Gambler’s Memory Paradox
– or why playing to win may be better than playing for fun

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Two fundamental misconceptions

Irresponsible gambling misconception:

Gambling is a good way to win some money.

Responsible gambling misconception:

Players should gamble for fun, not to win money.

… and the second misconception is probably the bigger one!
Gamble for fun?

Why this is a misconception?

• Wagering real money is a necessary component of gambling arousal (Anderson & Brown 1984).

• Technically, the more arousal (fun) one wants, the more he or she has to bet and... lose.

• Triumph of political correctness over common sense?
Gamblers have very well-defined preferences...

The table below shows various basic and complex derived statistics for one player visiting three casinos (real data). The consistency is simply stunning:

<table>
<thead>
<tr>
<th>Results - Player Z</th>
<th>Casino 1</th>
<th>Casino 2</th>
<th>Casino 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of visits</td>
<td>83</td>
<td>267</td>
<td>231</td>
</tr>
<tr>
<td>HOLD %</td>
<td>24%</td>
<td>19%</td>
<td>18%</td>
</tr>
<tr>
<td>Visits ending with a win</td>
<td>49%</td>
<td>58%</td>
<td>50%</td>
</tr>
<tr>
<td>Visits ending with a tie</td>
<td>-</td>
<td>-</td>
<td>0%</td>
</tr>
<tr>
<td>Visits ending with a ruin</td>
<td>22%</td>
<td>21%</td>
<td>20%</td>
</tr>
<tr>
<td>Average DROP</td>
<td>Visits ending with a win</td>
<td>78.4</td>
<td>61.4</td>
</tr>
<tr>
<td>Average DROP</td>
<td>Visits ending with a loss</td>
<td>138.6</td>
<td>124.9</td>
</tr>
<tr>
<td>Correlation: Result - Time to next visit</td>
<td>-0.305</td>
<td>0.463</td>
<td>0.160</td>
</tr>
<tr>
<td>Sessions when DROP is a multiple of PLN 1000</td>
<td>55%</td>
<td>55%</td>
<td>52%</td>
</tr>
</tbody>
</table>
Gamblers have very well-defined preferences...

Contrary to popular beliefs, there are many gamblers who prefer negative skewness (large probability of small win rather than small probability of large win)*

Consumption-oriented gamblers lose more than money-oriented gamblers*

Gambler’s Memory – how gambling sessions reinforce the desire to gamble?

- Data: 30+ most frequent players, 3 small casinos, 24 months.
- No significant positive correlations – some significant negative correlations.
- Psychological rather than economic explanation.
Gambler’s memory paradox

No inter-session chasing – loss is indifferent or defers next visit.

During the gambling session, the loss is correlated with the length of play.

If player wants to have pleasurable experience he or she should target small frequent wins.
A false alternative...

player who gambles for fun
vs.
player who dreams for big win, chases losses and so on...

What about:

Player who hopes for a modest win?
Distribution of after-game player’s capital

Gambling for fun (pre-determined time)
Ruin-adjusted binomial distribution
moderate or large expected loss

Gambling for big win
Bimodal distribution, many losses, little wins
large expected loss

Gambling for small win
Bimodal distribution, many wins, little losses
small expected loss
The responsible strategy to win a modest amount may be confused with chasing…

### REAL CASINO STATISTICS

<table>
<thead>
<tr>
<th></th>
<th>Player X</th>
<th></th>
<th>Player Y</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Casino A</td>
<td>Casino B</td>
<td>Casino A</td>
<td>Casino B</td>
</tr>
<tr>
<td>No. of visits</td>
<td>133</td>
<td>237</td>
<td>218</td>
<td>114</td>
</tr>
<tr>
<td>Hold PC</td>
<td>15%</td>
<td>16%</td>
<td>37%</td>
<td>30%</td>
</tr>
<tr>
<td>Visits ending with a win or tie</td>
<td>75%</td>
<td>80%</td>
<td>29%</td>
<td>30%</td>
</tr>
<tr>
<td>Visits ending with a ruin</td>
<td>13%</td>
<td>9%</td>
<td>51%</td>
<td>57%</td>
</tr>
<tr>
<td>DROP Variability (std / avr)</td>
<td>1.75</td>
<td>1.67</td>
<td>0.92</td>
<td>1.06</td>
</tr>
<tr>
<td>(Avr.DROP</td>
<td>Win) / (Avr.DROP</td>
<td>Loss)</td>
<td>18%</td>
<td>24%</td>
</tr>
</tbody>
</table>

- **few large wins**
- **many small wins**
- **many re-buy-ins = self control**
- **large average loss**
What constitutes a responsible gambling?

Telling the players that they should gamble for fun is like telling them that money does not matter in gambling.

This is very misleading.

Telling the players that they should gamble for fun and introducing loss limits is an example of inconsistent paternalism.
Solution: a loss win limit...

The maximum WIN limit
- an alternative responsible gambling strategy

• Reduces expected loss by reducing the length of gambling session

• Increases propensity to visit gambling venue by increasing frequency of wins

seems like a real ‘free lunch’ 😊
Thank you for your attention!

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The empirical data used in this presentation was collected with the invaluable help of two Polish casino operators: Orbis Casino and ZPR SA.