AN IMPROVED PATHWAYS DEVELOPMENT MODEL OF PROBLEM GAMBLING:

A SUMMARY OF 11 STUDIES IN HONG KONG & MACAU

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The rationale of this study came from a casual meeting of our supervisor Dr. Chan Chi Chuen and Professor Blaszczynski on a bus after the 2009 Reno conference.

On the bus, C. C. promised Mr. Blaszczynski that he would validate the pathways model in Hong Kong and Macau. And in the next 5 years, Dr. C.C. Chan and his students conducted 11 research projects on problem gambling in Hong Kong and Macau.

Purposes of current study

- To arrive on a summary finding from 11 studies on problem gambling
- To validate the pathways development model proposed by Blaszczynski & Nower (2002)
- To investigate what particular cultural factors in Hong Kong and Macau have contributed to problem gambling
THEORETICAL FRAMEWORK

- Integrated model of pathways development (Blaszczyński & Nower, 2002)

Pathway 1: Behaviorally Conditioned Problem Gamblers

Pathway 2: Emotionally Vulnerable Problem Gamblers

Pathway 3: Antisocial, Impulsivist Problem Gamblers
Behaviorally-Conditioned Gamblers

- Display minimal levels of pre-morbid psychopathology
- Exhibit depression or anxiety as a consequence of chasing and financial loss
- Gamble for actions, fun and excitement

**ECOLOGICAL FACTORS**
- Increased Availability
- Increased Accessibility

**CONDITIONING**

- Arousal/Excitement
  - Subjective excitement
  - Physiological Arousal

- Cognitive Schemas
  - Irrational Beliefs
  - Illusion of control

**HABITUATION**
- Pattern of habitual gambling established

**CHASING**
- Chasing wins, losses
- Losing more than expected

**PROBLEM AND PATHOLOGICAL GAMBLING**
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✦

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ÿamblers

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MoreKprevalenceKamongKfemaleKgamblers

๏

SignificantKdegreeKofKpreZmorbidKanxietyKandbK

orKdepression

๏

PoorKcopingKstrategiesYKpoorK

problemZKsolvingKskills

๏

zambleKtoKescapeKorKdissociateK

fromKnegativeKmoods

ECOLOGICAL FACTORS

• Increased Availability
• Increased Accessibility

ECOLOGICAL FACTORS

CONDITIONING

Arousal/Excitement
• Subjective excitement
• Physiological Arousal

Cognitive Schemas
• Irrational Beliefs
• Illusion of control

EMOTIONAL VULNERABILITY

Childhood disturbance
Personality
• Chasing wins, losses
• Losing more than expected

Mood Disturbance
• Depression
• Anxiety

Poor Coping/Problem-solving
• Life Stresses
• Substance Use

BIOLOGICAL VULNERABILITY

Biochemical
• Serotonergic
• Noadrenergic
• Dopaminergic

Cortical
• EEG differential

HABITUATION

• Pattern of habitual gambling established

CHASING

• Chasing wins, losses
• Losing more than expected

PROBLEM AND PATHOLOGICAL GAMBLING

✦ Emotionally-Vulnerable Gamblers

๏ More prevalence among female gamblers

๏ Significant degree of pre-morbid anxiety and/or depression

๏ Poor coping strategies, poor problem-solving skills

๏ Gamble to escape or dissociate from negative moods
THEORETICAL FRAMEWORK

**Antisocial-Impulsivist Gamblers**
- Highly disturbed individuals with biological vulnerability
- Poor interpersonal relationships, substance abuses, attention deficits, anti-social traits, early criminal records
- Undesirable family background, poor schooling and conduct problems

**ECOLOGICAL FACTORS**
- Increased Availability
- Increased Accessibility

**ECOLOGICAL FACTORS CONDITIONING**
- Arousal/Excitement
  - Subjective excitement
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  - Illusion of control

**EMOTIONAL VULNERABILITY**
- Childhood disturbance
- Personality
  - Chasing wins, losses
  - Losing more than expected
- Mood Disturbance
  - Depression
  - Anxiety
- Poor Coping/Problem-solving
  - Life Stresses
  - Substance Use

**BIOLOGICAL VULNERABILITY**
- Biochemical
  - Serotonergic
  - Norenergic
  - Dopaminergic
- Cortical
  - EEG differential

**IMPULSIVEIST TRAITS**
- Neuropsychological
  - ADHD
  - Impulsivity
- Anti-social behaviour
  - Substance abuse

**HABITUATION**
- Pattern of habitual gambling established

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**PROBLEM AND PATHOLOGICAL GAMBLING**
METHODOLOGY

ентр current study is a meta-analysis of the studies undertaken by the Dr. C.C. Chan and his research teams in Hong Kong and Macau.

It covers a series of small-scale qualitative studies carried out during the period of 2008-2013.
METHODOLOGY

- All together 190 participants (M=101, F=89, mean age: 40). There were 11 studies; all follow similar procedures. All participants were interviewed using semi-structured questionnaires that covered their developmental history, gambling habits and lifestyles.

- The interviews were based on the DSM-IV-TR (APA, 2000) & the PGSI (Ferris & Wayne, 2001)

- Some studies were included the administration of Beck Depressive Scale to assess the emotional states of participants
This study reviews those data from 11 qualitative studies.

1. **Casino Players in Macau**  
   \((N=15, 10\text{M}, 6\text{F}, \text{age: 24-53})\)  

2. **Young Sport Bettors**  
   \((N=20, 19\text{M}, 1\text{F}, \text{age: 16-26})\)  

3. **Housewives of Low Income Groups**  
   \((N=20, \text{age: 26-55})\)  

4. **Day Traders in Stock Markets**  
   \((N=16,10\text{M}, 6\text{F}, \text{age: 20-55})\)  
CROSS-SECTIONAL STUDIES

This study reviews those data from 11 qualitative studies.

5. Gamblers with Criminal Background
   \((N=11, 10M, 1F, \text{age:34-58})\)

6. Male Sex Workers and Taxi Drivers
   \((N=20, \text{age: 34-48})\)

7. Female Sex Workers
   \((N=20, \text{age: 34-60})\)
CROSS-SECTIONAL STUDIES

This study reviews those data from 11 qualitative studies.

<table>
<thead>
<tr>
<th>Study Title</th>
<th>Sample Size</th>
<th>Age Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cargo Labors</td>
<td>N=25, M=22, F=3</td>
<td>22-50</td>
</tr>
<tr>
<td>Pathways development of Problem Gamblers and Implications for Treatment Concerns In The First Asia Pacific Conference on Gambling Commercial Gaming Research, Macau.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Filipino Female Domestic Helpers</td>
<td>N=11, age: 29-53</td>
<td></td>
</tr>
<tr>
<td>Pathways Development of Problem Gambling with Filipino Female Gamblers in Hong Kong. (Unpublished manuscripts)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gambling Anonymous</td>
<td>N=17, 15M, 2F, age: 22-58</td>
<td></td>
</tr>
<tr>
<td>Elderly &amp; Retirees</td>
<td>N=20, 12M, 8F, age: 55-85</td>
<td></td>
</tr>
</tbody>
</table>

All studies follow similar methodology in data collection.
RESULTS

- **Summary of Participants (By sectors):**

  - Cargo Labors: 23
  - Casino Players: 15
  - Day Traders: 16
  - Elderly: 20
  - Female Sex Workers: 20
  - Filipino Maids: 17
  - GA: 20
  - House Wives: 6
  - Male Sex Workers: 10
  - Taxi Drivers: 12
  - Triad Members: 20
  - Youth Sport Bettors: 20
RESULTS

❖ Descriptive Statistics of Participants (N=190):

<table>
<thead>
<tr>
<th>Average</th>
<th>Female (N=89)</th>
<th>Male (N=101)</th>
<th>Grand Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>39.87</td>
<td>39.72</td>
<td>39.79</td>
</tr>
<tr>
<td>PGSI</td>
<td>7.80</td>
<td>9.11</td>
<td>8.57</td>
</tr>
</tbody>
</table>
RESULTS

Descriptive Statistics of Participants (N=190):

<table>
<thead>
<tr>
<th>Classifications</th>
<th>Recreational</th>
<th>Behavioral</th>
<th>Emotional</th>
<th>Anti-social</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female (N=89)</td>
<td>38</td>
<td>22</td>
<td>13</td>
<td>8</td>
</tr>
<tr>
<td>Male (N=101)</td>
<td>39</td>
<td>47</td>
<td>3</td>
<td>20</td>
</tr>
</tbody>
</table>
RESULTS ✦ Behavioral-Conditioned Gamblers

ECOLOGICAL FACTORS
- Increased Availability ✅
- Increased Accessibility ✅
- Peer Influence in work & school

ECOLOGICAL FACTORS CONDITIONING
- Arousal/Excitement
  - Subjective excitement ✅
  - Physiological Arousal ✅
- Cognitive Schemas
  - Irrational Beliefs ✅
  - Illusion of control ✅

HABITUATION
- Pattern of habitual gambling established ✅

PROBLEM AND PATHOLOGICAL GAMBLING

CHASING
- Chasing wins, losses ✅
- Losing more than expected ✅
- Significant Impaired Control of Gambling

A model of strong attachment to gambling (reproduced from Orford)
ECOLOGICAL FACTORS
- Increased Availability
- Increased Accessibility

ECOLOGICAL FACTORS CONDITIONING
Arousal/Excitement
- Subjective excitement
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EMOTIONAL VULNERABILITY
Childhood disturbance Personality
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PROBLEM AND PATHOLOGICAL GAMBLING
- Chasing wins, losses
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PRIMARY
- Controlling Factors
- Positive experience of gambling

SECONDARY
- Strong attachment
- Cognitive defense
- Harm
- Contemplation of change

TERTIARY
- Escalating Factors
- Chasing losses
- Drive for money
- Negative experience of gambling

RESULTS ✦ Emotionally-Vulnerable Gamblers

The depressive moods can turn inward that contribute to the development of borderline personality disorder.

A model of strong attachment to gambling (reproduced from Orford)
RESULTS

Antisocial-Impulsivist Gamblers

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- ADHD?
- Impulsivity
- Anti-social behaviour
- Substance abuse

PROBLEM AND PATHOLOGICAL GAMBLING

Attach gambling as daily habit

PRIMARY
- Controlling Factors
- Positive experience of gambling

SECONDARY
- Cognitive defense
- Strong attachment
- Secrecy

TERTIARY
- Contemplation of change
- Harm
- Negative experience of gambling
- Drive for money

A model of strong attachment to gambling (reproduced from Orford)

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DISCUSSIONS

✦ The B & N can adequately explain and distinguish the pathways development of all the problem gamblers. However, we argue that certain new elements should be added to improve the model.

✦ Extra findings:
  ○ More time involvement in gambling create more impaired control of gambling
  ○ Sub-cultural influence can shape gambling behaviors
  ○ Alcohol consumption is insignificant in problem gambling in all three pathway
DISCUSSIONS

- Time involvement & impairment of control

- Longer time involvement
- Deteriorate of self control
- More impulsivity
- More severe problem gambling

- Alcohol consumption is insignificantly related to problem gambling

Variables contributing to the development of level of involvement and impaired control of gambling: main study (Dickerson, 2001)
THANK YOU!

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