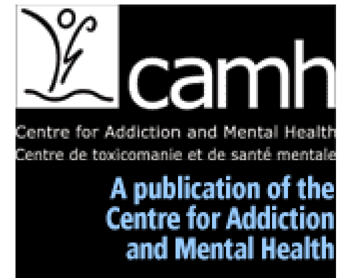

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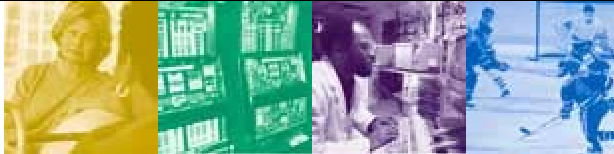

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Proceedings of the 19th annual conference on prevention, research, and treatment of problem gambling.
June 23–25, 2005 in New Orleans, Louisiana.
National Council on Problem Gambling, Washington, DC, U.S.A.

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guest editorial

The smell of gumbo was in the air...

There's a magic to gumbo, the spicy stew (or is it soup?) that is the signature dish of Cajun and Creole country. Years ago, in college, I learned to make gumbo from Stella, a dear friend who hails from New Iberia, Louisiana. She taught me to brown the flour and oil to a dark rich color, to ease in the finely chopped onions, bell pepper, and celery and cook them gently until they soften, to add spices and broth, and then to simmer everything together for hours until the meat falls off the bones and the vegetables melt into the broth and the smell fills the air. When I cook gumbo at home, people make excuses to walk through the kitchen, taking deep breaths and eagerly awaiting the moment when we sit down at the table to eat big bowls of gumbo poured over mounds of white rice, using slices of crispy garlic bread to mop up the last drops. The smell always lingers overnight so that I wake up the next morning savoring memories of a delicious meal with good friends.

This past June, I had the pleasure of participating in a very special day of presentations and discussion at the 19th National Conference on Prevention, Research, and Treatment of Problem Gambling organized by the National Council on Problem Gambling. The Louisiana Association on Compulsive Gambling was our gracious host at the lovely Hotel Monteleone in the French Quarter of pre-Katrina New Orleans.

The goal of the day was to bring together some of the best and brightest minds in the problem gambling field and ask these people to consider our present knowledge and likely future directions for research in the areas of etiology, treatment, prevention, policy, and public health, and considerations for DSM-V. Each speaker was asked to prepare and present only five slides, with time after each presentation for discussion among the presenters and members of the audience.

The day started with a presentation by Alex Blaszczynski on the "pathways model" that is proving to be an important theoretical breakthrough in the field. This was followed by a session on

problem gambling etiology that started with considerations of genetics and neurobiology but then moved to environmental issues. The session on problem gambling prevention addressed harm reduction and the possibilities of designing "safe" gaming machines and considered how states can develop a continuum of problem gambling services with a particular focus on the role of problem gambling help lines. This was followed by a session on problem gambling treatment that considered pharmacology, cognitive behavioral therapy, and brief interventions, as well as outcome assessment and training and certification issues. The final session of the day took up questions related to improving our understanding of problem gambling and included consideration of theoretical models and empirical data, asking where pathological gambling best fits in the larger DSM universe.

Something magical happened in New Orleans that day—we cooked up a "gumbo" that brought together established researchers and young Turks, put important ideas on the table for extended consideration, and left a real legacy for others in the field. It was a day filled with old and new friends and with stimulating conversation that lasted through the full arc of a long summer day and left us all with deeply satisfying memories to wake up to the next day. May this gumbo perfume the air again soon!

Rachel Volberg
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National Council on Problem Gambling

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Statement of purpose

The *Journal of Gambling Issues* (*JGI*) offers an Internet-based forum for developments in gambling-related research, policy and treatment as well as personal accounts about gambling and gambling behaviour. Through publishing peer-reviewed articles about gambling as a social phenomenon and the prevention and treatment of gambling problems, it is our aim is to help make sense of how gambling affects us all.

The *JGI* is published by the Centre for Addiction and Mental Health and is fully funded by the Ontario Substance Abuse Bureau of the Ministry of Health and Long-Term Care. We welcome manuscripts submitted by researchers and clinicians, people involved in gambling as players, and family and friends of gamblers.

Disclaimer: The opinions expressed in this journal do not

necessarily reflect those of the Centre for Addiction and Mental Health.

Ethics and accountability

The *Journal of Gambling Issues* is a member of the International Society of Addiction Journal Editors and supports the Farmington Consensus statement on ethical standards in publishing: http://www-users.york.ac.uk/~sjp22/isaje/farmington.htm

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intro

Preparing the 2005 National Conference on Problem Gambling conference transcripts for publication

Those who attended this conference may notice differences between what they heard presented and what we have published. These differences resulted from editing decisions that were sometimes difficult. In the interest of transparency, we present our readers with this description of the editing decisions that resulted in the current issue of the *JGI*.

Step 1: The National Council on Problem Gambling (NCPG) contracted for staff to audiotape and then to transcribe the tapes.

Step 2: The editor of the *JGI* found gaps and portions marked [unclear] in the transcripts, so he asked each presenter to correct these problems.

Step 3: Once the *JGI* had complete transcripts, we edited them for readability by removing repetitions, awkward expressions, asides, and off-topic remarks. (Nonlinguists are always shocked to see an accurate transcript of even a semiformal speech event. The number of errors of grammar and style—ums and ahs, repeated conjunctions, repetitions, asides that go off topic, shifts in person and verb tense—is always shocking. Natural speech has no punctuation and that supplied by transcribers may not always be the best for readability. Reading such an unedited transcript is fascinating for linguists who study language production, but tedious and irritating to the nonlinguist.) We edited all transcripts with a view to balancing readability with being careful to preserve the message that each presenter wished to offer.

Step 4: The conference presenters agreed that the question, answer, and discussion periods were fascinating and yielded worthwhile insights into how this team of front-line researchers and clinicians saw the future of problem gambling diagnosis and treatment. But for an editor there was the problem that many of the audience members spoke indistinctly and, without their names or contact information, it was impossible to obtain their corrections. So with regret we included only the discussions that involved the

invited participants, for we were able to check back with them to fill in and correct their discussions.

Step 5: Our copy editor worked over each transcript looking for areas that needed improvement (poor grammar, spelling, poor sentence flow, and poor readability) and edited to improve readability. She made suggestions on how each presentation could be improved without changing the text's meaning. Then we asked each presenter if the changes were acceptable and respected what each wished to say.

Step 6: The final transcripts were prepared for publication in this Issue 15.

We hope that you find this issue of conference proceedings to be an interesting record of what the leading researchers in North America foresee in problem gambling research, treatment, and policy.

We welcome your comments.

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Proceedings of the 19th annual conference on prevention, research, and treatment of problem gambling. June 23–25, 2005, in New Orleans, Louisiana. National Council on Problem Gambling, Washington, DC.

Subtypes of problem gamblers

Presenter: Alex Blaszczynski

(Introduction.) **Rachel Volberg**: When Keith Whyte and the program conference folks started planning this conference, Keith distributed the introduction to a book called *Stopping Family Violence*, published in 1988. It represented a consensus amongst experts and stakeholders in 1988 about what the most urgent research needs were in the emerging area of social problems. In a rather bizarre coincidence, I was reading *USA Today* yesterday, and I saw a small news item with a little graphic. It said that the rate of family violence had fallen by more than half, from 5.4 events per 1,000 to 2.1 per 1,000 between 1993 and 2002. I was struck by this because in a big-picture way, this is what we hope may come out of this event and this conference.

We've brought together experts from around the world to examine critical issues in the field of problem gambling, to shake up some of our established notions, hopefully, and to find consensus on others. The idea, or the hope that we have, besides having a great conference, is to identify the most urgent research needs in the field through a consensus process and a discussion process. The purpose of getting to that consensus is so that the National Council on Problem Gambling can focus its efforts and the efforts of a diverse board and diverse group of people on moving towards a national research agenda. We hope to shape the future of the field rather than be shaped by it, and I look forward to a couple of very exciting days.

We're starting today with a keynote address by a renowned colleague of mine, Alex—I won't try and say your last name properly. I'll say it the way that I usually say it, although you assured me that it was completely wrong. Alex Blaszczynski is the

head of the Department of Medical Psychology at Westmead Hospital and Co-Director of the Gambling Research Unit at the University of Sydney. He has conducted seminal investigations of the relationship of disordered gambling behavior to anxiety, depression, substance use, and suicide. Alex is a founding member of the Australian National Council for Problem Gambling and the National Association for Gambling Studies in Australia, and a Foundation Director of the Australian Institute of Gambling Studies. Alex tells me that he has promised that he will not be using any statistics today, so you can all open your eyes wide and pay attention. Rather, he wants to present to you a conceptual model with a clinical perspective that he hopes will help in developing or improving treatment for problem gamblers.

Alex Blaszczynski: G'day. I'm going to give this presentation in Australian, so I hope that you'll be able to understand me.

Today I want to start off on a somewhat somber note, and that is to inform people of the recent death of a great mentor and colleague and friend of mine, Neil McConaghy. Neil was a great person. I first met him in 1972 when he interviewed me for a job as a research assistant for a temporary position while I was looking for a job in economics and investor relations, and he certainly stimulated my interest in research in the area of compulsive sexual behaviors before my introduction to gambling in 1977. Neil was a great mentor. I credit him, basically, with shaping my thinking patterns, my writing style. My own incompetence I have managed to achieve myself, but he was a great thinker.

And my first memory of him was with psychophysiological work on compulsive sexual behaviors with Grass polygraph eight-channel equipment. We were standing there, and I was looking at this rather perplexing item hooked up to this person with GSR and penile plethysmography measuring sexual responses to some unusual stimuli. And I said to Neil, "Well, I'm having difficulty with this, Neil." And he said, "Look, apply science to this." He said, "If you're confronted with complexities and difficulties, always go back to the basics. The first thing you need to do is to turn on the equipment."

But that, I think, indicates the importance to Neil of science and going back to the basics and to empirical evidence, and he always in arguments would say, basically, that it doesn't matter what my views are or what my philosophy or beliefs are. The weight of the evidence points this way or that way. And he was, I think, a consummate scientist, so that I'd like to tribute not only this keynote presentation but also many of my career achievements to Neil.

I'd like to thank Keith Whyte and the National Council on Problem Gambling for inviting me and giving me the honor of giving the

keynote address. When Keith invited me in Barcelona, he said the next conference is in New Orleans, and I jumped at the chance. I jumped at the chance because my son goes to Nicholls State University here in Thibodaux, and he's done well. He's got a basketball scholarship. Unfortunately, I misread the dates, and he's back in Australia. *(Laughter.)*

Another main reason I enjoyed accepting this particular conference was, again, coming back to Neil's concept of going back to the basics, and asking ourselves important questions to look at: what is the critical state of knowledge, what are the gaps in knowledge, and how do we translate research into practice?

Neil McConaghy, I think, was seminal in terms of looking at one particular procedure: imaginal desensitization. But, unfortunately, despite the research indicating its effectiveness, it's still not widely used, but it's a technique that I think Neil will be, certainly, remembered for and hopefully that will continue going from research into practice. And the other important element is where do we go from here? And I'd certainly recommend Bourbon Street, Oak Alley, and Thibodaux and Nicholls State basketball.

The important element about science is that it's built up with facts, as a house is with stones, but a collection of facts is no more science than a heap of stones is a house. And I think that the current field of gambling is at this stage of collection of facts, and we need to put these into conceptual models to work out exactly what house we're building.

The objective of today's talk is to look at the construct of problem gambling, and I want to raise some questions, to get you to consider different perspectives, and possibly to offend a few people. But if I do that, and it leads to some degree of discussion, stimulation, and argument, then that would be good. I think what we need to do is to move away from the homogeneity myths, from the idea that all gamblers are exactly the same. What I'm looking for, basically, is a classification structure based on etiological factors and critical pathways that end up with a similar phenomenology that we see in our particular office each day and then ultimately present a pathways model looking at subtypes and then discuss the treatment implications of each of these particular taxons or groups.

The first question to ask is, does the construct of problem gambling exist? Is it a myth? Is it a syndrome? Is it a disease? Is it an illness? Is it a public health issue? A simple answer: yes. It does exist. We see it in clinical presentations to mental health services. We see individuals who complain of recurrent gambling behaviors that lead to distress and impairment in functioning. We don't have to go through DSM III, IV, V, VI, or VII to work that out: some

people do experience intense distress.

There are high rates of comorbidity, depression, and substance abuse. We don't know what the directions of causality are, and not everybody becomes depressed, nor do they all have substance abuse. We know that 75 percent of people presenting for treatment meet criteria for depression. Not surprising. In fact, I'm quite surprised that someone who is in significant debt, marital discord, suicidal ideation, is not depressed. The norm would be to expect someone in distress to be depressed. The question is, what is the etiological contribution of the depression? Does it precede or does it follow gambling behaviors? It's the same with substance abuse and other psychiatric disorders, and I think we need to go back and understand that.

We know that the severity of problem gambling is such that a significant proportion of people, roughly 40 percent of those presenting for treatment, manifest clinically relevant suicidal ideation, and some of our research indicates that 1.7 percent of Australian suicides are gambling related. And that's, I think, 1.7 percent too high.

Do we have a clear understanding of its construct, that is, the etiology, its pathology, and particular subtypes? At this particular state of our knowledge I don't believe we do. We're still collecting the facts. This is evident in the confusion in nomenclature and explanatory paradigms that are used to describe gambling.

We don't know how to refer to the person without a problem. A social gambler? A recreational gambler? A non-problem gambler? Does it imply that the non-problem gambler is a latent problem gambler subject to exposure to the right conducive environments? We refer to excessive gambling. Excessive relative to whom? What is excessive to one's spouse or partner may not be excessive to the gambler themselves. What do we mean by "at risk"? Does it suggest that someone may, in fact, be suffering a preclinical condition of pathological or problem gambling, that someone may, in fact, have some preclinical indicators of cancer? The disease remains asymptomatic in the disease process, but clinical pathology may subsequently discover some pathogenic process. Disordered gambling? Any gambling that leads to a loss, clearly, is disordered. Gambling that leads to winning is clearly ordered. What is a probable problem gambler as compared to a problem gambler, to a compulsive gambler? I think these particular terminologies are quite important because they do, in fact, shape our understanding of the construct that we're dealing with, and that, in turn, will lead our management and treatment interventions.

The science of pathological gambling is designed with one purpose in mind. That is to understand the etiology and the pathogenic

process of problem gambling in order to provide adequate and effective treatment programs to reduce the distress and harm that individuals suffer, and I think we need to bear that in mind.

In terms of current conceptual models, we're looking at single-dimension models in the main, most of them regarding pathological or problem gamblers as one homogeneous entity and attempting to provide particular conceptual models across the broad class of gamblers. And we have the addictions, the predominant paradigm, which have clear implications on how we treat problem gamblers.

We have the confusion of impulse-control disorders, but an impulse control that may, in fact, be premeditated, seems to be a bit of a contradiction. How can you premeditate an impulse? What exactly is an impulse? Is it something which is chronic, persistent, or is it something on the spur of the moment?

We're looking at cognitive models. We're looking at learning theories, at Eric Hollander's obsessive compulsive spectrum disorders, and we're looking at psychodynamic issues. And all of them, I believe, have merit. All of them, I think, are valid in some respect or valid according to some particular subgroup.

The other question I would like to have people ask themselves is, what is the threshold of harm required for the condition to be met? Have we stopped to ask ourselves what is the basis for harm? Because the predominant criterion identifying pathological gambling rests heavily on adverse consequences. What adverse consequences are we talking about, and what particular level of harm?

We have Bourbon Street in 2005. I happened to pass by for research purposes. We have a nice confluence of slot machines next to an ATM. The ATM was quite productive in terms of payouts. Well, I was quite impressed. It kept on working. Always managed to get the right numbers in. But, I mean, we have a situation here where we have an environment, and a public health issue—and David Korn will talk later and more competently than I will on public health issues. But you have an environmental situation that is conducive to harm, where you are going to get social recreational non-problem gamblers playing, probably, longer than intended and spending more time and money than intended simply because they can just move one seat to access the ATM, get the money, and then reinvest it into the slot machine and the Louisiana State Government.

At what point does harm occur? There must be some particular point in the dimension of the career of pathological gambling when it translates from no harm to a pathological condition. With diabetes

you may have precursors, but at some particular point something occurs, and there is a switch from a nonpathological state to a manifest pathological state. And my argument to consider here would be that it occurs on two bases, and that one can draw down all harm to the notion of a gambler exceeding discretionary available disposable income, that is, money that they can afford to spend. As soon as you spend one cent more than discretionary disposable income, you are now getting into money that should be going for other sources—mortgage, necessities, holidays, buying mint juleps at Oak Alley. As soon as that occurs, then there is an opportunity cost. In economic terms, you are taking money from one particular area and redirecting it into another.

So, as soon as you spend one cent beyond discretionary available income, harm occurs. The more you spend out of discretionary income, clearly, the greater the harm. If you're spending all your salary on gambling and borrowing more money to gamble, then, clearly, there are severe problems emanating, and that becomes manifest in the legal repercussions—once all your funds are exhausted, you then turn to criminal behaviors, and we know that roughly 60 percent of people with gambling problems participate in criminal offenses.

The same occurs with leisure time. As soon as the person spends more than their available leisure time on gambling, they now have an opportunity cost. They should be doing work or family or social obligations. So, at that particular point harm occurs. But we are aware that harm may be transient, and it may be inconsequential. And, again, we're looking on the one hand at severe and recurrent harm that we see daily in our clinical practices, quite severe harm that requires some form of intervention, and where some individuals require protection from themselves. On the other hand, there are other transient and inconsequential harms. People may spend more money than they can afford on a particular day. They may go hungry or they may need to walk home. It doesn't persist, and it doesn't create any major problems.

If we look at adolescence, we can see a lot of harm there, which may be transient and inconsequential. For some of us, drinking when we were adolescents, many of us here on occasions have drunk too much, embarrassed ourselves, created some degree of harm, but that did not lead to any requirement for intervention or concern. From a public health policy, clearly, there was harm, and the importance is to reduce hazardous levels of drinking or gambling or smoking behavior, looking at risk-taking behaviors to minimize the potential risk of later harm.

But the importance of this combination of the nature of the harm and its severity is important because it does influence health resource allocation. And, certainly, in Australia there's been a great

clamor following the Productivity Commission to indicate that 1.2 percent, 1.7, 2.3 percent of people meet criteria for pathological problem or severe problem gambling–related behaviors, and, therefore, there was a requirement for clinical counseling services to be established.

And when we start to look at the figures, we find that, in fact, a lot of people don't come in for treatment and the question is, why don't they come for treatment? So we're starting to look now at the possibility that there may be people who are adapting to levels of harm, don't recognize the harm they're experiencing, or are experiencing and adapting to the level of harm and believe that they're going to manage it on their own or hit the brick wall, and then there's spontaneous recovery, and they go on to cease gambling behaviors.

But the level of intervention ranges widely. It starts with psychoeducational material and self-help books. There are brief interventions, and David Hodgins's work, I think, is instrumental and quite influential in looking at the effectiveness of brief interventions. We're looking at the next level of intensive cognitive behavioral type programs, counseling programs, support groups, support for Gambler's Anonymous and other self-help organizations, and then we need specialized hospital or residential programs looking for those at the severe end of the spectrum, including those with hospitalization for suicidality.

In terms of the various levels of intervention and the various conceptual models and looking at some of the subtypes and some of the confusion, we're looking at primary prevention for dealing with problem gamblers, or the population prior to exposure, trying to educate them, trying to put in protective factors that will prevent them from actually developing gambling problems. In some elements, primary prevention is geared towards education. In other elements it's the reduction of the supply of the gambling products. We'll talk about this in a later session in terms of machine modifications.

In Victoria recently they have attempted to reduce the number of gaming machines in particular venues, and they contrasted the reduction of the number of gaming machines in five venues compared to a control group of five other venues that didn't have any reduction in the gaming machines. And the results were somewhat inconsistent. In some venues revenue went down. In others the reduction in machines led to an increase in revenue. What was interesting was the fact that the smoking ban was most effective in reducing revenue.

But the question is, does revenue reduction automatically mean a reduction in problem gambling? Or is it that recreational people are

not gambling as much, and, therefore, there's a reduction, and the hardcore pathological or problem gambler is continuing to gamble? We need to look at that.

What we do know is that within that mix of the population there is a variety of people who are at risk, who may have the propensity to develop problem gambling, and these are the people that I think primary prevention programs should be targeting, selecting those who exhibit high-risk behaviors in socially disadvantaged areas or those people who are, in fact, attending venues. And we know from our research that although the general population prevalence rates are roughly 1 percent, yet when you look at specific venues—such as clubs or hotels—the rates increase dramatically to 18 to 25 percent. Clearly, people who attend venues are the ones at risk.

The secondary approach is looking at people who do gamble and looking at ways of protecting them. Again, we have people who are active gamblers, and again, some people at risk. And that risk increases with exposure. Clearly, you cannot have problem gambling without the opportunity to gamble, but we do know that—from the prohibition era and other areas where gambling is banned—people do continue gambling. We're not going to get rid of it.

The third group we filter down to includes the treatment providers. Much depends on your particular orientation. From a public health perspective, clearly, you're going to look at primary prevention and secondary prevention issues. If you're a treatment counselor, then the primary focus is on the third group. So we can, I think, conceptualize all these particular interventions as falling across these particular strata.

The difficulty, of course, is that we have vested interests and sometimes it's hard to differentiate which group falls where. But, quite clearly, the position here is that we are in a difficult conflict of interest where the government—depending on your jurisdiction—either is the agent for gambling or derives substantive tax revenue from gambling and has vested interests in promoting gambling. The industry has vested interests in promoting gambling. Churches, welfare groups, gambling counselors have a vested interest in promoting problem gambling because they get research and treatment funding, and academics themselves have conflicts of interests because we want to highlight the issue. We want research funding. Everybody, in fact, is in this tumultuous scenario where we have our own particular philosophies and perspectives.

There is a lot of ideology and philosophy involved in this. There are a lot of people who are antigambling for a variety of reasons, some justified. I want to move away from that particular issue to look, basically, at the science of it. We recognize that there are conflicts

of interest. The question we need to ask is, are we looking towards banning gambling totally? I think the prohibition era suggests probably not because there are other unintended consequences if we totally ban gambling. Do we allow a laissez-faire promotion of gambling? Again, no, because, clearly, there is a relationship between gambling opportunities, promotion of gambling, attitudinal shifts, and development of problem gambling. To what level is society prepared to accept harm and to allow gambling to continue? Is it worthwhile to have a sustainable industry?

We can draw many parallels. For example, as I see it there is no benefit from smoking. One cigarette causes problems, yet we continue to allow smoking to occur. There are a lot of lobby groups and so forth, but, clearly, the lobby groups, the government, and the industry are quite powerful.

If you look at alcohol, there are some benefits, medicinal purposes, as we in the audience only drink for medicinal purposes. We have a balance with the recognition of significant harm associated with alcohol. We need to moderate it, teach people to reduce alcohol consumption, but we do it in a variety of ways. We don't do it by prohibition—although there have been some attempts, quite unsuccessful. We can reduce the level of alcohol in the beer so people drink twice as much to get the same effect. We can sell it in smaller bottles. Or the ultimate test would be to put vinegar in and make it unpalatable.

And the same analogy can be drawn with poker machines or slot machines and gambling. We could reduce the rates of losses on slot machines by having one reel spin every 10 minutes, having a jackpot payout of $1. I mean, there are variety of different ways, but what we're ultimately looking at is destroying the product, so from a philosophical/ideological point of view, are we at one extreme where we say "no gambling," the other extreme of laissez-faire gambling? Or do we try to find some particular balance between harm and acceptable harm?

For an unpalatable concept of allowing harm, look at the motor vehicle—as a clinician I'm involved in treatment of posttrauma, and we did some studies on road trauma and the implications of that. Look at the harm that the motor vehicle contributes in terms of rehabilitation costs, distress to the family, spinal cord injuries, brain damage, hospitalizations, and you're looking at the environment, freeways, pollution, and yet I've never heard anybody arguing for a ban on motor vehicles. They're always striving towards higher minimization, but, again, we have safer cars, separating pedestrians from motor vehicle, air bags, braking systems, safety belts. And what do people do? Compensate for it. They drive faster because they feel safer, so there are accidents. Rates of injuries persist, but the mortality rate decreases. We need to find some

particular balance between these particular issues.

The other question is, what are the core minimal requirements for problem gambling? Do we focus on adverse consequences or impaired control? And I think this is an important question. How many people could identify a problem gambler as they walk into their clinic within two to three minutes? Anybody? A few people could. Why? Because we're starting to look at particular patterns of behavior, and we intuitively identify core elements of problem gamblers. If I asked each of you to look at three questions that you would ask a pathological gambler or someone presenting with pathological gambling problems, only three clinical questions to ascertain a diagnosis, what would those three questions be? I'm asking that as a rhetorical question, I'm not going to answer it. Some people would look towards the concept of harm, but, again, we need to look at the level and the nature of harm and its impact on the levels of distress. Or is it impaired control, and what do we actually mean by impaired control?

But the question I'm raising for you is to ask, do we define this particular construct of problem gambling on the basis of only adverse consequences, or is it because of the presence of impaired control? Let me give you two quick anecdotes.

Anecdote #1. Let us assume that I am Catholic, and Catholics are not antigambling. In fact, they build some of their churches on raffles. I'm quite happy and comfortable with the notion of gambling, and I work in a nice institution where my boss and a few other people enjoy purchasing lottery tickets every Monday. We have a little syndicate, and every Monday I give my $10. And being a social worker, I'm on a salary of $200,000 a year, so I can well afford it. I give the $10. I get the ticket. My wife is a devout Muslim and because of her beliefs, which forbid gambling, she is totally antigambling. And on Monday evenings, as she is wont to do, she goes through my wallet, finds this syndicate lottery ticket, and we have an argument. She refuses to eat the dinner I cook. (It's typical for the males to cook in Australia.) We have arguments, and these arguments persist. And this is a recurrent theme every week. Am I a problem gambler? Is there harm emanating from my gambling? Do I require treatment, or does my wife require treatment? How would you manage this particular scenario? Is it a gambling problem, or is it a reflection of some obstinacy in myself that I'm not prepared to compromise? Do I have the problem? I refute that entirely, but the question is, would I have such a problem?

Anecdote #2. Let's take another case. This involves a chap whom I saw many years ago. He inherited $60,000. He complained that he was going to the club, and was gambling more money than he'd intended. He was concerned that he was unable to control his behavior. Is he a problem gambler? He had no adverse

consequences beyond the self-report that he gambled more than he intended. He could see the consequences in the long term and wanted to take action. He accepted the fact that there was some element of impaired control within him. Would you treat this person? No adverse consequences as yet. Does he meet the criteria for problem gambling, or do we have to wait until there are adverse consequences?

These are questions I hope to have you ask yourselves. What I'm arguing is that problem gambling is a term applied to a class of individuals who are defined by negative consequences and exhibiting characteristics that imply impaired control and/or poor decision making.

We have various subtypes. We have the horse race gambler who loses his shirt. We have the casino player who loses his trousers. Take a close look at this person. Anyone recognize him? We have the card player with the smoking addiction. We have the slot machine player. They're all different types and permutations of gamblers, but what I'm looking at—and I pose this particular question—is that we have the problem gambler, who's the individual who manifests harm associated with their gambling behavior. There are some adverse consequences of a level of severity that cause complaints to or distress to the individual.

The second global subgroup is the pathological gambler, and this is the core group of individuals who exhibit impaired control demonstrated by the inability to cease despite repeated efforts. And what I'm arguing, in a sense, is that you can have a situation where, with a problem gambler, they don't try to resist, they don't want to resist gambling, and they resist all efforts to have them stop gambling, yet they're causing harm to others. We've all come across those individuals in clinical practice. All pathological gamblers are problem gamblers, but I would argue that not all problem gamblers are pathological gamblers. The distinction resides in the core element of impaired control.

The implications of this, I think, are quite interesting. Screening and diagnostic instruments emphasize different components. Some look at impaired control, some at harm and the consequences. We have different instruments providing different rates. We have, in fact, the question of interpretation of items, and Bob Ladouceur recently did a study looking at clarifying the items and finding that clarifying SOGS (South Oaks Gambling Screen) items led to a reduction in scores.

Michael Walker did a study recently. I think it's reported in the latest edition of *International Gambling Studies*. In it he looked at providing written and verbal clarification of SOGS scores and found discrepant findings. Providing verbal clarification increased SOGS

scores. There was a difference between verbal and written instructions and their impact on SOGS scores.

We need to look at that. Sensitivity and specificity vary between particular measures, between the SOGS and DSM. They're not picking up the same cases. The SOGS is excellent in clinical treatment samples, but has poor accuracy in the general population, identifying twice as many cases as does DSM. We're looking at the concept that some individuals are not identified the same way by different instruments, and there's a great deal of discordance.

Again, the work of Bob Ladouceur is important in this, for with the NORC measure versus clinical interview, there was a 23 percent discrepancy in identifying cases. Low correlations between particular measures, and perhaps the most interesting one, which I recently came across, not all clients in treatment in gambling counseling centers meet criteria. In one study 25 percent of people being treated for problem gambling failed to meet DSM criteria, at least in one particular setting.

We're looking at some of these discrepancies and the lack of correlations and discordancies between particular measures dependent upon the notion that some of them are picking up elements to do with problem gamblers and others to do with impaired control and pathological gamblers. Are they targeting the same particular population?

I want to get on quickly (because we're running out of time) into the homogeneity myth, and I'm arguing that not all problem gamblers are the same. Let's set the scene for subtyping and look at some of the premises, principles, and assumptions behind it. What we need to do is deconstruct it and try to put some conceptual order onto it.

What I'm arguing is that there are multiple subtypes of this genus of problem gambler. One subspecies includes the pathological gambler, in which there are significant neurobiological foundations and intrapsychic conflicts that merge and have an interrelationship. We have cognitive elements and reward deficiency systems that interact. The second group includes problem gamblers whose main focus is on the development of erroneous perceptions and irrational beliefs and peer-group interactions. They're not mutually exclusive in that we may have neurological issues to do with problem gambling, but their particular contribution is less important than erroneous perceptions and irrational beliefs. There are other groups in which gambling problems are secondary to mania, risk-taking behavior, complexes, or marital conflicts.

What we're looking at, I would argue, are multiple etiological

components that lead to different pathways that result in a common phenomenology, and what we're looking at is the end result, which is this common phenomenology. This view is influenced in many respects by Howard Schaffer's clarity of thought, but I have a slight departure from him because he's focusing on the addiction model, and my position is that that is relevant and important, but doesn't fit all particular gamblers. And, hence, I'm moving a step aside and saying that there are, in fact, other multiple etiological components, not just addiction, in gambling as an addictive disorder.

It's complex. There are precursors, and these are neurobiological, genetic, involving the mesolimbic orbitofrontal reward systems—dopamine in particular—the amygdala segmental area reverberating through the frontal area and creating reward deficiencies. Components are similar across a broad range of addictive behaviors, and we have a good substrate for vulnerabilities to a broad range of addictive behaviors.

But we also have other important influences that may add to or have an effect that is independent of that, and those are family history, modeling, attachment, trauma, rejection. Dewey Jacobs's model, I think, is quite important in that regard, as is some of the work of Jeff Derevensky. We have personality traits, in particular, impulsivity, that may have some neurological basis. Personality traits interact with coping strategies, and the work of Lia Nower and Mark Dickerson, I think, is important in understanding that as well. We also have peer-group interactions, which I think are important in terms of shaping attitudes and beliefs. And then, ultimately, we have many other convergences between belief systems and schemas in the cognitive belief structures.

These are fluctuating. These are not static. These are dynamic precursors that may well set the scene, but they in themselves are not going to create gambling unless you have some degree of exposure to gambling. And we have the ecological government policy and public health relevance at this particular level. The gambling opportunity provides the groundwork or the foundations for the precursor elements to actually interact with protective factors to develop gambling. So, there is exposure to gambling, but we also need to have some affective shift, some salience of gambling.

As I experienced in my university days, I was taken to the track, and we had a number of bets. Seven of the bets lost. The last one won, and I managed to come out 10 cents in front. At the end of it I thought, "This is a relief. Thank God I got my money back. No more." And it took me years of practice to get back into gambling. But, in essence, that experience didn't excite me about gambling, and yet among other people, the colleagues that demonically influenced me to go to the racetrack, one of them in hindsight was

a problem gambler. He had won big early in his career, had a salience and preoccupation, and developed the cycle that we well know.

So, my basic view is that there is an important element that interacts with the neurobiological level, also subjective excitement, and generates and influences cognitive belief structures. But the important element is that there is some point at which the person suddenly has this affective shift.

Some social gamblers gamble for many years, on average five to nine years, without problems. Then, suddenly, something occurs, and there is a particular shift in cognitions and interactions with mood that provides a new meaning to gambling behavior. And some of that salience, I believe, is relevant to belief structures and to neurobiology and leads to the common phenomenon of problem gambling.

But we're looking at the notion or the assumption that there are different subtypes leading to different critical pathways, and to try to put this into some visual perspective, children and adolescents are exposed to gambling at a variety of ages and through a variety of different media, including parents. Many of them don't gamble or gamble intermittently and are then exposed—depending on your legal jurisdiction—at age 18 in Australia, 21 years in the U.S. They're exposed to family and peer games, gambling for matches—the family that plays together stays together—sports betting amongst peers, and lottery and horses, in particular, parental purchases, quite often the parents providing birthday scratch cards or gifts. It sets a nice model that gambling is fine. Many of those we know, like us, go on to develop social gambling behaviors, quite normal in the broadest meaning of the term.

In terms of adolescent gambling and youth gambling, we should acknowledge the work of Jeff Derevensky and Rina Gupta, looking at the nature of adolescence, motivation linked to enjoyment, excitement, money, the influence of poor self-esteem and stress, looking at the need for interventions designed to enhance problem solving for a proportion of individuals with difficulty coping. We have the requirements of attitudinal shift, the image promotion of gambling in the community, parental acceptance of gambling as an acceptable behavior, and then information balanced against that is information being provided by the public health approaches. But we know that information, per se, isn't sufficient to shift behaviors. We need the attitude, so we need to look towards the importance of early attitudinal shifts and learning behavior.

It becomes important because, currently, we have Texas Hold'em, and I'm observing the interest in the television shows on cable TV, celebrity poker, on-line poker. I'm watching my son as he's

engaging in and playing these particular games, and it is, in fact, starting to take on a degree of interest and promotion among adolescents. And it's a fascinating game. Many of them don't see it as gambling behavior, but as skills based and no different from any other video-type games. But I think with technological advances with handheld and Internet access using personal organizers it may become a problem later on. It's a great game to play. I play it every night, only for fun and for research.

We know that some people experience transient problem gambling and then they hit some brick wall early on and cease gambling. Others develop problem gambling and have major problems. We have a number of individuals who exhibit at-risk behaviors, a whole range of risky populations—reckless driving, exposure to or experimenting with drugs, alcohol, sexual practices, et cetera. Some of these remain at school, and they're poor at learning achievements. Others drop out of school and don't finish. On top of that we have another group of individuals who have comorbid conditions: attention deficit, conduct disorders, and other problems, and are more likely to seek treatment in the early phases and develop gambling problems and problems that are comorbid with gambling.

And so we have this particular confusion of social gamblers, a mixture of problem and pathological gamblers, and then another group of people who have more biologically based and physiological elements.

I'm arguing that we can distinguish at least three groups of pathological gamblers, and I believe that we can break these down into further subgroups within each particular category.

The behaviorally conditioned individuals are those who, when exposed to gambling opportunities and to reinforcement and cognitive distortions, end up making poor decisions, believing that you can win at gambling, and pursue gambling behaviors.

We have a second group who are emotionally disturbed individuals, and their gambling, basically, is to relieve or modulate affective states. And on top of that is the behavioral conditioning, the excitement, and cognitive belief structures on top of that, but their primary reason to gamble is emotional.

The third group are those who are biologically vulnerable, more prone to addictive-type behaviors. They have high levels of impulsivity and exhibit multiple maladaptive behaviors and, again, are subject to behavioral conditioning.

In the last few minutes I want to talk about some of the clinical

issues. Ecology is important. The environment, the attitudes, peer-group interactions are quite important in establishing the opportunities to gamble. Through the influx of classical and operant conditioning, excitement, physiological, and subjective arousal, we have excitement associated with gambling cues. We also have the beliefs that Bob Ladouceur, Tony Toneatto, and others have described in detail: the erroneous cognitions associated with gambling, misunderstanding of randomness, beliefs that you can actually win at gambling. Sometimes you do win, which reinforces those particular notions. That then leads to problem and pathological gambling.

This is pathway one. Minimal psychopathology. The gambling is primarily in peer-group contexts or exposed through peer groups, initially motivated by competitiveness, excitement, and winning. When they present for treatment, they have a shorter period of excessive gambling. Their problems are less severe at the time of presentation, or they have a particular crisis rather than recurrent crises. And they manifest a stable childhood and family history and background. In terms of psychopathology, there's an absence of gross premorbid indicators of psychopathology. There's a predominance of erroneous, irrational beliefs. They continue believing that you can win at gambling, but there's less evidence of neurological deficits, less neurotransmitter disregulation, conduct disorder, attention deficit, and learning disorders.

The affective and behavioral disturbances associated with gambling, many of the negative consequences and depression are in response to gambling-induced problems—depression, anxiety, worry about disclosure. Any substance abuse is to mediate the emotions caused by gambling concerns, and any criminal offense occurs in the absence of personality disorders, such as antisocial personality. There are lower levels of impulsivity, but it's still present. And there's more sensation-seeking combined with some impulsivity, but low levels of dysfunctional impulsivity.

Within this cohort natural recovery is more common. Self-help material and brief interventions are highly effective, and motivation enhancement is quite important. These are the nice people to work with because they're motivated, they comply with treatment, and they have a positive response to treatment, and they are highly recommended to deal with.

The second group, the emotionally vulnerable, I argue, have some degree of primary motivation linked to emotional escape through dissociation, through a narrowing of attention. And these people evidence some degree of vulnerability, factors which include childhood disturbances, or certain personality traits, which may manifest themselves in increased anxiety, some impulsivity, poor coping strategies, poor stress management and problem-solving

capacities, and a family history of gambling behavior, which may or may not be genetic, some elements of trauma and abuse—and I think we need to explore that area further—lower levels of self-esteem, sense of rejection, building up their ego through gambling behaviors. Parental modeling, attachments, and shifts in attitude are quite important in this regard. Again, there is a lack of clarity with respect to genetic versus environmental factors, and I think there may be an interaction there.

The concepts of early onset, severity of the disorder, and predictors of later gambling in adolescents in treatment who drop out all refer to the concepts of impulsivity. Again, I think that there is a bimodal distribution, in particular, amongst females and the elderly, where you have some females developing this particular emotional escape early on in adolescence and young adulthood and then a second cohort in middle age and towards older age in respect to the empty-nest syndrome. The family has moved out, there's a sense of alienation or other difficulties that they may experience within the family, they get exposed to gambling, and then gambling provides them with this particular need. They have higher levels of psychopathology—mood disturbances, maladaptive coping styles—which tend to predate the gambling, and elements of risk-taking and impulsivity. Again, the gambling and substance abuse is motivated by the need for emotional escape, and they're using substances—prescription drugs and alcohol—in the same way that they're using gambling: to deal with their particular issues.

Irrational beliefs are prominent, but with less focus on winning. The primary motivator is to win to allow the gambling to continue, so they're looking towards winning, obviously, to get that magic jackpot, but primarily to get more money to sustain and continue their particular gambling behavior.

These people require more intensive cognitive behavioral therapy programs, a broader intervention that looks at stress management and problem solving, targeting some of the important factors that they have difficulty dealing with. Treatment of depression and other comorbid conditions takes greater predominance in this particular group, and they require longer-term supportive interventions and participation in self-help groups.

The third pathway includes the individuals you'd like to refer to people you don't like. They have neurobiological factors and they're difficult to treat. They have an early onset of gambling in early adolescence. They have a history of dysfunctional family backgrounds, abuse and neglect, and high levels of impulsivity, antisocial-type behaviors, and risk-taking across a wide domain of behaviors, which extend beyond just gambling behaviors. And you can see experimentation, risk-taking behaviors, drugs, unprotected sex, and so forth, superficial relationships in early adolescence.

They have a predominance of impulsivity and other related personality disorders. There is substance abuse that is independent of and aggravated by gambling, and there's a mixture between the two. There's evidence of neurological deficits in early childhood, and, as I've mentioned, there's a broad spectrum of gambling and non-gambling related criminal behaviors. And there's a greater level of instability in interpersonal relationships and employment.

The treatment implications for pathway three are intensive cognitive therapy coupled with the prospect of medication with some of the SSRIs (selective serotonin reuptake inhibitors), although we're not sure whether they target the depression or the impulsivity, and also interventions for non-gambling related comorbid conditions, in particular, some of the personality disorders, so that there is a broader treatment-resistant, more addictive-type group related to these.

In terms of future directions—I won't belabor this because we'll talk about this during the course of the next two days—I think we need to start looking at longitudinal studies to start clarifying predictor variables that will identify problem versus pathological gambling in some of the particular subtypes, trying to define more clearly what is the construct of the various subtypes of gambling. And that relates to some empirical tests and looking for study and research designs that will clearly differentiate some of these particular clusters and identify and refine further these three particular model groups.

Importantly, we need to work out the mechanism or the mode of action of treatment, and ask, is that consistent with the conceptual framework? In other words, if we're applying cognitive therapy, we're assuming and targeting cognitive ideation. Is there a dose-dependent relationship between behavioral treatment outcomes and changes in irrational cognitions? We need to address those things. If you're focusing on habituation, cue exposure, and imaginal desensitization, which are more physiologically based, do they operate through reduction of arousal, or do they operate through cognitive shifts or an interaction between the two? And I think we need to start looking more clearly at treatment implications by going through randomized control outcome studies and trying to get a better handle in terms of understanding what is the best treatment intervention for which particular subtype of problem gambler.

[End of presentation.]

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JOURNAL OF GAMBLING ISSUES

session

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Session I: Critical issues in the etiology of problem gambling

The neurobiology of pathological gambling

Presenter: Jon Grant

(Introduction.) **Alex Blaszczynski**: The first speaker is Jon Grant. Jon Grant received his JD, which I presume is not juvenile delinquency, from Cornell University in 1992 before going on to get his MPH in public health from Harvard University and his MD from Brown University Medical School in 1999. He's currently a very enthusiastic worker. He's the editor-in-chief of the *Journal of Gambling Studies* and assistant professor of psychiatry and human behavior. I'm not sure whether we separate out psychiatry from human behavior or whether they're the same, but it'll be intriguing to find out. And he's the chief of impulse-control disorders at Brown Medical School and Butler Hospital. It gives me great pleasure to introduce Jon. He'll talk on the neurobiology of pathological gambling. And I'm sure Jon will be too humble to mention it, but he's recently published his work with Marc Potenza on pathological gambling, and it's a good read. Jon.

Jon Grant: Thank you. So, in five or ten minutes all that we know about the biology of gambling addiction. I'm happy that it's only a short amount because the key here, I think, is the take-home message: we're learning a lot more about the biology of what makes someone with a gambling addiction different from somebody without. But we don't know the whole picture, and so I'm not here to say, well, this is the cause. But we get little pieces of the puzzle, which I think are important because as we start to know more, we should be able to fill in that puzzle.

And when I talk about biology, I don't mean at all to suggest that all these other events in people's lives aren't important. As a matter of

fact, I think one of the issues that we don't know yet is how all of the other things that go into developing a gambling addiction—one's upbringing, one's development, one's current situation—how that affects biology. I mean, my grandmother, God rest her soul, could tell you if she met a gambling addict. There's something different about that person, and so this is just one piece of that puzzle, which I want to present to you and let you know that people are thinking about it, people are working hard on it, and we are trying to figure it out.

There are chemicals in the brain called neurotransmitters and early on some researchers were thinking that maybe some of these neurotransmitters are different in people who have a gambling addiction. One of the interesting things that we don't know—I think it is going to be very important—is the answer to the question, are these neurotransmitters different because somebody starts having a gambling addiction, or are they different, and that leads someone to having a gambling addiction? That cause and effect is not clear, but we do have little pieces here.

One of them is serotonin. Everybody talks about serotonin. It's a chemical that's all over the brain and all over the body and it's an easy answer to everything. But what's interesting about this is when we've looked at certain studies with MAOB, which is a peripheral marker, and if I check someone's platelets to see how well their serotonin's functioning, this seems to be a little off in people who have a gambling addiction. When we look at serotonin in the cerebral spinal fluid (which bathes the brain and the spine), it is a little different from that of people who don't have a gambling addiction.

The SSRIs [selective serotonin reuptake inhibitors] are medications that affect serotonin, which are most popularly the antidepressants: Prozac, Paxil; we've all heard about them. These have shown benefit in gambling addiction. That perhaps tells us that serotonin may have something going on in gambling addiction, but again, as part of the puzzle. And none of these act alone. They act in concert with each other.

Dopamine is another great chemical that's involved in the brain, and we associate dopamine with rewarding experiences. When people find something very enticing, the dopamine is activated, so it made sense for researchers to start looking at dopamine. When researchers looked again at cerebral spinal fluid, then dopamine seemed to be a little out of whack compared to people who don't have a gambling addiction.

Most interesting is the case of Parkinson's disease, which has gotten a lot of publicity recently. Parkinson's represents depleted dopamine, so when these patients take medications that increase

dopamine, interestingly enough, and neurologists have been noticing this, many of the Parkinson's patients develop a gambling addiction, even people who have never gambled before. An intriguing concept. Why is this? Why does this happen when we put dopamine in people's brains? We have case reports in the literature: it's interesting and it's intriguing.

Bupropion is a medication with a dopamine effect—it's also called Wellbutrin, Zyban—it goes by a lot of names. It's used to treat smoking problems. It has also been shown in some early studies to be effective against gambling addiction.

And then last are endorphins, the opiate part of the brain, which gets revved up and tells us something's pleasurable. You can see how this is yet another thing that might be involved. And it makes sense that it should be involved because people get that rush, that thrill, and they find it pleasurable when they gamble even though afterwards they'll regret it. We've found out that when you look at different parts of the opiate system, metabolites in the cerebral spinal fluid, again, it's a little out of whack in people who have a gambling addiction. And we have used opiate antagonists, the most widely known being Naltrexone, which is a medication to treat alcoholism and the urges of alcoholism, and we've used that in gambling addiction as well. People say that when they are on the medicine they gamble and it isn't any fun any more. They don't get that rush.

We find that different chemicals may be involved. One of the questions is, are all these equally involved? Are they differently involved in different people? We don't know that yet. But we're getting some indications.

Cognitive testing of people with a gambling addiction shows differences in terms of attention. So is that part of the brain that focuses on attention different in people who have a gambling addiction? It appears to be so. We find that when these people perform tests—computer tests, paper and pencil tests—they don't want to delay gratification. They want something right away. They'd rather take a smaller thing right away than even think about something later on. And that inability to delay gratification may also be at play and that would be a part of the brain that's involved in that.

When we look at arousal and we measure people's blood pressure, their sweating and heart rate and all these, people with a gambling addiction tend to have higher physiological responses when they gamble compared to people who don't have a gambling addiction. Again, pieces of the puzzle.

Interesting aspects have come out of our brain-imaging studies. Marc Potenza at Yale has done a couple of imaging studies. And Marc much regrets not being able to be here. When you look at different tests you're looking for two things, I think, in gambling. One, people who have a gambling addiction probably want to gamble more intensely than people who don't, so you look at that urge state. What is it about these folks? Where in the brain would that be where we intensely want to do something? And then, the other part is their inability to stop; they have more of a difficulty in restraining behavior. Restraint is a normal part of our brain function. When we really want to do something, part of our brain says, "Don't do it. Maybe you shouldn't do it." I mean, that's generally speaking, and if it's not harmful, we say, "OK, do a little bit of it." And then part of the brain says, "Don't," and part of it says, "I want to." One theory about gambling addiction asks if it's the part that wants to be more intense, or is the problem with the part that says, "Don't do it," being out the window and not working, or is it an imbalance in these? Other approaches involve using Stroop tests where you're looking at different colors, and you have to match colors with words; this assesses the part of the brain that can control our impulses.

And the upshot of these pictures is that the ventral medial prefrontal cortex, which is the front part of the lower part of the brain, does not seem to be as activated, and this is the part of the brain that would say, "Don't do it. Not a good idea." It seems to be less activated in people who have a gambling addiction compared to people who don't have a gambling addiction. And when you look at, especially the third picture, when you compare gambling addictions to controls, that's the part of the brain that is less activated in people who have a gambling addiction, and that's the part that would tell us not to do something.

People who have manic depression, which is an illness defined by its impulsivity, tend to have the same finding on fMRI [functional magnetic resonance imaging] brain scans. So our brain doesn't understand gambling as opposed to anything else, but it understands impulses, and it understands not being able to control impulses. It's not surprising that the same part of the brain in, say, manic depression that is involved in impulsivity would be involved in gambling impulsivity too. That's not to say that they're the same illness, but perhaps the same part of the brain is involved when someone cannot control impulses. You could look at this in terms of sexual addictions and drug and alcohol addictions, and if you could do the same scan, most likely the same part of the brain would be at work, the part that says, "I can't control myself when I really want to do something." Another of Marc's studies with people turned on to gambling found that the part of the brain that says don't do something tends to be deactivated, and you don't see that when you have people scanning under other conditions.

What we now know from brain scans and from studies of the neurotransmitters is that something is different, and while that may be obvious we have some clues about *what* may be different. I think part of what we're going to have to do in the future is understand how either all these other factors in people's lives create the difference, or the difference creates those other factors: as in which way the arrows go, cause or effect. And then, most importantly for the people who suffer, what the heck can we do about it once we know that the brain is actually different? Can we actually—through treatments, through therapy, and through medication—start making the brain return to how a normal control's brain would look?

Alex Blaszczynski: Thanks very much, Jon. It's an interesting area in terms of neurobiology and its implication with gambling behavior. I'd like to come back to the Parkinson's disease issue because I'm reviewing the literature at the moment. I've seen a case of a 56-year-old, I think it was, a chap with atypical Parkinson's who exhibited the same issues of sudden onset of pathological gambling in relation to medication. But when you analyze it from a clinical perspective, there's a question raised because he was attempting to deal with the implications of his Parkinson's. He had clear ideas that he wanted to be a businessman, and, in his eyes, he was a failure to his wife because he hadn't actually put into effect some of his brilliant ideas. And his gambling was an attempt to get money quickly so that he could then start to advertise or market his particular product. And I raised the question with him, was it the medication and the change, and we started to look at the correlation between medication and behavior change. And that didn't seem to be a one-to-one relationship.

But I'm wondering whether these other particular cases of Parkinson's and gambling are an artifact of the fact that people haven't explored the clear relationship and implications of Parkinson's coping mechanisms and gambling behavior, and as a consequence there is an inconsistent picture.

Jon Grant: I think that may be the case with some folks, of course, because when you read reports that are written largely by neurologists in neurology journals, oftentimes they don't go into incredible detail about understanding how people are coping with their illness. In my personal experience, I've seen folks who have not had a gambling problem. They've been on Parkinson's meds for many years. They've been stable. Their mood has been good. They've been active in the community. And I've had a couple patients whose neurologists changed them over to certain Parkinson's medication, and the patients wanted to go to the casino and start gambling.

Interestingly enough, there are problems not just with gambling. In general, these medications may produce a general lack of impulse control. Some of my patients have started exposing themselves. They've been inappropriately sexual with neighbors. It's not as if it's just going to cause gambling, but it may be more a lack of impulse control. And then it's a question of which target they seem to light on for whatever reason, maybe because they remember having gambled in the past, and they enjoyed it or something such as that. But it seems as if there is a global impulsivity.

Alex Blaszczynski: In terms of the disregulation, what, Jon, is the process by which a gambler gambles for a period of time, possibly on average five to nine years at social levels, and then starts to develop problems? What is it about the neurotransmitter system that becomes disregulated? What's the actual event that causes that, and does it spontaneously correct when the person goes into spontaneous recovery? In a sense, I'm trying to look at the triggering factors that cause the particular pathological process.

Jon Grant: That's a good one too and would be a great research question, which we have to address. We're not sure, for instance, why somebody can go nine years and gamble harmlessly and then suddenly develop an addiction, and somebody else can come in after three months and say, "I'm addicted. This is outta control."

I actually saw somebody the other day who started gambling and within two months was going every single day for 12 hours a day. And I thought, that's intense, and that's quickly intense. Why is that person different—what is going on? Are the neurotransmitters so easily beaten down by those events in that person's brain? Maybe, as we have talked about, for genetic reasons, maybe life events—maybe there have been enough stresses on the human body in that person that, over time, the stress of the financial problems and the anxiety and everything has beat it down more? We don't know yet.

That's a great $10 million question because it would help us know how to get back to interventions. If you know that some people are more at risk for having their transmitters out of whack early, you'd intervene earlier. If you think most people don't have a problem for nine years, your interventions don't have to be as intensive, perhaps, but we don't know any of that yet. That's not satisfying, is it? See, it's not satisfying for me. I'm always happy about where the state of science is today because I think we're much better off than we were five, particularly, ten years ago, but it's still not satisfying in the sense that you get to go home and think, "OK. Yeah. I got the answer. That makes sense."

Alex Blaszczynski: Thanks very much, Jon. Being lucky at Harrah's last night, I won $1 million. I'm going to give it to Jon at

lunchtime, and after lunch I'm going to ask him to apply it to a research methodology or design that would address some of these particular questions.

[End of session.]

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Proceedings of the 19th annual conference on prevention, research, and treatment of problem gambling. June 23–25, 2005, in New Orleans, Louisiana. National Council on Problem Gambling, Washington, DC.

Session I: Critical issues in the etiology of problem gambling

Problem gambling—Is it in your genes?

Presenter: Kamini Shah

(Introduction.) **Jon Grant**: Our next speaker is Dr. Kamini Shah, MHS, who is the project manager of several studies, including "Pathological gambling: Courses, consequences, and causes" at the Washington University School of Medicine, Department of Internal Medicine. She has a masters in health sciences from the Johns Hopkins University School of Hygiene and Public Health, and she's currently a doctorate of science candidate in the Public Health Policy and Management, Health Finance and Management, again, with the Johns Hopkins University of Hygiene and Public Health.

Kamini Shah: The question is "Problem gambling—is it in your genes?" And the answer is, "yes," sometimes it is. I've got the advantage over Jon in terms of the chicken and egg question because you do start out with your genes and so the temporal relationship is set there. Again, this is an area where there are probably more questions than there are answers.

There are a number of ways that we can study genetic effects on gambling. The simplest way or the most basic way is to look at family studies, where you're basically looking at the clustering of disease in relatives, and you're looking to see if there's a genetic effect: is there more clustering in the family members of affected individuals than in those who aren't affected?

In Walters's study they found a higher clustering with sons of problem gambling fathers than daughters of problem gambling mothers. In the more severe studies you can tell that there's a

familial effect. But a familial effect can be due to genes or can be due to shared-environment factors.

If you move into twin studies, you can do those in a number of ways. You can look at adoption studies for monozygotic twins—identical twins—who were reared apart, so one twin had his or her biological family and one had an adopted family. And then you look to see whether they're more like the adopted family or their biological family. Again, genes would be implicated if they're more like their biological family. Problems with that are that record-keeping for adoption studies can be very private. The studies are also difficult to conduct sometimes. So, it's nice if you have a twin registry or some way to access twins, and we're lucky enough to have one of those.

When you look at twins and carry out analyses with them, aside from those who were adopted, you can look at a co-twin control study, which essentially means that if you have monozygotic twins who are discordant for a behavior—again, one twin has the behavior, the other one doesn't—you can have the unaffected twin serve as a perfect genetic control for the other twin, and that allows you to eliminate some of the confounds and to get at your answers.

You can also look at concordance of disorder; basically, looking at this idea of one identical twin versus the other identical twin. Are they more likely to both have the disorder if they're identical twins as compared to nonidentical twins? And, again, if that correlation is greater for your identical twins, you've got that greater concordance, and that is termed the "classical twin design."

Keith Winters has a study, which is one of the studies that didn't really show a genetic effect, but they found with monozygotic twins greater participation in high-action games.

Then, if you take it a step further, you can actually estimate how great is this genetic influence. So, we've said, "OK. There is a genetic influence. Well, how great is it?" For this you need a very large sample of people, a large sample of twins, and this is hard to come by.

We have the Vietnam Era Twin Registry, a registry of over 7,400 twin pairs, approximately half monozygotic, half dizygotic. They're all males because of limitations—very few female twin pairs went into the military then—and they're middle-aged now because they were serving at that time, so there's a definite limitation to that study. A number of people have been involved with those studies. But many of the studies that estimate genetic influence come from this one sample, and from it we've found that about 64 percent of the variance in gambling behavior is due to genes.

We know that there is a pretty large genetic influence on gambling, but we don't know which genes are involved. Then you go to the next step of looking at molecular studies and there are two ways of doing that. One is to look at linkage analysis, where you basically look for a gene that is linked to a disorder and it'll be present more in affected family members than nonaffected family members, and then you follow a pedigree. That hasn't been done yet for pathological gambling and one of the reasons is that to follow that kind of a linkage you need a clear mode of inheritance for a disorder. And we just don't see that with gambling or with a lot of behavioral issues.

So then, you can do association studies, which look at affected individuals versus nonaffected individuals, and ask, "Are certain genes more present in those affected versus those not affected?" Those are called "association studies" and much of this work has also come from two groups. One uses a population in Spain, and one uses a population here in the United States, with smaller samples than the twin registry, and I believe both are Caucasian samples.

Gambling and many behavioral issues and psychiatric disorders are "polygenic," which means that you don't have one gene that's driving the whole situation. A lot of different genes act in little ways and maybe in conjunction with each other, and so we have to tease out what's really going on.

To do association studies you have to have somewhere to start. There are a lot of genes out there. You can't just go studying them all, so what has happened is that because of the similarities, I believe, with addictive disorders, and the research on alcohol and all that came before the research on gambling, a logical place to start are the genes that have been shown to be involved with other addictive disorders. These types of genes, dopaminergic genes, serotonergic genes, and noradrenergic genes, have all been found to be related to gambling. And Jon did a wonderful job earlier, so I won't go into the details there, but there are small samples in this work. And that limits your ability to test for these effects, and when the effects are there, they tend to be small.

Dr. Cummings has a nice analysis wherein he looked at the effect of a number of different genes and found that 15 of them were related to gambling, but if you looked at the effect of any one of those genes, it was only about two percent of the variance. That's very little and it is very hard to detect a specific gene being involved with gambling.

Now, let's go back to the twin registry for estimates of genetic influence. Remember that this is with middle-aged males in an old study, based on data from 1992, so it does use the old DSM-III-R

criteria. But what we found was that, in the range of 50 percent of the variance in reporting, the first five symptoms had a genetic influence. There were limitations in our modeling procedures, often due to low prevalence of certain items. But, typically, when you have familial effects, you assume that they're largely genetic unless there's some very strong relationship between an environmental factor and a disorder. You can assume that much of that familial chunk is actually genetic. Again, limitations in our modeling prevented us from looking at the other four symptoms [*unclear*].

In a later study we used a bivariant model and could actually estimate the genetic, as opposed to the familial, influence on problem gambling, and it was 64 percent.

Something to throw out there for interest is that there are a lot of good reasons why we look at gambling as an addiction. We model treatments after what we've learned about other addictive behaviors to see how well they work. You do have to start somewhere and there are certainly many, many, many similarities between gambling and other addictions, whether it's just the phenomenological symptoms that look like withdrawal and tolerance and things like that, or whether it's the neurotransmitters that are involved, for instance, dopamine and that whole reward pathway, things like impaired decision making that affect both types of [*unclear*], similar types of comorbidities, antisocial personality, and then similar gene effects.

It's interesting to look at the overlap between pathological gambling and other psychiatric disorders in terms of "Does gene A affect pathological gambling, and does gene A also affect antisocial personality disorder, major depression, nicotine dependence, alcohol dependence, and drug dependence?" Then you can see that there definitely are some genes that are shared, but it's a relatively small percentage of them. The drug dependence estimate is a little funky because we had a confidence interval that went from here to there, but especially if you look at those first four, you do see that the overlap is significant.

But there is yet another story out there, and one of our questions is, "What are the other genes that affect pathological gambling?" Now, I should probably say that if you look at comorbidity of gambling with some of these other disorders, the genetic influence on that comorbidity is greater, and ask, "Is that same gene affecting both disorders?"

Where does this go? A question was raised earlier asking how close we are to being able to do something. Well, I think the future is here. The models that we use (statistical issues, various sampling designs) are expanding and developing rapidly, and it is almost as if by the time you finish the manuscript you are

developing, that your analysis is already somewhat old because now there's a new and better model for it. We're definitely learning as we go and you have to imagine what you could do with this genetic information. Genes are immutable, so to speak, but that doesn't mean they're irrelevant because genetic information can be applied.

Whenever I talk about these things, someone always tells me that I'm blaming the victim, and I'm not. I'm not, because a genetic influence is there, but it is not blaming the victim. There is certainly no one gene that determines that you will have gambling problems, and so that's not the focus here at all.

Instead, what you might want to think about is how you can use this genetic information. Gene effects are relative. When you look at our estimation models, the environmental effects and the genetic effects have to equal one, so there may be times in a person's life, say, youth, adolescence, when the environmental effects on your behaviors are greater. At that time your genetic effects will be lower, because just by definition it has to equal one. There may be some cohort effects that weigh in in terms of how big the genetic influence is. Remember, we're looking at a sample of middle-aged men.

You can also look at tailored treatments. People have certain genetic patterns. Maybe certain treatments will be more effective with some than with others. Maybe some people are more likely to have treatment failure. You could also look at correct outcomes. We know the question asking whether abstinence is the only way to go, or is controlled gambling possible after you've had a pathological gambling experience? And, again, there may be a genetic effect in determining which one of those is possible for an individual.

Clearly, this is work in progress and we're showing some genetic effects even in small, preliminary samples for genes and gender in terms of pathological gambling. You might ask, "Could genes be affecting that telescoped progression that you see in women in gambling?" Natural recovery, age of onset, again, like with many disorders—breast cancer, Alzheimer's disease—the stronger genetic effects are with the more severe forms of the disease. And we're seeing that, as I've shown with the data, with gambling as well.

Finally, we haven't been able to do much with our models in looking at that environmental genetic interaction. Someone isn't just going to be sitting in their home and out of the blue develop a gambling problem. But because of some statistical modeling issues—and, again, it involves power and sample size—we have some limitations in terms of how much we can model that process.

What do we need to do to improve our models and our estimation techniques?

The first question is this issue of clinically versus genetically informative phenotypes. Now, a phenotype represents expressed behavior or whatever happens as a result of the genes. It's what you observe. And within the clinical realm with the DSM you've got a threshold model of four or five plus symptoms, depending on which set of criteria you use. Either you have the disease or below the criteria you don't. Obviously there is a sense of a continuum with subthreshold gamblers versus pathological gamblers, but there's still a dichotomous view of the disorder. It may be that when looking at genes this is not the most clinically informative way to go. For instance, the genes may be more related to more biological forms of the disease, so what we're working on is defining phenotypes that might be more informative from a genetic point of view. And you can use multiple things to define a phenotype—the more you can narrow that phenotype down, the more likely you're going to be able to detect these teeny tiny genetic effects.

An endophenotype is a biological marker for a disease, and, usually, these markers have continuous values, like blood pressure or serum cholesterol. With them you get greater power for your studies, as with studies of, say, heart disease. We haven't found something like that yet for gambling, but if it is out there, it will help us.

And finally, we need to look at gender issues and, particularly, at racial issues, which we haven't been able to study much in the two samples that I've been talking about. And, clearly, there's reason to think that genetic frequency would be different with different races.

Alex Blaszczynski: Thanks, Kamini. We'll have time for questions after lunch.

[After lunch session.]

Alex Blaszczynski: We have an hour and a half to continue our discussions.

I think this is a key issue that we're talking about, in terms of the fundamentals of neurobiology, of genetics. It has implications, as Kamini has mentioned, in terms of blaming the victim. Questions such as, "If you do have a genetic predisposition to gambling, is it inevitable that you're going to develop problems? If not, what are the protective factors? What is the implication for relapse?" So there's a whole range of questions that we're going to cover.

Kamini Shah: A gentleman asked me after you all left for lunch for

a clarification about the size estimates that I gave earlier. And the issue is this: when you say that there's a 64 percent effect, a gene effect on pathological gambling, it's a little different than just talking about a pure correlation. And without getting into all the statistics of how it happens, you base what you're doing on these correlations and concordances.

But then there's modeling that gets you to those estimates. And if any of you are at all interested, we have an article that came out in this last *Journal of Gambling Studies*, that talks through some of that modeling in a nonstatistical manner. So I would refer you to that.

Getting back to issues and implications, I was trying to make some notes about things that I might have missed. Something important in these studies, and the reason why we haven't been able to do as much as we would like, involves the need to identify big samples. I can't stress that enough. It is a challenge for a number of different reasons. You can look at clinical samples where you get the higher proportion of pathological gamblers, per se, but then you end up with generalizability problems. You look in the community and it's a relatively rare disorder. So how do you get enough people?

These are the kinds of things that we have to grapple with before we can do more. I keep talking about increasing the power. And that means we'll be able to identify these differences. And you have to understand that just because we're not identifying an effect, it doesn't mean that it's not there. It just may be that we aren't able to detect it given what we've got.

And that's where you get into some of these issues like phenotypes and such. Because, if you can do things within modeling to help you identify effects, you can do it with the same size sample. You could take a phenotype, or an observed behavior. Or you could even think of Alex's typology of different types of gamblers, and instead of looking at all gamblers together, try to break it down so there's a meaningful grouping, in particular, a grouping that might be more related to a genetic load.

For instance, with the third category that was mentioned this morning—with the biological group—or even the second category with the emotional vulnerability, there was an issue of psychiatric disorder. And we know there's a genetic link with psychiatric disorders. So you may try to pull a group of people like that out and look at them. Perhaps you've got a narrow phenotype. Plus, genetically, you also want to try to get people who are a little more similar, so you don't have a vast heterogeneity with just a very small ability to detect changes.

I think a lot of work needs to be done on phenotyping. And it encourages me to see the literature now going much more in the direction of looking at types of gamblers, at subtypes, and that all gambling isn't equal. I think that will help this field out tremendously.

The effect of diagnostic reliability is another important approach. Because one of the issues with looking at genetic effects is this idea of how you classify a person as being disordered and having the disease or the illness versus not having it; this is critical to your estimates. How do we categorize these people? Based on the DSM? Are we getting a lot of false positives or false negatives? Do we have people that we're saying have the disorder, but really don't? Things like that affect the modeling. So I think as progress is made in classifying gambling and gambling disorders, that will help move this field along as well.

I think we need to look at how gamblers are different and to give that as least as much thought as we're giving now to looking at how gamblers are like other addicted individuals. I don't know that that's the magic bullet, or anything like that. But I certainly think it's an interesting place to go. I certainly think the evidence suggests that that might be useful. And certainly we, who are doing the research and the modeling, are also dependent on folks who are out in the field doing the clinical work and all, to help us define some of these things so that we can do better modeling.

Alex Blaszczynski: Are there any questions from the audience?

Carlos Blanco: I have two questions. When we talk about subtyping, we seem to consider problem and pathological gambling as two different entities, but research suggests that they might be a unitary construct. So, the first question is, how do you interpret this subtyping? Do you think it's environmental? Or do you think there are certain genes that provide a general vulnerability for pathological gambling, and then other genes that specify the subtype?

Kamini Shah: Some of our studies do show that continuum of gambling and that single liability throughout, and when you look at the idea of subtypes, there could well be some genetic differences. And you might be able to more clearly identify them by looking at a slightly different phenotype.

One of the advantages with phenotypes is that you may not be just looking at it based on genetics. You might be pulling other things into it, like personality and other things that also have a genetic load. And by looking at more of these variables that all are correlated, you might be able to increase your likelihood of finding

that gene that actually affects all of those things.

Carlos Blanco: But you think that the subtypes are really genetically based? Or do you think that they're more environmentally based? I realize you don't have the answer, I just want your thoughts.

Kamini Shah: I don't know. I find right now that the literature on subtypes is a little confusing. It's all over the place. And I think one of the things that has happened in the literature is that a lot of the studies of subtypes look only at pathological gamblers, at clinical samples, at people who have sought treatment. And clearly those folks are different; there's not as much work being done pulling in problem gamblers and recreational gamblers.

One issue with genetic studies involves looking for controls for our cases. And we don't do association studies. But what is the correct control? Who do you include in your study? One of the issues with only having pathological gamblers, versus your general population control, is that if you identify a genetic effect, are you identifying a gene for someone having an interest in gambling, or are you identifying a gene for someone who has a problem with gambling? So unless you have that middle block of people you can't tell what you're finding.

So, I'm not quite sure how to answer that, because when I look at the literature and see things like motivation to gamble, and risk taking, and impulse seeking, and psychiatric comorbidity, and a lot of the things that seem to be used right now to define these different types… right now my bias would be to say that there is a large genetic load.

Carlos Blanco: These studies suggest that there's a lot of genetic load, which would suggest biological treatment for these disorders. But my impression is that psychotherapy works better than medication right now.

I'd be happy if you wanted to answer this as well, Jon. What are your thoughts? Do you think that if it's a biologically based disorder, it should be treated with medication? Or is there room for psychotherapy? That we don't have the right medications, but eventually the medications will be better than the psychotherapy?

Kamini Shah: While he's fiddling with his microphone… one of the things that we've got an interest in looking at right now is cognitive distortions, and how these affect gambling. There is a literature out there about these. For instance, cognitive behavioral therapies are focused on dealing with these distortions and helping gamblers to understand that what they're thinking is not necessarily correct nor

does it reflect reality. But the issue is that perhaps there's actually a genetic influence on things like cognitive distortion and your likelihood of processing information that way. So yes, I still think there is room for the genetics in that kind of therapy. But certainly, more directly perhaps with the pharmacology, because there you can more directly tailor it.

Jon Grant: It's an interesting question, Carlos. But I'm always of the opinion that both medication and therapy will still do something fundamentally different to the brain. What groups are going to benefit most from medication versus therapy, or from a combination? We don't know. I think the genetics may lead us to some understanding of what people may benefit from something. When all is said and done, it's all biological. It's just a matter of how you are able to understand it. It'd be ideal, I guess, if you could look at a gambler and say, "Well look, based on this gene, and based on your subtype, you will benefit from eight weeks of CBT [cognitive behavioral therapy]. However, the person next to you will benefit from Paxil only." That would be the ideal world.

But I think either way they're going to benefit from it because it's going to change their brain. We're obviously just not there yet. But that would be the ideal, I think, of combining the genetics. Also imaging, which I talked about, with treatment options. That would be the perfect world. Yet I don't know of a disorder or a medical condition that can actually do that at all. So, holding gambling to that standard may be aiming a little too high at this point, given the fact that nobody else seems to do it.

Kamini Shah: There has been, I think, some work done with pharmacogenetics. And in terms of how definitive it is or not, I'm not sure. But with issues such as dosing, for instance, that some individuals may need a higher dose, or may react badly to a higher dose, it's all at an early stage.

We had looked at trying to do a study with that approach with gambling and we're not there yet. Because until we know a little bit more about what's going on biologically, we can't take the next step of trying to figure out how that interacts with genetics. [*Unclear.*] So in a way, some parts of the field have to wait a little while sometimes for other parts to catch up. And, as Jon said, we are so new at this. And even with disorders that have been out there for eons, they haven't gotten there yet with this.

Alex Blaszczynski: I'm just wondering whether there'll be any advance in identifying the antigambling gene. Are there any questions? There must be some questions. Otherwise, I'll have a panic anxiety. *(Laughter.)* I'd like to ask the panel members about samples. I think it's something we probably don't pay enough attention to. I'm raising the question of the potential for certain

agencies, certain institutions, certain people with research interests, to attract certain types of clients to their particular facilities.

And whether some of the genetics, some of the fMRI [functional magnetic resonance imaging] studies, some of the OCD [obsessive compulsive disorder] spectrum disorder studies, our own studies, cognitive therapy studies, suffer from the fact that some people filter through certain types of individuals to certain facilities. I would argue that within a psychiatric facility, you're probably more likely to get the more severe end of the spectrum, to get people with impulsivity-type disorders. If there is a known interest in particular fMRI studies on dual diagnoses, or on certain types of individuals, there's going to be a particular funneling effect, or filtering effect, leading to those particular institutions. Is this my fantasy? Jet lag? Or is it reality?

Rachel Volberg: We're still working on technology here. I've almost exclusively done general population and patron surveys. And the challenge there, of course, is that there are so few problem pathological gamblers in the population, that you have to have large samples in there to be able to identify enough people to have anything meaningful.

The issue that you've raised is a somewhat different one, I think, and speaks to the question, "Are particular types of problem gamblers attracted to particular types of treatment?" And they therefore end up in your research sample, because of their belief, or their feeling, that that type of treatment is going to be effective with them. I have to say, it's an intriguing possibility. Maybe some of the other research folks in the audience might have some ideas about how you would control for that, or how you would address that, in doing that kind of work.

Jon Grant: In my experience, I think that people who have gambling addictions are so desperate for treatment that they will go wherever they can find somebody who will give treatment. Yet it's always intrigued me that we live in this information age. The possibilities for people to know where to go are not difficult. People call me from all over the country saying, "Is there anybody in my area?" Why don't people know? How can we make that information available? And I think, "Yeah, there's somebody 30 miles from you." But why don't they know that?

When people sign up for treatment studies, for fMRI studies, I have found that it's almost like *Field of Dreams*; if you build it, they will come. And if you let people know that there's something out there that will help them get more information about the illness, or have it treated, they will flock to it. But I just don't think we necessarily do a good job.

We have so many different options—newspapers, Internet, all these things that only hit slices of populations—that I don't think we do a good job of letting people know about all these things. And that's the selection bias that I see; people just randomly find something, or just randomly don't.

Kamini Shah: My two cents here is that I think that there are definitely issues about clinical populations being different from nonclinical populations, just by the fact that they were seeking treatment. Even before you get into the issue of "did they seek this treatment versus that treatment?", there is the fact that they sought treatment, because such a small proportion of problem gamblers do seek treatment. But there's also a volunteer bias because you have people that are in a clinical situation and they have more awareness of their illness.

But there are also issues around community surveys which use advertisements, as opposed to direct-digit dialing, or random-digit dialing, where you've got someone who is volunteering, who has looked at an ad, has said, "Oh, that sounds interesting." Or, "Oh, that applies to me." Someone has taken the initiative to call you and wants to participate. That person is also different from the person who looked at that ad, but chose not to do anything about it.

Issues of sampling are beyond just the clinical realm. And as an aside, to get back to our genetic models, we actually did a study looking at the genetic effect on treatment seeking for alcoholism and found a 41 percent genetic load. So these guys are different.

Alex Blaszczynski: Is there a gene for treatment seeking? Is that the implication? *(Laughter.)*

Could I have some feedback from the audience in respect of do you believe that there is a filtering effect of certain types of severity, or certain characteristics of clients attending different types of centers? Because you have community centers. You have hospital-based centers. Veterans Administration [VA]. Private practice. Talking amongst yourselves, do you detect that there is any difference between subtypes? Could we go for the microphone please? We like to give people the limelight.

Joanna Franklin: My sense is that much as Dr. Grant's saying, the gamblers will go wherever they can find help. Phoenix is an interesting example of several different centers in one metropolitan area. And though it's not an entire spectrum of possible treatment venues, it's a selection of venues. Folks are clumping and clustering based on preferences that I certainly don't understand. But they're interesting to look at. If you go to Flagstaff, if you go to Tucson, you don't see that.

I think for the counselor something like the pathway model that we talked about this morning is much more helpful because you can get any number of different folks. Trying to understand which one is which, and who is who… lots of counselors who are relatively new to the field bring the shotgun with them and figure, "Let's try a little bit of… and see what's going to work." We don't have enough in the way of assessment information that lets you categorize. At least not in the hands of us, the folks in the trenches, so to speak, that lets you categorize: "I think you'll do best with this, and you'll do best with that." We're not there yet.

Some counselors are somewhat resistant even to the medication trials, with some medications that have been suggested in studies. It's almost like, "When all else fails, we'll think about a pill, but not until we've tried everything else under the sun." So availability has a lot to do with it. And in some areas there's ample GA, as opposed to no GA, and where there are ample state-funded treatment programs and regardless of income you have access to care. Louisiana is a great example of that.

In other states, you have to have job income, maybe insurance, or forfeit your first-born child in order to find some access to care. So it's a mixed bag. *(Laughter.)*

Rachel Volberg: I just have to reinforce what Joanna said, that resources for pathological gamblers are spread very thin. I would say that like any number of people addicted to other things, they may present at a mental health clinic, or have some episode, in which they have a 72-hour commitment at a state mental hospital, or even go through the private psychiatric network, if they have medical insurance. A lot of that probably depends upon whether they actually know what ails them.

And of course, we have a help line for Delaware and several other places. And by definition, they have some idea of what's wrong, or they wouldn't be calling a problem gambling help line. They come through us because we're the only game in town. And we see every conceivable variant, all the subtypes, the genders. We just don't see many young people.

Rachel Volberg: [… responding to a comment about the low numbers of people seeking treatment…] There's so much that can be said on this. A couple of things. When we had a treatment program in Las Vegas and were running a pharmacological study at the same time, the people who came in for the study were not the people who came in for treatment. And when they finished the study, they didn't say, "Okay, now I want treatment." They just finished the study and went off someplace. So what the differences were between those who came in for treatment, and didn't want to volunteer for the study, and those who came in for the study, and

then didn't want treatment, I'm not sure. Superficially on several measures they looked much the same. But still, there must have been something different about how they self-selected, how they chose to deal with their problem.

With data from the VA and comparable data we've collected in the private sector we see some significant differences in those populations of gamblers. On cognitive variables. On personality factors. So when we've done our brain scans on veterans, where you may have significantly higher rates of attention deficit disorder and cognitive deficits of various kinds, you're going to get different results.

So yes, you do have to be careful to describe the population you're dealing with. If you don't have comparable data for other populations, you're not sure what you're looking at. So I think that's a significant concern. You can have a population like veterans, where you may have a whole different genetic loading than nonveteran populations. It's an interesting question.

Jon Grant: The one comment that I have in response is this. I think the idea of stigma is still obviously quite huge with gambling addiction, as much as education has tried to suggest that it's more common than is thought. People will tell me, "You know, I really want to get help. But I don't want this on my insurance. Can you offer me something so nobody has to know I have this?"

Because I think more and more people are suspicious over the privacy of their records, and what insurance companies know and don't know. And I don't think it's paranoia. I actually just think it means well-informed people. And so when people come in for treatment, they have to have a certain different perspective and confidence, I think, in some way. Because they're saying, "Okay. This is going to go through insurance. You're going to bill me. Somebody might write down a little code that says pathological gambling."

I think a lot of people are aware of that stigma and how it may affect their work, their future insurance, all of these. And this is also why I like the option of being able to offer some types of studies for people and being aware that some people simply won't go for any treatment if it means having to give too much personal information.

Rachel Volberg: I wanted to comment on that too because this idea of insurance coverage for treatment for problem gambling, or for other disorders, is a singularly U.S. one. And let's not lose sight of the fact that in order to get coverage for problem gambling treatment of a professional kind, in the U.S., for the most part—with some few exceptions—people have to meet diagnosis. And they

have to have insurance. And the insurance company has to know what they're paying for.

In other countries, that's not the case. And so I think it's important not to be parochial, and just think about this in terms of U.S. issues, but to understand that there are a lot of different ways of doing this and that that may also impact people's willingness to access treatment services and participate in studies.

Kamini Shah: In terms of the different treatment programs, clearly, a lot of these people with gambling problems, as you point out, may actually show up in a drug treatment center, or somewhere like that.

And particularly in that instance, you then have to deal with the comorbidity issue where you've got a gambler who is also addicted to alcohol, drugs, et cetera. And how do you deal with that when you want to study gambling? And so there is an issue around whether you exclude people from studies who have comorbid disorders like that. Which means how many pure gamblers do we really have out there? Or do you keep them in the study?

Because then what you're really finding in your genetic study of gambling is the effect of genes on gambling over and above the effect on these other things. So I think the issue of comorbidities might also become important, in terms of which gambling treatment center you were at.

Alex Blaszczynski: [… in response to a question…] But in raising the question of EMDR [eye movement desensitization and reprocessing] and other treatment paradigms, I think the important element is to provide some degree of evidence enhancement that these interventions are quite effective.

It concerns me that when we did a review in Australia of some of the counseling services and looked at the particular methods of treatment, it became quite depressing and quite worrying from a clinical perspective that you have counselors who don't use any particular diagnostic criteria, or any particular measure to assess the problem of pathological gamblers in their particular clinics. But then they run a range of esoteric treatment interventions of unknown effectiveness with that particular population, with the assumption that it works over there, so therefore I can do it over here. And a high percentage of people are doing reflective listening without using elements of interventions that have been empirically validated to some extent.

But all of that, I think, is in the treatment domain. Again, addressing the audience to try to stimulate you, post-lunch: is it the genetics?

Is the neurotransmitter element really that important for counseling interventions? Does it really matter whether someone has the genetic makeup, immutable or not?

We know from the research presented here that there's a 60/40 percent split, genetics versus environment. But that can change, depending on certain circumstances. So it's not immutable. We can't change the genetic component, so do we need to worry about it from a treatment-intervention perspective? Or do we just focus basically on what we can modulate or modify, and assume that there is some genetic component? Do we ignore it? Or do we take it into account in modifying our treatment interventions? Any comments on that? From the audience, preferably.

Loreen Rugle: One thing I do with my clients is to give them a lecture on the biological, on the psychological. Believing that information is power, and empowering patients and clients, is giving them that information. And while at times they think, "Oh, immutable gene. I'm doomed," this gives you power to decide how your treatment should progress. And they come in with a question of "Why? Why do I keep doing this? What's wrong with me?" And helping them have that understanding and awareness of what puts you at risk, where your vulnerabilities are, is important in empowering them to make informed treatment decisions, and be part of that treatment-planning process. So I think it's important.

And to understand, for me, what I'm working with, and all the domains, and whether treatment is likely to be longer or shorter, and how to triage, and get a medication referral, is critical in relapse prevention.

Alex Blaszczynski: Or is it perhaps, Lori, too premature to raise those particular issues, since there are inconsistencies in responses, small effect sizes, biased samples? Is it worth it?

[End of taping for this presentation.]

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Proceedings of the 19th annual conference on prevention, research, and treatment of problem gambling. June 23–25, 2005, in New Orleans, Louisiana. National Council on Problem Gambling, Washington, DC.

Session I: Critical issues in the etiology of problem gambling

Gambling and environmental issues

Presenter: Rachel Volberg

(Introduction.) **Alex Blaszczynski**: Rachel and I have known each other for quite some time. She's the president of Gemini Research and is one of the leading figures, the exemplary figures, in terms of studies on prevalence. Her research work is always of high quality. Her interpretation of data is insightful. And it gives me great pleasure to introduce Rachel.

Rachel Volberg: I just want to express my appreciation for the work that Keith Whyte and Linda Abonyo and the program committee have done in putting this conference together. This is very different from the usual conference that we have had over the years. But I think that there's a tremendous value to putting all of you in the same room together, hearing the same stuff, and having the time in the social periods to trade impressions of what you thought was good, and what you thought was bad.

I introduced myself at the beginning of the conference yesterday, by letting people know that I had crossed 54 time zones in the last five weeks. And I apologize again for any fuzzy thinking that I might exhibit.

We're going to turn away from the genetics, and the inside of the body, and we're going to look at some different things having much more to do with environmental issues. I'm a sociologist, not a psychologist, and not a clinical person at all, so you can tell that my prejudices are showing.

This is an early slide that I put together back when you could use

Excel to make maps, showing the extent of gambling availability in the United States in 1973. Basically, there were nine states that had lotteries. And there was one state that had casinos. The slide doesn't show the availability of charitable gambling, which was pretty much available across the board. And it also doesn't show you the availability of horse racing, which was also fairly widespread, but quite limited in terms of its impact on the environment.

Well, here's 1999. Obviously a much more colorful picture. And it's not even up-to-date at this point. Quite a number of changes have occurred since 1999. The major changes since 1999 have been the legalization of lotteries in quite a number of the southern states that are still grey on this map, but at this point in 2005 would be yellow, and the introduction of what are called *racinos* [racetrack and casino combined] in a number of states. I don't even have a code on this map for racinos. I think it would be interesting to see how those have spread through the United States, certainly in the last five years. It's been quite remarkable.

The other major kind of gambling that has expanded recently has been tribal gaming, particularly in California, where over the last five years, we've seen the establishment of over 50 casinos in a state of just over 25 million people. It's also worth noting the introduction of racino gambling in Pennsylvania, Oklahoma, and a number of other states. So that is to give you a flavor of how the environment has changed. I mean it's really quite remarkable over a period of 25 years, the kinds of expansion that we've seen.

Here's another not very surprising slide. But I always feel that it's important to understand how rapidly legalized gambling has introduced itself into not just American society, but internationally. This chart shows the growth rate in annual gross revenues for all types of legal gambling in the U.S. between 1992 and 2003. In 2003, total gross revenues from all types of gambling rose to nearly $73 billion. And compared to the $3 billion that were legal gambling gross gaming revenues in 1975, that represents a 2,400 percent increase. I mean this is just absolutely phenomenal growth.

This pie chart gives you some information about the major sectors of the market. This is from the 2003 gross gaming revenues. Basically, casinos represent 40 percent of gross gaming of the gambling industry in the United States. Casinos in the United States include the major markets of Nevada, New Jersey, and Mississippi, as well as the riverboats.

What's interesting to me is that although casinos represent 40 percent of gross gaming revenues in 2003, their market share has actually declined since 2000, from 42 percent to 40 percent.

Lotteries are the second-largest sector of the market, with just over one quarter percent of revenues. But again, market share has declined since 2000 from 29 percent to 27 percent.

The third big player in the picture is tribal gaming, with 23 percent of gross gaming revenues in 2003, interestingly, up from 17 percent in the year 2000.

The typical and longstanding assumption that we've all had, and I don't exclude myself, is that when you see this kind of growth, of course you're going to see a tremendous increase in rates of problem gambling in the population. Certainly some early work that Howard Shaffer and colleagues did with their meta-analysis in 1997, suggested that there had been a significant increase in rates of problem gambling over time. There's other evidence suggesting that prevalence rates have risen rapidly in jurisdictions where machines became widespread, in Australia, for example, and in some jurisdictions in the U.S.

But here's what we are beginning to understand. There is a growing amount of information to suggest that natural recovery, that is, recovery that people undertake on their own rather than seeking treatment, is actually extremely common.

There's a study that Max Abbott and I did in New Zealand, where we initially assessed people in 1991. And then we reassessed them seven years later in 1998. We found that the majority of people who were classified as problem and pathological gamblers in 1991 no longer reported significant problems in 1998. It was a fairly small sample. We had 147 people in this sample and half of them had been problem and pathological gamblers when we assessed them initially. Considering the fact that pathological gambling is defined as a chronic and progressive disorder, this was quite a surprise.

With our colleague Maynard Williams, Max and I did some additional analysis to look at what factors predicted a continuation of problem and pathological gambling at the second point in time. What we found were three factors that explained the bulk of the variance.

The first one was how severe your problem was at point one in time. If you were a pathological gambler in 1991, you were much more likely to still be a pathological gambler in 1998.

The second factor was comorbid drinking problems. If you engaged in hazardous drinking behaviors in 1991, you were far more likely to have a gambling problem in 1998.

And in spite of the fact that New Zealand saw a tremendous expansion in the availability of gaming machines in the period between 1991 and 1998, the third factor that predicted continued severe problem gambling at time two was a preference for racetrack betting.

Separately, David Hodgins and his colleague, Nady el-Guebaly, did an interesting study of resolved and unresolved problem gamblers who were volunteers from the community. They were recruited by advertisement. And David and Nady found that recovered problem gamblers had less severe difficulties than the unresolved problem gamblers, and that they were more likely to report negative emotions and financial concerns related to their gambling. So there may have been something about the harms, the types of harms, or the level of harm, that the problem gamblers in this sample were experiencing, that led them to change their behavior, and to resolve their problems over a period of time.

Howard Shaffer and Matt Hall were able to assess a group of casino employees three times over a period of two years. And they found, interestingly, high overall rates of pathological gambling among casino employees, in the same way that you find high rates of alcohol problems among people who tend bar.

However, it was interesting and they commented on the fact that there were much lower rates of less severe problem gambling in this group of casino employees. The results of the third assessment were particularly interesting in this study, because Howard and Matt found that nearly a quarter of these casino employees had improved their problem gambling status over the two-year period of the study, but 12 percent developed more severe problems. So this suggests that there are different ways that people move in and out of problem gambling status over time.

The fact of the matter is that this is the extent of the literature at this point, with one more set of studies that I'm going to refer to in just a moment. But, the evidence base on which we operate in the gambling studies field is horrendously small. So this is the last study. This was a study that my colleague, Wendy Slutske, did with Kristina Jackson and Ken Sher. They looked at 192 young adults, aged between 18 and 29, who were assessed at four points in time.

The interesting thing that this study showed was that the overall prevalence rate didn't change in this population. It stayed the same, which was a bit odd, because you would expect some kind of change, either a decline, or perhaps an increase. And what Wendy and her colleagues did was to look not just at the aggregate prevalence rate, they looked at changes in the individuals over time. And they were able to show that there was considerable

individual variation. Some people went up, and then went down. Some people went down, and then went up. Some people went down and stayed down. They were able to break out, even within this small sample, quite a number of different pathways through problem gambling over time.

They argued that the stable aggregate rates mask considerable individual variation, as well as substantial rates of negative incidence, where individuals classified as problem or pathological gamblers at one point in time no longer met criteria at a later point in time.

Max Abbott and I meet in various countries around the world and we like to spend our time together thinking up good questions that will keep us busy for the next few years. And we've actually been asking this question for about five years: "What is it that makes some groups in the population particularly vulnerable?" And we've been looking internationally, at New Zealand data, at U.S. and Canadian data, and at data from a small number of studies that are being conducted in the Nordic countries, including Sweden and Norway.

Essentially we have found groups in the population in each of these jurisdictions who appear to be particularly vulnerable because they have a bimodal pattern of gambling participation, where there's a relatively large proportion of the group that does little or no gambling and a significant minority that gambles very regularly or heavily. These groups in the population include young males and older women. However, ethnic minorities and recent immigrants also score significantly higher on all of the problem gambling screens that we've used.

We think that this bimodal pattern of gambling participation, with relatively low rates of gambling participation across the group, but high rates of problem gambling, is characteristic of groups just entering the gambling market. And here's the hypothesis that we're hoping to test: that as these groups gain experience with gambling, their problem gambling rates may initially increase, and then level out, and perhaps even decline. Now this is a hypothesis. We haven't got enough data yet to test it out. But, it's the typical researcher's plaintive lament: "We just need to do a little more research to figure it out."

Getting from research to practice is always a big challenge for me because I don't really do the practice, so I have to listen to a lot of practitioners who tell me what is important to them. But here are some of the implications that I think these data that I've just presented have for those of you who treat problem gamblers.

I think that we are going to see continued increases in availability and expenditures on gambling. The poker craze is just the latest thing that we've had to deal with. Just before that, it was racinos, which are still going on. Tribal casinos are still expanding in numbers and in proximity to large, urban areas. Those of us in the United States tend not to think very often about Internet and wireless gambling. But believe me, in the U.K. and in Europe and in Australia, and in other parts of the world, this is an enormous issue.

The notion here is that there may be a topping-out point; that is, the prevalence rate goes up to a certain extent and then levels off, or it might even decline. The question is, where is that topping-out point? And can you move it back, so you don't have to wait until you get all the way up there, before you're able to have an effect, and reduce the harms in the population?

I think the other question that this raises is, how much gambling is enough? Because regulators and even the public tend not to ask that question. I think it's an important policy issue. If you're going to have gambling increases, and if you're going to have some increase in problem and pathological gambling, then when do communities get to decide that that's enough?

You had an interesting experience here in Louisiana, where you had video poker all over and then the parishes—which is what they call counties here—were able to vote in a referendum on whether they wanted video poker in their parish. And half the parishes said, "Yeah. We want these machines to be here." The other half said, "No. We really don't want these machines here any more." This was actually the voice of the community making itself heard, working to determine its own destiny, if you will.

I think the issue of natural recovery is a really important one. And despite our surprise when we realized how common it was, and the dismay that some of the treatment folks expressed when they realized that people were recovering on their own, and might not actually need help, this is important.

Natural recovery is much more frequent among folks who are not at the most severe end of the spectrum. By the time they are all the way out at the end of the continuum, it's going to be hard for them to recover on their own. There really are people out there who need help. But natural recovery offers hope for effectively preventing gambling disorders in the community.

This hope lies in targeting prevention messages to specific groups at risk in the population—recent immigrants, for example. Leaders in those immigrant communities should be made aware that this is a specific set of issues that they might want to address with

organizations in their communities.

I think there's also work that needs to be done to identify the specific behaviors that are associated with progression towards more problematic gambling, so that those behaviors can be targeted in prevention messages.

I think that the clear link we see across a large number of studies, between problem gambling and hazardous drinking, is particularly important for the treatment community to consider. I think the first thing it tells us is that alcohol and substance abuse treatment programs really need to do regular screening for gambling problems with everybody that comes through their doors. And I think that it also points to the importance of either making referrals of those individuals to specialty gambling treatment or training treatment providers to treat substance abusers with gambling problems.

It's clear that we need to focus our scarce resources on where the problem gamblers are already in the system. While it's certainly in the alcohol and drug programs, it's probably also in incarcerated populations, in jails and prisons. And we need to start looking there as well.

Just briefly, where do we go from here? I think that there is work to be done to improve the ability of communities to participate in decisions about the availability of gambling. I think we need to expand our services to address the needs of at-risk and low-severity problem gamblers. As we've been saying all along, this morning and this afternoon, I think we need to do some work to identify which services are most effective with which types of problem gamblers. I think we're at the beginning of an interesting era in problem gambling service development.

Alex Blaszczynski: Thanks very much, Rachel, for that in-depth overview. I think it was really informative.

[End of session.]

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Proceedings of the 19th annual conference on prevention, research, and treatment of problem gambling. June 23–25, 2005, in New Orleans, Louisiana. National Council on Problem Gambling, Washington, DC.

Session II: Critical issues in problem gambling prevention, public health, and policy

A public health perspective

Presenter: David Korn

(Introduction.) **Loreen Rugle**: I'm very happy to moderate this section of the conference. I'm primarily a treatment person. But as I've gotten more involved in councils, and states' issues, and funding, and how best to help people, it's certainly become increasingly ingrained in my awareness that we need a paradigm, a way of looking at these issues. Looking at public health perspective, how that interfaces with public policy, can inform public policy and policy makers, and what we need to consider in terms of prevention, and how complex and intertwined all of these topics are, is an increasingly interesting area for me. So even though it's the end of the day, and you've sat through a lot, I think this is going to be an intriguing and practical and informative session, and I hope you have lots of questions that you're already waiting to ask the panelists.

We begin with Dr. David Korn. David is an addiction specialist, a public health physician, head of the Public Health Gambling Project in the Department of Public Health Sciences, Faculty of Medicine, at the University of Toronto, previously in charge of public health for the province of Ontario. He comes with a rich background to gambling, and has had a successful career in the area of public health. He brings a richness to the field of gambling that we've all been able to benefit from. So he will be starting with an overview from a public health perspective.

David Korn: Thanks Lori. Good afternoon everyone. Thank you for coming to this session at this time of day, a kind of half

punishment. I'm going to speak a new language. It's not Canadian. It's public health. So I hope it won't be conceptually too mind-bending for you. I want to thank the organizers, the National Council, for the invitation to come to your country, and to be a participant on this panel.

What I would like to do in the next 10 to 15 minutes is just walk you through some concepts that are public health related. Over the period of time that I've worked in the gambling field, it's been my sense that there are many people who intuitively feel that this is a public health matter, but they haven't been able to find the language to communicate or conceptualize this. I guess that's my task as the introduction to this panel, to provide that kind of framework. Perhaps as a result of this, you'll have some new language for yourself that might resonate. It might give you some ideas around healthy public policy, and programs in the gambling field.

Though this is a brief presentation, I did want to acknowledge a couple of other people that I've done some of my writing with, in this area: Howard Schaffer at Harvard University, my good friend Harvey Skinner at the University of Toronto, and Jason Azmier and Robert Gibbons at the Canada West Foundation in Alberta. They've been colleagues on a number of papers that we've written together. So what I'm going to do in the remainder of my time is just talk to you briefly from a public health perspective about the value of this perspective, public health determinants, and strategic goals, again from a public health perspective, and to propose a framework for action planning.

I want to begin with a small story. A former colleague of mine from the Smallpox Program, the late Dr. Jonathan Mann, who became the professor of social justice at the Harvard School of Public Health, was fond of saying that what you do about a problem depends on how you frame it. So that's the crux of positioning this as a public health issue. There are lots of different ways of framing, which can be extremely valuable. This is simply another way of talking about and looking at the issue.

So when you think of gambling, what does it connote for you? Does it connote a problem? An epidemic? A compulsion? Some public health issue or threat? A disease or a disorder? Entertainment or a leisure time activity? Or a significant revenue stream for your particular state, local government, or tribe? So again, how you think about this will likely determine what you do about it.

When I talk to some people, and to some of my colleagues who are in public health, about public health, they say, "It's an intriguing way of thinking about things," but they're concerned that people really don't understand it. So let me just take a second and give you my

definition of what public health is. Public health is the study of the determinants and distribution of disease, disability, and death in a society, in specific populations, and then the organized efforts to prevent, eliminate, or control the occurrence or spread. So half of that definition has to do with science, and the other half of the definition has to do with public health practice.

So with that as our background, what's the value of this? Why even try and do this from a public health perspective? Why think about this from a public health perspective? I think there are some advantages in doing it.

First of all, as with alcohol, public health folks talk not only about problem and pathological gambling, but gambling as a whole. So it brings a broad view of gambling as a whole. It has an upstream emphasis, meaning the emphasis is on prevention and health promotion. There's a commitment to partnerships. Public health people tend to do things in collaborative ways. A values commitment to engaging stakeholders, regardless of what the stakeholders' position might be. Multiple interventions.

So it's one size doesn't fit all, and bringing better outcomes by combining appropriate interventions to achieve public health goals in the gambling field. At the end of the day, the bottom line is, "Does it do more good than harm?" That's the critical debate in the gambling field, individually, within communities, and from a healthy public health policy perspective.

If there's time today or tomorrow, that's one of the things probably we could discuss in some way. I want to emphasize that public health is embedded in a notion of public health sciences. It has to do with public health practice, public health research, and public policy. But it's embedded in science. The driving force for public health and gambling is epidemiology. That is the basic tool.

There are people in this audience who have distinguished reputations for their work in the area of prevalence studies. Epidemiology is probably the key and the central science that backs up public health practice. All of the discussions on costs and benefits are underpinned by the notion of, "Exactly what's the prevalence rate here? And how does that play out in community and population terms?"

The second science that goes with public health is something called population health. Some of you might understand that. Some of you actually probably come from universities where they have departments of population health. For others, it might mean nothing at all. But basically, that's looking at particular groups, at risk groups and subpopulations, to see how they are affected by

gambling and gambling-related harms. So it's population health. In addition to that, health promotion plays a big part. Health communication, health economics, are all critical, with people with expertise in these areas to bring their savvy to bear on how these problems are discussed.

Let me spend a few minutes on the determinants of problem gambling from a public health perspective. There are four of these determinants that I'll talk about briefly. At the top of the pyramid is the gambler. On one side are the games that people gamble. On the other side is the gambling environment. Then, sandwiched between the gambler and the games, is money or something of value. So those are the four public health drivers to understand and to think about how gambling plays out for individuals, for special populations, and for communities at large.

Some of you in the audience have backgrounds in public health, and you'll recognize where this comes from. It's the classic public health model of agent, host, environment, and vector, used to describe control measures for various communicable diseases. Historically, for things like malaria. More recently coming from Toronto, that's the model, in terms of determinants, that was used to develop the strategies for SARS [severe acute respiratory syndrome]. So you can talk about SARS in this regard. You can talk about malaria. But probably more importantly for us, it's also the model that's been used in the addiction field.

Many of you are familiar with the notions of drug, set, and setting. In the tobacco wars now in the States, this is the model that everything turns on. It has to do with the smoking environment: big tobacco and the advertising and marketing practices that are being played out within your justice system at this point and time. So it equally applies to gambling.

My view on what's been happening so far in the conference is there's been a lot of focus on the gambler. The gambler's biology. The gambler's behavior. The gambler's psychology. I'm going to suggest that there's a lot of value in looking at not only the individual dimensions of the gambler, but their social dimensions. Their age. Gender. Socioeconomic status. Ethnocultural background. All of these things play out in important ways.

In other areas of health, it's well understood now that the social determinants, not so much the individual determinants, are extremely powerful in predicting health outcomes in a whole range of conditions, from heart disease to cancer to various addictive behaviors, as well. My encouragement and appeal to people, is to look carefully at the interactions between the social dimensions of a gambler and the gambling environment. Embedded in the gambling environment, obviously, are the gambling industry, the Internet,

family, community, peers. Look at the relationships between the social dimensions of the gambler and the gambling environment, and lots of good ideas worth testing will come out of those dimensions.

Determinants of public gambling. Why am I dwelling on this? I'm dwelling on it because this is a complex web of interaction. Alex and the other people throughout the day have talked about the complexities, the web of connection that's between the gambler, the gambling environment, and the games. It gives you hints as to how you deal with it, in terms of interaction strategies.

Let me talk for a second about gambling strategies. A notion from Alice in Wonderland: "If you don't know where you're going, any road will get you there." So whether you're working with clients in treatment, or you're working within agencies in the community, or at a policy level, goals clarification is important—both broad conceptual goals, and where possible, putting numeric indicators to these with specific objectives.

Public health is about health promotion, prevention, and community protection. I framed broad goals within those three themes, to promote informed and balanced attitudes, behaviors, and policies towards gambling and gamblers, given all the stigma; to prevent gambling-related health problems; and to protect vulnerable and at-risk populations. That last one being the whole area of high-risk populations that I mentioned. Within that, you can speculate on targets that you might want to consider around prevalence reduction, not only for the general population, but also for at-risk populations.

So I'll finish up with introducing a framework for public health action. I want to talk about what's at the bottom part around harm reduction, prevention, and health promotion. There's a range of health interventions. But let me work down. In the middle, you'll see the green, yellow, and red that reflects the range of gambling behaviors, and some rough approximation of the distribution of gambling behaviors in the general population.

So given everything you've heard, I'm introducing some more language, health language around gambling. So you have the green nongamblers; that large yellow swath, which are the healthy gamblers; then at the other extreme, towards the apex, unhealthy gamblers. Roughly, in terms of the distribution of the population, and I'm just using this in broad terms, fifteen percent of the population don't gamble. Eighty percent of the population gamble, either with no, mild, or moderate problems perhaps. Again, just in broad terms, five percent of the population have severe problems.

So the question is, where do you want to put your time and resources, in terms of the biggest bang for your buck? If you're a clinician, you want to work with people that have severe problems, to help them. But there are other ways of talking and thinking about this as part of an integrated approach.

Public health people have a tolerance for a high level of ambiguity. So rather than a clinical view of sharp demarcation points between pathological gamblers, problem gamblers, social gamblers, public health folks often will talk about continuance. So at the top you'll see a continuum of problems that range from none, to mild, moderate, and severe. You could also have a risk continuum that provides some background for looking at the interventions—the rest of the talks for today and tomorrow.

So in addition to treatment, you'll see primary and secondary prevention. The primacy of prevention, I think, is what public health is all about in the gambling field. Perhaps less familiar are notions of harm reduction. It has been, in the United States, a controversial area, because it's been associated with treatment goals. It has introduced the concept in the treatment area of moderation, in addition to abstinence goals for patients and clients you're working with. I feel that Alex's work around machines, electronic gaming machines, is pure harm-reduction strategies in the best sense of the word. There are other examples, as well. So introduce the notion of harm reduction.

Lastly, I'll finish up by talking about health promotion. Notice it's at the green end of the continuum that has to do with processes to enable and empower people to make informed choices about their gambling and gambling-related risks, to build on their assets, and the capacities of themselves, family, and community members, to allow people and support people to enjoy this activity, if they choose to.

The research that we do at the Public Health Gambling Project at the University of Toronto is almost exclusively health promotion research. We have a Web site, youthbet.net, and a recent project that we finished up, looking at commercial gambling advertising and its potential impacts on young people, that are pure health promotion. It's a big area for many of you; it's probably quite foreign to you. But it's a worthwhile way of looking at and working in this area of gambling. Thanks.

Loreen Rugle: Let me ask this. In terms of health promotion, do we really need gambling-specific health promotion efforts? Or do we just need to fund general health promotion activities that will immunize people against a whole range of problems?

David Korn: It's a huge debate, and has to do with a number of assumptions. Just to give you my perspective on this: I'll maybe come at it sideways first. In the gambling field, we have a lot of discussion about high-risk populations, and what to do about it. [*Unclear*] populations, lower socioeconomic groups, youth, et cetera, et cetera, et cetera, homeless populations, as having high-risk, vulnerable, or special needs.

I think there is a big debate in the gambling field about, "if you've got limited resources, do you have broad primary prevention strategies that enhance awareness? Or do you target your efforts to high-risk groups?" Most of the discussion that I've heard tends to lean towards targeting high-risk groups.

If you look at some of the literature coming out of Canada, in the area, for example, of preparing children for school entry, there's good data coming out of British Columbia that suggest general approaches to healthy kids is a much more effective use of funds than targeting kids at risk. That's at school entry. Preparation for school entry. Other studies in public health in the Scandinavian countries suggest broad-based population approaches are worthwhile. But the problem here is that you need to do good studies.

And so it's my opinion versus your opinion, or what we extrapolate from other areas. I think this is a significantly important area of research to try some of this out.

Some of you may remember in the United States the big Mr. Fit, Multiple Risk Factor Intervention Trials, about 10 years ago. It spent millions and millions of dollars looking at this issue, and at different kinds of interventions versus a control group in broad societal terms. The control group did almost as well as the people that had all the interventions. We collectively have to think of research that asks this question, tries it out, and see what's the better approach. It's a big debate.

Alex Blaszczynski: David, the public health approach is, in part, a provision of information and protective factors that, in essence, is the community and government initiatives, despite the fact that governments have conflicts of interest. But it also balances against the marketing, and the promotion, and the development of particular attitudes towards gambling.

And, in particular, if we look at the Texas Hold'em, we're starting to develop an opposing force. How does the public health approach do with the particular marketing and promotion of particular products?

David Korn: In the gambling field, the studies that have looked at advertising and marketing are almost nonexistent. We've just completed a study looking at commercial gambling advertising's potential impacts on young people, as a preliminary descriptive study. We couldn't find other studies in the literature, around this.

When you think about how much money is spend on commercial gambling advertising, it's absolutely staggering, yet we don't know what the impact of this is. It deserves an enormous amount of study. In the tobacco and alcohol field, this is a highly researched area.

And again, a lot of what's turning on the legislation, as in the case before the U.S. Supreme Court and the States, is turning on advertising and marketing practices. So I think this has to be looked at extremely carefully.

My personal view on this is we have to communicate better, at least as a beginning place, that gambling itself is a risky behavior. Most people do absolutely fine, but it's a risky behavior. I think commercial marketing doesn't really want to convey that message, at least easily. But we need a ton of research in this area. It's a wide open field. It's important, in my view.

Alex Blaszczynski: Just on that particular point. The Australian Gaming Machine Manufacturer's Association published and distributed a player information booklet. Within that booklet, it states specifically that gambling is for entertainment. It's not to establish revenue. In the short term, it is possible to win. But in the long term, the more you play, the outcome is virtually impossible, and exists only in the most extraordinary circumstances.

So this is the statement that the gaming industry has, in terms of player information. Then, balanced against that is, "Win cash. Win. Everyone's a winner. You've got to be in it to win it." So you have these contradictory messages that occur.

And I think it's the important element here, as in other public health areas, less the information, but the significance of attitudinal shifts, which ultimately will lead to behaviors. The community doesn't have the resources that the gaming industry does, in terms of promoting a product that for some is potentially dangerous.

Rachel Volberg: I'm going to take this back again to the question of advertising. Because I do think it's an area of the gambling environment that has received a woefully inadequate amount of attention. I was able to be involved, over the past year and a half, in a significant set of literature reviews. I was struck that there have been three studies of prevention and public awareness campaigns.

Three studies. One in Manitoba. One in one of the states in Australia. One in the north central United States, Minnesota, I believe, or Indiana.

And the lesson learned from those three studies was that the campaigns to raise public awareness about problem gambling and provide some prevention were completely outclassed and outspent by a factor of something like nine or ten to one by the campaigns to promote gambling.

And David, I'm wondering if you might comment on the tobacco, and the alcohol, and the other public health campaigns, and how that issue might have been addressed.

David Korn: I haven't done my research, or I'm not familiar with the research literature, in any detail, in the tobacco, and in the alcohol field. But there have been a range of studies that have been done. There's good literature on it. I just don't have it at my fingertips. I think that the challenge, Rachel, is that these are quite difficult studies to do. They usually raise more questions than they answer. If you use sophisticated methodologies, it takes a ton of time, and a ton of money, to look at whether they're effective.

Most of the stuff that I've seen, and some of this that I'm kind of involved with, as well, tend to look at changes in knowledge, attitude, and behavioral intent, with or without a control group. I guess that's a place to start.

But we've got to get a lot more sophisticated than that in developing counterforce messages that are worthwhile. So I think we have a long ways to go.

[End of session.]

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Proceedings of the 19th annual conference on prevention, research, and treatment of problem gambling. June 23–25, 2005, in New Orleans, Louisiana. National Council on Problem Gambling, Washington, DC.

Session II: Critical issues in problem gambling prevention, public health, and policy

What is the role of problem gambling help line services?

Presenter: Jeff Marotta

(Introduction.) **Loreen Rugle**: I'd like to introduce Dr. Jeff Marotta. I have to say that he gets the humility award among all of the presenters. I think his is the briefest bio in the packet, not because he hasn't done much, but just as a sign of his humility. I'll embarrass him by saying that he's a previous winner of the student dissertation award for work on natural recovery, which was among the first work done in the field. The programs that he has developed for problem gambling in Oregon, I consider one of the models of using a public health approach to designing a whole range of interventions for problem gambling in state-funded programming.

Jeff Marotta: Thank you Lori. And thanks to the council for inviting me here. And thank you all for being here at five o'clock. I have the task of defining the role of problem gambling help line services. And I was thinking, who am I to address this question? Shouldn't this be a question for the gambling help line? Let's give them a call right now. And let's find out from the people who answer the phone, what is their role? *(Laughter.)* We have a ring.

Help Line Counselor: This is the Oregon Gambling Help Line. How can I help you?

Jeff Marotta: This is Jeff Marotta. I'm at the National Conference on Problem Gambling, and I'm in a room with about two hundred people.

Help Line Counselor: Oh boy.

Jeff Marotta: And we wanted to ask you, what is the role of the help line?

Help Line Counselor: The help line. What's our role? Most of the time, when people call this line, they are in crisis. Most of them have recognized that there's a loss of control. They're feeling pretty miserable. So this is a cry for help and we offer a referral service. That's our job. We try to get problem gamblers counseling and assistance, as close to their home as possible.

We also are a crisis intervention team. We try to stabilize the person, and then encourage them to follow through with making a connection with an agency, so they can get free, confidential services.

Jeff Marotta: Thank you very much. That was helpful and thanks for all the work that you do. *(Applause.)*

Okay. You heard it from the expert. "What is the role of the help line?" You heard that the roles include crisis intervention, and facilitation into an appropriate level of care. I'm wondering if the help line counselor saw my slides. *(Laughter.)* There are other potential roles that are less apparent.

Shortly after I moved to Oregon to administer the state's problem gambling services, I conducted a general assessment of the system. It became apparent that the system was not performing optimally. Because the help line was a vital piece of the system, I felt it was a logical focal point to begin system improvements.

System data revealed that many more people were calling the help line than were getting into treatment. We were contracting help line services with an excellent firm staffed with mental health professionals. Help line counselors were well trained in crisis intervention but they were not problem gambling experts. We hypothesized this arrangement could have negatively impacted helpline performance in the following way; the counselor, not comfortable with the topic, may spend less time with the caller; the caller, not engaged by the counselor, may lose assurance in the system and motivation to follow-through with the referral.

We have since restructured the Oregon Gambling Help Line and now contract with a gambling treatment agency for help line services. Certified problem gambling counselors staff the help line. With knowledgeable helpline counselors, the helpline can function beyond the traditional crisis intervention and referral roles to include a new role as the state's centralized information source on

problem gambling. Callers get information from knowledgeable people about many things, including inquiries as to the winning lottery number. *(Laughter.)*

A better example is the out-of-town callers looking for a GA meeting close to their hotel. They can call the help line and get that information. Another example is the concerned parent of a teen poker player who can call the helpline for information and advice on how to talk to their kid about risks.

An often overlooked help line role is public relations. Help lines are usually one of the first services to enter jurisdictions. Their presence sends the message, "We are doing something to address this issue. If people come into problems with gambling, they can call this number, and they can get help."

The public relations role can be expanded from a passive role to a more active one.

A help line agency may actively promote community awareness through advocacy, coalition building, and working with state and local media. This public relations role is most evident in help lines operated by the state problem gambling councils.

Case management is a role help lines traditionally have not played. This is a new role that we are trying out in Oregon to improve the conversion rate of help line caller to treatment enrollee. Instead of looking at that caller as a customer, the help line counselor is viewing callers as clients. Through a motivational interview process they listen, probe, and assist the caller to establish a solution-oriented plan. With the caller's consent, the help line counselor calls that client back to see if they followed through with their plan and continues to call until the client is engaged in the intervention of their choice.

Let's look at this next slide. You heard from our help line counselor that his role is to handle crisis calls, to send people in a direction of treatment, and to facilitate entry into treatment.

The top graph is composed of data provided by Nebraska and the bottom graph contains data from Oregon. Both graphs contain information on the number of calls to the help line and the number of new treatment enrollees. Both Oregon and Nebraska operate publicly funded gambling treatment systems.

In Nebraska, we notice an inverse relationship between call volume and treatment enrollment. That is, as help line calls decreased, treatment enrollment increased. One interpretation of this finding is that the help line is not working. Another interpretation is that the

help line worked extremely well. Without defining the roles and objectives of the service it is difficult to interpret these data. For example, if the role of the help line was to increase treatment utilization by kick-starting the system, it worked. That is, utilizing the help line, in conjunction with start-up media, to build up a client population large enough to generate a snowball effect. Word of mouth appears to be a primary vehicle delivering people to treatment in Nebraska.

In Oregon we observe a positive relationship between call volume and treatment utilization.

Why are the Nebraska data so different from the Oregon data? One confounding variable is diet. Nebraskans are obsessed with beef and Oregonians are obsessed with salmon. *(Laughter.)* The variable that more likely influenced the difference was help line advertising. During the time period this graph represents, Oregon invested $700,000 into promoting their help line number and in Nebraska the advertising budget was zero.

Looking at call volume and treatment utilization data provides important information needed to manage and understand system performance. For example, if we observe help line volume increasing and treatment enrollment decreasing, that may indicate a treatment system at capacity.

Are help lines efficacious? This topic has been debated in the literature on drug and alcohol help lines. A common argument against help lines is the finding that the proportion of callers that enroll in treatment is very small and most people in treatment did not arrive there through the use of a help line.

Before we can determine if a help line is efficacious, we need to define the roles and objectives of that particular help line. After we determine what these roles are, we can then measure our progress in meeting the objectives. Multimethod evaluation procedures may include the measurement of call volume, treatment enrollment, public awareness, conversion rate of calls to treatment entry, user satisfaction, call time, length of call, and wait time.

We need to look at the role of marketing. In Oregon, when TV ads were aired, call volume increased by 59 percent and treatment enrollments increased 39 percent. This is strong evidence that suggests good advertising combined with a good call line is effective in increasing care for people with gambling problems.

Oregon is home to a relatively well-funded gambling treatment system. This allows Oregon to support its help line services with good referral options and good advertising. In jurisdictions that

struggle for resources, there may be a greater importance to defining the different roles of their help line. Opportunities will be missed without expanding our thoughts about the roles help lines can assume.

Different jurisdictions have different needs, so it starts with a needs and resource assessment. It is time for the developers of problem gambling help lines to expand beyond traditional help line roles and to look and think outside the box.

As we assess help line roles over time, we need to evolve with the rest of the system. For example, the time may be near when help line providers also offer brief or minimal treatment interventions in order to target less severe problem gamblers or people who are not ready to enter traditional treatment.

Another evolving role may be functioning as a centralized intake for jurisdictions with various levels of treatment.

Perhaps we need to think of "help centers" as opposed to help lines with the growing importance of communicating through cyberspace. The time may be right to develop more of a Web presence, so that people seeking assistance can go to a site, gather information, and have the choice to interact with a counselor on a real-time basis. An Internet-based gambling help center may be particularly effective with the next generation of problem gambler growing up in the digital age of text messaging, instant messaging, and video conferencing. Furthermore, many problem gamblers may avoid calling a help line due to social anxiety, interpersonal discomfort, and feelings of guilt and shame, and may find a Web-based help center less intimidating.

So what's the role of help lines? That is up to you. Go out and think! Think different!

[End of session.]

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Session II: Critical issues in problem gambling prevention, public health, and policy

Harm reduction, secondary prevention and approaches, and trying to make a machine a safer product

Presenter: Alex Blaszczynski

(Introduction.) **Loreen Rugle**: Let me start by introducing Dr. Blaszczynski. He's the Head of the Department of Medical Psychology at Westmead Hospital, Co-Director of the Gambling Research Unit at the University of Sydney and, certainly, among the very top respected researchers in this field.

You've heard him present on other topics, and his depth and breadth of interest and involvement in clinical policy prevention research efforts and thinking are just so exceptional.

We're so fortunate to have him, and he'll be talking about gambling machine characteristics and that part of prevention and harm reduction.

Alex Blaszczynski: Thanks very much, Lori. I spent last night reviewing the machines on Bourbon Street. What I'm going to talk about this morning is harm reduction and secondary prevention and approaches, and the concept of trying to make a machine a safe product.

I'm going to make a number of provocative statements that, again, will hopefully confuse you. Because out of confusion, I think, comes clarity if you keep asking yourselves specific questions.

And I guess the first question to ask about the concept of modifying the machines to make them safe is a fundamental premise: Do electronic gaming machines, in themselves, cause impaired control?

We can understand drugs. The ingestion of certain external substances can affect neurotransmitter activity, cause disregulation, and we have an intuitive understanding of how they operate.

But can a machine cause impaired control? If we have a high-speed V8 motor vehicle, and a 17-year-old kid gets into that and drives at high speed, did the V8 machine cause the individual to drive at high speed?

So I would put forward the concept of the human/machine interaction. That it provides an opportunity for impaired control to occur: that is, you require both components.

And I guess the question is, where does imbalance occur? Is it the individual's responsibility? Or is it the machine's? Or do you look at an interaction, a sort of synergistic effect, between characteristics of the machine, to protect the player? Or do you look at what it is about the machine that actually causes impaired control? Or what it is about the individual? Or what it is about the interaction between the two? That, I think, is the important question to address.

Again, we come back to the question of etiology. What is the process by which impaired control is established by a human/machine interaction?

Is it the opportunity for excitement? The cognitions of potential wins? Occasionally I've won and got really excited, and then lost it again, got depressed, got excited again—did this cause neurotransmitter disregulation, and the machine was merely a passive object?

What are the structural characteristics of promoting impaired control? Clearly, one element is the rate and continuity of play. Reel spin speed would have minimal harmful ill impact if we had one spin for three days. *(Laughter.)* It might increase substance abuse. *(Laughter.)* But, clearly, we have to look at the rates. Again, assume that we have a product which involves a spinning reel. What is the duration of play for each particular trial that is optimal, that will allow recreational players to enjoy the game and, yet, protect individuals from excessive losses?

Let's look at maximum bets. Clearly, a machine that has a minimum bet of $1,000.00 is going to create more harm than one

with one cent. But then you put on multiple reels and multiple coins, and you gain the false impression that you're playing minor amounts on a two-cent machine but in reality you're spending an average of $4.50 per game. It's entirely different from playing a $1.00 game and thinking, "Well, I'll limit it to one single reel, one coin, $1.00."

The note accepters—the little vacuum devices that they attach to the side of machines—is there a difference between coin-only machines as compared to a machine that allows $5.00, $10.00, $15.00, $20.00, and $100.00 denomination notes to be inserted?

Will a compulsive gambler merely insert ten $10.00 notes, and will he lose that at the same rate of play as if he inserted one $100.00 bill? Given that the rate of loss is governed by the wheel spin and the speed of play?

Cashless smart cards, ticket in/ticket out, and credit now are joined with the concept of smart card/dumb idea. *(Laughter.)* If you look at the process conceptually, smart cards are magnetic stripe, computer chip cards, or a related form, which you insert and the idea is precommitment. You can establish how long you wish to play for, how much money you want to spend.

But consider exactly where a person purchases the cards. What happens to the recreational gambler who has forgotten their cards? What happens to the compulsive gambler when they've already emptied the amount of money on the card? Do they purchase another card? Do they borrow cards? Will there be black marketing in smart cards? All those issues I don't think have been properly considered.

What will happen is the revenue will decrease, and the impact will be on social gamblers who couldn't be bothered purchasing smart cards, or who leave their smart cards at home. The compulsive gambler will make sure that they have their cards. They will top off their limits and make sure that they have access to additional cards.

The other issue of machines is with prize pools that link machines. It doesn't take a genius to work out that if you have a $20 million slot machine payout prize, more people are going to attempt to win it, as compared to a $20.00 or a $20,000.00 prize. When the $20 million luxury occurs, how long is the queue?

We have little information about the color, noise, icons that promote gambling participation. Do people have favorite machines? Talking with some of the manufacturer designers, they cannot predict what physical characteristic of the machine will be attractive. It's like with

motor vehicles—some people like certain types; some cars are popular, some are not.

So what are the particular objectives of machine modification and harm reduction? We can slow the rate of play, slow the rate of expenditure, or to attempt to initiate breaks in play, shutting the machine down after a period of time.

Each of these has particular technical problems, in particular, the last one. In addition, we can have internal control regulators, providing informed choice for education through the provision of signage, or initiate regular review of patterns of play to promote informed choice. In other words, we can give the player information about the duration of their current session, how much they've spent, and whether they're in front or behind.

These are particular potentials. Again, we come back to the idea of how much we allow design modification to interfere with recreational play.

As I mentioned in the presentation yesterday, we put vinegar into beer and that will certainly reduce all but the most hardened alcoholic. There may be leakages into other forms of alcoholic drink, so we put vinegar in all forms of alcohol. But that ultimately destroys the product, so we're looking at an issue of particular balance.

I'll talk about three studies. And I'll talk about one that my honor student did last year, in terms of signage.

We were interested in some of the responsible gaming information that was provided on machines. Your chance of winning the maximum prize in a gaming machine is generally no better than one in a million.

The colors and dimensions and content of signs are mandated by New South Wales Government Legislation, so each machine has to have that.

But is it effective? Are there better ways of providing that information? So, with the cooperation of Aristocrat Leisure Machines, they donated—well, didn't donate—but it was rather quite interesting because in New South Wales the provision or possession of a slot machine is highly regulated, and even to move a machine from one location to another requires approval from the Liquor Administration Board. It becomes quite difficult to actually do that. And so according to the Legislation, we were not allowed to have a poker machine for research purposes.

So we discussed this with them. We put forward the proposal of what we wanted to do.

We were quite effective in shifting the legislation in New South Wales, under Section 8 of the Gaming Act, to allow gaming machines to be used for research and teaching purposes. Except you can't bet on them. So we can use them, but we can't insert coins, which I think is a bit unfortunate. But there are ethical issues in that.

So Aristocrat, the gaming machine manufacturers, supplied us with free machines, provided the technical support, the installation, and the modification of EPROM cards at no cost to us, and said, "Here are the machines; do what you want with them."

So we had the machine with the mandated sign that said your chance of winning is et cetera, and then another sign—and I forget the exact wording of it—but it basically said you had bugger-all chance of winning. *(Laughter.)* We compared that to a dynamic scrolling screen, and this was a screen with the same message, so we had two messages. One was more informative, and one was merely more on the statistics. Static versus just dynamic. I don't have the video of it, but what occurs every three or four minutes is a translucent message that scrolls across the screen while the player continues to play.

So it's quite evident and it doesn't distract from the play, and we found the results actually indicated good recall of information. We asked the subjects, 120 university graduates—slightly confused, but nevertheless of intact intelligence—we asked them basically to write down any information that they could actually recall from the front of these reel gaming machines.

And then we asked them again to recall—actually, we prompted them—did you recall seeing this, did you see that? We found that the dynamic scrolled message was recalled significantly more often than the static machine.

The next step in the research is to look at trialing these particular messages and seeing the actual effect that they have on behavior, because this is only on self-reported recall of information, and we don't know whether that actually affects behavior.

And so we're now looking at collaborating with the gaming industry to insert some of these in actual venues, with the approval of the Liquor Administration Board, to see if we can influence behaviors.

Questions of effectiveness? Are these particular measures effective? And we look at benefits versus unintended effects. And,

again, I'll refer to the University of Sydney's study, because it's quite illuminating.

It's one of the first studies, and it was meant to be a pilot study, but it's taken on a greater momentum than that. This was a study which occurred in response to the Government Legislation and in response to responsible gambling initiatives.

The Liquor Administration Board made some 21 determinations, including the removal of bill accepters, reduction of reel spin speed from 3.5 seconds to 5 seconds, and reduction of maximum bet per machine from $10.00 to $1.00.

The gaming industry became quite concerned about this, arguing that there was no empirical evidence to support its effectiveness and, of course, a secondary issue was that it would cost them a lot of money.

So they approached me to become involved in evaluating their particular studies, and we did this through the University of Sydney.

We went to the Ethics Committee and a research agreement was written in which the gaming industry ensured that the research data were the property of Sydney and that all publications emanating from that research would be published before being sent to the gaming industry. In other words, no censorship was guaranteed.

We commenced the project, and I had two phone calls before data collection started, before we had initiated the design. One came from a church group and another from some other researchers who criticized the findings as being biased before we collected the data, or before we came up with the design. *(Laughter.)* I said, "Why is it biased?" Because it's funded by the industry. Well, I tried to point out that the agreement was that we would publish the results in a report form and give it to the government and the Liquor Administration Board and publish the results, before we gave it to the industry.

In contrast, we've had research funding from the New South Wales State Government to the Casino Community Benefit Fund. Their requirement included the need to submit any publication to the government for approval for publication seven days before we distributed it.

So, again, the point that I'm making is that there are elements within the gaming industry that are genuinely interested in working out what is and isn't effective in harm-reduction measures.

The results were interesting, indicating, basically, that two of the

three measures were not effective in influencing problem gambling behaviors and one measure affected a small percentage of problem gamblers, but was most likely to be effective, and we argued that there needed to be more research on that.

The Nova Scotia study, Focal Research, looked at some design modifications, as well, and that is research under process. I won't go into the research design, but they looked at the potential to ensure that the player had the option to establish their own time limits of play. You could set out how long you wanted to play.

The findings in that regard were a small decline in reported losing track of time, but no change of playing within the intended limits. So it didn't have any impact on limits. Thirteen percent of players used that particular option, and ninety-eight percent reported that it had no impact on budget constraint. In other words, there was minimal effect on expenditure.

There were pop-up messages at 30 minutes, similar to what we had. Again, a small effect for the high-risk players, in terms of having them play within limits, but, overall, no effect on the session length, intended time, or tracking of expenditure.

Again, there was 13 percent usage and 88 percent reported that it was of no particular benefit to them.

As to onscreen clocks, in Nova Scotia, as in Australia, we have a shortage of wristwatches. *(Laughter.)* I think we're unable to tell the time. And so there's the important provision of clocks on the screen. And the rationale for that is beyond me. Presumably, it relates to some elements of disassociation and losing track of time.

But, again, many of the gamblers that I know don't lose track of time; they lose track of time during sessions, but we have the biological clock that, when we have to go back to work, we suddenly realize we need to go back to work, but then decide to spin a little bit longer. *(Laughter.)* It's a decision; it's not loss of time. Very few problem gamblers that I know fail to pick up their children. They may come late, because they decided to extend their time, but very few have forgotten to pick up their children. There may be one or two, but I don't think it's a great problem.

But, impressively, and most surprisingly, the onscreen clocks did not have any effect. What was important was a high level of awareness of these particular initiatives and design modifications, but their usage was limited.

Again, the authors argued that modifying some of these design characteristics was probably less effective and the focus perhaps

should be on assisting people managing their budgets.

I'll just finish because I'm talking too long, clearly. Another recent study, which I referred to yesterday, was in Victoria on the impact on reducing the number of electronic gaming machines within a jurisdiction.

And, just briefly, I have five locations where they reduced machines and compared that to five where they didn't. And the results were that in only a few cases can we find evidence that the original regional caps reduced the level of gaming expenditures. Specific venue results were inconsistent.

Statistical tests did not find significant evidence that caps on machine numbers, that is, setting limits on the number of machines in a venue requiring some venues to remove machines, affected revenue in a consistent direction. In other words, there's no statistical reduction or difference in reduction of revenue between the venues.

They found no evidence that the caps affected or displaced the gaming expenditure in leakage regions. In other words, surrounding regions didn't have an increase in revenue from people that moved from the reduction in the number of machines to surrounding areas.

They found no evidence that the regional caps policy had any positive influence on problem gamblers attending counseling, on problem gambling rates, or on other forms of thrill-seeking behavior.

Reducing access, 24-hour gambling reduced to 18-hour trading, led to gaming expenditure falling by around 3.3 percent. The estimated effect was statistically significant at the 5 percent level of confidence. So closing down machines will reduce revenue but, again, we don't know what the effect is on problem gamblers.

And the smoking ban significantly impacted the reduced gambling expenditure and the decline was quite significant at about 16 percent. So that there are other factors, I think, more important than modifying and mucking around with the design of the machines that are important in terms of protecting problem gamblers. Thank you.

[End of presentation.]

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Proceedings of the 19th annual conference on prevention, research, and treatment of problem gambling. June 23–25, 2005, in New Orleans, Louisiana. National Council on Problem Gambling, Washington, DC.

Session II: Critical issues in problem gambling prevention, public health, and policy

The Association of Problem Gambling Service Administrators

Presenter: Tim Christensen

(Introduction.) **Loreen Rugle**: Tim Christensen is the new czar of problem gambling in Arizona. The bio is a little bit wrong and outdated. He's also Chair or President of the Association of—

Tim Christensen: Problem Gambling.

Loreen Rugle: Problem Gambling.

Tim Christensen: Service Administrators.

Loreen Rugle: Service Administrators. Asparagus. *(Laughter.)* And a wonderfully knowledgeable, perceptive, and thinking out of the box kind of person. So, Tim.

Tim Christensen: Thank you. I found myself in the unenviable position of being a government employee standing between several hundred people and their lunch. *(Laughter.)* So I am nervous and I'm hoping your frontal brains are restraining all of your impulses at the moment. *(Laughter.)* I'm very honored to be here. I appreciate the invitation to speak with you all. I feel somewhat out of place up at the table with all of the greats in this field, but I do think that, given those things, I do have something important to share with you, especially for those of you in the United States.

This is a young enough field, it's an emerging enough field, and I think the underpinning to what Dr. Blaszczynski was talking about is that we're still learning. We're still trying to figure this out.

Even from a government perspective, a regulatory perspective, what programs work? What don't work? What do we need to do as public policy? And, honestly, this is an area where democracy is working. Your voices will have an impact in this.

I hope that, although it is dry government stuff for most people, it is something that does impact the work you do and the way that you will do it in the future.

In the United States, almost all of our gambling and problem gambling policies have developed independently of each other, up to this point. And the reason for that is the federal government has really taken no stand on gambling.

It's a state-level issue. States will have to deal with it as they do. Every single state that has allowed legalized gambling has done so in different ways.

We have some similar characteristics, but all the specifics are really quite different. So from the problem gambling side of things, this is changing somewhat.

The infamous Asparagus Group, which is the Association of Problem Gambling Service Administrators, was created to get states to work together a little bit, to learn from the lessons that the others have learned through recent painful experiences. We're a small group, but I think we're making a lot of headway.

There is also confusion with where problem gambling fits. Is it a mental health issue? Is it a substance abuse issue? What is it? Is it something that needs to be regulated? Do we just need to throw these people in jail? Do we need to give them checkbook-writing lessons? What do we do with it as a government?

And that's been a real challenge for us. Not only in the states, where sometimes it winds up in the mental health agency, sometimes it winds up in the substance abuse agency. In Arizona, we actually work for the Department of Gaming, which is the regulatory agency for the tribal casinos.

It's done differently in every single state. And that creates real challenges for us. At the federal level, we have a lot of agencies in the Substance Abuse and Mental Health Services Administration that are interested in this.

This disorder is impacting the substance abuse agencies and mental health agencies in what services they can provide, but does it fit under the Center for Substance Abuse Treatment? Does it fit under the Center for Mental Health Services? Nobody really knows, yet.

And there isn't a strong mandate from the government as to whose responsibility it is. So what we rely on are people's good intentions and desire to do what's right. Strange, maybe, for some of you to hear from government, but it is true. We are trying to do the things that are right. But there are a lot of constraints that make this difficult.

One of the trends that I've seen change here recently is that states are now almost assuming that you need to address problem gambling in their legislation. The latest round of expansions of legal gambling have all included mandates to do something around problem gambling services.

We also have states expanding the resources that they're providing for this disorder, which is also very, very encouraging. Just four of them that have occurred over the last month or two here are, in Washington State, thanks in large part to Gary Hansen, Chuck Mahar, and their Council; in Nevada, Carol O'Hare and the Nevada Council; in Nebraska, with Jerry Bauerkemper. With Nebraska it was interesting to see one of the few funding increases that didn't come from gaming revenue. They actually appropriated funds from a state healthcare cash fund, which is a little bit unique, and again shows that it is rising on the agenda of governments. And in Oregon, Jeff Marotta is also likely to receive some additional funds. So it's rising on the public agenda and this is progress that we really need to acknowledge.

However, my concern is that often policies are not developed and are not based on a sound overall view like the one Dr. Blaszczynski just described. Rather than just focusing on whether all the signs need to have the 800 number, how about a comprehensive policy that really does change community attitudes, beliefs, takes away the stigma of problem gambling, of receiving help, et cetera, et cetera.

All those things have been kind of interwoven in the talks up to this point, and that's really where I would like to see problem gambling policy go.

Instead of the debate being, "Do you get 0.5 percent of the revenue or one percent of the revenue?" I'm hoping it'll change to, "We need to have a comprehensive awareness, prevention, treatment, da-da-da-da-da, and, in our state, this is how much that's going to

cost."

We need to figure out how to get those resources to provide the appropriate services. So it's a maturation, I think, of this process. The result of all these independent states creating things is we have a lot of duplicate and inefficient processes with very little resources. Now, the example that I always use is with help lines. I think we've got three or four help lines in Arizona alone. We have 800-GAMBLER, we've got 800-NEXTSTEP, there's 877, I think, 2 STOP NOW.

There's the national number, 522-4700. All of them do, in essence, the same thing. And Jeff talked about how in different states their function may be a little bit different, but especially when we're working with the industry to say, "You need to promote this number over and over and over again." But the number's different in every single place, which doesn't work so well.

Again, some of these independent processes have created problems for us. The other thing that happens is when the legislation gets passed in some states, it's given to the bureaucrat that is also responsible for mental health, substance abuse services, other types of activities, and so what you have is a 0.25 FTE, or Full Time Equivalent person, trying to set up this whole elaborate system. And that's not very easy to do.

So one of the things that we're really hoping for is that the policies will allow for adequate staffing. The collaboration among the states, ultimately, I hope, will wind up in our being able to pool some of those resources, identify some common goals, and work together.

We have seen this in a couple of different areas, with several states getting together to put on conferences, things like that. Hopefully, we're going to move into things like creating minimum data sets. We have these for mental health and substance abuse services, with TEDS data, or Treatment Episode Datasets, but we need to get the different states working together to identify some minimal criteria and datasets that we can use to improve our services. And to work together on certification issues and on reciprocal agreements amongst states for problem gambling counselors, so that when people move we don't have disparate criteria. And, obviously, the development of best practices is also important.

The problem with everything being governmental is that eventually we're going to be held accountable to everybody and if we can't prove that those resources are being used in an effective and efficient way that results in some positive outcomes, then we're going to see the tide turn. With the creation of minimum datasets

and our working together in different states, hopefully, we can get to a point where we can actually show that we are making a positive difference.

What do we need? One of the first things—and this has been kind of an underpinning to everything that's been talked about up to this point—is we need to involve more than just the substance abuse agency, or the substance abuse counselors, or the mental health counselors, or whatever else may be three.

We need to have networks that go across systems. We need to interface with the legal system, with the corrections system, with law enforcement, with gaming regulators, with the industries, et cetera, et cetera.

It's got to be a collaborative effort. We can't do it in isolation from all of these other service systems. So when we develop state strategic plans, or when we're planning for services in a state, I encourage people to not just look to a council, or just to the government agency that's responsible for it, but to ask, "How do you bring all the stakeholders together?" I think Dr. Korn talked about engaging the stakeholders. That is critical. We absolutely have to do that in order to provide the services that we need to offer.

With the Authorizing Legislation, for a long time, we had a lot of states that were receiving funding, but all they were allowed to do by statute was to provide a help line or to provide public awareness. There wasn't the authorizing legislation that allowed them to develop the services that are actually needed to reach the people.

If you're in a state where you're looking at maybe being able to receive some money or get some of those allocations, then you can't make that legislation so restrictive that it ties their hands, that they can only address this issue with one approach. Then the problem will be that it won't work well.

And, finally, what I call proof of the progress that we're making is in the two reports in your handout. Get out your magnifying glass and read them. *(Laughter.)* But, the National Association of State and Alcohol Drug Abuse Directors, NASADAD, recently did a report about the role of problem gambling services in the states. It's growing to where, on a national or federal level, this is being addressed.

There was a very, very promising meeting with The Center for Substance Abuse Treatment, actually just last Friday, where they're considering developing a TIP (Treatment Improvement Protocol) or a TAP (Technical Assistance Protocol) directly

addressing problem gambling services.

For nonbureaucrats, that may not sound like much, or as just more government documents, but it represents on a governmental level a real commitment and desire to address this issue in a meaningful way. So there are a lot of encouraging things happening.

And, finally, the APGSA Web site, we're currently working on it—we've got to update it with all the recent advances and changes, but it will be operational here shortly. So, thank you.

[End of presentation.]

[The APGSA Web site is now available at: http://www.apgsa.org/ - ed.]

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Proceedings of the 19th annual conference on prevention, research, and treatment of problem gambling. June 23–25, 2005, in New Orleans, Louisiana. National Council on Problem Gambling, Washington, DC.

Session III: Critical issues in treatment

Brief interventions for problem gambling

Presenter: David Hodgins

(Introduction.) **Ken Winters**: We are glad to be able to present to you Dr. David Hodgins, professor of psychology at the University of Calgary in Alberta, Canada. He's going to speak to us on the topic of brief interventions for problem gambling.

David Hodgins: Brief and self-directed treatments are an exciting area of development in the treatment of gambling and other addictions. I want to start by providing a context: brief treatments have an important role to play in supplementing and complementing more formal treatment options—they are a way to broaden our treatment system and have the potential to help greater numbers of people. This figure, adapted from other public health areas, provides a schematic of an ideal treatment system. The population of individuals that we call problem or pathological gamblers can be divided into two groups. The larger group, perhaps 90 percent of people with gambling problems, are "not ready to change." For those individuals we have started to develop public awareness campaigns to try to get them ready to acknowledge and address their problems. As well as these campaigns, we can also work through family members to encourage insight, and provide opportunistic interventions for individuals when they seek help for related problems with mental or physical health or even finances. The goal is to get people "ready to change." For people who are ready to change, we need to offer a range of interventions consisting of different levels of structure and intensity. These interventions should include outpatient counseling and residential programs. As well, the options should include brief treatment and encouragement for people to recover

"naturally." There is a set of hypothetical factors that can be used to match people to the treatment that is most likely to be effective—for example, severity of problem is a likely matching factor (people with more severe problems need more structured treatments). Other potential factors are social support and comorbidity (people with less social support or greater comorbid problems need more structured treatment). The model also suggests that if people do not perform well at one level of intervention, they should step up to a more intensive treatment format (hence the treatment title, "Stepped Care Model").

I am interested in the self-change and brief intervention aspects of the model. We know that rates of natural recovery are high among people with gambling problems. Our research also shows that people do not move quickly into natural recovery—most often they have lengthy and serious problems before they become ready to change; however, they do reach this state of readiness without treatment. The question that we had was, "What can we do to promote this natural recovery process so that it happens earlier?"

We have reported a two-year follow-up of people who were provided with a telephone-workbook self-recovery program. The participants were recruited through the media and were eligible to participate if they believed they had a gambling problem but wanted to quit on their own without treatment or Gamblers Anonymous (GA). The workbook was brief and simple and provided cognitive behavioral strategies. The telephone aspect involved one motivational call from a psychologist at the beginning of the project. The psychologist spent 20 to 40 minutes talking to the participants about their reasons for change, their ambivalence about changing, and their previous efforts to change their bad habits. Despite the brevity of the intervention, by 24 months almost 40 percent of participants were abstinent and most were significantly improved.

That is just one example of a brief intervention. Currently, we are conducting a replication study to better understand who benefits from this approach (i.e., the matching factors). We also do not know much about what exactly helps people: the workbook, the motivational interview, or some other therapeutic ingredient. One of my doctoral students, Kate Diskin, is doing a study looking specifically at the effects of a motivational intervention. The goal of her project is to identify people who were showing some concern regarding their gambling, who would be willing to volunteer to come in to assess the effectiveness of two different ways of interviewing people with gambling problems. So when people came in, they were randomly assigned to one of two groups.

One group received a more traditional clinical interview, where they were interviewed about their gambling and filled out some

questionnaires about their gambling, and so forth.

The other group provided the same information, but a motivational interviewing style was used. Therefore, both groups were similar in the sense that they talked about the pros and cons of their problem, and their previous efforts to change, and so forth.

Although Kate is in the process of analyzing the results, it's very clear that over a 12-month follow-up, the participants who had the motivational style of interview showed much better outcomes in terms of their gambling, compared to participants who had the more traditional clinical interview.

Remember, these weren't people that were seeking treatment, or even seeking a change in their gambling. They just identified themselves as having some concern over their gambling. Kate isn't necessarily meaning to package this as an intervention, but it really does underscore the importance of motivational processes in brief interventions.

And that's one of the major points I want to make today—that my working hypothesis is that brief interventions are going to be more effective if there are clear motivational properties associated with those interventions.

Let's look at some of the other research that has been conducted. This is a table of some of the trials that I'm aware of. The first one is the one I described—promoting self-recovery in a dual package. There is good evidence of its effectiveness.

The second one is Kate's study that I just described—the single-session motivational interview. And, again, there is good evidence of its effectiveness.

The third trial on the list, the relapse-prevention booklets, is another trial that we conducted. The rationale for the trial was to do some follow-up work with a group of people who had quit gambling. We found, not surprisingly, that people who involved themselves in some sort of recovery group—mostly GA, but not exclusively GA—had better outcomes than those who did not attend support groups.

We found that only about a quarter of the people we were following were actually attending the groups and, therefore, these had better outcomes. However, most people, roughly 75 percent, were not attending the groups.

Then our question was, "If people aren't willing to attend these support groups, can we provide them with some kind of information concerning relapse, so that they will have better outcomes? Can

we provide them with something that they will perceive as treatment, that will supply them with information that will help with their outcomes?"

So, we designed a series of relapse-prevention booklets. Basically, we sent one per month to people and each booklet was on a different topic: "Helping with Your Finances" and "Dealing with Urges," and various other topics on relapse prevention. We found, frankly, lukewarm results. There was some suggestion that it was somewhat helpful, but there were not strong outcomes in that particular study. So, that's a relapse-prevention brief intervention.

The fourth one on the list is a study by Ellie Robson in Edmonton, who did a trial where she targeted people who were problem gamblers, not pathological gamblers. So I think they scored three and four on the SOGS and she provided them with various options.

One was a self-help package. She found similar results, with some being positive, but not really strong results overall.

And then the final one on the list is another project that we did in our group where we developed a brief intervention for concerned significant others, for family members and friends of people with gambling problems, where the gambler wasn't doing anything to address his or her problem. We knew that family members were calling help lines looking for help. When we interview successfully recovered gamblers, they tell us that families are very important influences on recovery. And so we asked, "Can we provide some self-help materials that will be useful to these family members? Can these materials help them feel better about, cope better with, and maybe be more effective in dealing with the gambling problem?"

The results of that trial were somewhat positive, but again, somewhat lukewarm. So what I'm presenting here, if you look at the rank ordering of the strength of the evidence, is that interventions—and mainly the brief interventions that have a clear focus on motivational properties—are the most effective.

The relapse-prevention booklets and Ellie Robson's program have some focus, but not as clear a focus as the top two. So my working hypothesis is that if we're going to be effective in offering brief interventions, it's not the information that we provide in the form of strategies, it's more the focus on the motivation that's going to be the important therapeutic ingredient.

And that's a hypothesis that we need to further investigate. Let me just summarize here that I'm arguing that there is a clear role for brief interventions in our treatment systems. We need to be

creative in how we fit those interventions into the system, though, because we shouldn't be offering them to people who are already saying, "I want to go for treatment."

We need to find ways of offering them opportunistically to people who don't want to go to treatment. I don't know that we have clear evidence at this point of who does well.

We have a large, ongoing project where we're replicating this self-recovery study and we're collecting a lot more information about the participants as a way of identifying who does well in this brief intervention approach. We're assuming that severity will be one of those factors. It will be most effective with people who have relatively less severe problems.

Ellie Robson is also replicating her study with a stronger scientific design, while specifically targeting early-stage problem gamblers, so that will be very informative. Nancy Petry also has an ongoing brief intervention trial, which will be helpful. And then there's Kate's trial as well. So I think, with these various approaches, with their similarities and differences, we'll be in a better position to understand who does well a year or so from now.

Finally, just let me restate my hypothesis that a motivational focus is important and needs to be a clear part of our efforts to develop brief interventions. Thank you.

Ken Winters: Excellent. So we are at the middle of the triangle there, of the brief intervention section and, as David said, it might be a treatment approach that's better targeted to those with mild to moderate problems. Although, a good question is, to what extent can we stretch this out perhaps for the continuum?

There might be some severe-end cases for which a brief intervention is what's needed, at least for a kick start. Probably more on that during the discussion section.

[End of session.]

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Session III: Critical issues in treatment

Empirically supported treatment for pathological gamblers

Presenter: Robert Ladouceur

(Introduction.) **Ken Winters**: We're now going to tackle treatment approaches that are usually focused on the more intensive or longer-term approaches and models. And we're going to start with Dr. Ladouceur, who's a professor in the Department of Psychology at Laval University in Québec City.

Dr. Ladouceur is one of the most prolific researchers in the field. It does help if you're in Canada, though. Those Canadians do get the money to do the research. *(Laughter.)* But, we get the benefit as well. So here's Dr. Ladouceur.

Robert Ladouceur: Thank you, Ken. And thank you to the Council for the nice invitation, and I'm quite honored to be with you to discuss important treatment issues for problem gamblers. When we got the guidelines for this symposium, which my colleague, David, did not tell you, not only did they suggest, but they *imposed*, that we have only five minutes and only five slides to be presented. Ken just told us that now we have fifteen minutes, so he said that to solve that problem, just speak more slowly. *(Laughter.)*

Ken Winters: I'm the moderator.

Robert Ladouceur: I have another solution: I'll make a regular speech, five minutes in English and the other five minutes in French, because I come from Canada. *(Laughter.)*

Well, let me start with a citation that struck me.

A couple of months ago, I was in a symposium and Peter Nathan started his talk by saying that, "Gambling has a long history but a short past."

I thought that was very interesting because we often compare the knowledge we have in our field with the knowledge we have with substance abuse or alcohol or anxiety disorder or depression. Well, the story is quite the opposite. The majority of the controlled studies in the field have been conducted over the last decade or so.

We often forget this. Our past is quite recent: not only our knowledge about gambling in general, but our knowledge about the efficacy of our treatment procedures.

Fundamental research increases our knowledge and improves our understanding of what's going on in the mind or in the life of the gambler and so helps us to develop more effective ways to help problem gamblers. That's our goal. This is why, I guess, we attend conferences such as this one.

The first question that we should ask is, are the treatments we use effective?

Let me adopt the perspective of a scientist for the next five minutes. We all know that the efficacy of a treatment can be evaluated in many ways. Yet such a task is difficult to conduct.

What are the best measures to use? What is the goal of the treatment? Is it abstinence? Is it controlled gambling? Is it increasing the quality of life of our clients? What else?

Many criteria can be used to assess the efficacy of our treatment. But, recently, the American Psychological Association has recommended that, when they are available, we should use empirically validated procedures.

Let me give you some information about what is empirically validated treatment. For, in general, an empirically validated treatment is a treatment that we should use, if available, for any particular disorder. For example, if you have a patient with panic disorder in your office, what is the best treatment to use? In physical medicine, if you suffer from diabetes, what is the best treatment? You expect your doctor to give you the best available treatment or medicine.

If your doctor is an old doctor who says, "My clinical experience tells me that this is the best treatment for you. This is what I recommend," how would you react? For from a scientific

perspective, it may not be the best available treatment.

So what is empirically validated treatment? Do we have empirically validated treatments to help problem gamblers?

Here are some defining criteria to establish such treatment:

I. At least two good between-group design experiments demonstrate efficacy in one or more of the following ways:

  A. Superior (statistically significantly so) to pill or psychological placebo or to another treatment.

  B. Equivalent to an already established treatment in experiments with adequate sample sizes.

  OR

II. A large series of single-case design studies demonstrating efficacy. These studies must have:

  A. Used good experimental design and

  B. Compared the intervention to another treatment as in I.A.

III. Experiments must be conducted with treatment manuals.

IV. Characteristics of the client samples must be clearly specified.

V. Effects must have been demonstrated by at least two different investigators or investigating teams.

The first criterion means a treatment group should provide better results than a control group. It should be superior, from a statistical standpoint, to either a pill or a placebo.

Another criterion is that experiments must be conducted with a treatment manual.

Using a manual doesn't mean that the therapist will act as a robot, or in a mechanical way. Quite the opposite. A manual is a guideline for the therapist who can be creative in doing therapy.

The other criterion is to specify the characteristics of the sample.

And, finally, the effects must have been demonstrated by at least two different teams of investigators.

Well, in a paper that my colleague and friend, Tony Toneatto, published about a year and a half ago on reviewing treatment outcome studies, we came across about a dozen, or a few more, controlled trials in psychological treatment.

I'm not including drug treatment. All the treatments used a cognitive behavioral approach. There were mainly three. We could classify these studies in three clusters.

There was one on cognitive and behavior therapy that probably some of you know about, on our work at Laval.

There was the imaginal desensitization research conducted by the Sydney group, led by Alex Blaszczynski.

And there's the cognitive behavior therapy and the stimulus control component by the Spanish group, mainly by Enrique Echeburúa in the Basque Country in Spain.

In the majority of these studies, the treatment group had better results than the control group.

Well, that's good news.

Now, the question is, can we assume that these treatments are empirically supported?

We can conclude that they are effective. But if we use all the criteria suggested by the American Psychological Association, unfortunately we cannot conclude from the results of these clinical trials that they are empirically validated.

The good news is that we are very close to that status. And I think that's very important, taking into consideration that these studies have been conducted only over the last 10 years.

So what can we conclude? Well, I'd like to make four comments as a wrap-up.

1. Although we have effective treatments to help pathological gamblers, we still don't know exactly how these therapies work.
2. We need to move away from the uniformity myth. All pathological gamblers surely do not fit into one model. We need to pay more attention to the different types of problem gamblers and to adapt our therapeutic interventions to each type. The three pathways identified by Blaszczynski are surely a great start to adapting our treatment to the individual.

3. There are many trials going on now with drug therapy. Jon will talk about this in few minutes. Let me simply raise the question of the efficacy of combined therapy. Is drug therapy effective in comparison with psychological therapy? Is combined treatment effective? If so, for what kind of pathological gamblers?
4. And finally, what is the goal of our treatment? Is abstinence the only goal? Is controlled gambling a better avenue for some problem gamblers? At Laval University, in Québec City, Canada, we are now conducting a clinical trial on this topic.

What are the preliminary results? Interestingly, many gamblers enrolled in our trial clearly indicated that they would not have enrolled in treatment if the goal was abstinence. Secondly, some gamblers have shifted their goals in going from control to abstinence.

Let me end my talk by flashing out a very important issue. As mentioned by Alex in his talk at lunchtime, we strongly need to revisit the construct of pathological gambling.

And I think we've been underestimating the importance of this aspect. Essentially, we need to identify the main defining features of pathological gambling. We have put too much emphasis on the negative consequences to assess problem gambling. The majority of the instruments, the DSM, the SOGS, the CPGI, the 20 questions of the GA, the majority of the criteria we use, refer to negative consequences. Let's have a closer look at the construct of impaired control. We may open new avenues that will tell us more about this disorder.

Thank you very much for your attention.

Ken Winters: Would anyone like to offer a question?

Robert Ladouceur: It has to be a good one.

Ken Winters: Yeah, by the way, there's a chair over there for people who don't ask good ones. You have to sit in that.

Are there ways that you can envision, then, further tailoring cognitive and behavioral therapy to address your core construct of impaired control? In other words, do you feel like you haven't yet maximized the targeting of that construct?

Robert Ladouceur: Well, here we get into the content of what we do and I would certainly not say that cognitive modification is the only active element in the treatment of pathological gamblers. I

think we would all agree.

It's one of the major ones, and I think it should be there, not only to help gamblers at the moment, but to prevent relapse. So what are we doing when we do cognitive therapy?

The first thing is to increase gamblers' awareness of the erroneous perceptions they've been maintaining for many years. Once they're aware of their erroneous perceptions, we try to modify them by creating dissonance in the way they think.

In this process, the individuals are increasing their level of awareness; they can identify an illusion of control and many other cognitive biases. Many of these cognitive biases refer to the basic notion that they do not consider the gambling activity as chance, but as a game of skill.

The illusion is in trying to control what is uncontrollable. Impaired control as a defining feature has a lot of implications for cognitive and behavior therapy. I think it was a fairly good question, Ken. *(Laughter.)*

Ken Winters: You're too kind.

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Proceedings of the 19th annual conference on prevention, research, and treatment of problem gambling. June 23–25, 2005, in New Orleans, Louisiana. National Council on Problem Gambling, Washington, DC.

Session III: Critical issues in treatment

Pharmacological approaches

Presenter: Jon Grant

(Introduction.) **Ken Winters**: In the words of Peter Nathan, "We've had a long history, but a short past." Those of us who've been involved in treatment outcome studies know that a portion of the short past has been in pharmacological therapy approaches and the introduction of medications to our treatment toolbox.

And that leads us to our next presentation, with Dr. Jon Grant, who is currently—although not for long—at Brown University Medical Center at Brown and Butler Hospital. He's going to move to the University of Minnesota in a couple of weeks. So he'll be part of a growing corps of researchers in Minnesota.

I'm looking forward to this talk. This is about some of the more cutting-edge technologies available in the arena today. Jon?

Jon Grant: I want to preface my comments by what I always tell my patients when I talk with them about medication. There's nothing FDA approved for the treatment of pathological gambling. So everything that's been studied and everything that's been used clinically by some of us is sort of off-label. You have to let people know that this isn't for that indication.

I always tell people that I own no stocks in any of this. And, the reason why I say this is that a patient came in one time and said, "Well, I had a doctor who kept telling me they prescribed this medication, and when I asked why the doctor said, 'Because I own stock in that company.'" *(Laughter.)*

Which is honest, I guess. And the other thing is my grandmother does not make any of this in her basement, so if people don't like these things I don't really care. I don't have any personal investment. *(Laughter.)*

The pharmacological literature is really growing and that's pretty exciting. One thing that should be kept in mind is that there's a difference between these studies that I'm going to talk about which have been done, and up until now the published studies, medication studies.

They're not comparison studies. They're not using therapy with it. And I think most people who use medications clinically are responsible enough that they use it in combination with therapy. I don't think of any one thing as the perfect treatment.

I would even go so far as to say that even though we call these medication studies and we say there's no therapy in them, I don't completely buy that. And, as I'll point out later, I think that's one of the issues that's complicated the way that we understand these studies.

When patients come in and tell you all about their gambling problems and you're doing a study, you can't help but do some supportive therapy; you might do some motivational enhancement therapy, unbeknownst to you. Just because you're human and somebody's sitting there telling you these things.

I think, also, that the disclosure therapy aspect of when people tell you the first time, maybe, that they've got this problem, and that you're the first person that they had ever told, brings a huge therapeutic improvement in their lives, independent of the medication.

So we kind of play this game that these are medication studies, but I don't really know, legitimately, and that there's often an element in these studies that they're medication-plus. Whatever that may be.

One way to think about medication—and this is also from a clinical perspective, as well as what we know from the studies—is, what are we looking at? What are we trying to improve with medication? And which one would we pick?

I mean, there are a bunch of them out there. I think one of the issues has often been trying to see each individual as an individual, and realize that what drives behavior in one person may, even if they can check off all the DSM criteria, not be what drives that behavior in another and is often qualitatively very different in other people.

There are people who come in and say, "I gamble because I can't deal with stress. I mean, it's the place I run to when I want to get away from stress. I'm so depressed in my marriage; I'm so depressed in my life; I go gamble."

In some ways pathological gambling almost becomes a symptom of other underlying issues. This may also determine our choice. This is where we have the selective serotonin reuptake inhibitors, commonly known as antidepressants, and this is the world of Prozac and all the "Prozac children" that have come out since then.

These medications are often very helpful, particularly if people are saying, "I'm obsessed with gambling; I'm thinking about it all the time; I can't get it out of my mind; I go when I'm anxious; I go when I'm depressed." Clinically, I think, this may be a very helpful option for people who gamble due to anxiety, obsessions, or depression.

Another class of medications are the mood stabilizers and they tend to be medications that are FDA approved for epilepsy. They keep people from becoming too impulsive. Because what we often see in many people with pathological gambling is, obviously, comorbid bipolar disorder or manic depressive disorder. But I would say that even that misses the point. Some people have what I would refer to as subclinical mania, or hypomania. They're generally impulsive in many avenues of life. Even though, from a strict DSM sort of checklist view, they might not actually be bipolar, they've got a quality that often drives their gambling.

In that case, these medications can often be very helpful, not only for their mood stabilization but for gambling that often results from impulsiveness.

The third group are the atypical antipsychotic medications. What we find is, even though as a group most of them have come out FDA approved for the treatment of schizophrenia or psychotic disorders, as I said yesterday, these pills do more than any of us know and sometimes they do a heck of a lot less than any of us expect them to do. But even though they're primarily set up to focus on psychotic issues—delusions, paranoia, things such as that—they often deal with anxiety reduction, and particularly obsessional reduction in many folks. So they have a role, as well.

Finally, there are the opiate antagonists, which have been used in the treatment of alcohol and heroin and narcotics addictions, and they reduce cravings. So for pathological gamblers who have intense cravings, these offer a very reasonable alternative.

A good question is, "Is medication effective?" Even though medication has not been studied as long as some other

interventions, there are already nine double-blind published studies, meaning, medication versus placebo or sugar pill: the most rigorous types of study design.

Eight of these have been positive studies, meaning that people that are on medication have done better than people who were just taking a placebo, for the most part. Now, response rates among people who are taking these different types of medication in these studies are actually pretty high, at 70 to 79 percent, if you pool the studies.

And on the response, it's a little difficult because not all the studies are trying to measure exactly the same thing. The response in most of these studies is really referring to either very mild or nonexistent symptoms, often complete remission of symptoms, meaning no gambling, no thoughts, or mild thinking and some minimal gambling.

Again, as people have said, this has a lot to do with which scales you use, and not all the studies have used the same scales. So they're not directly comparable, but I do want to point out that when people come up with the idea of medication, I think we're seeing at least some glimmer that these have a role, and not just in a small percentage of the people who are taking them.

I would also point out that most of the people who have been in these studies often look quite severe, when you look at their measures of gambling severity. So it's not as if very minimal symptoms of pathological gambling are what these folks are reporting.

So I'm very encouraged by what we see. Although, again, I don't think any one pill is going to be amazing magic. The problem is sometimes the media get wind of these things and then I've had patients come in and say, "I want that magic pill."

And I think, "Well, I wish I had a magic pill for you. I have some very good pills that may be beneficial. At the same time, they may have some problems."

Some of the problems in medication studies include seeing high dropout rates. Now, interestingly enough, the dropout rates in some of the cognitive behavioral studies are also fairly high. But I do think that the medication studies suffer from higher rates because we don't do a lot of, in my opinion, the motivational enhancement that allows people to stay in treatment.

We are also seeing a fairly high percentage of people who aren't taking anything and they respond. And this is sort of baffling.

People will go into a study for three months, four months, and at the end they'll say, "I'm not gambling any more. This has been great. Thanks for that pill."

I open up the envelope. "You weren't on a pill. You were on a placebo." Which is really interesting. And I think a lot of coming to see somebody weekly, or every two weeks, is a sort of hidden, not quantified, therapy element from which they may be benefiting.

The studies have been short: 8 to 16 weeks. There haven't been follow-ups of these studies, so that we don't really know how well these people are doing, say, a year later. And that's obviously something we have to focus on.

The studies have also been really clean studies, in the sense that, up until recently, people who had clinical depression, clinical bipolar disorder, attention deficit disorder, and all these other things weren't included. So these are studies of pathological gamblers who have no other problems and you ask yourself, "My goodness, is that like any pathological gambler you've ever met?"

And maybe, maybe not. And one question is, maybe that's why we're getting such good rates of response in these studies is that we're not taking complicated people who reflect the real population better.

And then my thought is, does this really match clinical practice? Because I'm intrigued by how many patients are in treatment studies who do very well with responses of 70 percent. I treat several hundred gambling addicts now and I don't get 70 percent response rates within the first three months of treating them.

What is it about this patient population? Is it the lack of comorbid conditions or something else that makes people highly motivated when they enter a treatment study? I don't know, and we haven't really studied the difference between treatment study folks and clinic patients.

But I think the bottom line is that we're seeing some early evidence that medication may have a role. It may not be the answer, but it may have a role. And for which patients, how long, all of these other things are questions that we still have to figure out.

[End of session.]

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Session III: Critical issues in treatment

Special populations and treatment for gambling problems

Presenter: Loreen Rugle

(Introduction.) **Ken Winters**: Next up is Dr. Lori Rugle. She is someone who has helped with the long past and the recent history. Or is it the long history and the recent past? She has been there. One of the eminent clinicians and researchers, she got the field started in looking at treatment issues before I think this came under a bigger spotlight, and has also helped move the field in these recent years to a more rigorous point.

Lori's going to talk about specialized populations.

Loreen Rugle: When I talk about working with special populations, I always think of the variety of ethnic, cultural, and social backgrounds everyone in the audience comes from, and I think of my own background.

My ethnic background is Slovenian. Anybody know where Slovenia is? *(Laughter.)* Many people don't. It's part of the old Yugoslavia, kind of nudged between Italy and Austria in a little tiny corner there. And the joke about Slovenians is, how does a Slovenian double her money? Anybody know? She folds it and puts it in her pocket. *(Laughter.)* We're not known as the most financially risky group, ethnically. If we're prone to any addiction, it's probably work, which is certainly true for me. But I think all of us come from different backgrounds, with different attitudes, values, practices, in terms of gambling.

There is not a great deal of research that has been completed

regarding the treatment of special populations, yet we do know that different ethnocultural groups have differential prevalence rates for problem gambling.

We don't necessarily know why this is. It's not necessarily anything particularly inherent in that ethnic group. You may speculate, "Is it because they're economically disadvantaged in any particular culture?" It is not the same ethnic group across cultures, across states of the United States, across countries, that exhibits higher risk for problem gambling. It seems to be whatever group is most marginalized, culturally and economically, in that particular area that's the factor that puts them at risk for problem gambling.

Is it an issue of social and economic hope and mobility? Is it that gambling is seen as the only option that particular group sees for advancing and integrating and becoming enculturated in that society?

Is it because gambling is a way of maintaining a cultural identity when individuals are coming into an area where they are not familiar with the majority culture's traditions and values? They may not know or understand how to fit into the majority culture, but they do know that they gamble with their family, with people in their cultural group. They have their own games and it's a way of identifying and holding onto that sense of fitting in and belonging.

So there are many things we don't know about why those differences in problem gambling prevalence exist across different groups.

Perhaps the reason for the higher prevalence rates is just that they don't have access to resources; that they get turned down for loans more frequently and gambling seems like a way of making needed money?

Let's look at women as a special population. We know that male gender remains a risk factor, but women are catching up in terms of problem gambling rates. We know that men may start earlier, and this may be a cohort effect. Younger women, younger cohorts of women, may be starting to gamble at younger ages. Currently, the data still show that men start at younger ages, but women seem to progress faster in developing problems.

Again, is this something inherent in female gender, or is it a lack of economic resources? Or a lack of understanding about the game? We don't know what the cause is.

Women seem to come in with higher rates of trauma and abuse history, as with substance abuse. There may be gender differences

in terms of illegal activities. Debt and poor family support, for example, are fairly common, so that women coming into treatment are more likely to be divorced and not have a supportive spouse than are men coming into treatment. So there are issues there.

Women are underrepresented in treatment research. When we talk about the research, we come head-on to this issue. Ethnic groups, cultural groups, and women have been severely underrepresented in treatment outcome studies.

I think that's very significant. I hope we can talk later about the issue, which is one of my questions to this group: not, "Are the criteria for empirically validated studies too strict?" but, "Are they not good enough?"

I have some ideas in terms of what is "not good enough" because we haven't taken the next steps of applying those criteria to real-world populations and settings. I think we need more criteria for what are really evidence-based effective treatments, rather than fewer criteria.

Service delivery and perceptions of successful outcome may differ based on gender. This is a really intriguing finding from one study, in terms of clinicians' perception of treatment effectiveness. And clinicians perceive treatment to be more effective for women than for men, even though, when you look at the concrete qualitative-quantitative outcome measures, there wasn't any significant difference.

But the clinicians perceived that the women were doing better than the men. So there are gender differences along those lines that may affect the types of services available based on gender, the length of services, and the need and perception of the need for additional services.

Significant issues, in terms of these special populations, are isolation and alienation. Groups in our society that are isolated, that are alienated, that have no hope, are clearly at higher risk.

We talked earlier about the public health model, and about addressing these issues in our service delivery system because these groups feel isolated and alienated from the service delivery systems, not just generally isolated from mainstream culture.

There are often more significant issues of shame and guilt in these special populations. There are people who feel different from the majority culture to begin with, and to come into a treatment setting when they're already feeling different and alienated, where there may be a lot of shame and guilt inherent in a cultural perspective or

in a value system, presents an incredible obstacle and barrier to accessing care.

We need to look at the route to success and independence. Is gambling viewed in this different group as the only route they have to success, as defined in that culture? As the route to financial success, social success, business success? If that's the only avenue that our society is providing, then we're in serious trouble.

Here is a modification from the 12-step programs of the acronym HOW. I thought it very appropriate here. Rather than Honesty, I start with Humility. As gambling treatment providers, professionals, policy makers, I think we need to start with humility in working with special populations. We can't tell any particular group how to do it. We need to learn from that group. We need to make our treatments fit into the context, the value systems, the understandings, the perceptions, of that culture.

We have something to offer, which is our understanding of problem gambling, but we also have a whole lot to learn and to be educated in, in terms of what works and what doesn't work for any particular group.

Next is Open-mindedness that our ideas might not work for any specific group. We must deal with the groups that we work with. I thought about Dr. Pursch and his presentation of the group he works with, where he has a 90-some percent success rate. Well, if he comes in to my VA population with that approach, it's not likely to work very well. What I was thinking was, "Gee, that's nice, but my guys don't even have a job." So they're not even going to be motivated by keeping their job. Or they've had 20 jobs in the last five years, and they don't need any particular job because they can always go out and get another job.

So motivating factors are different. I think we have to be open-minded that what we may experience that works, or even what the empirically validated studies say works, may not work very well for any particular cultural group or different population.

And we need to involve, as David [Korn] said, all the stakeholders in the community. Actually, they may need to involve us. They don't have to. It's their community; it's their group. We're the outsiders. We have to prove our value to them, not the other way around.

So if we're fortunate enough and if we're open enough, we may be included as a stakeholder at the table when each community talks about how to deal with problem gambling within their group, within their community.

Finally, we have Willingness. Willingness to integrate community and program evaluation components to really study what works and why it works. Willingness to design program evaluations that address the complexity of a holistic and a community-based perspective.

This is not easy. It's not the simple answer. It's not a clearly defined, "We're going to study this one aspect of the problem; we're going to try this one narrow intervention." It's about a very complex study that looks at a lot of different factors and tries to integrate them into what's going to work.

It's also a willingness for funders, policymakers, governments, funding sources, to fund these kinds of complex studies that are not easy to do and not cheap, and require resources. We barely have enough resources to provide minimal treatments for the broad culture. But to say we need more funding to provide services to special groups that maybe have very small numbers in the context of our state, of our nation? Policymakers aren't going to be happy with that. But we need to serve all people so we can all learn, and the willingness to provide the resources to reach out to every segment of the population is incredibly important.

We need to learn a lot. What are the barriers for special populations to accessing problem gambling services? What can we do about them? What are their help-seeking preferences and how can existing approaches mesh with different cultural traditions? Does treatment advocacy differ for various groups? Does pharmacological therapy work the same for all ethnic groups?

Just a couple of days ago I heard a news story about a high blood pressure medication that hadn't been found to be effective when applied to the broad culture. But recent studies have reexamined the data and it seems to be effective for African American men. Go figure. It may yet be approved for that segment of the population. We don't know what medications may act differentially for men, for women, for Hispanics, for African Americans, for Asian Americans, for Caucasians. This is intriguing information.

Do cognitive behavioral approaches work across cultures? Probably not in the same way. Do 12-step approaches work? It's been very hard in Ohio, in the Cleveland area, to have African Americans stick in GA. They don't feel welcome.

Fifteen years ago, it was women who wouldn't stick in GA, because they didn't feel welcome. A lot of work is needed to find out whether 12-step approaches work the same across cultures or whether we have to do other interventions to integrate different cultural groups into 12 steps or provide their own 12-step groups.

And the role of family and community is important. We haven't talked much about family interventions yet at this conference, but family can be so important in these different cultural groups. And how to utilize family as a resource, how family plays a role in engaging and repairing patients in treatment or in other interventions, is incredibly important.

So with that, I'll conclude, and thank you very much.

[End of session.]

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Session III: Critical issues in treatment

Improving the measurement of outcomes in problem gambling and treatment research

Presenter: Tony Toneatto

(Introduction.) **Ken Winters**: It's apropos that our next speaker is going to try to give us a bit of an overview of outcomes, in general, with various treatment approaches.

Dr. Tony Toneatto comes to us from Toronto, Canada, from the Centre for Addiction and Mental Health, and has been a leading researcher and publisher in this area of summarizing outcome evaluation research.

Tony Toneatto: But my title is misleading, it should say: "Improving the measurement of outcomes in problem gambling and treatment research." My focus is going to be on something I hope that all of you will be able to take back with you, rather than being a talk directed only at research.

But as a context for that, let me just tell you that a couple of years ago, Rob Ladouceur and I were embarking on the review of literature, which he alluded to earlier, and in doing so we identified some of the better studies.

Actually, most of them were done by people like Ladouceur, Dave Hodgins, and Alex Blaszczynski. They made up most of the studies in the 12 or so that we identified.

In doing this we came up with an analysis of what needed to be done if the treatment field were to progress. And it really revolved around assessment. A lot of the recommendations were around

measuring, assessing, what you do, how you do it, when you do it, why you do it.

From that, about a year later, last May, a bunch of us met in Banff, Alberta, including people like Alex, David, Robert, Nancy Petry, Marc Potenza, Michael Walker, and several others, to further discuss the issue of measurement assessment in gambling research.

The purpose of this was to advance the field and to not have to wait too long before we get information that is going to be useful and effective and guide our treatment practices.

The downside of that is that most of the research that we were discussing and doing was efficacy research, where highly controlled research excludes a lot of populations and the end results don't generalize very well.

That's not actually the best kind of research, probably, for this audience. It's really about effectiveness research and how does this research work in the real world in the clinics or settings where you work?

So as I'm speaking about my material today, it's really meant to be applied in any setting that you work in, whether it's residential or outpatient, whether it's a brief or long-term program, whether it's mandated or nonmandated programs, whether it's a case study—one single subject—versus a group you're involved in.

I'd like to make the issues I'll be raising applicable not only to good efficacy research, but also to any kind of clinical intervention, because the assessment piece that underlies all that, the issues that underlie a good assessment, cut across any type of research and any type of intervention.

That's the context for my material. It's also ideal for a program that wants to do any kind of qualitative evaluation, program evaluation, quality assurance—not just for any kind of controlled research.

Even with the best studies, there's a wide variety of assessment methodologies. People do things very differently. Surprisingly, some people don't do much with assessment. It's not unusual to find many good studies where the assessment is lacking or too poor to allow any kind of meaningful statement to be made.

So we realize that with that kind of array, with that poor quality of assessment methodology, it would be very difficult to really compare studies and to make good conclusions.

We also realize that by not improving our assessment procedure, we were going to retard the progress towards developing effective treatments. And as I mentioned in the article I wrote, we met in Banff to improve on that. Out of that came the following principles that apply in any setting you're in: whether treatment, research, or not.

First, we need to measure problem gambling behavior. Believe it or not, not all studies measure gambling behavior. They may often measure attitude towards gambling or they measure it in a very overall simplistic sense. We would encourage people to measure the frequency of gambling behaviors. That is, when, how often, in what context, over a period of time—30 days, 60 days, 90 days—to allow you to compare what happens after the person's gone through treatment, in any context of the received treatment. Without that information, it's really hard to know and hard to actually argue that your program is effective or that you're achieving what you want to achieve.

Second, in addition to the frequency of the behavior, the financial aspects of gambling are important to measure. An issue that's been very difficult for us to get around is how to best measure net financial loss.

We don't have the final answer on that, but one way to do it—which I'm going to show here—is that you measure the money that you have available to gamble at the beginning of the session, including any kind of withdrawals or borrowings you make during that session, minus the money left at the end of the session.

A third aspect of measuring problem gambling behavior is to describe what kind of gambling you're actually treating. It's amazing how many studies don't say what kind of gamblers are being studied or treated.

That's like reporting a study on addiction including, let's say, smokers. The word "addiction" won't tell you whether it's about smokers or about cocaine users. You need to actually specify the kind of gambling. In our case, it would be specifying whether it's slot machine gamblers or racetrack gamblers or lottery players. Without that critical information, it's really hard to compare studies that may have an unknown mix of subjects.

But having fairly detailed measures of frequency, the amount of money lost, and so on, you're then able to present the findings in a variety of ways that are not there if you measure outcomes just in terms of abstinence, nonabstinence, using a lot, using a little.

The fourth aspect that needs to be measured—this is obvious, but

we're not yet ready to do this study because it's invasive—is to measure problem gambling related consequences. This, as Dr. Ladouceur alluded to earlier, is the idea of measuring the pure gambling psychopathology, the phenomenon of gambling, the core of gambling pathology, which may be impaired control. The reason why it's important to measure that, versus consequences, is that most consequences of gambling treatment, which involves effects on the person's psychosocial functioning, may take a long time to take effect.

You may as a clinician get the client to be abstinent. But it doesn't mean that they're going to be happy or that their life will be any better. They may have a lot of resolution of problems for a long time—divorces, loss of jobs, financial problems.

In terms of evaluating your intervention you want to be able to show that, "Yes, I helped the person with their gambling behavior," but in a study that may not translate into better functioning. It may take years before they recover their life, and you don't want to take responsibility for that, necessarily. It also allows you to provide the additional counseling and resources to deal with the consequences that come from the gambling, besides just the gambling itself, and there are many ways to do that.

The fifth thing that we thought was important to measure, when you're measuring gambling, was how much time people spend thinking or preoccupied about gambling. I know it's a symptom in DSM, but we often don't think a lot about that aspect of it, their cognitive thinking about gambling. But many people who are caught in gambling pathology spend a lot of time just thinking about gambling, not just in an obsessive way, whether you want to gamble, but thinking about the consequences of gambling, how to improve their gambling, systems of gambling, and recovering from gambling-related consequences, "How will I lie to my wife? How will I deal with this issue or that issue?" and there's a lot of mental activity that will go with the gambling.

Getting a sense of how much of that is going on is actually a good measure of the impact of gambling on someone's life. And that's a variable that's often not easily measured or measured at all.

Dr. Ladouceur also mentioned that we need to measure why we think people are getting better. All of us will have our pet theories about why our clients get better—education about cravings, depression, medication, self-esteem, impulsivity—but how do we know that unless we measure it? We can easily get into useless disagreements between treatments and treatment studies that could be resolved if we measured why we think someone gets better.

In addition to measuring just gambling behavior, the sixth issue is measuring the important predictors or constructs that we think explain it. So if you think that impulsivity is a core mediating factor, measure impulsivity before and after so that you can say, "Well, I measured that; it did go down" or "it did go up" or whatever.

Without that kind of information about the process of change, we often don't know why our clients get better. It may be for all the nontherapeutic factors that are often present in treatment, like motivation, group social support, the role of the therapist, and things that are not part of the treatment, per se, but are part of the therapeutic environment.

So to convince your program head or government funding agency or anyone else that your treatment is effective, you need to have some measure of the key things that you think are effective.

The example I give is that it would be strange to say that cognitive therapy is effective when there's no evidence that cognizance was modified. And so, researchers like Dr. Ladouceur include measures of cognitive functioning in order to see if that occurs so a link can be made.

The seventh issue involves measuring what happens to your clients as they go through therapy. Whether with research or your own clinic it's misleading to include the people who don't attend assessment, who don't attend treatment, in your success rate.

It helps to know exactly what happens to these people. In fact, where I work, we're starting to embark on actually calling up people who drop out, or who don't even come for treatment, to find out what happened to them. We often assume they're doing poorly; often that's not the case. They may be doing quite well. The assessment may have been therapeutic and we are able to use those data.

But otherwise, without that information, our results are misleading, so we need to know how many people are seeking treatment—if you're doing it in a clinic or a clinical setting—how many attend the assessment, and, out of those, how many begin treatment, how many complete treatment, and how much of the treatment they complete, and how many of the clients are followed up. That way, you can actually begin to get a sense of how strong your program is and how meaningful the results might be.

Then following treatment we need to measure longer-term outcomes, other than end-of-treatment and posttreatment. Almost all clients will get better with almost any treatment. That's pretty well clear. With the effort of coming, the motivation of being there,

and the attention they're going to get, rarely will people get worse while they're in treatment.

But the key thing is to ask, "Do they retain those gains in the short term, in the medium term—about a year later—and the long term?" And that's when you can begin to make links between your program, your intervention, your study, and a lasting change in a client.

And the last point, my final point: if possible—and it's not always possible—get others that would know about the client's gambling to corroborate or validate or provide some information as a way of feeling more comfortable about the reports that clients give.

Know that for many gamblers it's a great difficulty to be honest, especially if there's something riding on it—some other secondary gain—and when that is possible, include that as a way of having confidence in the results that you collect.

Ken Winters: Let’s change gears a little. During break, Jeanette asked two questions.

One is for Tony. Can you give us clinicians some examples of assessment tools that we could use if we want to do pre–post analysis?

Tony Toneatto: That brings to mind a project that I'm involved in now in Ontario where we're evaluating a residential treatment program in a pilot project and, in doing that, I have developed a core set of questioner's instruments that are going to be administered before treatment, after treatment, and for the follow-up.

That core set of instruments has to be pretty short, fairly easy to use, self-administered. If it takes too long, people aren't going to use it, so it takes about 20 minutes, half an hour, to do.

It includes measures on gambling behavior, severity of gambling, DSM criteria, high-risk situations, cognitive distortions, gambling-related consequences, quality of life—which we think is important to put the gambling in context of—treatment goals, psychiatric histories, substance abuse histories, and treatment history.

In addition, we ask questions around the overall program, to rate the program evaluation piece, and then we have a specific list of questions about the actual treatment components.

This goes back to a comment, actually, Dr. Ladouceur mentioned about treatment manuals. Treatment manuals are often developed

for the treatment studies that we have been describing. But in actual practice, most programs don't use anything that comes close to one.

But what you should be able to do is to actually describe what you do. So that if somebody asks, "How did you get those results in your program?" you can say, "Well, we did this, this, this, this, and this."

So what we ask the people in our program to do is to come up with about 15 key interventions that they will be administering in their residential program and we convert that into a questionnaire that the clients will get at the end of treatment to find out from the client whether they were effective, whether they were desirable, and how they felt about it.

That way the program gets direct feedback from the clients as to the efficacy of the program and then they can develop the program further.

I can make available to you the set of questionnaires that I just described. My e-mail is up there. It's Tony_Toneatto@camh.net.

A subset of those questionnaires are then re-administered at the end of treatment, a smaller set, and then at any follow-up that one would desire. In our case, it's three months, six months, and twelve months.

That way we're able to quickly and validly get information that allows each program to find out not only if what they did works, but also how to improve it because clients will be giving individual feedback.

This can be used in any kind of new program being developed. You can use it just to see whether your program is working well. You can use it to see whether changing your program will make it better. You can even use it in individual cases you're seeing and just monitor the client's experience pre- and postintervention. You can use it if you're trying a new type of therapy, and so on.

So that core package is something that we developed and I'd be happy to share with you. None of it is something that has to be secret or bought. It would definitely be available that way.

And, along that same question, it addresses the interesting acronym that Joanna was saying, the YCTs and the YCJTs. You can just tell. Now you don't have to say that. You can say, "No, I know they got better because these cores changed and these cores didn't change and I know why they got better because they

said these interventions helped and these didn't."

And that, then, is good for morale for therapists, it's good for advancing a program, and if you're going to be training other people in your particular programmatic approach, you can now say what you're doing and how effective it is.

So it has many, many functions that go beyond just simply outcomes, to also enhance programs.

[End of session.]

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Session III: Critical issues in treatment

Problem gambling certification and training: The issues of applied science

Presenter: Joanna Franklin

[The audiotape of this presentation by Joanna Franklin was unfortunately lost. But she kindly offered us the use of these PowerPoint slides that summarize her talk. We thank her for their use. -ed.]

Presentation slides (127 KB)

[The HTML version of the PowerPoint content:]

- Purpose of certification is to provide the public and other stakeholders the means by which to identify certification standards that serve their competency assurance needs. *(NOAC'02)*
- Can we assure that this counselor knows what they are doing, will do no harm?
- Through a peer review process we have established :
  - accreditation standards
  - evaluate compliance with these standards
  - recognize counselors that meet these standards
- The Gambling Counselor Certification process began being

formed in 1984 through the National Council on Problem Gambling. At least four different groups watch over the certification process for gambling counselors internationally. Survey data is forthcoming.

- Though approval of gambling training hours is done in most states and nationally there is no approved standard training program for these counselors.
- The field struggles to find a way to include recent research findings into direct clinical practice and meets various forms of resistance along the way.
- There is little evidence or no evidence that patient characteristics interact with type of treatment to affect outcome *(Longabaugh & Wirtz, '01)*.
- Training programs need to emphasize not just the facts and figures of research but the effective ways to implement multimodal strategies focusing on:
  - integrated care is more effective for co-occuring clients *(Barrowclough et al, '01; Moggi et al '99)*
  - need for structured, evidence-based multi-modal paradigm
  - integrate with empowerment and qualitative methods
- The discrepancy between what research indicates as efficacious and what most gambling counselors practice seems a growing issue.
- Movement towards clinical training that includes a Unified Model of Treatment and Research could include:
  - Community based participatory models
  - Use of interdisciplinary research teams
  - Inclusion of consumer perspectives
  - Input from put-upon therapists and support with long term integration of strategies and client matching interventions.
- Gambling treatment researchers are few and far between.
- Their work is critical to the evolution of care that can improve

availability, outcome, affordability etc.

- BUT- we must consider ways of measuring effectiveness that are practical, do-able, objective and of course relevant to counselors, clients, and administrators.
- Counselors in the real world don't have easy access to control groups, cannot provide care and do double blind studies.
- Evaluating the clinical care of real people should not be structured like a drug trial.
- Researchers and counselors should join together to create a meaningful research design that allows for good care and good evaluation of services.
- The certification of gambling counselors should assure consumers and administrators alike that the individual providing clinical care is specifically trained (30-60 hrs) and has been supervised in the provision of gambling treatment and is competent, safe and effective.
- Gambling counselors do not need more advanced credentials than certified drug and alcohol counselors to begin their work with gamblers and their families as long as they have completed the specialized training program.
- Gambling Counselor Certification should assure consumer and administrator, hiring agency, funding source, court, EAP, etc., that this service provider has been:
    - specially trained to help gamblers and their families with issues unique to these clients.
    - supervised or has consulted with gambling treatment experts as they gathered first hand experience with this clinical population.
    - objectively tested with a passing grade on a national minimal competency exam that is gambling specific.
- Clearly, researchers and counselors collaborating together could produce meaningful results for ourselves, the field, and the consumers we are here to serve.

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Problem Gambling Certification and Training: The Issues of Applied Science

Joanna Franklin MS NCGC II

with

Lori Rugle PhD.

Trimeridian Inc.

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Problem Gambling Certification and Training: The Issues of Applied Science

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- BUT- we must consider ways of measuring effectiveness that are practical, do-able, objective and of course relevant to counselors, clients, and administrators.
- Counselors in the real world don't have easy access to control groups, cannot provide care and do double blind studies.
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Session IV: Towards the DSM-V

The categorization of pathological gambling and the Impulse-Control Disorders Not Elsewhere Classified

Presenter: Richard Rosenthal

(Introduction.) **Jon Grant**: It is my great pleasure to introduce Richard Rosenthal. Richard has been a pioneer in understanding pathological gambling. In fact, he was instrumental in drafting the DSM-IV criteria for pathological gambling. He continues his research at UCLA and treats individuals with gambling addiction in his private practice.

Richard Rosenthal: Thank you, Jon. It's my impression that pathological gambling is not a difficult diagnosis to make. The criteria are reasonably straightforward; they work well. They even provide a simple measure of severity. There is a problem, however, although not with the diagnosis. It's with the classification. In other words, we can say whether someone is a pathological gambler, but not what that means. What is it? Often the question is worded, "Is it an addiction or an impulse-control disorder?"

I'm going to be discussing the classification of pathological gambling, and the category of the impulse-control disorders, by attempting to answer that question and two other questions that are commonly asked: Isn't the category of Impulse-Control Disorders Not Elsewhere Classified a wastebasket category? And why is the categorization of the impulse disorders so confusing?

Is pathological gambling an addiction or an impulse-control disorder?

That question has a very simple answer. It is both. Addictions *are* impulse disorders. First, consider the name of the category in which pathological gambling appears: the Impulse-Control Disorders Not Elsewhere Classified (IDNEC). This is a residual diagnostic category for disorders of impulse control that are not classified elsewhere in DSM-IV. DSM-III and DSM-III-R called attention to this in the introduction to their respective IDNEC chapters, and both offered examples of some of the other impulse disorders. However, the IDNEC committee for DSM-IV was aware that this was often overlooked, and that there was still confusion about the residual nature of the category, so they tried to make the introduction clearer and to give a more complete listing of the other impulse disorders. They include substance-related disorders, paraphilias, antisocial personality disorder, conduct disorder, schizophrenia, and some mood disorders. Thus, substance dependence—which had been similarly listed in DSM-III and III-R—is understood to be an impulse disorder, albeit one classified elsewhere.

Addiction, it should be noted, is not a word, or concept, which appears anywhere in DSM-IV. It was considered a layperson's term: too difficult to pin down or define. Instead, the preferred terms for the substance-related disorders are abuse and dependence. The most obvious comparison of substance dependence with pathological gambling occurred in DSM-III-R, where the criteria for the latter were taken directly from the former. This was most obvious in an earlier published draft of DSM-III-R, where one can see that the criteria for pathological gambling were taken directly from the criteria for substance dependence, with only the substitution of the word "gambling" for "intoxication" or "use." In a 1992 paper in *Psychiatric Annals*, I placed the two sets of criteria side by side. One can appreciate that they're almost identical, curiously differing only in the number of criteria needed for diagnosis. Historically, if alcohol and substance dependence were thought to be "addictions," so too was pathological gambling.

And, finally, the original definition of pathological gambling that the IDNEC committee for DSM-IV unanimously agreed upon was "a continuous or periodic loss of control over gambling; a progression, in frequency and in amounts wagered, and in the preoccupation with gambling and with obtaining money with which to gamble; irrational thinking; and a continuation of the behavior despite adverse consequences."

This has been repeated in the literature and on Web sites and in educational materials and appears to have received some acceptance as an official definition of the disorder. It clearly is the definition of an addiction. Unfortunately, the senior editors for DSM-IV substituted another definition so as to put it into conformity with the other disorders. What currently appears in DSM-IV is

"persistent and recurrent maladaptive gambling behavior that disrupts personal, family, or vocational pursuits." This is unfortunate in that it doesn't add to our understanding of the disorder. What is "maladaptive gambling behavior"? It appears that the preferred definition of pathological gambling is that of an addiction.

Isn't the category of Impulse-Control Disorders Not Elsewhere Classified a wastebasket category?

Various authors have argued that the five disorders categorized as Impulse-Control Disorders Not Elsewhere Classified have little in common, and were placed together only due to a lack of agreement as to where else to put them. The IDNEC category has been described as something of a wastebasket.

Only kleptomania and pyromania seem to belong together, although there has been essentially nothing published about pyromania for the last 40 years, not even case reports. Trichotillomania may better fit under obsessive compulsive disorder, although some would prefer it to be classified under disorders of childhood or as a stereotypy/habit disorder. The IDNEC committee, like its III-R predecessor, questioned whether intermittent explosive disorder (IED) really existed, and decided to include it in order to encourage research that might provide an answer. In its present form, IED is a disorder of exclusion, to be made only after a number of other disorders have been ruled out. As already discussed, similarities between pathological gambling and substance dependence were obvious to the committee. Pathological gambling could have been classified with the substance-related disorders. That it wasn't may have been at least partly for turf-related or political reasons.

Thus one can argue that the Impulse-Control Disorders Not Elsewhere Classified is a category that exists only by default, and that the five disorders represented in it don't really belong together other than by accident or as part of some politically minded compromise.

I would like to take issue with this, and suggest that these five disorders have much in common, and that one can easily understand why they are grouped together. First of all, they are all old disorders. Kleptomania was named and described by Mathey in 1816, pyromania by Marc in 1833. Gambling mania may have been around a lot longer, but was the subject of a famous painting by Gericault in 1822. Impulsive homicidal mania was described during this period. Only trichotillomania, which Hallopeau didn't introduce until 1889, came later. Thus, the IDNEC disorders came into existence or were first described within a short time of one another.

A second trait shared by the group is that they are all deviant disorders, in that they either describe criminal behaviors (kleptomania, pyromania, perhaps intermittent explosive disorder), behaviors that frequently lead to criminal behavior (pathological gambling), or behaviors viewed with shame and disgust (trichotillomania). And, finally, a third trait is that the behavior may occur in a seemingly normal or otherwise normal individual.

Most importantly, what holds the category together are its historical roots, dating back to Esquirol's 1810 description of the monomanias. The defining characteristic of these disorders was the idée fixe, a single pathological preoccupation in an otherwise sound mind. What was revolutionary in Esquirol's new classification was this notion of partial insanity; that a person could otherwise be normal or appear normal when you talked to them, and unless you asked them the right question or somehow brought out this preoccupation of theirs—some driven kind of activity or delusional identity—they would appear normal. Esquirol also described the "irresistible impulse": these people were driven to set fires, or hurt people, or steal, drink, or gamble.

Monomania became an extremely popular concept for about 60, 70 years. It not only dominated French psychiatry, it spread to other countries, and was taken up by the intellectuals, the artists and writers, and by the general public. One of the most important and lasting effects of the concept was in its use as an insanity defense. In 1825 one of Esquirol's protégés, Georget, introduced monomania into the courts. Prior to that the best witnesses for somebody accused of a crime, the so-called experts, were his neighbors—people who knew him when he was growing up. "Well, he was very quiet, and he always was nice to the children." Now a new idea appeared, that it required an expert who would know what questions to ask. That the person could appear normal except in this one area of their behavior. This was the beginning of forensic psychiatry. The notion of the irresistible impulse remained in the court system for quite a while, although it's now in disfavor.

Why is the categorization of the impulse disorders so confusing?

First of all, the irresistible impulse: it's a wonderful phrase, but it's kind of like a ghost that has remained hanging over the category and has followed it from DSM-III to III-R to IV. People still think that the category talks about the inability to resist. In DSM-III, the pathological gambling section does mention being "unable to resist impulses to gamble." But starting in DSM-III and dominating III-R and then IV, it doesn't say "unable to resist." It says "failure to resist," and broadens this further by saying not only "failure to resist an impulse," but "failure to resist an impulse, drive, or temptation."

So the essential characteristic of all of these disorders is failure to resist temptation. In other words it's a purely voluntary thing. If I fail to stop at a stop sign it's not because I can't. It may be because I don't want to. I look around, don't see a policeman, there are no cars. Maybe I don't believe in stop signs. Anyhow, I make a decision not to stop. There's the notion of volition. And the idea of loss of control has not been pinned down satisfactorily in the category.

In fact, there are no definitions offered either in the IDNEC chapter or in the glossary to DSM-III, III-R, or IV for what an impulse is, what impulsive means, or impulsivity. I think this has hindered research in this area, and, of course, there is difficulty with the construct of impulsivity. Just because somebody engages in self-destructive behavior, we say they're impulsive. They gamble. They set fires. They steal things.

An important distinction one needs to make is between specific and generalized types of impulsivity. For example, somebody can be a pathological gambler and act impulsively only in the area of their gambling, and perhaps in the rest of their life they are not impulsive. And the behavior, whether it's gambling or stealing or setting fires, may be purposive and defensive. They are engaging in this seemingly impulsive behavior for a reason. There is meaning to it. It has a defensive purpose. They are self-medicating.

One of the things I learned early in my training is that people will subject themselves to incredible amounts of pain in order to avoid pain. Therefore this purposive, meaningful kind of impulsivity as opposed to the more generalized, purposeless, random kind of impulsivity. Examples of the latter might be people who are more organic, who have no control over their behavior, and are more chaotic.

So that's one problem with the way impulsivity is used in relation to these disorders. There's another problem. When you talk about pathological gambling, there are about five kinds of impulsivity that are involved. You can be impulsive before you start gambling or you can be impulsive as a consequence of the gambling. The impulsivity before gambling can be because of some innate genetic predisposition or it can be secondary to a comorbid disorder, such as attention deficit hyperactivity disorder.

The impulsivity that's a consequence of the gambling may be because the individual is chasing. They have to get money because of some immediate debt or because somebody important to them is going to find out. They're afraid of losing their job, home, or marriage. The desperate behavior they're engaged in may look impulsive but is actually specific and goal directed. As gambling progresses, there may be an increase in shame, guilt, and

depression. As a result, losing becomes more intolerable. Chasing increases in a desperate attempt to get even to undo the guilt and other painful effects.

Still another possibility is that the gambling progression leads to increasing disorganization, greater difficulty with self-regulation, and a general breakdown of executive functions, cognitive abilities, and cognitive skills. The increase in impulsivity would be part of this general deterioration; therefore it's not defensive or purposive. It's more of a spilling over or spilling out. This may be gradual or occur late in the disorder. So there are different kinds of impulsivity, and of course they may be present in combination. Impulsivity can lead to pathological gambling, which can lead to greater impulsivity.

Tension reduction is also a muddy conceptual problem. In DSM-IV, a central feature of the IDNEC disorders is an increasing tension or sense of tension prior to the act, relief or release with the commission of the act, and feelings of guilt or regret afterwards. Four of the five disorders list increasing tension as a central feature. Three of the five list increasing tension followed by relief as necessary for a diagnosis. This is carried over from DSM-III, where an increasing sense of tension followed by relief constituted two of the three essential characteristics, the other being the failure to resist.

Yet there is no definition of tension either in the chapter or in the glossary. And tension has multiple meanings. Tension can mean stress. It can mean dysphoria. It can mean what's going on in the environment that causes one to be upset. For example, we speak of tension in the workplace or tension at home. But the term "tension" also refers to a whole bunch of physical meanings. Tension headaches are the most common kind of headache—probably everybody here has had one at one time or another—but when we talk about tension headaches, it's not clear what the word tension means. Half of the literature on tension headaches talks about them as if the tension means stress. They even call them stress headaches, and there are a number of other synonyms relating to emotional stress.

However, there are just as many authors who think that the tension in a tension headache refers to muscle tension, and that it's the muscular band around the head or the muscular tension at the base of the neck and in the occipital region that gives it its name. There are also a whole bunch of uses of tension relating back to 19th-century physics and the energy models used by Freud. Tension there is defined by excess energy, which the body and mind seeks to reduce. Discharge of psychic energy leads to relaxation, while any increase in energy causes dysphoria or tension.

The motivational psychologists adopted this mechanistic, hydraulic model of energy, which has survived in references to energy being blocked or released therapeutically when one expresses anger. Sports was believed to be a way to get rid of excess anger and aggression. One of the most common theories for alcoholism, just prior to the writing of DSM-III, in fact, was the tension-reduction hypothesis. People drank to release tension. While these theories have been disputed, they continue to form the basis for the tension-reduction model expressed in the IDNEC chapter of DSM-IV.

Another source of confusion is the elimination of any reference to ego-syntonic and ego-dystonic behavior. In the draft of the text for pathological gambling, this distinction was thought to be extremely important. In fact, most of these behaviors started out as pleasurable, but at some point they took on a life of their own. There's no mention of this in the chapter as it was published, which I think interferes with our attempts to understand the loss of control.

Possibilities for DSM-V

On my final slide I listed the various possibilities for DSM-V. The first option would be to keep the Impulse-Control Disorders Not Elsewhere Classified as it is. Since there is a bias in favor of not making changes in the manual unless there's strong data and compelling arguments supporting the need for change, this would be the leading contender.

I've listed two possible modifications. One would be to add more disorders to the category. Various groups have made a case for adding compulsive shopping, Internet addiction, sexual addiction, and pathological lying. Interestingly, we talked about Internet addiction in yesterday afternoon's session. The one paper I'm familiar with on it used the diagnostic criteria for pathological gambling and adapted them to Internet addiction. Sexual addiction—there's a large group of treatment providers making a strong argument for including it. And, again, they're undecided whether it's a sexual compulsion or an addiction. But these are the disorders that are most likely to come into DSM-V and into this category.

Another modification, within the existing classification, would be to clarify what the essential features are. This would be extremely important, as would defining the various terms, such as "impulse," "impulsive," and "impulsivity."

Next I list the spectrum disorders: obsessive compulsive spectrum disorders as described by Hollander, and the affective spectrum described by Susan McElroy. Carlos is going to talk about them and he'll also talk about the possibility of categorizing these

disorders as addictions, specifically behavioral addictions. And, finally, I just want to mention these last two ways of conceptualizing these disorders. Under primitive subgroups, I list disorders of acquisition and disorders of grooming. Judy Rappaport, among others, has suggested this way of thinking about these disorders. Disorders of acquisition would include pathological gambling, and also kleptomania, compulsive shopping, and hoarding. Disorders of grooming would include trichotillomania, compulsive nail biting, skin picking, and a number of disorders found in various species of animals.

For example, canine acral lick disorder—where dogs bite off their fur, mostly on their forepaws—can cause terrible dermatological conditions. Feather plucking in birds is another well-known disorder. Similarities to trichotillomania and compulsive nail biting and skin picking are obvious. And both of those animal disorders are treated with selective serotonin reuptake inhibitors, such as Prozac or Zoloft. We had a dog who was on Prozac for canine acral lick disorder, and he complained terribly of the sexual side effects. *(Laughter.)*

With these primitive subgroups—the disorders of acquisition, and disorders of grooming—in addition to there being animal models, which are extremely useful to researchers, there are parts of the brain that have been localized for these disorders. Again, this suggests possibilities for research.

And, finally, there are some authors who believe that all of the impulse-control disorders are just different manifestations of the same disorder. Webster and Jackson feel that these are people who suffer from feelings of worthlessness, who self-medicate in different ways (stealing, shopping, setting fires), but that they're all trying to deal with the same underlying problem. And [S. W.] Kim, who has done naltrexone studies with Jon Grant, has said that the primary problem is one of uncontrollable urges and cravings, and that how they manifest themselves is what determines the name of the disorder. In other words, it's the drive, not how it's expressed, that defines the underlying, unifying problem.

So that's my talk. I don't know how much time we have for questions…

Jon Grant: We'll just take two questions.

Renee Cunningham-Williams: Hi, Renee Cunningham-Williams from Washington University. Very nice overview. One of the things that I was thinking about as I was sitting there and thinking about additional possibilities for DSM-V: what are your thoughts on subtyping based on age of onset of certain symptoms, as well as

clustering of symptoms within a specific time period?

Richard Rosenthal: Clustering meaning lifetime versus last year in the diagnostic criteria?

Renee Cunningham-Williams: No, clustering of certain symptoms like, say, having preoccupation, chasing, and something else in the last 30 days in addition to some additional symptoms.

Richard Rosenthal: I think Marianna [Toce Gerstein] is going to be talking about that, so I'll hold off on that. As far as age of onset, of course, one of the reasons for wanting to exclude trichotillomania from this category was that they thought it was a childhood disorder that should be categorized under the childhood onset disorders. Other people thought it should be under OCD, but there was strong support for including it as a childhood disorder. Does that answer your question or is there—

Renee Cunningham-Williams: I was specifically thinking of—there are some gamblers who we know start early, early in age, like age eight, in early childhood; and then there are others who are pretty much new to gambling and may start later in age, like some women starting like in their 30s and their 40s. Are these different types of folks? Are they different types of pathological gamblers, and, if so, would it be helpful in the criteria to have a typing like adolescent onset or childhood onset or adult onset similar to—a little bit of what we do with ASPD [antisocial personality disorder] in looking at conduct disorder, and having to meet certain criteria in childhood before you can say something about this same behavior being manifested slightly differently in adulthood?

Richard Rosenthal: We can ask the other people on the panel, but my sense is that there have been a number of attempts to subtype pathological gamblers, and that clinically I think, the one that works best is Henry Lesieur's distinction between the action seekers and the escape seekers.

However, one of the problems has been that Henry and I at one time tried to develop an instrument to distinguish the action seekers from the escape seekers. We thought we had the right questions to ask, but no matter how we played with it, we couldn't get it on paper. However, when we knew the gambler, or were interviewing someone face to face, it wasn't that difficult. I think it's a distinction that still holds the greatest utility, and going back to the original question, the action seekers typically start gambling early in life, and the escape seekers—and this is usually true for women gamblers—typically start later in life, after their adult identities have been formed.

One of the things I remember being discussed at an early conference was the difference between gambling patterns in boys and in girls. I don't know how many of you remember Sirgay Sanger, a psychiatrist who was one of the first presidents of the National Council. He had the experience of having treated a lot of children, and he made the comment, which I think is valid, that gambling was normal in young people, and that it started a lot earlier than people thought, and with various games, but that a difference between boys and girls was that boys were more competitive, and they played for keeps. Girls, on the other hand, even when they played similar games, at the end of the game would give back what they had won. *(Laughter.)* Girls, it seems, are aware early on of the need to maintain the social order and the sense of the community. One of the things I've wondered about when I hear about changing drinking patterns among college students, with girls now binge drinking and drinking like guys, was whether we were going to see a difference in how girls gambled? I don't know if people who work with young people have seen that yet, but we may start to see a change in gambling patterns and in the characterization of women gamblers as typically late onset, noncompetitive, more luck-based escape-seeking gamblers.

Before we finish that, anyone else want to respond to that question? No? Okay.

Jon Grant: Thank you, Richard. We'll keep this kind of thing flowing. Otherwise, I won't get my moderator award. And I do have my own comment, which I think I'll just toss out for later thoughts. We're talking a lot about categorization, and, obviously, you can look at this on two levels as Richard has alluded to. The actual individual criteria of pathological gambling, and whether there should be changes there, are also how you conceptualize it.

And one of the things that I was thinking about as he was talking: I would just have people ponder the forensic aspect of gambling. The one criterion that's always personally bothered me is committing illegal acts in furtherance of gambling. Also interesting, as Richard mentioned, is the irresistible impulse.

This is a very big issue for the court system. For those of you who have testified in court about this, if you have an irresistible impulse to gamble, do you also have an irresistible impulse to embezzle to gamble? In order to feed your gambling? It's an interesting criterion to have it one step removed from the behavior, which we don't have—I mean if you say to alcoholics, "Well, driving drunk and having an accident is part of the alcoholism." That would be kind of a parallel, and I think we have a difficulty in understanding how to legally deal with behaviors that are in furtherance. But it's interesting that it's a criterion for the disorder.

[End of presentation.]

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Proceedings of the 19th annual conference on prevention, research, and treatment of problem gambling. June 23–25, 2005, in New Orleans, Louisiana. National Council on Problem Gambling, Washington, DC.

Session IV: Towards the DSM-V

Theoretical models of pathological gambling

Presenter: Carlos Blanco

(Introduction.) **Jon Grant**: Our next presentation is by Dr. Carlos Blanco from Columbia University, and he doesn't have a bio in the sheet that you were given, but he deserves one. And then I was thinking, "Well, I could make up some things about Carlos," but I was happy enough with what I know about Carlos, so I don't have to make up anything. He's at Columbia University, and he's been doing research on pathological gambling for at least the last eight to ten years in a wide variety of things, in some very interesting biological studies as well as treatment studies. He's gotten good funding from national organizations. And recently he has been doing a lot of work on understanding where gambling fits, building on Richard Rosenthal's presentation, "What's it like? What's it not like?" And what we should start thinking about in where to put it. Carlos.

Carlos Blanco: First I want to thank you all for being here. I want to thank Keith Whyte of the National Council for inviting me to come to this great meeting. And I also want to thank the agencies that have funded my research, and also Henry Lesieur, who has been an inspiration for me throughout all these years. I'm very sad that he's not here.

I'm going to initially disagree, of course, with Richard [Rosenthal], about the name. I actually think "pathological gambling" is a great name. *(Laughter.)* And the reason I think it's a great name, at least for the moment, is because it doesn't have any theoretical load. In general, I think that pathological gambling is pathological, and I think very few people would disagree with me that it has to do with

gambling, so I think it describes the behavior. But I don't think it says whether it's an addiction, a compulsion, or an impulse-control disorder, and maybe 10 years from now we can change the name, but I think for the moment, it's a very neutral name that may not be pretty, but I think it's descriptive.

I'm going to present four potential models of how to understand pathological gambling and I'm not wedded to any of these models. I'm just going to present them, and while there are probably other models, I'd be interested in your thoughts about these models and potential alternatives.

One of the models that I think is better known is the OCD model, for, as you know, obsessive compulsive disorder is characterized by repetitive behaviors, and by engaging in rituals or compulsions to relieve the anxiety produced for those upset by those obsessions. Eric Hollander, who has been the main proponent of this model, has enlarged the concept to include other behaviors. It's unclear to me exactly which behaviors are included, but certainly pathological gambling would be one. And probably trichotillomania, and maybe sexual compulsions or sexual addictions, would be included, as well.

The reason to include pathological gambling is because the first criterion from the DSM-IV is the increased preoccupation and repetitive thoughts about gambling, and that would fit the model nicely.

One potential reason why it might not fit the model so well is that, in general, the obsessions in obsessive compulsive disorders and related disorders like trichotillomania are what we call ego-dystonic. And ego-dystonic means that you are not at ease or you don't like having those thoughts. I think in the case of most gamblers or most pathological gamblers, they actually like having the thoughts, and they like engaging in the behavior. What they don't like are the consequences. Whereas I think, in general, obsessive compulsive patients are ego-dystonic in regard to the disorder and their thoughts. I think most pathological gamblers are ego-syntonic. I've seen a few that are ego-dystonic, and probably you other members of the panel have had this similar experience, but I would say 90 percent, 95 percent of the patients that I see like gambling. What they don't like is when they go home and they have trouble with the family. They don't like losing their jobs. They don't like going to jail. But the actual activity of gambling, I think, in general they enjoy it, which is what drives them back to gambling.

Another characteristic of obsessive compulsive disorders is the pathological doubt, which we all have, I think, to a certain extent, that occurs when you leave home and you check if you closed the door or you check the oven. The difference with obsessive

compulsive disorder is that, in general, most of us, I think, check once or twice. And obsessive compulsive people or obsessive compulsive patients with obsessive compulsive disorder would check perhaps 10 times, 20 times.

I don't think that pathological gamblers have so much pathological doubt about whether they want to gamble or not. They just go and gamble, so I think that this is not a very characteristic feature of the disorder.

There's a bit of disagreement on comorbidity. As far as I know, only three studies have studied comorbidity or OCD with pathological gambling. One was done by Renee Cunningham-Williams, who is here, and the other by Roger Bland in Canada. And then we have the National Comorbidity Survey-Replication, whose results have not been published yet.

So the OCD range in client populations varies from essentially 1 percent to 16 percent. And other characteristics of OCD may or may not fit pathological gambling. One is that, in general, obsessive compulsive disorder is associated with harm avoidance or trying to avoid anxiety. I don't think that's very characteristic of most pathological gamblers, although it may be in the case of escape gamblers. Also, an obsessive compulsive disorder is characterized by anticipatory anxiety, which, again, I don't think is very characteristic of gamblers.

An alternative would be the affective disorder model, which Susan McElroy and other people have suggested. And the reason to consider pathological gambling as a potential affective disorder is that the behavior is harmful, but also pleasurable, which happens also in bipolar disorder, especially in mania. This also leads in some pathological gamblers to mood fluctuations, very much as it happens, again, in bipolar disorder, where people may go from being elated or excited to being depressed or disappointed.

And I think most people will accept including escape gamblers in this model. Also very well established are increased comorbidity or increased rates of mood disorders and anxiety disorders among pathological gamblers. And, in general, even though an association doesn't mean that two disorders are similar, disorders that are similar to each other tend to share comorbidity, so that would be an indication or a hint that pathological gambling may be a variety or subtype of affective disorders.

The biochemical abnormalities that have been found in pathological gambling coincide with biochemical abnormalities that have been found in affective disorders, such as changes in the serotonin levels, dopamine, and noradrenalin. And, finally, some studies

have shown a response to SSRIs [selective serotonin reuptake inhibitors], such as paroxetine (Paxil), and also to mood stabilizers like lithium and depakote.

So these aspects suggest that pathological gamblers could be, or at least some pathological gamblers would be, among a variety of patients with mood disorders.

The third possibility is to consider pathological gambling as an addiction and, more specifically, what we would call a behavioral addiction as opposed to a chemical addiction. The distinction between a behavioral versus a chemical addiction is that the patient doesn't ingest a substance that induces a disorder. In other addictions, of course, like alcohol or heroin addiction, the patient has to consume the substance periodically. In pathological gambling, instead of a substance, we have an activity, here gambling, that substitutes for the substance of the addiction.

One thing that makes us think that pathological gambling may be an addiction is that gambling behaviors are very much like the consumption of heroin or alcohol or marijuana, which are ego-dystonic. A second characteristic that is becoming more and more important in the field of chemical addictions is the importance of motivation in the behavior of the person. When somebody starts using heroin, it may not be a very important part of their life. But as the person becomes more and more addictive, consuming heroin becomes more important than anything else in their life. At some point, the only thing that the patient cares about is consuming heroin, regardless of whether they go to jail, they lose their families, they lose their children. They don't go to the movies any more.

And I think that that happens a little bit to pathological gamblers. Initially, they start gambling, and maybe it's just entertainment, but as gambling becomes more and more important, other things in their life lose importance. I think that's pretty much reflected in the criteria. If you look at the last criterion of the DSM-IV, it reflects what Jon was saying, that committing illegal acts means that they care more about gambling than about remaining within the constraints of the law. They jeopardize relationships. They jeopardize their jobs.

There's also the issue of impulsivity that Richard brought up, and one way of measuring impulsivity is by [*unclear*], or, in general, comparing the importance of short-term rewards versus long-term rewards. If you're at the casino the short-term reward would be to gamble and enjoy the moment. Or if you're at the bar, the short-term reward is that you can drink and enjoy the wine or the alcohol or the company. But the second part is what happens later on.

If you gamble your money right now, then you may not be able to buy a house later on, or you may have trouble with your family. If you drink too much tonight, then tomorrow you might not be able to go to work, or you may have a hangover, or you may have liver disease. Part of what happens in the addictions is this imbalance between short-term rewards and long-term consequences of the behavior.

Finally, another reason to potentially consider pathological gambling as a behavioral addiction lies in responses to treatment. One of the best established treatments right now within the limitations of what we know would be cognitive behavioral therapy, and not just any cognitive behavioral therapy, but mainly the cognitive behavioral therapy that we call relapse prevention, which is the cognitive behavioral therapy that is used in the treatment of addictions.

So there are a number of reasons, epidemiologically, biochemically, neuroanatomically, in terms of neuropsychology and treatment response that suggest that gambling could be a behavioral addiction.

I thought I would also bring up the rational addiction theory, also called RAT theory; I'm not sure why, but… *(laughter)* … that's what it's called in the literature. And, again, I'm not necessarily wedded to this theory, but I thought I would bring this up as a provocation. Rational addiction theory was proposed by Gary Becker, who's an economist at the University of Chicago, and he won the Nobel Prize in economics not just because of this, but this was part of the reason why he got a Nobel Prize.

And in contrast to the other theories where we interpret pathological gambling as a disorder, Gary Becker, the author of RAT, does not necessarily interpret pathological gambling as a pathological behavior. What he proposes for substance abuse can be extended to gambling. He suggests that addictions are not necessarily irrational behaviors or things that we should not do. To the contrary, he says that pathological gambling or other addictions can potentially be rational behaviors and things that we should engage in or some people should engage in, and that's why they do them. They're not irrational.

The reason why you may want to gamble is because by engaging in it you may maximize how much you can enjoy life. Suppose that you are unemployed, have no friends, have a terrible illness, and you're unable to enjoy anything else. But you enjoy gambling. Why wouldn't you gamble as much as you can? That's the best chance you have or the best way to enjoy life. I'm not suggesting you do it. I'm just saying some people may. *(Laughter.)* They may want to do it. And that dovetails with what I was saying before about

alternative rewards. It's a balance between the reward of gambling and alternative rewards. If you have a family, if you have a good job, you have friends, you enjoy food, you enjoy going for a walk, then you may not want to give those up for gambling. But if you have nothing else, again, why not gamble?

One of the discussions in terms of rational addiction theory includes the terms "maximize pleasure" or "maximize enjoyment" or "maximize local utility" and any of the words that they use to describe those behaviors, because are we referring to maximizing pleasure right now or do you have to take into account the rest of your life?

Again, if you're at the bar, then maybe the best chance to maximize your utility or maximize your pleasure at that point is to have a drink. Maybe the people around you are boring, or maybe if you go home, you're going to get bored. There's nothing else to do, at that point; maybe the best option is to drink. Or if you go to the casino perhaps the best way to enjoy yourself is to gamble; that would be a maximization of local utility or local pleasure.

But other possibilities include if you want to maximize your pleasure throughout your life, and if you gamble now, you maximize your short-term utility, but then throughout your life you're not going to be able to keep a job. You're not going to be able to keep your family. You may have to sell your house. You may go to jail. Then you're not maximizing your utility.

One of the reasons to consider gambling as a rational addiction is that gambling seems to be more prevalent or more frequent with people who have lower incomes. And people with lower income, in general, have fewer opportunities to enjoy life than do people who have more income. If they have fewer alternatives, then maybe gambling is an attractive option for those individuals.

Rational addiction theory also gives us some clues as to what we could do in terms of treatment. If the only thing that you can present to the patient is that they're not going to gamble, but there's no other advantage for not gambling, that would not be very attractive. But let's say, if gambling was associated with perhaps potentially paying patients for not gambling—I'm not saying that we should—but perhaps you could say, "Well, if you come to treatment and you don't gamble, I'm going to give you every month a thousand dollars, or five thousand dollars, or a million dollars," then some patients may not want to gamble.

A different way of presenting that would be to present other alternatives like, "If you don't gamble, you're not going to go to jail" or "If you don't gamble, we'll give you a subsidized job." You can

present contingencies or other things that may encourage patients not to gamble, and I don't think these have been used very well in treatment, but I think they are worth some consideration.

What are some of the future directions that I think we should follow in terms of advancing the categorization of pathological gambling? Well, one thing would be, of course, to integrate the knowledge that we have, and we, hopefully, will continue to acquire in the coming years, from epidemiological or biological or clinical findings.

Another area that I think would be very important in categorization is that most of the research up to now has been focused on samples of treatment-seeking gamblers and on treatment-seeking pathological gamblers; but those may be very different from people who do not seek treatment. And we know that only about 10 percent of pathological gamblers seek treatment. We don't know what's going on with the other 90 percent of the people who don't go for treatment.

Our current ideas about pathological gambling may only apply to a very small percent of the population, and when we know more about the population, the overall population, we'll have very different ideas of how to categorize pathological gambling. Maybe the subset of patients that we see are closer to the addiction model, but perhaps 90 percent or 50 percent of them fit better into a different model.

I think another important consideration is to conduct longitudinal studies. One of my criticisms of the subtypes is that, in general, they have been derived using cross-sectional data, data collected only at one point in time, but we don't know if those subtypes are stable. We don't know what those subtypes predict, and I think it would be very useful to categorize gamblers according to different subtypes and then see which one of those subtypes better predicts both the natural course of the disorder and the response to treatment.

Another possibility that was suggested by Marc Potenza—who unfortunately is not here—is the use of hybrid models. It's possible that pathological gambling, instead of being an addiction or an obsession, shares some features from addictions and some features from obsessions, and so it represents a different category. Ultimately, of course, some people would fit the addiction subtype and some patients would fall more into the OCD subtype.

And that brings my presentation to an end. Thanks for your attention, and I'll be happy to answer your questions.

Jon Grant: Questions?

Richard Rosenthal: The most direct examples on subtyping, I think, are those of Iver Hand from Germany, who's presented at our conferences before. He distinguishes addictive pathological gamblers from, I guess, OCD or compulsive pathological gamblers, and how they get treated in Germany in different settings, in different hospitals, and the subtyping of those with obsessive compulsive disorder and those with the addictive… whatever. And that's the way they subtype gamblers and it determines not only the treatment, but actually where they get treated.

Carlos Blanco: Maybe I'll offer the last word on why I think the models are useful. I think that they are useful clinically, because I think they help us understand the patients, and I think also in terms of research, they're very useful, because, depending on how you understand the disorder, you're going to try to devise treatments or devise strategies for the research in one direction or the other, and maybe one of the most clear examples is treatment with psychotherapy. There are at least two models that I can think of right now. One is, again, the relapse-prevention model, or the motivational approaches, which I think tend to assume that this is an addiction model.

But then the treatment developed by Enrique Echeburúa's model is much more based, I think, on extinction, which is more part of an obsessive compulsive based model, more of an anxiety model.

Depending on how you understand the disorder, you're going to approach the patient either in one way or in another way. I don't think this is just academic. I think it has a lot of very practical implications. [*Unclear.*] I mean, I don't see how you're going to extinguish the conduct by bringing the person to the shores of the substance. In relapse prevention, it's just the opposite. You try to avoid the person getting close to the substance. I think that the models have very, very important clinical and research implications.

Richard Rosenthal: I wanted to ask a question about addiction. The impression that I've gotten is that, in terms of addiction, one possibility is that pathological gambling will be brought over to the psychoactive substance use disorders because of the associations with it, and will be or could be categorized there, as a special or unique kind of thing, because of the many similarities and the comorbidity, et cetera.

But a second approach would be to introduce behavioral addictions and, if pathological gambling is a behavioral addiction, then that would be a very large category with a lot of these other disorders that we talked about. Here are two very different approaches within the addiction umbrella. And then possibly a third is in an article I came across recently. Peter Martin used the term "addiction

spectrum disorders," and I thought that was kind of interesting.

Carlos Blanco: I think if any of these disorders would make it to the dependence or the addiction category, it would be pathological gambling. My concern is that it's a slippery slope argument. Once you include pathological gambling in the addictions, then are you going to include sexual compulsions or sexual addictions? And then once you include those, what about shopping? What about kleptomania? And then where do you stop? And I think part of the concern is then the category can become so wide, so broad, that it becomes sort of meaningless. Yes, the person has something that is wrong, the person is ill, but this has implications for treatment. That's one of the concerns, as I said.

The other concern, as I said before, is political. I think right now the government is interested in funding research and treatment for substance abuse and alcohol, because it has not only scientific but very important social implications. But I'm not sure that the government is ready to diffuse that funding into kleptomania or compulsive shopping, which have very different social implications. Science is science, but I think there's also a lot of politics.

[End of presentation.]

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Session IV: Towards the DSM-V

Using statistics to explore the DSM-IV criteria for pathological gambling

Presenter: Marianna Toce-Gerstein

(Introduction.) **Jon Grant**: Marianna Toce-Gerstein is a research scientist working primarily in the use of qualitative and quantitative analysis, questionnaire design, and discourse analysis, and she is going to be talking about using statistics to explore and examine the diagnostic criteria for pathological gambling. And after her presentation, again, we'll open it up for questions.

Marianna Toce-Gerstein: [This presentation was authored by Marianna Toce-Gerstein and Dean Gerstein. Please contact the author for the slides.] Welcome to the bitter end. *(Laughter.)* I wouldn't mind if you all left. I've never talked in front of this many people before, and I am really, really nervous, so bear with me. I'm going to torture you all with a lot of numbers and statistics and make your eyes glaze over, I promise. But when I get to the end, there are some simple points that I'm going to make with all this.

Thank you, Keith, for inviting me to talk today. I was very lucky to have NORC [National Opinion Research Center] pay for me to prepare this talk for this conference. I took advantage and did an analysis that has been on my wish list of things to do for a long time, which is to combine a series of datasets that have been collected by NORC and Rachel Volberg, and merge them into a single dataset to look at the patterning of the DSM-IV criteria for pathological gambling among at-risk, problem, and pathological gamblers in a large enough sample to actually do some interesting analyses.

Well, I'll just go through the samples really quickly. There's a total of 18,381 adults, and the samples include a U.S. national RDD [random-digit dial survey], a U.S. patron intercept survey, the reliability and validity samples that were done to originally test the NORC DSM-IV Screen for Gambling Problems (NODS), and the state survey samples for Arizona, Florida, Florida seniors, Nevada, North Dakota, and Oregon. And out of that, we got 1210 at-risk gamblers, 204 problem gamblers, and 201 pathological gamblers.

And at the pathological level, about 20 percent of the gamblers were from the clinical sample [that was used to test the NODS]. I think one of the earlier presenters said that about 10 percent of pathological gamblers have been in treatment? So this group is overrepresented in the sample, but I think the differences in the study designs and the different kinds of sampling [strategies used in the surveys likely] even each other out.

Do you feel fairly comfortable with the DSM-IV definitions of the criteria, or would someone like me to go through them really quickly? No? *(Laughter.)* In that case, I'll just say that we call them—we operationalize them as—Preoccupation, Escape, Chasing, Loss of Control, Withdrawal, Tolerance, and Lying, Risking Relationships, Bailout, and Illegal Acts (*a slide of graphs for percentage of gamblers reporting each criterion is presented*).

The sample that's represented in these graphs comprises the gamblers who reported one or more of the DSM-IV criteria, and that makes it about 1615 gamblers who qualified for these graphs. And on the X-axis, the bars start on the left with the people who report one problem, and if you go up to the far right, to the tall bars, you have the people who reported all 10, so they're necessarily 100 percent. The first row shows Preoccupation, Chasing, and Escape. And then we have Loss of Control, Withdrawal, Tolerance, Lying and Risking Relationships, Bailout, and Illegal Acts.

And, as you can see on the graph, some of the DSM-IV criteria dominate at the lower levels of the problems, and that's the first row: Preoccupation, Chasing, and Escape. And most progress at the rate that you would expect, and those are Loss of Control, Withdrawal, Tolerance, Lying, Risking Relationships, and Bailout. And then Illegal Acts doesn't appear with much frequency until you get to the very highest levels.

So the criteria with linear curves, the ones in the middle, increase at the rate you would expect if the probability of the criteria's incidence at different levels were directly dependent on increasing severity in a uniform underlying process. And the decelerating curves for Preoccupation, Chasing, and Escape suggest that when few or no other symptoms are present, the likelihood of these criteria being present is higher than one would expect based on

chance. And, therefore, the opposite is true of Illegal Acts. In the absence of many other criteria, the symptom appears far less often than you would expect.

Now I'm going to make your eyes glaze over (*table slide is presented*). Across the top [of this slide], the columns are the percentage of people reporting each criterion according to what their NODS score is, from one to ten. And the only thing you need to look at is the tan ones, which represent those cells in which the criteria appear more often than you would expect, and the blue ones are the ones that appear less often.

And to explain what I mean by what you would expect, among people who report one criterion, you would expect 10 percent to report Chasing, Preoccupation, Escape, Tolerance, and so forth. And that would sum to 100 percent. But nearly half of the sample that report one problem report Chasing.

And then for those who are data nerds like me, you might be interested in the [statistical] significance as you move between levels. I found a couple of things interesting about this. Between the problem and the pathological levels, four and five, Tolerance and Withdrawal—two of the hallmarks of dependence—increased significantly. And then when you get between five and six, you see Loss of Control, Risking Relationships, and Bailout increasing significantly, to the point where they get to the level that you would expect them to be reported in that group. And then Illegal Acts is lower, far lower than you would expect, all the way across the line, and doesn't increase significantly until you get to between nine and ten criteria.

(*Correlation slide is presented. This is the overall correlation matrix for the dataset, which includes all gamblers who reported two or more criteria, or 680 gamblers.*) The correlation matrix basically looks at how well each of the 10 criteria correlated with each other, and the numbers that you see here are for the sample overall, with the colors indicating differences by gender. I broke it down by males and females and found some interesting differences—some surprising differences—that I want to mention.

The tan boxes indicate where there is a high correlation coefficient for women and not for men. The blue boxes indicate where there is a high correlation coefficient for men and not women. Where there are tan lines going across these, that means they were not significant for women, but were significant for men. [Where there are blue lines,] they were not significant for men but were significant for women.

So the first point on this is that Chasing wasn't strongly correlated

with other criteria for either men or women in the sample. The only three that it was correlated with were Tolerance, Loss of Control, and Bailout, but you can see the correlation coefficients are very weak. There doesn't seem to be much going on there with Chasing, as being part of the [same] underlying construct.

Among women, Tolerance has high correlation coefficients with four of the ten criteria: Preoccupation, Illegal Acts, Risking Relationships, and Bailout. Similarly, Illegal Acts has high correlation coefficients with other criteria for women more so than for men. And these differences were most pronounced with Preoccupation, Tolerance, and Withdrawal. And the differences for men and women are especially pronounced at the pathological level, where women were significantly more likely than men to report both Tolerance and Illegal Acts, which I found incredibly interesting.

Also, for women, Escape is not significantly correlated with any of the other criteria except for Lying and Risking Relationships. However, it was significantly correlated with most other criteria for men, although the only strong correlation coefficient was with Withdrawal. Yet the women are significantly more likely than the men to report gambling for Escape. This criterion, again, does not appear to be connected to the underlying construct among female gamblers in particular, but it's also less correlated than the other criteria in the matrix with perhaps the exception of Chasing.

And, lastly, you see the dark blue outline. It's to indicate those [criteria] that were significant for men and women and had high correlation coefficients for both men and women. And you'll see they include Withdrawal and Loss of Control, which is not surprising, since they both assume that you've tried to stop, cut down, or control your gambling at some point. And Lying, Illegal Acts, and Risking Relationships, and Bailout all seem to be very tightly connected.

These criteria were then tested in a factor analysis (*factor analysis slide is presented*). And those are the results of my next slide. The factor analysis sought to examine the patterning of the ten criteria by sex and by problem level among gamblers reporting two or more DSM-IV criteria.

Across levels and among both male and female gamblers, three underlying clusters of problems were identified that appeared to represent a specific type of problem with regard to gambling, but not necessarily a specific type of gambling. The first factor comprised Withdrawal and Loss of Control, which you'll recall had the highest correlation coefficient of any two DSM-IV criteria. And these are two of the three dependence criteria for the DSM-IV diagnosis of substance dependence with physiological

dependence. They do not form a factor with Tolerance. They may be more suggestive of impulse control than dependence, per se.

Secondly, Risking Relationships, Illegal Acts, and Bailout formed a strong factor. And Lying, which formed its own factor at the subclinical level, joined these at the pathological level. And these criteria obviously all have in common breaking social norms. So I refer to this factor as the social dysfunction factor.

Finally, Preoccupation and Tolerance formed a factor; Chasing, which tended to form its own factor at the subclinical level, then joined them at the pathological level as a factor. And I thought about this one for a while. Maybe other people who have more experience treating clients can provide a lot more insight into this. It struck me as perhaps resembling the obsessive quality of gambling, but perhaps even more so, it reminded me of the action gambler. And I'll leave that to you to do further interpretation of.

The criterion of Escape was a really interesting case. It didn't have high consistent loadings with any of the factors at any of the levels. It mostly loaded negatively with a lot of the factors, which is difficult to interpret. But it didn't appear to be connected to any of these factors at any level.

In looking toward the DSM-V, we're presented with a number of challenges (*conclusions slide is presented*). A more sophisticated means of diagnosing pathological gambling is needed beyond simply counting criteria as if they were all equivalent. Up until now, researchers have not had available to them a large enough sample of lifetime at-risk problem and pathological gamblers to analyze the patterning of the criteria.

This analysis reveals that while differences exist between groups that need to be taken into account, nevertheless, three patterns exist that can help illuminate the nature of the disorder. Based on the findings, I would recommend further qualitative and exploratory research examining the individual criteria. Specifically, I would like to see Chasing and Preoccupation refined so that they are not overrepresented at the lower levels of the gambling taxonomy. Secondly, we need to learn more about the Escape criterion. Gambling to escape problems or negative emotional states may indicate a neutral or even healthy mechanism, a coping mechanism that is only a problem when it occurs in the presence of other criteria and higher levels of problems. Escape is the only DSM-IV criterion that is actually a risk factor. It does not become a symptom until the gambler starts gambling to escape the problems caused by his or her gambling. This criterion, therefore, may be more central to the cycle of the gambling problem, but not representative of the problem itself. As such, it may act contextually to accelerate the process of developing problems. The crafters of the DSM-V

might consider discussing Escape in the narrative about pathological gambling, while removing it as a criterion.

Lastly, I believe we should consider the utility of requiring certain criteria for a diagnosis. For example, a problem gambler who reports Withdrawal or Loss of Control might be classified as pathological, while a gambler reporting five or more criteria without Withdrawal or Loss of Control would be classified as a problem gambler. I suggest this because I believe, with Drs. Blaszczynski and Ladouceur and many others, that Loss of Control is central to the construct of pathological gambling. Individuals who lose control of their gambling are, at least in the survey context, those who have tried to essentially treat themselves and failed. Therefore, natural recovery is less likely for these gamblers, and they come to the clinicians, because they can't do it on their own, and that's where the DSM-IV comes in.

The three factors here may have implications for treatment, which I leave to you to deconstruct (*speaker flips back to factor slide*). A gambler may have one of seven possible combinations of factors, from only one to all three, and each may require a somewhat different approach. Brief interventions may work well for gamblers who fall into factors two and/or three, meaning those who experience Preoccupation, Tolerance, and/or Chasing, with or without mild social dysfunction. And gamblers who report high levels of social dysfunction without Loss of Control may first need to be treated for something entirely different than pathological gambling. Those whose problems span all three factors will obviously have the most intractable cases and require intensive treatment with long-term follow-up.

The last thing I wanted to mention is just an interesting footnote. A couple years ago, I talked about the NODS-CLiP, which is the three-item screen that Rachel Volberg and I developed. And I looked at most of these same datasets, and tried to find three questions that captured all problem and pathological gamblers, while filtering out as many as possible subclinical gamblers. And, interestingly, the three items that came out pertained to Loss of Control, Preoccupation, and Lying. And each of those is an element of [one of] the three factors. So there's something going on with these three factors that I think is real, and I look to you and the crafters of the DSM-V to figure out what to do with all this! Thank you.

Jon Grant: It's nice to know those data have finally been found to be useful for something besides sitting on my computer for a few years. That was a great job, Marianna. Great piece of work. I'm very struck by this question of the Escape criterion, and I wonder whether we may be looking at something that is more related to a type of gambling rather than to a psychiatric construct.

Marianna Toce-Gerstein: Yes.

Jon Grant: I'm very struck by the link that we've seen over the years between escape and the people endorsing the criterion of Escape, and their involvement in gaming machine gambling or whatever we're going to call it. Machines. Versus Preoccupation, which we know is endorsed more frequently by some of the old horse bettors or people who are engaged in games of skill.

And it occurs to me that there might be some utility in looking at the activities that these 1600 or so people are involved with to try to understand whether Escape is something that people are more likely to endorse if they're involved in machine gaming.

Marianna Toce-Gerstein: That was an excellent point. We have a few surveys underway, for example, in California, where I'm attempting to link the criteria to certain kinds of gamblers, and I think the data that we have—this dataset of these 11 samples—is an incredibly rich resource for doing that in the future. Since this is something that was just pulled together in the last two weeks that I got very excited about, and I did for this conference, there's a lot more work to be done with these data.

Richard Rosenthal: The comment I'd like to make, first of all, is that I'm very pleased to see the further research and exploration of these things with, I assume, you're using the NODS, is that right?

Marianna Toce-Gerstein: Yes.

Richard Rosenthal: And there are some problems that I think that you hit upon with this need to refine Chasing and Preoccupation. And we did some research in the horse-racing industry, and tried to apply the NODS to that, and one of the difficulties is that if you use the NODS criteria and apply them to serious handicappers in the horse-racing industry, they are all going to be listed as problem gamblers, because you can't be a serious handicapper without doing what would look like Chasing and what would look like Preoccupation. You just can't do it.

I think this brings up another point, and that is that, as you've mentioned, this is a screening device. And I think we need to remind ourselves, as I have to remind myself, that the DSM is intended for use by a sophisticated clinician, and that when we take those sophisticated concepts and apply them as used by interviewers who are not sophisticated clinicians, then it does come up with something different. I think we're going to have a more accurate presentation when we apply those DSM criteria in a screening way, but then follow that up with a sophisticated clinician.

Marianna Toce-Gerstein: I would like to build on that. I agree with some of those points, and one limitation is that some of the differences that are found may be due to the fact that the NODS is not administered by a skilled clinician. It's done by a lay interviewer, and the questions may have some biases of their own that are built in that we're not aware of, even though the wording is very closely built on the wording of the DSM-IV. But it's also a general population sample, and we need to have cognitive interviews that ask people who don't have serious problems and people who do have serious gambling problems whether they perceive the question in the same way.

It's very possible, perhaps even likely, that people at low levels who hear the question about Escape just think of it as, "Well, I'm there having fun, so I guess I'm escaping." Or someone at a much more serious level may see it as part of their cycle of addiction, so to speak.

Kamini Shah: Marianna, a comment, I guess, and then a question or a statement, I'm not sure. It's interesting to me to see this because some of the work that we've done, which was with DSM-IIIR criteria, which are obviously a little different, showed the same layout, and we used a latent class analysis as opposed to a factor analysis. But we also saw this thing where you had a low-level gambler, a middle level, and then your really impaired pathological gamblers. The same sort of thing where Chasing didn't seem to do much to distinguish things.

Marianna Toce-Gerstein: Yes.

Kamini Shah: You got into that middle level of more dependence-related symptoms where Tolerance, Withdrawal seemed to distinguish that middle group from the bottom group, and then the tail-end group, it was in those criteria that we had the things like impaired relationships and obligations. It's interesting to me that both our work with the IIIR and your work with the IV show a similar thing. I also advocate looking at the notion of not just adding up symptoms, but looking at what the symptoms are and maybe using that to distinguish.

And the comment, then, or the question is that when you said you'd found that Escape didn't load on any of the factors, and, as we're always very interested in the issues of comorbidity and what is the gambling and what is the other psych illness, and it just strikes me that maybe the reason that's not falling into place is that Escape is tying in to the depressive aspects that often go comorbid with gambling, but aren't the gambling, per se, and that's why it's not loading on these other factors.

Marianna Toce-Gerstein: If I had had more time, I would've gone through, and I would've connected all the variables in these 11 datasets that had factors such as depression and substance abuse and other issues, and have done something super interesting for you. But, unfortunately, I didn't have the time. But that's part of the future directions for this.

Richard Rosenthal: I wanted to clarify something about a couple of the criteria. First of all, I agree with Curtis about the Preoccupation in the serious social gamblers and the handicappers, that you would see Preoccupation. The Chasing criterion, I think, is overused and overdiagnosed. What Henry Lesieur, who did his original work on horse racing, believed is that all gamblers chase, and that what we tried to do in writing the criteria was to distinguish regular chasing or normal chasing from malignant chasing.

And returning another day or in the questionnaire that we developed to test the criteria, the person had to chase more than half the time; it has to be at least a regular thing. It's not, "did you ever chase" or "do you chase sometimes"; that may be why it doesn't fit in with the other criteria in your analysis. [Author's note: Chasing item is worded "Has there ever been a period when, if you lost money gambling one day, you would often return another day to get even?]

And the other comment I wanted to make is about the Escape criterion, and that's not the same as the escape-seeking gambler or the subtype of escape gambler. We believe that all pathological gamblers escape dysphoric feelings, and we list what the most common feelings are, and so that Escape should approach 100 percent in the pathological gamblers. The reason it doesn't is that some male gamblers, in particular, are not aware of their feelings and deny that they're gambling because they're angry or because they're getting away from some feelings. And it's only after you've worked with them for a little while or sometimes in the second or third session when you see them that they can be specific about that. And that's one of the questions that they frequently change their answer to from a negative to a positive after you've seen them for a short while.

The escape-seeking subtype is the gambler that's specifically seeking numbness or oblivion, and they describe that experience differently. But the escaping from the intolerable feelings is something that's true for all pathological gamblers.

Carlos Blanco: One thing that I don't think has been discussed enough in this meeting, but maybe this is right place to do it, is problem gambling. I think we've been very focused on pathological gambling, but I don't think we have discussed what is the right

cutoff for the diagnosis. Richard can correct me, because he knows the story better than I do, but my understanding of how the cutoff of five was selected is by comparing treatment samples to [*unclear*] samples with known pathological gamblers. And actually the cutoff could have been as well four as it was five, and the APA politically decided that it was five instead of four.

But I think Marianna's analysis suggests that there's no clear cutoff point for the diagnosis, and I think that has very important implications for both treatment and policy. If the cutoff point is five for pathological gambling, then the prevalence is probably around one percent. But if the cutoff point, let's say, is one criterion or two criteria, then it's probably more like five percent. I think it would be interesting to get your impression, both the panel and the audience, and see where you think that the cutoff should be, who should be offered treatment, what treatment should we offer, should we give different treatments to different levels, is it the same disorder?

I know there's some discussion of calling problem gambling or comparing problem gambling with substance abuse and then comparing pathological gambling with substance dependence. But, actually, that may not be appropriate, because the substance abuse and substance dependence are not two degrees of severity, but two different types of disorders. They load on different factors.

And here it doesn't seem like problem gambling and pathological gambling load on different factors. It seems to be a continuum. I would like to have some debate from the others on the panel on what you think about this.

Marianna Toce-Gerstein: I would just like to stress again that I think Withdrawal and Loss of Control are very central to the pathological gambling construct and that they should be present for someone to be diagnosed with pathological gambling. And even somebody who has three criteria, who exhibits one of those, who's tried to stop and failed, is on their way to needing treatment or needs treatment already.

Carlos Blanco: Right now, the [*unclear*] insurers and state agencies would probably not reimburse treatment if you only meet three criteria or four criteria. And, again, the prevailing studies reflect people who have five or more criteria. But you're suggesting a slightly different approach where you're saying that maybe three criteria, if they are specific criteria, should qualify and then those people should be considered pathological gamblers and not subclinical population, but really would be a clinical population, and we should be reimbursed for treating those people, and they should be included in DSM-V, or—

Marianna Toce-Gerstein: If you've tried to stop, cut down, or control your gambling and failed, then you have not been successful at treating yourself, and natural recovery hasn't come about for you as it does, I believe, for the vast majority of people who do attempt to stop or cut down their gambling. And, therefore, I think you need the help of a therapist, and you should be reimbursed for your treatment. That's my own bias.

Jon Grant: From what you're doing in terms of gender analysis, in terms of your refinements, would you go so far as to make a recommendation that we have to look at different criteria for this diagnosis if a man comes in versus a woman?

Marianna Toce-Gerstein: I had expected the different factors for male and females. I had expected Escape to be highly correlated with some factor for women, maybe Preoccupation, Tolerance, Chasing. And that wasn't the case. In fact, those three factors were consistent for males and females at most levels at which there were enough people to do a factor analysis. It got a little sketchy once it started getting below 100 people.

But these factors that I'm presenting weren't different for males and females and that was surprising to me. It was when you got into the details of the correlations and the actual frequencies; for example, women report Escape more often than men, and Illegal Acts and Tolerance at the higher levels. That's where the differences started coming through. But in terms of the actual number of criteria, the only thing I would think that would make a difference with the diagnosis would be if we threw out Escape as an actual criterion. That might affect your prevalence.

Carlos Blanco: I think there may be at least one alternative interpretation of your findings. As you have probably guessed by my accent, I'm not from here, and I speak Spanish very well, and if I brought here, let's say, 100 Spanish pathological gamblers and asked them the criteria in English, they wouldn't endorse any, because they wouldn't understand English. That doesn't mean they don't meet the criteria.

So one possibility would be that people are actually having the symptoms, but not endorsing the criteria, and I think that Richard alluded a little bit to that. You may be gambling to escape, but you don't realize you are doing that. That doesn't mean you don't have the symptoms. You're just not endorsing the symptoms. I think one possibility from what you're suggesting is that the factors are different. Another possibility is that the questions are asked in a way that is more easily endorsable by certain populations but not by others.

Marianna Toce-Gerstein: Oh, I strongly believe that people who have been through therapy, for example—particularly a 12-step program—come to see and are taught to see their lives in a new frame of pathological gambling. And problems that they had originally thought were disconnected, they see under that umbrella now as being connected to their pathological gambling, and so they are far more likely to see themselves as having experienced certain criteria than people who would be in the general population, for example. My hope, and I don't know if this is what really happened, but by having 20 percent of the pathological gamblers in my sample be from a clinical population, I think some of that difference might have been watered down a bit in the results, and that maybe that isn't as much of a shortcoming as one might think.

Richard Rosenthal: A couple of comments. First of all, in response to Carlos. When we developed the criteria, it wasn't just from the treatment population. We made the effort to get a cross section of pathological gamblers. Some were GA volunteers. Some were nontreatment samples, and they were from all over the country and represented different kinds of gamblers.

The question of the threshold was brought up, and what Henry and I recommended was that the cutoff be four, and that was what we sent to the DSM-IV committee, and they decided it should be five. Again, I think I mentioned earlier, I think there was a bias in their concern about there being too many pathological gamblers, whatever. But four actually worked a little better, and Marianna's study seems to confirm that.

The other point to remember is that it says in the beginning of the DSM manual that it's not to be used as a cookbook. It's to be used by clinicians, and judgment is important, and so you can diagnose someone as a pathological gambler who only meets three criteria. And there is that kind of leeway. I don't know what you're doing in the state that requires a score of five on the NODS, but you certainly can submit to an insurance company or whatever that someone's a pathological gambler just because there's the Loss of Control and the Withdrawal, and base it on the two or three criteria.

Kamini Shah: I don't mean to hog the microphone, but two things. One is that I hear the frustration, at least, in counselors from Missouri and elsewhere about not being able to get funded treatment for individuals who clearly have the problem, but because of the way that the regs are written, if you don't meet the diagnosis of five plus, you can't get the treatment. But, the flip side of that is there's limited funding for states, too. So if you could have this lower threshold and then had a ton of people getting free treatment, that wouldn't work either.

So, again, this idea of finding something that's necessary and

sufficient, that's documented in some way other than us talking about it here or a clinician being able to submit to an insurance company based on two or three symptoms, but if it's not documented somewhere from a legal perspective, that's not going to work. If there were some subcategory within the DSM that documented that perhaps one or two or three particular symptoms were also indicative, that would help there. It would help both issues.

The other thing that makes me curious about this, and I guess it's self-report data in general, is hearing Richard talk about how, when a clinician assigns a certain criterion, such as Chasing or whatever, Escape, and that the clinician's interpretation of whether this—it's the "all gamblers chase" versus "is this the pathological chasing?"—is a distinction that could be made by clinicians when they're doing a full evaluation and being able to explore.

A lot of these samples, and ours included, come from self-report over the phone, and when we ask, from the criteria based on the NODS or SOGS or whatever, "Do you chase?" I don't think they have the ability, and I don't think I even realized it until I just heard Richard say that there's distinctions with Chasing. And I wonder how that affects what we're reporting with our surveys, because we're looking at these things from a self-report, and if maybe there's some way to think about creating new instruments that get into that, so the question asked of the gambler is more focused on what the clinical interpretation of that symptom is.

Marianna Toce-Gerstein: Can I just say something really quickly about Kamini's first point? When we did the analysis for the Gambling Impact Study Commission, I did a little side thing on my own because I was interested in seeing if the prevalence rate changed depending on whether you included the people who reported dependence but were actually subclinical, and if you eliminated [those who did not report dependence] from the pathological, and, actually, the prevalence rate was exactly the same. If you make that a requirement, you are probably not going to have floods of people coming in and demanding free treatment. I would guess that it would be just about the same.

Jon Grant: You make another point about this aspect of the subcategory of problem gambler and what drives the fact that clinicians see it all the time. And we all describe it in the literature and yet DSM has not discussed it. I'm not so sure if what's driving that for DSM-V is the worry about a flood of people. Well, if people have problems, shouldn't we recognize and address the flood of people who are around three or four criteria and are having problems? It doesn't seem like we should worry about the epidemiological numbers going up.

My question for Richard is when you were creating the DSM-IV, and you were obviously taking from the substance dependence criteria, did you think about, and what dissuaded you, if it did, from the idea of abuse dependence distinction, or in the case where it translates to gambling, problem gambling and pathological gambling? And would you, if you did DSM-V, put problem gambling in now?

Richard Rosenthal: First of all, we were not copying substance dependence. We were trying to see what was unique about pathological gambling, and we were comparing the criteria to previous sets of criteria—DSM-IIIR, DSM-III, the GA 20 questions—and we spent a lot of time testing different wordings of the questions to see which were more significant.

The question of problem gambling, we didn't consider putting it in at the time. As I said, we're aware of the bias about pathological gambling and not wanting too many gamblers, on the part of other people, and there still was a questioning of whether the disorder existed, and even after DSM-IV came out, there were articles about this being a fake diagnosis. We would submit articles to journals in those days and be told, "This is really interesting, but I don't believe that pathological gambling exists," and that would be the comments of the editor or the reviewers.

So the timing was not right politically and socially, culturally, whatever, to introduce problem gambling. The definition of problem gambling that I like is basically anyone who has a problem with gambling. *(Laughter.)* Now, as to whether it should be included in DSM-V and what the criteria should be, I would like to hear from the audience. I have mixed feelings about it. Are we introducing a subclinical condition, or are we trying to intervene earlier? I don't know. I would like to hear from people here about that.

Marianna Toce-Gerstein: […to a question about DSM criteria…] Well, that's where my little interesting footnote comes in about the NODS-CLiP. In this three-item screen, each of them is from a criterion from each factor, and this screen captured all but one pathological gambler in our combined sample. And 95 percent of the problem gamblers. So it overdiagnoses, obviously, but then you follow through with the rest of the [NODS]. But, obviously, if you want to minimize the number of criteria, the place to start is with these factors.

Richard Rosenthal: We were aware, when we wrote the criteria, when we introduced the criteria, that there were three dimensions, and that it wasn't one-dimensional and that was nicely brought out by what you showed.

Marianna Toce-Gerstein: And could I say something about what you said earlier, Richard, about the problem gambling diagnosis? With substance abuse there's a subclinical diagnosis, and the criteria are very different from the criteria for substance dependence. They're much more related to the antisocial or dangerous behaviors that someone who's on drugs or alcohol might do. For example, driving under the influence.

And this factor on the bottom right, with the Illegal Acts, Risking Relationships, Bailout, and Lying, it's probably the closest thing that I've found in the data to an abuse construct. Something where people are harmed by the gambler's behavior, and it's probably the closest thing I would say to a problem gambling diagnosis. If other people are being harmed by the gambler's behavior, as if the gambler were driving under the influence. It seems parallel to me.

Carlos Blanco: My plan was to disagree with Richard, but I have to disagree with Marianna, *(laughter)* because I think, in general, the diagnosis of substance abuse and possible dependence is considered—even though they are not degree of severity—but is considered something of a lower-level diagnosis. It's in a way better to have substance abuse than to have substance dependence. But I think in the gambling, it is the opposite. I mean the factor of lying and stealing and jeopardizing a relationship is much more, I think, a mark of higher severity than lower severity. In that sense I think when we talk about problem gambling, we, in general, refer to lower-level severity pathological gambling where there's the factor that you're suggesting as problem gambling would be—or gambling abuse is the marker of severity—rather a different entity as I understand it.

Marianna Toce-Gerstein: I wouldn't argue that it's a different entity, but rather the reason—an important reason—for having a diagnosis of substance abuse is to get people into treatment who need it, who are somehow dangerous to others. The vast majority of people who are substance abusers get that classification because they've been driving drunk or driving under the influence of drugs. And they need help before they get to the substance dependence level, because they're on the way fast.

Marvin Steinberg: Weighing in on the same issue, I do think that an abuse category for pathological gambling dimension would be helpful to identify people earlier, and I do think that some of the Illegal Acts and serious consequences, social and legal consequences, are more end-stage problems, and wouldn't fit the abuse category. In my mind, it would be more a case of someone who's chronically dependent on gambling and his life is really disordered.

I did want to make a comment. I certainly agree with Marianna's

statement about refining Preoccupation and Escape, because I do think that once we change the wording and clarify what we mean, not just escape from a day of stress at the workplace, but to escape dysfunctional, dysphoric feelings. I think that would be very helpful in eliminating some of those who say "yes" to that, but in the comments before about what the racetrack owners say about the criteria is the same thing that the casino people say about it, and they often dismiss the criteria because they say, "Well, half—ha-ha—half my employees would be considered to escape or have preoccupation." To me, I think that the primary group from which pathological gamblers and abusive gamblers come are the regular gamblers. If we try to make a distinction and say just because someone is a regular horse player or a regular machine player, and they would say "yes" to Preoccupation and Escape, means that we dismiss those two criteria, and I don't think we dismiss them at all. I think we need to refine them, and I think that a large percentage of people who say "yes" to both Preoccupation and Escape even now have a problem or a beginning of the problem.

Marianna Toce-Gerstein: I guess the question is, how long does the problem last? I just wanted to point out one thing with your first point (*flips back to second slide*). For people who report four problems on the NODS, which was originally suggested to be the cutoff point for pathological gambling, you'll notice that Risking Relationships and Bailout and Loss of Control significantly increase between the people who report three and people who report four [criteria], and more than a quarter of people at that level report Risking Relationships and Bailout. That's a significant number, and I wouldn't underestimate it. I wouldn't say that it's only something that comes up at the highest levels of pathological gambling.

Rina Gupta: Can I throw two cents in regarding adolescents? We're from McGill University in Montreal; we've done a lot of youth work. One of the things that seems to be very important to our understanding of where an adolescent is when they walk in through our doors is the whole notion of impaired control, and I think this was discussed throughout this conference a little bit. Instead of going straight to a DSM type of evaluation, we try right away to determine whether or not there is a severe inability to control one's behavior.

So if they say, "I don't want to. I tell myself I'm not going to, but I find myself doing it. I was supposed to be at this friend's birthday party. I wanted to be there, but I found myself needing to leave and go gamble," this seems to be between impaired control and a preoccupation and we right away have a very good sense of whether or not this adolescent is experiencing a serious problem with gambling. The whole idea of the DSM- or consequence-based criteria that are then met, with respect to our experience, goes on to reflect a degree of severity with which they've been experiencing

their problems.

Jeff Derevensky and I always wonder, are we talking about adolescents, and is it a different situation with adults, or is this the same thing that we're seeing with adults as well? We don't have the experience with adults, so it's hard for us to say, but my personal sense is that it is the same. And, ideally, when we look at a pathological gambling problem with an adolescent compared to one with adults, we don't see a different phenomenon going on. We just see different consequences.

We see the amounts of money that they're gambling with being different. We see how their life trajectory might be affected differently, because where an adult may have already completed education or established a career, an adolescent has not, and so they may not get into the program that they wanted to, or they may not be able to be in the profession they wanted, even though they may stop gambling down the line.

It would be interesting to me if there could be a way to include adolescents in the consideration of the DSM-V criteria. You may find that there is no difference in terms of the problem itself. But, I think, since there's been so much youth work done in the field till now, it would be unfortunate not to have a specific section addressed in the DSM-V. Thanks.

Carlos Blanco: Richard and I were talking about something that is probably not appropriate, but I'll still say it. Since we have Jon Grant here who is the leader of the *Journal of Gambling Studies (laughter)*, I think it might be interesting maybe to have an issue devoted to issues on the DSM-V and talk about adolescents and problem versus pathological gambling issues and criteria. Have I embarrassed you enough or—

Jon Grant: As a matter of fact, I think that one of the things just in terms of adolescent gambling, I'm surprised by how little, even as much as there is, more than there was a few years ago, how little there actually is out there. It seems we do a general disservice when everybody knows that adults tell us that they started when they were younger. But it seems like we should go right to the source and hit it at home.

An issue with the DSM and one that we've had with all disorders is with understanding what the disorders look like in adolescents. Does adolescent depression look different from adult depression? Does adolescent phobia look different? Also, I think sometimes the one worry that I always have about adolescents, and I'm wondering if this prevents us from doing more adolescent research, is the public perception of whether we're pathologizing our kids and this

kind of stuff. But I think, unfortunately, that gets in the way of finding people who actually are having budding problems and to fix them before they become problems.

So I'm always willing to accept, or to look at for review, articles on DSM-V issues, particularly with adolescents. I'm always just amazed by how few there are, as much as this is an issue when you go to conferences, so let's think about DSM. I'm not seeing a lot of people—at least from my journal—who are actually critically appraising it as much as I would like and trying to think about it. We have Richard here to talk about DSM-IV, but we're all saying, "Who's on DSM?" "Who's in charge of DSM-V?" "Where is the pipeline?"

As somebody asked, if we had a great idea and if all of us in this room could come to a great consensus that "this is what DSM-V has to do," then who do you tell? I'm not even sure who. It's like all these mystery people and somebody puts it together, but I'm not sure who they are and how we actually do influence DSM-V.

Carlos Blanco: That was my point. I think that maybe we could have a monograph and several of us would write papers, or I mean, I don't have to be one of the authors, but some people who are experts in the field write papers, and then we submit the whole monograph of the general gambling studies to the proper committee of the APA, and say, "This is the statement of the field. We may not be on the committee, but this is what we think as gambling researchers." And then they can still disregard it, but I think it'd be harder to do if several of us agree on what the issues are as opposed to just having one person who is the chair of the committee, or whoever, saying, "This is what I think, and I don't care what you think." We make it free—it'll be much more compelling.

Richard Rosenthal: One issue that was brought up was problem gambling and whether that should be included and what the criteria should be, and we need studies, and we need people writing up cases and contributing to that.

Something else that hasn't been mentioned at all today, but should've been, is that in DSM-IV, there's an exclusion criteria or a partial exclusion criteria for manic episode. That was something that our committee was against. There were no data to support it, and we even had a letter-writing campaign at the time trying to influence the editors of DSM-IV not to include that, and we were unsuccessful. But since that occurred, there's not been a single piece of research that has come out testing that exclusion criterion, and unless somebody looks at it and writes something about it or does some research, it may automatically just be carried over into DSM-V.

Marvin Steinberg: Just a comment on changing the criteria. When we started in 1980, you could read the literature in a few days and I think that being within our first 25 years, we are being appropriate in an evolutionary way. Changing the criteria? I think that maybe another 10 or 15 years from now, we should look for fairly stable criteria, because we're going to have a lot more research.

But I just want to symbolically make a motion, which is inappropriate in this context, and that is that since Henry and Richard were instrumental in the last DSM-IV, and they are board members of the National Council, it seems appropriate for the National Council to take a lead in forming a committee and putting together a white paper that might take a year or two or three, that actually looks at the current criteria and the exclusion criteria, and see what research supports it and doesn't support it, and perhaps come up with a clearer conceptual basis for the criteria, and I think that if we could demonstrate that within our own field, a collection of five to ten experts, we could actually agree on a conceptualization and put it forth. I think whoever actually is on the committee will have something to work from and then know what the field is and test it out over the next few years. It's not a real motion, but I think it's a decent idea.

Rachel Volberg: Well, I'm going to second Marvin's inappropriate motion. *(Laughter.)* And, as president of the National Council, I think it's entirely appropriate for me to be able to say that I think that's a very, very good idea. I'd like to hear from members of the board if they would like to serve on that committee. But not just members of the board, but also others who are members of the National Council. You don't have to be a member of the board to serve on one of our committees.

I'd also like to put the pressure on Jon, if the National Council committee is able to come up with the white paper that Marvin has described, or a series of papers such as Carlos was proposing, we'd like to feel that we could ask the *Journal of Gambling Studies* to publish that and make it available to the DSM-V committee.

Jon Grant: I think that's probably a good spot to end. Thank you very much. Great questions, great presentations.

[End of presentation.]

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