

# STARVING TO GAMBLE

Hunger and gambling-related craving interact to heighten persistent play among problem gamblers

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# RESPONSIBLE GAMBLING

- Pre-commitment Measures
- Pop-ups
- Self-exclusion
- Cool-off periods

# BARRIERS TO RESPONSIBLE GAMBLING

- Utilization
  - Tools are for “problem gamblers”
- Prevention not intervention
  - Persistence

# Addiction Monitor

**Crave It!**

**Need It**

**Want It**

**Like It**





# CRAVING

- The conscious **experience of an urge or desire** to engage in an addictive behavior
- Craving is considered the **main reason for relapse** among problem gamblers
- Craving increases the **willingness to take risks**

# STUDY 1 - CRAVING AND PERSISTENCE

- Young & Wohl, 2009
  - Examine the influence of craving on gambling behaviour
- 45 gamblers
  - 15 non-problem , 16 low-risk, 15 high-risk
- Procedure
  - Administer the Gambling and Craving Scale, Given \$5 (20 credits) to play on VR slots
  - After 50 spins all players have 60 credits, then persistence (all spins are losses)





# RESULTS

- Craving to gamble significantly predicted gambling persistence!

# CRAVING AND GAMBLING

- Craving will not be part of the DSM-V definition, yet it is considered a **central motivating force** behind gambling (e.g., Kushner et al., 2007, 2008; Sharpe, 2002)
- Craving does **not always lead to gambling**, and may be but one of many factors (Blaszczynski & Nower, 2002; Ledgerwood & Petry, 2006)
- Why does craving then lead to problem gambling behaviour ?

# WHY DOES CRAVING LEAD TO IRRESPONSIBLE PLAY?

- It influences executive cognitive functioning



# EXECUTIVE COGNITIVE FUNCTIONING (ECF)

- Various complex cognitive processes, implicated in successful **goal-directed behaviour, co-ordination and/or control**
  - Planning, abstract reasoning, anticipation of consequences, cognitive flexibility, and response modulation and inhibition (Stuss & Benson, 1984)
- If ECF fails, behaviour can become **disjointed, disinhibited and uncontrolled**



# FACTORS INFLUENCING ECF

- Exercise improves children's ECF (Davis et al., 2007)
- Stress negatively affects ECF (e.g., de Kloet, Joëls & Holsboer, 2005)
- Perhaps **craving is a possible antecedent** of poor ECF
  - The intense urge or desire to engage in an addictive behaviour may impair a person's ability to control their executive functions

# CRAVING AND ECF

- Craving may impair a person's ability to control their executive functions
  - Addicts perform poorly on addiction-specific Stroop tasks – possibly due to cravings (Boyer & Dickerson, 2003; McCusker & Gettings, 1997; Ashrafioun and Rosenberg, 2011)
  - Problem gamblers perform worse on the Iowa Gambling Task – possibly due to cravings (Goudriaan et al., 2005)

## STUDY 2 - ECF, CRAVING AND GAMBLING

- Establish an association between craving and ECF among gamblers
- Gamblers ( $N=25$ ) were allowed to gamble until they were satiated
  - Craving and ECF was assessed (using the IGT)

# RESULTS

- Craving to play was a significant predictor of poor ECF!
  - $\beta = -12.79, t(23) = -2.19, p = .04$



# DISCUSSION

- Preliminary evidence that **craving may undermine self-control**
- Doing research to verify and determine causation
  - Initial results look promising
- If we can **undermine craving**, we may have a very **powerful RG tool**



# **GHRELIN** (GHREL·IN) *NOUN* \ 'GREL-ƏN\

- 28 amino-acid peptide hormone
- The **hunger hormone**
  - Correlates strongly with subjective measures of hunger
- **Increases food intake** and fat accumulation fat
- Endogenous to the GHS-R
  - Concentration of GHS-R in VTA

# GHRELIN + REWARD

- VTA → Reward seeking behaviour
- Ghrelin → Intake of addictive substances
  - Methamphetamine, smoking, alcohol
  - Correlates with craving for those substances

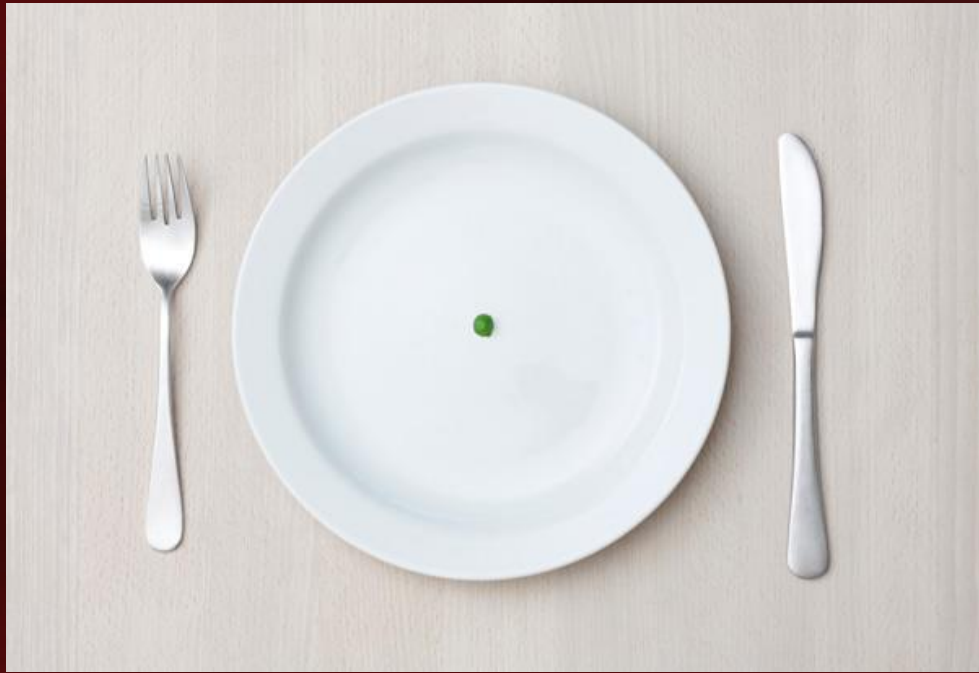


# GHRELIN AND GAMBLING

- Increased ghrelin is associated with increased financial risk-taking
  - Makes sense from an evolutionary perspective
- Perhaps ghrelin affects gambling behaviour?
  - Addiction Transfer

# HUNGER AND GAMBLING

- Hunger has been shown to **increase illusions of control and positive outcome expectancies** (Biner, Huffman, Curran & Long, 1998)
- We aimed to examine the affect that hunger would have on **gambling persistence**







# METHOD

- 51 At-risk to Problem gamblers
- Instructed **not to eat** before the experiment
- Half of the participants **fed a high caloric muffin**
  - Other half promised muffin at end of study
- Ghrelin, hunger and craving to gamble assessed
  - Ghrelin data still needs to be Assayed

# Mardi Gras



PAY  
TABLE

15

Lines Bet

5

Credits / Line

75

Total Bet

CHANGE  
GAME

MAX  
BET

SPIN

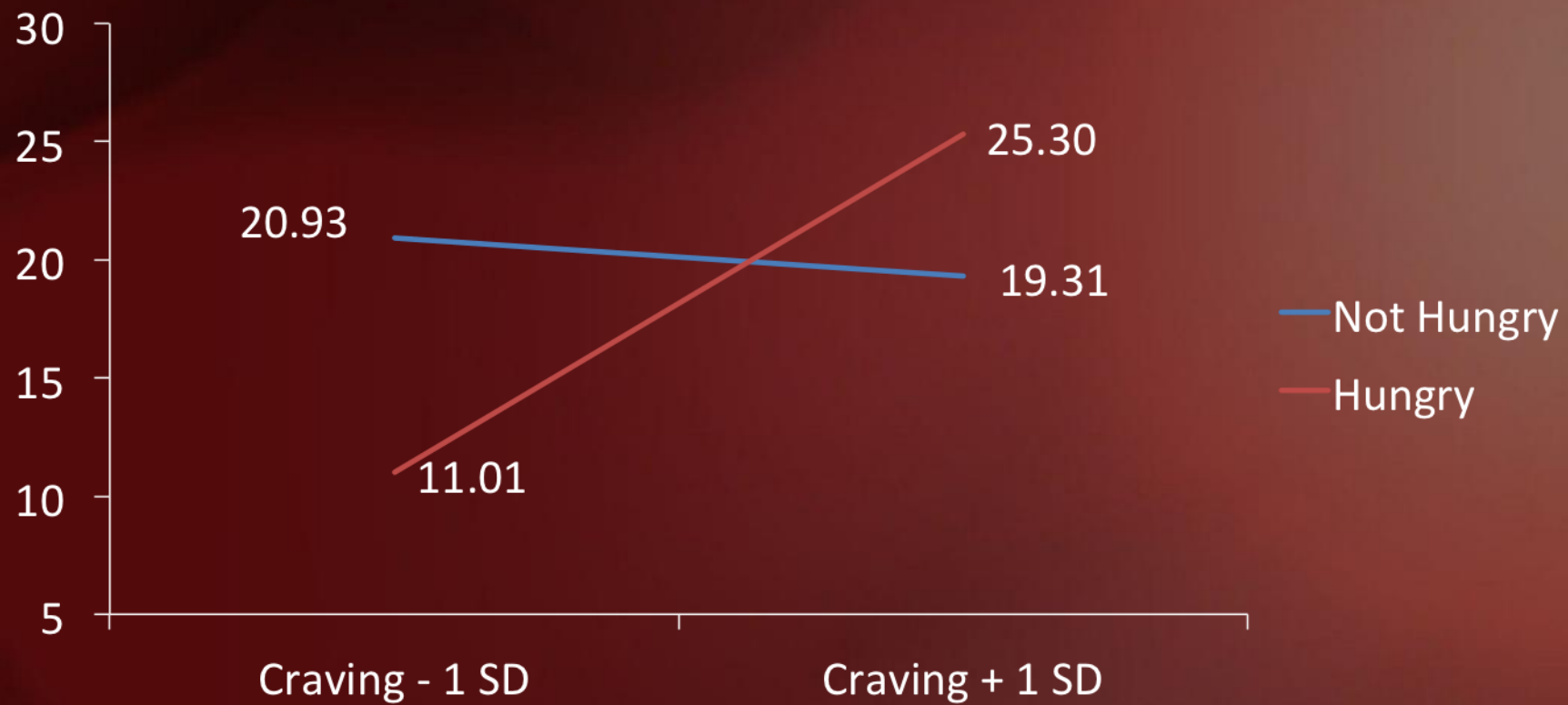
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CREDITS

100 106

# PERSISTENCE





# WHAT DOES THIS MEAN?

- Perhaps we should suggest **gamblers eat before entering a casino**
  - “Eat Before Play”
  - “Fill your mouth before you fill your pockets”
- Food on the casino floor is a good idea
  - Alcohol is allowed, but not cookies (or apples)
- If gamblers continuously gamble without eating, suggest an **eating break**
  - Pop-ups
  - “Have a muffin on us

# WHAT DOES THIS MEAN?

- Responsible gambling guideline that works as an **intervention**.
  - At-risk and problem gamblers



# FUTURE DIRECTION

- Replicate & Validate
  - This was a preliminary study
- Ghrelin, ECF and Craving



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