Tim Falkiner
Melbourne

25 March 2009

Gambling Enquiry
Productivity Commission
GPO Box 1428
Canberra City ACT 2601

Dear Mr. Banks

SUBMISSION TO THE PRODUCTIVITY COMMISSION GAMBLING INQUIRY – ANSWERS TO QUESTIONS BY GAMING TECHNOLOGIES ASSOCIATION

I note the Gaming Technologies Association lodged a submission with your Commission dated 10 March 2009 containing argument and questions which the Association considered should be put to me. I set out below by way of submission answers to those questions. Naturally I would be happy to appear before the Commission to give further answers and answer any other questions which may be put.

Question 1: How are symbols such as hearts, dolphins, gods, goddesses, dragons and unicorns different when shown on a gaming machine compared to when they are shown on books, movies and television programs?

The question was asked whether I had difficulties with such symbols when they were *'depicted in the "Harry Potter" books, "Indiana Jones" movies or TV programs such as "Flipper"'*. The effect of symbols obviously depends upon their context. I personally do not have difficulties with the use of the symbols in the Harry Potter series. The symbols in these movies were very powerful and no doubt had a large impact on a generation of children. But the use of the symbols in the movies was not exploitative and the underlying theme was morally sound. The Indiana Jones movie, "Raiders of the Lost Ark" elicited the following comment from the Christian Science Monitor[1]

"Also predictable is the film's simplistic treatment of themes from religion and myth... It's curious that Spielberg and Lucas see these venerated objects not as symbols of divine inspiration but as repositories of a blind, undiscriminating force that can be wielded (like the three wishes from a genie or a magic lamp) by whoever gets their hands on them."

These symbols are known as archetypal symbols. I first realized there was something special about them when I found they were being used in the treatment or self-treatment of victims of childhood sexual abuse. Properly used, these symbols can inspire the highest motivations in humanity. But they can also be used for exploitation.

In the case of gaming machines, archetypal symbolism is used in conjunction with rhythm and the pain of loss to induce a state of spiritual trance, sacrifice in transcendence.

It is not simply the use of these archetypal symbols alone but the use of the symbols on the panels arranged in such a way as to tell a story to the unconscious. The most successful machines tell a story of rebirth or resurrection.

As to the criticism of my evidence that escape problem gamblers are playing certain themed machines I make the following comments.

[1] http://www.metacritic.com/video/titles/indianajoneslastcrusade/

100 Wattle Valley Road, Camberwell, Victoria, Australia 3124
Tel: 0417 107 440 Email: timothyfalkiner@optusnet.com.au

Anecdotal evidence. Gabriella Byrne was the first to mention to me that her clients were playing certain machines: Dolphin Treasure and Sweet Hearts. A South Australian treatment provider had a high proportion of her clients playing only Dolphin Treasure. Of three problem gamblers I met at a Gamblers Help conference, two played only Sweet Hearts II and one played only Queen of the Nile.

Charles Livingstone's paper contains an exemplary account of his discussions with gaming machine problem gamblers. To his credit, Livingstone really listened to what they were telling him and he made a lot of very pertinent observations. All too many of the studies are flawed in that the researchers try and explain escape gamblers within an action gambling framework and Livingstone did not make that mistake. I quote from page 527:

Most of the machines very popular amongst informants (popular games include Queen of the Nile, Dolphin, Adonis, Hearts) provide a series of 'free' spins when a particular arrangement of symbols appears on the screen. In some cases, prizes won during such spins are increased in value. Informants reported that obtaining these 'free' spins is very important to their continued play, but the majority also reported that winning money was not a particularly important aspect of EGM play, particularly once they became what they (mostly) later came to regard as 'problem' gamblers. What winnings do is to extend the duration of play. Time is liquidated to become an essential currency of the problem gambler, and discussions summarized here indicate that it may well be the most important and significant currency. But time as such is elided during the term of the pokie session. It ceases to exist in its socially recognizable form.

The Loved Ones No. 3 study simply confirmed what was already clearly apparent. I do not consider the sample small when one considers these were all gaming machine problem gamblers. In that study they asked seventy-seven problem gamblers, "What is your favourite machine?" Seventeen had no favourite machine. Of the remaining sixty who had a favourite machine, thirteen played Sweet Hearts. Also scoring high were Dolphin Treasure, Adonis and Queen of the Nile, Black Rhino (which I will mention later), Geisha, Indian Dreaming and Moons and Unicorns (which is Unicorn Dreaming). These figures closely matched my own assessment of the archetypal power of the particular machine panels. The only one I had not picked was Black Rhino.

Question 2: It has been reliably estimated that removing the EGM industry would reduce employment throughout Australia by 140 000 people in the short run. How does your statement about low employment levels associated with gaming machine gambling relate to this estimate?

As I wrote in my submission, there are others who can explain this better than me. Of course the gaming industry employs people but the Western Australia/Victoria comparison study shows the employment per $1 million turnover is low compared to other activities. The Ohio study which I sent in shows that gaming revenues draw moneys away from other economic activities. Assuming the other economic activities have higher employment per $1 million turnover there will be a net loss of employment. Even this

underestimates the loss of employment because of the destructive nature of the machines on the spending power of families. A family that is reduced to penury loses much of its spending power. As I mentioned in my original submission, gambling expenditure figures are qualitatively different to other expenditure figures on other products such as shoes, theatre tickets or food. Much of the gambling expenditure figure is made up not of steady expenditure but of parabolas of expenditure by problem gamblers who develop the habit, take off, exhaust their resources and fall into penury – only to be replaced by others who do the same – like the front of a grass fire.

Question 3: State and territory government regulators require detailed internal and external evaluation and implement stringent processes prior to the approval of a gaming machine or a game. Why do you think that governments do not enforce highest quality standards in approving gaming machines?

In order to understand how starved reels gained regulatory approval in Australia; one must look at the history of the machines. The machines were not developed in Australia but in the United States. Up until Atlantic City legalized them, Nevada was the only jurisdiction where they were legal. Nevada became the pre-eminent gambling regulator and Nevada standards became the touchstone for the gambling regulators of jurisdictions approving gambling.

Nevada standards for table games were of the highest quality and remain so today. These standards were crucial to the success of the industry in Las Vegas and have set the standard for table games throughout the world. Any casino found using gaffed dice or decks of cards can expect to be dealt with severely by regulators not only in Nevada but in any jurisdiction throughout the world.

With gaming machines, however, Nevada failed to implement the high standards it applied to table games. It would seem the machines were gimmicked from the start. Walter A. Raschick[2] writing on the workings of gaming machines in 1932 considered the gaming machines a "*come-on game*"[3], referred to the machines as "*mechanical pickpockets*"[4] and referred to the operators as "*racketeers*"[5], "*human jackals*"[6], and an "*oily band of scum whose depredations are designed to make bums out of upright American citizens*"[7].

[2] Machines that Pick Your Pocket - AND MAKE YOU LIKE IT! —Inside Story of the Slot Machine Racket – by Walter A. Raschick - From Modern Mechanix and Inventions Magazine 1932 - http://blog.modernmechanix.com/2006/07/20/machines-that-pick-your-pocket-and-make-you-like-it/

[3] A *"come-on"* is defined in The Free Dictionary by Farley (http://www.thefreedictionary.com/come-ons) as *"anything that serves as an enticement"* and *"qualities that attract by seeming to offer some kind of reward"*.

[4] At page 34

[5] At page 35

[6] At page 38

[7] At page 39

In 1988, the issue of slot machine design in Nevada came to a head in the Universal Case. This case is described in detail in Chapter 4 of Jeff Burbank's book "*Licence to Steal*".[8]

According to Burbank, Schreck, the lawyer for Universal which was accused of producing a deceptive machine argued:

"[T]here is not a single gaming device slot machine that I am aware of that doesn't have some sort of near miss feature. We are not dealing with anything novel. [Universal's near miss feature] is a new technology and a newer way of doing what has been done from the day slot machines first entered the industry in the State of Nevada.

Schreck, maintained that the old mechanical three-reel slots had always produced near-miss results by loading more winning symbols onto the first and second reels. Players would see the symbols on the first two reels more often than they would normally expect since many players believed that all three reels had the same number of symbols."[9]

These passages confirm that near-miss based on the uneven allocation of symbols between reels had been used from the time slots were introduced into Nevada and Schreck clearly implies the practice misled players and was intended to do so. There is nothing in Burbank's account of the proceedings to indicate that Schreck's statements above were challenged by the Commissioners. On the contrary, one of the gaming commissioners, Robert Peccole, is reported to have said:

"I can remember the old mechanical machines when you'd load up the first reel and the second reel and have one bar on the end, and if that isn't messing around with the pay line, I don't know what is. I mean you are just as deceptive in that instance as you are with any concept of deception. It will bring those bars up on the first two reels, but nothing shows up on the third reel. And people keep coming back because they think they are going to win."[10]

If Burbank's account is accurate, we have a Nevada gaming commissioner, a cardinal in the gaming regulation hierarchy, pointing out that the unbalanced reel mechanism (the same mechanism used in Australian machines) is deceptive, as deceptive as any concept of deception, and that the deception is done to make people think they are going to win and to keep them coming back to play the machines.

As for Australia, I can only speak from my own experience with the introduction of the machines into Victoria and even then I can only do so in general terms. The machines as presented to the casino regulator had been approved by the gaming machine regulator. As far as I was concerned they were a black box but they had been certified by technicians as complying with Nevada standards. The Nevada standards as they applied to table games were of a very high standard and I had no reason to suppose the Nevada standards as they applied to gaming machines were also of a very high

[8] Jeff Burbank "Nevada's Gaming Control System in the Megaresort Age – License to Steal" University of Nevada Press 2005
[9] page 113
[10] page 123

standard. It never occurred to me until I heard from Roger Horbay that the machines might not be what they seemed.

I can only assume the other jurisdictions assumed the Nevada gaming machine standards prevented cheating.

Question 4: Why do you believe that a player would presume that the symbols should be equally distributed in a reel and across the reels when the paytables clearly indicate the various combinations that provide wins including the bonus features?

You write that, "A person who approaches an EGM can clearly see the paytables and rules displayed on the machine …" The player does not know all the rules because the player does not know what happens inside the machine. If I play craps, I know each dice has six sides numbered one to six. The gaming machine player is given no such information about the reels.

You write that the average person owns a pair of dice or a deck of cards. I own a number of pairs of dice and all the dice are the same – except a pair of misspots, and these are cheating dice. I also own several decks of cards and all of these decks are the same. I own a set of poker dice and these dice are the same.

It never occurred to me that the reels would be other than identical with one another. Players consciously or unconsciously believe the reels are the same and this is made very clear when they get excited about near misses. The pay tables do not alter the situation. The use of card symbols increases the effect.

Counsellors who advise problem gamblers of the starved reels report the gamblers respond with incredulity and anger.

Professor Philip G. Fox describing a starved reel machine in 1959 commented, *"A glance at the arrangement of the symbols, given above, reveals the devilish cleverness of the setup."*

Professor Jerome K. Skolnick[11] who had, for three years, a high level of access to the Nevada gaming industry and who wrote the leading book on casino regulation, documented the players' misconception that the reels were identical:

Generations of players have pulled slot machine handles and produced jackpot symbols on the first and second reels, seemingly just missing out on the jackpot. What happens is this: because of the differential placement of jackpot symbols players wrongly - though not necessarily consciously – believe that jackpot odds are something like 4 x 5 x 5 (100 out of 8000), while, in fact, the odds are 4 x 5 x 1 (20 out of 8000.) …" [page 64]

Add to this the materials in the Universal Case and it is clear that the industry has for many years known the deceptive effect of reel starving on players.

I was interested in obtaining feedback from the magicians regarding the effect of reel starving. In 2007, I gave a presentation to the Victorian Chapter of the Australian Society of Magicians. The presentation was titled "Techniques of Illusion – Lessons from Reel Gaming Machines". The

[11] Jerome K. Skolnick, "House of Cards – the Legalisation and Control of Casino Gambling" by Little Brown & Company, Boston, Toronto 1978

presentation was designed to illustrate how, by examining the workings of reel gaming machines, magicians could learn techniques to help them improve upon their magic acts or develop new ones. I felt the magicians, whose trade is the harmless use of deception, are amongst the best people to judge whether something is deceptive.

The magicians were appalled at the starved reel gimmick. This extract from their newsletter[12] makes it clear what they felt about the internal design of the machines.

"As his [Tim Falkiner's] explanations of the methods used by pokie manufacturers to outwit the hapless gambler came forth there were exclamations of disbelief from members and a general bewilderment as to why generally poor people continue to pour their hard earned money into the pockets of operators.

…

… The most startling example was the fact that the symbols on the reels are not evenly distributed: six kings on reel 1, six kings on reel 3 but only two kings on reel 2. As only three symbols can be seen on each reel the unfortunate mug keeps believing he's only missed a win by a couple of inches.

If nothing else, the three dozen or so members and visitors in attendance all returned home vowing never to be tempted to add to the profits of big time operators … You just cannot beat a cheating system folks."

Question 5: Why do you believe that gaming machines generating statistically proven random numbers constitute cheating devices when each play event is certified by licensed testing authorities to be clearly independent?

Your argument is as follows.

Each EGM operates a "Random Number Generator" (RNG) which has been tested and approved to provide random numbers for the selection of the reel position at the time the play button is pressed. EGM's are required to be implemented such that the symbols visible to the player (and even whilst spinning) are exactly as per the reelstrip defined when the play button was pressed.

You say "the reelstrip defined when the play button was pressed". Does this mean you have different reels which are selected only when a particular button is pressed? In other words, if a player presses one button reel 2 is one design and if another button reel 2 is a different design? Or have you started randomly switching the reels?

Even if you are not doing these, the fact is the player can only see a small part of the reel. It is impossible, even if you are not altering the reels between spins, to work out what is on a reel from observing it. I invite the Commission members to play some machines and see if they can work out the reel strips. Even experts cannot work them out let alone the players. And

[12] Magic Makers Vol 57-04 page 9 – May 2007 newsletter of the Australian Society of Magicians - Victorian Chapter

it must be noted that gaming machines tend to be played by the most ingenuous players.

Your argument continues:

As each symbol appears on the screen, the probability of this occurrence is identical to the frequency of the symbol on the reel. No other symbols or positions on any of the reels displayed can be altered in any way.

What you are saying is the machines are not mapped. I have never said the Australian machines are mapped. I am complaining about reel starving.

The machines are not random as between reels. And there is no way the player can tell that because the player cannot read the reel strips.

You mention dice – it is like playing with misspotted dice with the player only being able to see one side of the dice at a time. Even with dice, which are openly handled and have only six sides, the rules of the game require mirrors on the craps table to enable players and the house to ensure the dice are not misspots. Misspotted dice are random insofar as each face has an equal chance of facing up but they are still cheating devices.

Gaming machines are cheating devices because they use concealed asymmetry. Cheating involves deception. This involves making the player see something wrongly. This is done by a combination of concealment (the player cannot see the reels are different) and asymmetry (the reels, which the player consciously or unconsciously believes are the same, are different).

If one considers the words used to describe cheating, they involve words of concealment: underhand, covert, shady, shadowy, clandestine, sneaky, stealthy, concealed, furtive, secretive, hidden and words of asymmetry: irregular, crooked, devious, double-crossing, shifty, bent, gaffed. Starved reel machines incorporate concealed asymmetry, a hidden crookedness.

You use the term "play event". The term "play event" does not appear to be defined in the Standard but I take it to either mean the spin of each reel or the outcome of the game.

The reels are unconnected and each spins independently of the others. But this does not avoid the cheating caused by the concealed asymmetry between the reels. If you cause one reel to miss by starving it instead of connecting it to other reels by cogs, you are still cheating. It is just a different way of doing it. The cats in a gaffed cat game are independent of each other but the game is still gaffed.[13]

If you are arguing the machines do not cheat because they operate so as to pay a theoretical return of, say, 90%, the simple answer is that is just good cheating. The cheating is accomplished by making the odds look better than they are by starving reels so the player keeps thinking he or she just missed.

[13]John Scarne, "Scarne's Complete New Guide to Gambling" Simon & Schuster 1986 at pages 612 to 614. The cat game involves knocking four stuffed cats off a shelf with three baseballs. Knocking down three or four cats wins a prize. There are a number of ways of rigging a cat game; the simplest is by having two weighted cats. The unweighted cats are easy to knock off but the weighted cats, like the starved reels, are hard. The cats are not connected to each other in any way.

There would be no sense in taking so much from the player that the player stopped playing.

Question 6: Statistical expectation of symbols appearing and random number selection create winning and losing combinations. Do you consider that every losing combination is a "near miss"?

This comes back to the same argument. Your argument is the reels are not mapped, they are independent and the display shows the result. Your argument is that according to the Standard this is "fair". I say the machines use reel starving and the display misleads the player who does not know what is on each reel and who assumes the reels are the same.

Do I consider every losing combination a near miss? No. But how can the player tell the difference between a near miss and, for want of a better phrase, a "far miss". This question really smokes out how deceptive the machines are.

By way of illustration, imagine a 30 stop machine with kings starved on reel one – reel one – 1 king, reels two to five 6 kings. The player plays and gets a king on reels one , three, four and five - missing two. That is a near miss. He had a one in five chance[14] of making reel two. He spins again and makes kings on reels two, three, four and five – missing the first (starved) reel. That is a "far miss"; he only had a one in thirty chance of making the first reel. He will get many times more far misses than near misses. And he cannot tell the difference from viewing the screen between a near miss and a far miss. This is a function of the concealed asymmetry. He sees the kings appearing on reels two, three, four and five at a frequency of around every second spin[15] and interprets the far misses (on reel one) as near misses.

Question 7: Why do you think that players expect EGMs to provide an RTP of 100% or greater when no other game in a casino provides this level of return?

My calculations in the Unbalanced Reel Gaming Machines paper[16] indicate the appearance of the screen would give a player the expectation the machines paid out at a return to player of about 200%, twice the amount put in.

It is wrong to say the player cannot win playing a gaming machine. Certainly, if a player continues to play for an extended period it will be increasingly likely and then increasingly certain he or she will lose. But a player can certainly win in a single session.

Roger Horbay explained what happens in an ABC interview with Terry Lane on 20 November 2005.

Terry Lane: Now getting back to some of the myths, just before we finish. There is this belief amongst gamblers, that if they stay at one machine for long enough, they must eventually get a payout. But if the machines are random, it's possible that some individual machines never pay out.

[14] That is, six kings out of thirty symbols = 6/30 = 1/5

[15] For each of reels two, three, four and five the chances of a king appearing on lines 1, 2 or 3 are 6 divided by 30 multiplied by 3 – that is over one in two.

[16] Forwarded with my earlier submission - see pages 15 and 16 of the paper

Roger Horbay: No, they have a confidence index that's calculated, so they actually do have to pay out.

Terry Lane: So in other words, there is some truth in the theory that if I stay here long enough I'll win?

Roger Horbay: Well absolutely, but players know that. They know that if they play enough they will eventually win. But the problem is, they'll win a lot less than they've lost, up to that point, over time. Over time you can win, and players know this. I say people who get addicted to pokies win, it's not the losers who get addicted. But the thing is what I've been studying is the outcome sequences of the game because of the variable prize structures on the games. If you link all these ups and downs of winning and losing, that experience does not feel random to the player. They know that their fortunes will eventually turn, and so they chase after them, even in the face of losses knowing they'll get a little bit of money back, it may not be as much as they lost, but at least they'll get some back. And it just leads to further and further chasing of losses and mounting debts.

In the same interview, Roger Horbay expressed concern about the starved reels:

Roger Horbay: Well I'm thinking it is possible, intentionally or not, to give players misleading information and still miss perceptions about how the machines are working, or the probabilities of winning the next spin. I'm very concerned that the players cannot get an accurate sense of the virtual reel strips, so they don't know that say reel 1 has four Kings on it, but reel 5 has only one King on it, they would get the impression they're all spinning equally, they all look like they're spinning the same. They all have the same odds of winning. Or lining up when they don't. So a player may be getting lots of Kings in a couple of reels waiting for their fifth reel to line up, and it's very rare that it ever will. But because they can't see that entire reel strip, they cannot make an informed choice around the next purchase or the next play option.[17]

Question 8. How can you correlate mechanized cheating with EGM's that provide electronic player information?

I will again quote from the Terry Lane interview with Roger Horbay:

Terry Lane: You see, this is one of the things that I find particularly interesting about the design of poker machines. Strictly speaking, all you need is a black box. You press the button and a message comes up 'Win' or 'Lose'. That's what the machine is fundamentally. So what are all the flashing lights and loud noises and proliferation of buttons and what-have-you, what do they add to the experience that makes it addictive?

The players who play gaming machines are the most ingenuous players. Although I am pleased to see the return to player is now disclosed, the odds mean nothing to them. Apart from the return to player figure, they would mean nothing to me if I were playing a machine. Players play from session to session and gauge their chances of success by looking at the reels. For the reasons given above, the reels are deceptive and mislead the players into

[17] Sunday 20 November 2005

believing they just keep missing. As Roger Horbay explained it to the New Zealand problem gambling counsellors:

- The player is making decisions from moment to moment on false information
- You cannot make a rational decision when you are working on false information [18]

These reels are like loaded dice. If a casino is using loaded dice you don't solve the problem by having a pamphlet showing the odds. You take the loads out of the dice.

Kind regards

Tim Falkiner

[18] Address to Problem Gambling Foundation of New Zealand 2005