-term gaming behaviors exhibited in online sports betting, casino, poker and other games since 2005.

This unique, worldwide research project has observed and analyzed the actual gaming behavior of online gamers over several years. bwin.party is the first online gaming company to provide the DOA's researchers with access to customers' de-identified gaming data².

Before this collaboration, there were no scientific studies based upon actual online gaming behavior. Since the start of the collaboration, a considerable part of the research undertaken by the DOA draws on actual online gaming behavior.

The DOA's researchers have published 17 related studies in renowned international peer-reviewed scientific journals since the collaboration with bwin.party commenced. Not only are the results shared with the scientific community, the raw online gaming data is openly available as part of the Transparency Project at: www.thetransparencyproject.org

The results obtained to date can be summarized as follows:

- The myth of online gaming being a powerful seductive force can be challenged. The overwhelming majority of online gamers play in a very moderate manner, spending minimal amounts on gaming.
- Responsible Gaming measures can be effective at promoting observable changes in gaming behavior. Although deposit limits imposed on players did not affect gaming behavior, self-set deposit limits did produce significantly lower gaming frequency and intensity.
- It appears feasible to recognize the development of problematic gambling based on real gaming behavior and therefore take countermeasures early on. The first markers enabling the early detection of gambling-related problems have been identified.

1. Division on Addiction, Cambridge Health Alliance, a teaching affiliate of Harvard Medical School.

2. In compliance with data protection laws, all data was de-identified prior to being used for research.

Introduction

The internet is a revolutionary and very powerful medium. Within a brief period of time, it has redefined how we learn, work, play, shop and communicate with one another around the world.

These significant shifts are bringing about two developments: users want more safety on the internet as well as desiring more individual expression and technological progress. A responsible digital company has to act in both a safe and progressive way to address both of these important developments.

bwin.party is a market leader in providing real-money gaming in the digital environment and makes use of the business opportunities the internet has to offer. Matching consumers' needs for entertainment and excitement with the demand for safety and security is of paramount importance to bwin.party. So too is matching an individual's gaming experience with individualized player protection. This is what Responsible Gaming is about.

Today, a global leader in online gaming, millions of customers from across the globe place their trust in our promise to provide them with entertainment and excitement in a safe and secure gaming environment. Trust is a fundamental customer need and for us: it is a pre-requisite for long-term business success.

A unique partnership: The Division on Addiction, Cambridge Health Alliance, a Harvard Medical School teaching affiliate (DOA), and bwin.party

For the purpose of undertaking research about online gaming behavior and Responsible Gaming practices, bwin.party has found an internationally respected partner – The Division on Addiction, Cambridge Health Alliance, a Harvard Medical School teaching affiliate. This unique collaboration with Harvard Medical School's faculty experts, who have gained international recognition in the field of addiction, has pioneered the empirical study of real online gaming behavior.

bwin.party allowed the DOA to access its customer database, but ensured that individuals' privacy and data protection were ring-fenced by rendering the data anonymous. This gave the DOA the opportunity, under the supervision of its director Prof. Howard J. Shaffer, to directly observe individuals' online gaming behavior.



"Our mission to 'making responsibility real' is a key pillar of our corporate strategy. The collaboration with the DOA is a fundamental part of our commitment to have the safest and most innovative online gaming environment in digital entertainment."

Norbert Teufelberger,
CEO of bwin.party
digital entertainment plc.

Gaming behavior as an in-road

What is addiction and what triggers it? Expert opinions on this subject suggest that addictive behaviors are based on a wide variety of factors, e.g. social factors, personality traits and also the gaming products. Most research relies on the statements made by pathological gamblers and people who are at risk of becoming addicted. What has been lacking from all of the studies is research that is based upon actual gaming behaviors. bwin.party and the DOA, however, are progressing the debate through conducting research based upon empirical data for actual gaming behavior – not just commentaries or the self-perception of gambling addicts or those at risk of addiction.

The DOA adopted a two-stage approach to its research. Firstly, they studied all the relevant scientific research previously undertaken on internet gaming. In the second stage, the DOA observed the individual gaming behavior of up to 100,000 de-identified players in various sample groups over a three-year period. The effectiveness of specific Responsible Gaming measures such as corporate deposit limits and self-limitation were also examined. Collectively, these studies resulted in an empirical database that provided an accurate and reliable insight into gaming behavior.

In addition, a central goal of the DOA's work is to develop a predictive algorithm for the early identification of gambling-related problems. To achieve this, the DOA has undertaken studies that are aimed at identifying behavioral indicators of potential gambling-related problems. Such problems might include: extreme gambling patterns, closing accounts for reasons related to gambling problems, self-imposed limits on accounts, attempts to exceed deposit limits and through contacts made with customer services.

Through their work, the DOA brought about a paradigm shift in addiction research and gave bwin.party the opportunity to improve its Responsible Gaming measures through using a reliable base of scientific evidence. In addition, the European Commission's Green Paper 'On on-line gambling in the Internal Market' refers to the findings of the DOA.



"A matter of fact is that the vast majority of people, according to recent surveys, want to gamble and they would like to gamble online. In a democratic society that values liberty, most people think they should have the opportunity to gamble. The very first thing we have learned is that the overwhelming majority of gamblers gamble online in a very moderate way."

Howard J. Shaffer,
Ph.D., Associate Professor, Harvard Medical School, Director, Division on Addiction, Cambridge Health Alliance, a teaching affiliate of Harvard Medical School

Our Mindset

Share and win: Creating business and social value

At bwin.party we have seized the opportunity to share our knowledge from the DOA study in order to generate added value for business and society. In so doing, the collaboration with the DOA was founded as a public/private partnership. As a consequence, the scientific community has not only been given access to the results carried out by the DOA and peer reviewed in international journals, but also to the raw data upon which their research was based.

This data is publicly available within the framework of the Transparency Project at: www.thetransparencyproject.org

The Transparency Project – the world’s first public data repository for privately-funded datasets related to addictive behavior

The Transparency Project for the first time ever invites researchers working throughout the world to use the unique collection of empirical evidence on real-time gaming behavior at bwin.party for their own research purposes. In making the research data available, the DOA and bwin.party intend to give international research a renewed impetus and provide empirical resources for public policy making. The database offers material for researchers from various disciplines – from psychology, economics, health policy and healthcare amongst others.

Since the project was launched during February 2009, more than 63,500 unique daily visitors from over 90 different countries have visited the Transparency Project website. Scientists and companies can submit their own data when it has been verified through an independent peer-group review.

Currently, five files with datasets from bwin.party and the National Center of Responsible Gaming (NCRG, USA) are available on the Transparency Project. Two further files, which have already been defined, will become available during the course of 2013.

Data available		
Theme area	Sample size	Observation period
Meta-analysis of prevalence studies	146 prevalence studies	1976 – 1999
Online sports betting	40,499	Feb. 2005 – Sep. 2005
Online casino	4,222	Feb. 2005 – Feb. 2007
Online poker	3,445	Feb. 2005 – Feb. 2007
Predictive model	530	Feb. 2005 – Feb. 2007



Data available

Theme area	Sample size	Observation period
Meta-analysis of prevalence studies	146 prevalence studies	1976 – 1999
Online sports betting	40,499	Feb. 2005 – Sep. 2005
Online casino	4,222	Feb. 2005 – Feb. 2007
Online poker	3,445	Feb. 2005 – Feb. 2007
Predictive model	530	Feb. 2005 – Feb. 2007

--	--	--

--	--	--

--	--	--

“The Transparency Project reflects our determination to ‘making responsibility real’. We believe that this will foster innovation for research, health-care, public policy, our business and society in general.”

Norbert Teufelberger,
CEO of bwin.party
digital entertainment plc.

The Responsible Gaming Research Project

The background of a paradigm shift

“For the first time ever, the studies conducted in cooperation with bwin.party use the accurate records from computer-based internet gaming to study actual gaming rather than what people remembered or were willing to say.”

Howard J. Shaffer, Ph.D., Associate Professor, Harvard Medical School, Director, Division on Addiction, Cambridge Health Alliance, a teaching affiliate of Harvard Medical School

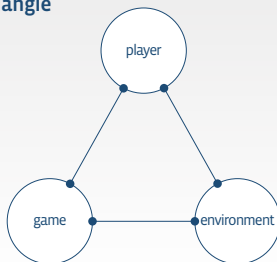
Up to now, addiction research – as shown by a comparative study of pertinent literature – has been evaluating the risks of addiction based on self-evaluations obtained through surveys meaning that no reliable empirical data on online gaming was available. This made researchers’ determination of problem gambling and addiction risk highly speculative. The DOA has taken another path. Its observation of specific, objective gaming behavior is based on the following paradigm:

Based on the parameters of gaming frequency, gaming duration, the amount wagered and the number of bets placed as well as net loss, the DOA’s researchers were able to ascertain an objective view of unusual behavior. The factors that define problem gambling or even pathological behavior still require further research, however.

The results of the research conducted by the DOA underscore the fact that gambling behavior is determined by both individual conditions and the environment. This means that a person’s gaming behavior and any symptoms of problem gambling can vary over the course of a lifetime.

The epidemiological triangle

The danger is not an inherent property of the game, instead it results when the properties of a particular game appeal to the vulnerabilities of a particular player and there is no sufficient protective environment.



Conclusion

The paradigm shift in addiction research brought about by the collaboration between the Division on Addiction, Cambridge Health Alliance a Harvard Medical School teaching affiliate, and bwin.party will create new impetus both in research and the Company’s online player protection programs.

Prof. Howard J. Shaffer summarizes that objective concisely:

1. Establishing a scientific evidence base to guide the development of a safe, recreational gaming environment.
2. Supporting the development of player protection programs able to prevent the emergence of gambling-related problems and minimize the harm for those that already exist.
3. Building a scientific fundament that yields protocols capable of identifying risk patterns associated with gambling problems.

The Responsible Gaming Research Project continued

Findings that change research and online gaming

Research by DOA has shown three essential things:

- 1. The analyses of bwin.party data, to date, challenge the myth of online gaming as a powerful seductive force.
- 2. Responsible Gaming measures can be effective at promoting observable changes in gaming behavior.
- 3. It appears feasible to recognize the development of problematic gaming based on real gaming behavior and take countermeasures early on.

The progressive findings not only supply the international scientific community with the empirical basis that was lacking in the field of addiction research, but also the work of bwin.party derives lasting benefits from the cooperation with the DOA. This cooperation ensures that bwin.party can make its vision of safe and recreational gaming become a reality.

Implementation of a paradigm shift

Individualized player protection as a public health approach to prevention

Different players have different needs for protection. Tailoring the offer of Responsible Gaming tools to players' individual behaviors allows bwin.party to give each of them the level of protection they actually need.

Behavioral analysis and research about early-detection of markers for problem gambling will help bwin.party detect the specific protection needs of different player groups and enable it to target Responsible Gaming practices accordingly.

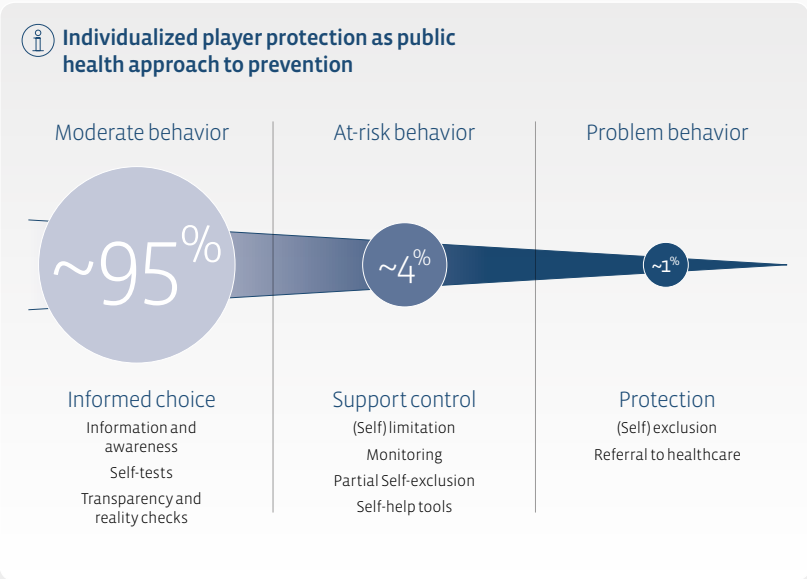
Scientifically evaluated Responsible Gaming tools and practices

Responsible Gaming tools are meant to moderate gambling-related risks and to provide safeguards for players. To make sure our Responsible Gaming tools are effective and able to achieve those goals, they have been subject to scientific evaluation by the Division on Addiction. This helped us to better understand about how we can support our customers in keeping their play safe.

Policies safeguarding player protection

bwin.party cooperates continuously with its stakeholders from the research and healthcare sectors to develop its products and to align them with Responsible Gaming measures and policies. The research findings flow directly into the work undertaken by the dedicated bwin.party Responsible Gaming team to guide their daily work with customers.

bwin.party has also taken on a pioneering role with its DOA-developed training program called EMERGE. The program is applied to educate new employees about gambling-related problems and Responsible Gaming best practice.



Sharing co-developed products and programs for consumers, stakeholders and society

The collaboration with the DOA also focused on player protection programs that could be used outside of the framework of online gaming portals. These tools would naturally serve as a link for players in need of help, connecting them with the healthcare and treatment sector, but they also provide a link to the healthcare and treatment sector in a different way: in keeping with our mindset of ‘Share and Win’, bwin.party cooperates with NGOs to help them integrate the following tools into their portfolio of services.

Brief Biosocial Gambling Screen (BBGS) e-screener

Conventional gaming screens are useful tools to generate awareness for gambling-related problems. However, the player is often left alone and without a clear understanding of what to do about the problem. This is where the BBGS e-screener picks up: instead of restricting itself to symptoms of gambling-related problems, the screener also assesses respondents’ attitude towards changing their gambling behavior and, based on the result, provides a tailored solution-centric recommendation for the next steps. bwin.party hosts the web-based gambling screener in 22 languages.

en-da.partypoker.com/responsible-gaming/bbgs.html

Self-help toolkit ‘Your first step to change’

‘Your first step to change’ is a self-help toolkit, applying motivational interviewing techniques to help players form a more rational attitude towards their gambling. By doing so, at-risk players are being assisted in making a decision to start cutting-back on their gambling, quitting or seeking help. The DOA developed the self-help toolkit originally as a brochure in partnership with the Massachusetts Council on Compulsive Gambling. bwin.party hosts it as a web-based tool, available in 20 languages, directly from the Responsible Gaming website.

www.gamblingselfchange.org/?step=welcome

E-Health website ‘Health-E Gambling’

In cooperation with the University of Nevada Las Vegas International Gaming Institute, the DOA created a comprehensive e-Health website and mobile learning system for both players and healthcare professionals. With the support of bwin.party the ‘Health-E Gambling’ system has been developed for fix and mobile devices and localized to eight languages.

divisiononaddiction.org/healthegambling



Conclusion

Ultimately, the outcome of bwin.party’s collaboration with the DOA is not only changing how bwin.party provides an innovative gaming experience with individualized player protection in place but also how stakeholders can benefit from the research that:

- Creates awareness about gambling-related risks;
- Develops science-based Responsible Gaming tools and policies to support a safe play and supplies the industry with best practice examples; and
- Provides policy makers with an unbiased evidence base.

Outlook

A successful research partnership emerges

In view of the results and success achieved by this unique collaboration in online gaming research and the online gaming industry, the project was extended for five years in November 2008. International research in the field of addictive behavior will also profit from this cooperation in the future.

In addition to promoting an ongoing international research dialogue and the Transparency Project, the DOA and bwin.party have defined two goals for their continued cooperation:

1. Further development of the scientific evidence base

One of the two main objectives of the cooperation between the DOA and bwin.party is to expand the empirical research findings. To this purpose, the database is being extended in order to develop a safe online gaming environment. This includes basic research, risk analysis and assessment, as well as a detailed study of the practical applications.

2. Further development of the safe gaming environment

The second scientific objective is to research safe gaming environment, which will include employee training, public access to research and healthcare resources.

Scientific evidence base

Epidemiology	Risk identification	Practical application
Studying the fundamentals of online gaming	Identification of behavioral markers of different types of gamers	Evaluation of player protection measures
Evaluation of gaming behavior at bwin.party	Early recognition of problem gambling	Further enhancement of product safety

© Division on Addiction, Cambridge Health Alliance, a teaching affiliate of Harvard Medical School

Safe gaming environment

Employee education	Communication	Practical application	Evaluation
EMERGE	The BASIS	Further development of product safety	Evaluation of player protection tools
	Improvement of contents in Responsible Gaming material	Further development of Responsible Gaming tools	Evaluation of player protection policies
	Health-E-Gambling website	Further development of player protection policies	Evaluation of employee training

© Division on Addiction, Cambridge Health Alliance, a teaching affiliate of Harvard Medical School



“bwin.party has taken the industry’s leading position for Corporate Social Responsibility with regards to Responsible Gaming. The commitment to the scientific process and unwillingness to take short cuts to achieve short-term gains is noteworthy and indicative of its commitment to the health and welfare of its subscribers.”

Howard J. Shaffer,
Ph.D., Associate Professor, Harvard Medical School, Director, Division on Addiction,
Cambridge Health Alliance, a teaching affiliate of Harvard Medical School



“Online gaming needs to strike the balance between being as entertaining as possible while being as safe and secure as necessary. The collaboration with the Division on Addiction provides scientific evidence, where there had been only speculation. Based on this paradigm-changing evidence, we are now in the position to better understand our consumers, to detect risk behaviors early, to protect customers on an individualized level according to their needs and ultimately prevent problems before they can emerge.”

Norbert Teufelberger,
CEO of bwin.party digital entertainment plc

The Research and its Most Important Results:

Summary of Key Research Findings

1. Literature review about research based on actual gaming behavior³

Although there are theories about which properties of online gaming could make it more dangerous, what exactly is the scientific fundament of these theories? A comprehensive literature preview has been conducted to investigate the underlying evidence base.

1.1 Approach

In one study, scientific databases were searched for articles that satisfied international publication standards, i.e., articles that had undergone a peer review. To this end, the search keys 'internet' and 'gambling' were entered into scientific publication databases. For the time period from 1 January 1967 to 7 March 2008, the list of hits included 111 articles.

1.2 Illustrative Findings

Only 30 of the 111 articles in the list of hits were focused on online gaming. Not a single study investigated actual gaming behavior though. Only ten of them were based on surveys – in any case, not a single sample was representative. Furthermore, there are 20 theoretical treatises in the style of commentaries. Their authors represent a wide variety of viewpoints. Some of them argue that the internet per se is not a potential source of addiction, since it is just a virtual space between two computers, whereas addiction can only arise out of a relationship between people and the objects or activities that are available to them. Others argue, in contrast, that the increased availability of services online leads to a higher prevalence rate. Similarly, some authors speculate on properties of the internet that increase the risks without providing any real-data reference.

1. Conclusion

No scientifically-based empirical study proves that online gaming increases the risk of addiction. At the time of publication, all previous empirical studies of online gaming were based on self-report survey methods and non-representative samples. The studies conducted by the DOA were the first scientific research based on the actual gaming behavior in the internet.

3. Peller, A. J., LaPlante, D. A., & Shaffer, H. J. (2008). Parameters for safer gambling behavior: Examining the empirical research. *Journal of Gambling Studies*, 24, 519-534.

Shaffer, H. J., Peller, A. J., LaPlante, D. A., Nelson, S. E., & LaBrie, R. A. (2010). Toward a paradigm shift in Internet gambling research: From opinion and self-report to actual behavior. *Addiction Research and Theory*, 18, 270-283.

2. Studies about the risks of online gaming⁴

Ever since online gaming was introduced in the late 90s, a controversial discussion has been underway among researchers on whether the attributes of the new media – permanent and convenient availability, for instance – make it an especially dangerous ‘seducer’ or whether it represents the safest gaming environment given the many possibilities of player protection. The results of the prevalence studies typically show that the share of pathological gamblers is higher among users of online gaming line-ups. Many researchers conclude from this that internet gambling creates an increased risk.

2.1 Approach

In the course of re-analyzing the data of the British Gambling Prevalence Survey 2007 – conducted for the UK Gambling Commission – the DOA set out to identify potential markers of pathological gamblers in online gaming. They examined game participation, as well as more general gambling participation patterns, such as the number of different gaming products used by a player.

2.2 Illustrative Findings

Pathological gamblers differ from moderate gamers in the number of different forms of gaming they use for instance. While the average participant in the study plays approximately 1.7 different types of games in one year, this figure is markedly higher among gamblers exhibiting problem gambling, who play about 7 different types of games. The results indicate that among problem gamblers there is at least a sub-group that indiscriminately uses any opportunity they get to play games of chance. This sub-group fails to stand out from customers of gaming forms with a large market share, as lotteries for instance. But particularly among games with a smaller market share, like online line-ups, they are a noticeable share of the customer base. This conveys the impression that online gaming has more inherent risks. However, these persons use nearly every form of gaming available.

2. Conclusion

The DOA established that the number of games a person plays in parallel is a good indicator for potential gambling problems, while the fact whether this person is an online gamer does not hold any incremental information. These findings suggest that an over-emphasis on game-specific risk is misplaced, and prevention/intervention efforts should focus more on overall gambling patterns.

4. LaPlante, D. A.; Nelson, S. E.; LaBrie, R. A.; & Shaffer, H. J. (2009). Disordered gambling, type of gambling and gambling involvement in the British Gambling Prevalence Survey 2007. *European Journal of Public Health*, 21, 532-537.

The Research and its Most Important Results:

Summary of Key Research Findings continued

3. Studies of online gaming behavior⁵

Since valid behavioral analyses were lacking prior to 2005, the DOA and bwin.party entered into a research partnership that allowed the researchers to investigate anonymized data of actual gaming behavior. This gave them the opportunity to study online gaming behavior in an objective and representative manner.

3.1 Approach

In one study, an anonymized sample of 48,114 online gamers from over 80 countries was selected. Their gaming behavior was observed in the course of a two-year longitudinal study. In the first phase of the analysis, the data was compiled in order to identify the following four indicators that reliably point to unusual gaming behavior: increasing wagers and losses, gaming frequency, long gaming periods.

3.2 Illustrative Findings

Two groups of gamers were identified: moderate gamers who, depending on the product, made up between 95% and 99% of the customers and exhibited a very responsible and moderate gaming behavior, and a group of more involved gamers who played more often and for higher stakes.

Gaming behavior among moderate and involved gamers

In sports betting, involved gamers made up 1% while in poker and casino involved gamers made up 5%.

Moderate gamer	Classic sports bet (99%)	Live sports bet (99%)	Poker (95%)	Casino and games (95%)
Games per week	4	5	2	23
Stake per game	€ 4	€ 4	€ 12	€ 4
Costs per week	€ 2	€ 2	€ 4	€ 3
Involved gamer	Classic sports bet (1%)	Live sports bet (1%)	Poker (5%)	Casino and games (5%)
Games per week	16	42	10	226
Stake per game	€ 44	€ 53	€ 89	€ 25
Costs per week	€ 50	€ 66	€ 24	€ 89

While weekly costs incurred by moderate gamers were extremely low, they were markedly higher with the most involved gamers. Therefore, one can conclude, among the involved gamers there might be some at-risk of developing gambling-related problems.

3. Conclusion

The epidemiological findings of these studies contradict the conventional view that most online gamers exhibit excessive gaming behavior. On the contrary: evidence showed that the overwhelming majority of customers played moderately and thus only very low costs were incurred. A small share of players was more involved and therefore requires additional protection through Responsible Gaming measures.

5. LaBrie, R. A.; LaPlante, D. A.; Nelson, S. E.; Schumann, A.; & Shaffer, H. J. (2007). Assessing the Playing Field: A Prospective Longitudinal Study of Internet Sports Gambling Behavior. Journal of Gambling Studies, 23,347-363.

LaBrie R. A.; Kaplan, S. A.; LaPlante, D. A.; Nelson, S. E.; & Shaffer, H. J. (2008). Inside the virtual casino: A prospective longitudinal study of actual Internet casino gambling. European Journal of Public Health, 18, 410-416.

LaPlante, D. A.; Schumann, A.; LaBrie, R. A.; Nelson, S. E.; & Shaffer, H. J. (2008). Population trends in Internet sports gambling. Computers in Human Behavior, 24, 2399-2414.

LaPlante, D. A.; Kleschinsky, J. H.; LaBrie, R. A.; Nelson, S. E.; & Shaffer, H. J. (2009). Sitting at the virtual poker table: A prospective epidemiological study of actual Internet poker gambling behavior. Computers in Human Behavior, 25, 711-717.

Shaffer, H. J.; Peller, A. J.; LaPlante, D. A.; Nelson, S. E.; & LaBrie, R. A. (2010). Toward a paradigm shift in Internet gambling research: From opinion and self-report to actual behavior. Addiction Research and Theory, 18, 270-283.

4. Evaluations of Responsible Gaming Tools and Policies

Most of the player protection measures applied in practice have never been subjected to any scientific evaluation to determine if they are effective and actually lead to the desired change in behavior. In this respect, the DOA too has broken new ground in the field of addiction research. It has specifically evaluated the Responsible Gaming tools of self-imposed limits and self-exclusion from playing.

4.1 Self-imposed limits⁶

In order to impose a fixed limit on their spending that is consistent with their financial means and that they consider appropriate for entertainment purposes, gamers can set a maximum limit to the money they are allowed to credit to their account per month (and thus also limit their losses). This personal limit can be set at any time and is effective immediately.

4.1.1 Approach

In one study, the usage of self-imposed limits was evaluated and differences between the gaming behavior prior to and after self-limitation were monitored.

4.1.2 Illustrative Findings

The option of setting self-imposed limits was used by a total of 587 of the 47,134 gamers – i.e., about 1.2%. This is in fact an excellent ratio, since according to international prevalence studies one would expect some 0.5% to 3% of the population

to be at-risk gamblers and therefore being in need of aids to control their gaming.

Once the limit had been imposed, self-limiters markedly reduced both their gaming frequency as well as the amount wagered. In addition, self-limitation prompted a considerable share of gamers to restrict themselves to one form of gaming (e.g. classic sports betting) or to stop playing altogether.

4.2 Self-exclusion⁷

Customers can exclude themselves from playing directly on their initiative at all times. They need to select a time period of at least 24 hours ('cooling-off'), but also have the option of excluding themselves for a week, a month, six months or for an unlimited period.

4.2.1 Approach

In one study, the DOA compared the gaming behavior of customers who closed their account due to gambling-related problems with the gaming of a similar sized group who played without problems.

4.2.2 Illustrative Findings

The gamers in the group who had closed their accounts suffered a high loss shortly before they actually closed their accounts. In response, while they increased their stakes, there was no trend towards a loss of control or riskier betting as would be expected with the phenomenon of 'chasing losses'.

4.1 Conclusion

The fact that online gamers can set responsible limits on their own initiative – thereby limiting the overall frequency of gaming – and reduce the time and money spent, has proven to be effective for the purposes of player protection. Self-limiting is therefore a useful tool to promote Responsible Gaming and might be superior to fixed limits imposed by the Company or a regulator.

4.2 Conclusion

The study challenges the idea that problem gamblers tend to place higher stakes and opt for riskier bets in order to offset their losses. The study shows a more rational behavior that avoids risk and is characterized more by the desire not to lose than by the urge to quickly offset earlier losses.

6. Peller, A. J.; LaPlante, D. A.; & Shaffer, H. J. (2008). Parameters for Safer Gambling Behavior: Examining the Empirical Research. *Journal of Gambling Studies*, 24, 519-534.

Broda, A.; LaPlante, D. A.; Nelson, S. E.; LaBrie, R. A.; Bosworth, L. B.; & Shaffer, H. J. (2008). Virtual harm reduction efforts for Internet gambling: effects of deposit limits on actual Internet sports gambling behaviour. *Harm Reduction Journal*, 5, 27-36.

Nelson, S. E.; LaPlante, D. A.; Peller, A. J.; Schumann, A.; LaBrie, R. A.; & Shaffer, H. J. (2008). Real limits in the virtual world: Self-limiting behavior of Internet gamblers. *Journal of Gambling Studies*, 24, 463-477.

7. Xuan, Z.; & Shaffer, H. J. (2009). How Do Gamblers End Gambling: Longitudinal Analysis of Internet Gambling Behaviors Prior to Account Closure Due to Gambling Related Problems. *Journal of Gambling Studies*, 25, 239-252.

The Research and its Most Important Results:

Summary of Key Research Findings continued

5. Detection of problem gambling⁸

The early detection of problem gambling plays a particularly important role. The earlier a targeted intervention takes place (e.g. Responsible Gaming information or limitation of deposits), the more likely it will be successful and any further self-harm the gamer may suffer is averted. This is why an important part of the research carried out by the DOA aims to identify indicators from actual gaming behavior suggesting problematic developments.

5.1 Approach

In one study, the sub-group of players who had excluded themselves because of gambling-related problems were given special attention. Based on the gaming behavior, the aim was to identify risk patterns that could help to discriminate these players from players who did not encounter gambling-related problems. Those risk patterns could serve as a predictor for a future gambling problem.

5.2 Illustrative Findings

On the basis of the actual gaming behavior, four gamer types were identified in this group:

1. Disinterested gamers most of whom had been inactive even before they had closed their account.
2. Moderate gamers whose behavior had been inconspicuous and who had not exhibited any risk characteristics until then.
3. Involved gamers with consistent behavior who play at a high frequency and volume, yet very consistently, without reacting strongly to wins and losses.
4. Involved gamers with erratic behavior who, unlike the previous group, reacted very strongly to wins and losses.

Group 4, in particular, is associated with future problem behavior and thus a good indicator for future self-exclusion.

The following behaviors have been identified to be risk markers:

- Increased gaming frequency
- Increased gaming volume
- High involvement directly after registration
- High variability of gaming behavior

5. Conclusion

The study shows that it is possible to identify risk patterns in the gaming behavior at a very early stage, which will not lead to gambling-related problems until several months later. This provides the basis for individualized player protection geared towards early prevention. At the same time, the risk markers studied to date explain only part of the gambling problems encountered – future research projects in this area must aim to identify further risk patterns.

8. Xuan, Z., & Shaffer, H. J. (2009). How do gamblers end gambling: Longitudinal analysis of Internet gambling behaviors prior to account closure due to gambling related problems. *Journal of Gambling Studies*, 25, 239-252.

Braverman, J., & Shaffer, H. J. (2010). How do gamblers start gambling: identifying behaviour markers for high-risk internet gambling. Advance Access. *European Journal of Public Health*.

LaBrie, R. A., & Shaffer, H. J. (2011). Identifying behavioral markers of disordered Internet sports gambling. *Addiction Research & Theory*, 19, 56-65.



Appendix

Peer-reviewed studies published as part of the DOA–bwin.party collaborative – in a nutshell

2007	Assessing the Playing Field: A Prospective Longitudinal Study of Internet Sports Gambling Behavior	Journal of Gambling Studies
	Understanding the influence of gambling opportunities: Expanding exposure models to include adaptation	American Journal of Orthopsychiatry
2008	Population Trends in Internet Sports gambling	Computers in Human Behavior
	Assessing the Virtual Casino: A Prospective Longitudinal Study of Internet Casino Gambling	European Journal of Public Health
	Virtual harm reduction efforts for Internet gambling: effects of deposit limits on actual Internet sports gambling behavior	Harm Reduction Journal
	Real Limits in the Virtual World: Self-Limiting Behavior of Internet Gamblers	Journal of Gambling Studies
	Stability and progression of disordered gambling: lessons from longitudinal studies	Canadian Journal of Psychiatry
	Parameters for safer gambling behavior: examining the empirical research	Journal of Gambling Studies
2009	Sitting at the virtual poker table: A prospective epidemiological study of actual Internet poker gambling behavior	Computers in Human Behavior
	How do gamblers end gambling: Longitudinal analysis of Internet gambling behaviors prior to account closure due to gambling related problems	Journal of Gambling Studies
2010	Disordered gambling, type of gambling and gambling involvement in the British Gambling Prevalence Survey 2007	European Journal of Public Health
	How do gamblers start gambling: identifying behavioral markers for high-risk internet gambling	European Journal of Public Health
	Toward a paradigm shift in Internet gambling research: From opinion and self-report to actual behavior	Addiction Research & Theory
2011	A Taxometric Analysis of Actual Internet Sports Gambling Behavior	Psychological Assessment
	Disordered Gambling: Etiology, Trajectory, and Clinical Considerations	Annual Review of Clinical Psychology
	Identifying behavioral markers of disordered Internet sports gambling	Addiction Research & Theory
2012	Gray, H. M., LaPlante, D. A., & Shaffer, H. J. Behavioral characteristics of Internet gamblers who trigger corporate responsible gambling interventions. Psychology of Addictive Behaviors, online first, Jun 11, 2012.	

An up-to-date list of all current new development can be found at: www.divisiononaddiction.org

Appendix continued

How frequent is pathological gambling?

Definition of pathological gambling

Pathological gambling is defined as maladjusted gambling that can lead to financial hardship, emotional as well as physical degeneration, and harm human relations. According to the requirements of DSM-IV (Diagnostic and Statistical Manual of Mental Disorders), at least five of the listed criteria must occur several times and be observed over a lengthy period of time.

Criteria

- Being preoccupied with gambling (e.g., preoccupied with reliving past gambling experiences, handicapping or planning the next venture, or thinking of ways to get money with which to gamble)
- Needing to gamble with increasing amounts of money in order to achieve the desired excitement
- Having repeated unsuccessful efforts to control, cut back, or stop gambling
- Being restless or irritable when attempting to cut down or stop gambling
- Gambling as a way of escaping from problems or of relieving a dysphoric mood (e.g., feelings of helplessness, guilt, anxiety, depression)
- After losing money, often returning another day to get even ('chasing' one's losses)
- Lying to family members, therapist, or others to conceal the extent of involvement with gambling
- Committing illegal acts such as forgery, fraud, theft, or embezzlement to finance gambling
- Jeopardizing or losing a significant relationship, job, or educational or career opportunity because of gambling
- Relying on others to provide money to relieve a desperate financial situation caused by gambling

Annual prevalence

Annual prevalence is an indicator used in healthcare that specifies how many people had a specific disease at some point in time during a year.

The majority of players gamble with little or no adverse consequence. These people are Level 1 (L1) gamblers. However, gambling is associated with meaningful negative effects for certain segments of the population. Level 2 (L2) gambling represents a pattern of gambling that is associated with a wide range of adverse reactions or consequences.

The people who experience the most serious of these consequences are Level 3 (L3) gamblers. Level 3 gambling refers to disordered gambling that satisfies 'diagnostic' criteria and, therefore, is clinically meaningful.

Country	L2+L3 prevalence rate (1 year)	Study
Austria	1.1%	Kalke et al. (2011)
Belgium	2.0%	Druine et al. (2006)
Denmark	0.4%	Bonke & Borregaard (2009)
Finland	3.1%	Aho & Turja (2007)
France	1.3%	Beck et al. (2011)
Germany	1.1%	BzGA (2010)
Iceland	1.6%	Olason (2008)
Italy	1.3%	Barbaranelli (2010)
Netherlands	0.9%	DeBruin et al. (2006)
Norway	0.8%	Bakken et al. (2008)
Sweden	2.0%	Rönnberg et al. (1999)
Switzerland	0.1%	Brodbeck et al. (2009)
United Kingdom	0.9%	Wardle et al. (2010)

About bwin.party

bwin.party digital entertainment plc (LSE: BPTY) is a global online gaming company, formed from the merger of bwin Interactive Entertainment AG and PartyGaming Plc on 31 March 2011. Incorporated, licensed and regulated in Gibraltar, the Group also has licences in further jurisdictions including France, Italy, Spain and Denmark. The Group's scale, technology and strong portfolio of games collectively differentiate its customer offer from those of its competitors. bwin.party is a constituent member of the FTSE 250 Index and the FTSE4Good Index Series, which identifies companies that meet globally recognised corporate responsibility standards.

For more information about bwin.party, please visit www.bwinparty.com

For further inquiries:

Sonja Zant, Head of Corporate Responsibility

bwin.party services (Austria) GmbH

1030 Wien, Marxergasse 1B, Austria

Tel: +43 (0)50 858-20080

Email: sonja.zant@bwinparty.com

