Gambling to Cope with Negative Emotions vs. Gambling to Cope with Stress:
Longitudinal and Daily Diary Studies

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Gambling Motives

People gamble for a variety of different reasons or "motives"

To socialize or affiliate

For excitement or action

To cope or escape

Motivational Theory

- How do we organize these various reasons for gambling?

- Motivational models of addictive behaviors (Cox & Klinger, 1988; Cooper, 1994; Cooper et al., 2016)

- Assumptions:

  - People engage in addictive behaviors to obtain desirable and valued outcomes

  - Some motives "riskier" than others

  - Motives are the final common pathway to gambling outcomes through which other risk factors exert their effects
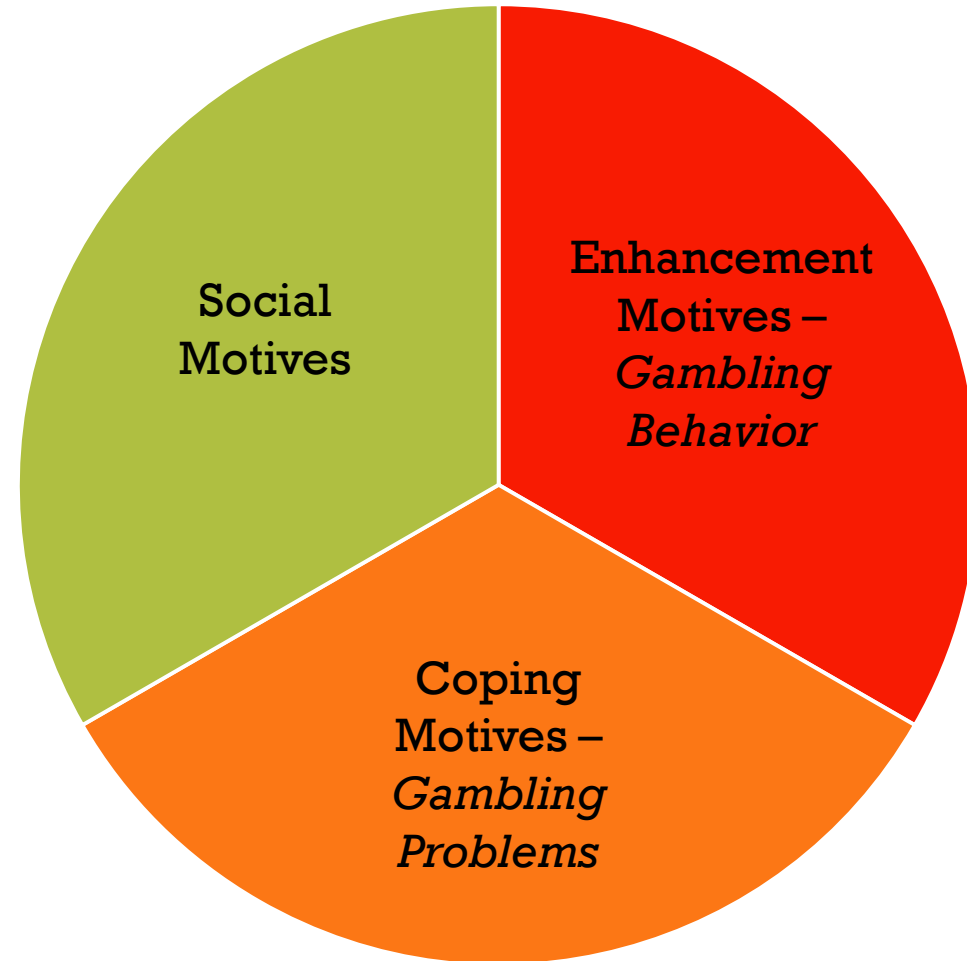
The Modified Drinking Motives Questionnaire - Revised
(Grant et al., 2007)

Drinking Motives

- Enhancement Motives
- Coping Depression Motives
- Coping Anxiety Motives
- Conformity Motives
- Social Motives

Structural validity; Predictive validity: only Coping Depression longitudinally predicts DPW and alcohol problems; only Coping Anxiety longitudinally predicts alcohol problems controlling T2 DPW
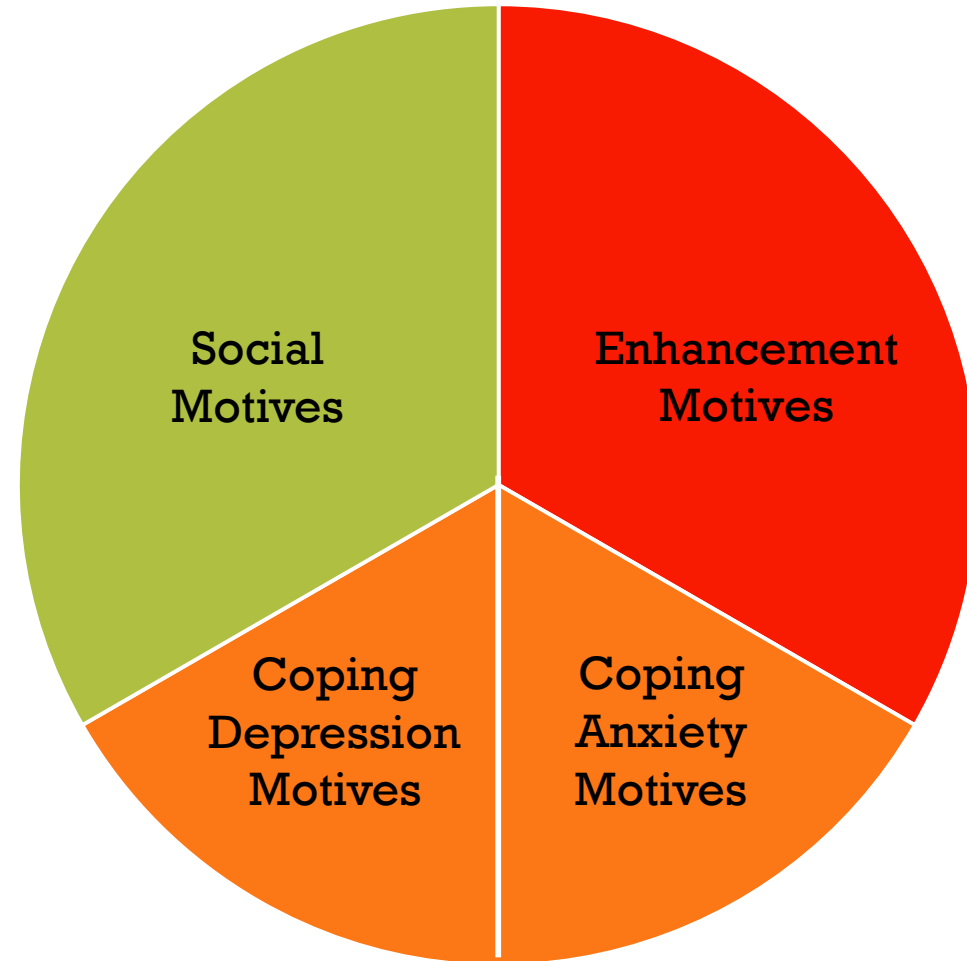
Study 1

Longitudinal Survey

Study

Study 1: Aims

- Develop a new gambling motives measure that separates coping with anxiety and coping with depression motives and retains social and enhancement

- Examine the structural validity of the new measure

- Examine the concurrent and predictive validity of the new measure
  - Antecedents: Personality (concurrent)
  - Consequences: (predictive):
    - Gambling Behavior
    - Gambling Problems

Study 1 Method: Participants

- N = 197 community-recruited gamblers from Halifax, Toronto, and Winnipeg

- Recruited via online & newspaper ads, flyers, SONA

- 19+ (18 in Manitoba), gambled 2+ times last month (M [SD] = 34 [14] years; 64% male; 43% students)

- PGSI: non-problem = 6.1%; low risk = 46.2%; moderate risk = 20.3%; and problem gambling = 27.4%

- N = 114 (57.9% retention) at the 6-month follow-up

Study 1 Method: Measures & Procedure

- 28-item Gambling Motives Questionnaire – Revised

- Validation Measures:

- Substance Use Risk Profile Scale (SURPS; Woicik et al., 2009): impulsivity, sensation seeking, hopelessness, & anxiety sensitivity

- Gambling Timeline Follow-Back (G-TLFB; Weinstock et al., 2004): frequency, time spent gambling

- Problem Gambling Severity Index (PGSI; Ferris & Wynne, 2001)

- First two administered at baseline, latter two at 6-month follow-up

Study 1 Analyses

- Structural Validity
  - Exploratory PCA with oblique rotation
  - Kaiser's eigenvalue > 1.00 and scree test
- Concurrent Validity
  - Correlations of baseline motives factor scores with personality antecedents
- Predictive Validity
  - Correlations of baseline motives factor scores with consequences at 6-month follow-up

FACTOR LOADINGS FOR FOUR FACTOR SOLUTION

	Component			
	F1	F2	F3	F4
To numb your pain. (CWD)	**.870**	-.040	-.157	.002
Because it helps when you are feeling nervous. (CWA)	**.849**	-.007	-.068	-.051
Because it helps you when you are feeling depressed. (CWD)	**.817**	-.123	.076	.003
To reduce your anxiety. (CWD)	**.803**	.001	-.043	.109
To forget painful memories. (CWD)	**.801**	-.152	.059	-.081
To turn off negative thoughts about yourself. (CWD)	**.797**	-.038	.058	-.155
To reduce your tension. (CWA)	**.788**	.086	-.086	.334
To calm you when you feel panicky. (CWA)	**.786**	.084	-.055	-.115
Because it helps you when you are feeling restless or on edge. (CWA)	**.747**	.013	.091	.078
To forget your worries. (CWA)	**.736**	-.031	.076	.281
To cheer up when you're in a bad mood. (CWD)	**.687**	.137	.070	.139
To distract you from your concerns. (CWA)	**.663**	-.041	.179	.140
To stop you from dwelling on things. (CWD)	**.641**	.087	.093	.357
To help you feel more positive about things in your life. (CWD)	**.619**	.202	.174	-.230
To stop you from feeling so hopeless about the future. (CWD)	**.552**	.264	.062	-.163

FACTOR LOADINGS FOR FOUR FACTOR SOLUTION (continued)

	Component			
	F1	F2	F3	F4
To be sociable. (SOC)	-.079	**.887**	-.142	-.068
Because it makes a social gathering more enjoyable. (SOC)	-.007	**.834**	.001	.031
Because it is what most of your friends do when you get together. (SOC)	.082	**.783**	-.079	.094
Because it is something you do on special occasions. (SOC)	-.062	**.665**	.164	.054
As a way to celebrate. (SOC)	.101	.330	.322	-.324
Because it's exciting. (ENH)	-.002	-.029	**.860**	-.041
Because you like the feeling. (ENH)	.111	-.130	**.819**	.007
Because it's fun. (ENH)	-.344	.120	**.762**	.247
Because it makes you feel good. (ENH)	.111	.100	**.760**	.060
To get a high feeling. (ENH)	.355	-.042	**.617**	-.069
Because you feel more self-confident or sure of yourself. (CWA)	.331	.223	.359	-.162
To relax. (CWA)	.221	.097	.286	**.629**
To unwind. (CWA)	.360	.073	.183	**.495**

Notes: Salient loadings (>.400) in bold.

Interpretation 1:

Factor 1 – Coping with depression?
Factor 4 – Coping with anxiety?

Or is that "Square Peg in a Round Hole"?

Alternative Interpretation:

Factor 1 – Coping with negative affect
Factor 4 – Coping with stress

The shapes fit!

	Motive Factor Score			
	SOC	ENH	CWNA	CWS
Sensation Seeking (SURPS)	.210**	-.017	-.150*	-.125*
Impulsivity (SURPS)	.207**	.240**	.366**	.011
Hopelessness (SURPS)	-.068	.125*	.268**	-.031
Anxiety Sensitivity (SURPS)	-.056	.021	.230**	.133*

Motives and Personality Relations

*p<.05; **p<.01
(one-tailed tests)

		Motive Factor Score		
	SOC	ENH	CWNA	CWS
Gambling Frequency (G-TLFB)	.115	.281**	.240**	.139
Gambling Time (G-TLFB)	-.031	.105	.056	.212*
Gambling Problems (PGSI)	-.073	.290**	.497**	-.062

Prospective: Motives and Gambling Outcome Relations

*p<.05; **p<.01
(one-tailed tests)

Study 1: Conclusions

- It is possible to separate two distinct coping motives
    - Unexpectedly, coping with negative affect (CWNA) vs. coping with stress (CWS)
- New measure retains the good psychometric properties of the social and enhancement motives scales
- Distinct antecedents and consequences
    - AS, SS correlated with both CWNA and CWS
    - HOP, IMP correlated only with CWNA
    - T1 CWNA predicted T2 gambling frequency and problems
    - T2 CWS predicted T2 time spent gambling
- Overall CWNA motives riskier, but CWS not without risk

Study 2

Daily Diary

Study

Study 2: Aims

- Examine the validity of the GMQ-R coping with negative affect (CWNA) and coping with stress (CWS) scales in the context of a daily diary study

- Do higher scores on these trait coping motive scales predict greater use of gambling for those same motives when assessed on a daily basis on gambling days (validity check)?

- Do higher scores on these specific trait coping scales interact with daily negative affect or daily stress to predict specific state coping motives for gambling on gambling days?

Study 2 Method: Participants

- N = 123 community-recruited gamblers from Halifax, Toronto, and Montreal

- Recruited via online & newspaper ads, flyers, SONA

- N = 88 provided sufficient daily diary information to be retained

- 19+ (18 in Quebec), gambled 2+ times last month (M [SD] = 30.9 [10.4] years; 70.5% male)

- PGSI: non-problem = 5.7%; low risk = 37.5%; moderate risk = 23.9%; and problem gambling = 32.9%

- 76.8% compliance with daily diary reporting; gambled on 32.4% of reporting days = 657 gambling episodes.

Study 2 Method: Measures & Procedure

- At baseline, in-lab session, completed GMQ-R, PGSI, Demographics measure; trained in use of daily diary

- Each day for 32 days, texted link to survey on smart phone two times per day:

- Mood state VASs 0-100 slider; 3:30pm each day
  - Negative affect (mean of 6 adjectives e.g., nervous, sad)
  - Daily stress scale (Bolger et al., 1989)

- State motives for gambling (on gambling days); noon for prior day
  - 4 item measure; one item per motive; VAS 0-100 slider
  - Only state coping-negative affect and state coping-stress used

- Analyses with HLM 7.0 using lagged variables
  - Trait motive (CWNA or CWS), PGSI and gender served as level 2 (between-person) predictors in analyses
  - Mood state (negative affect or stress) served as level 1 (within-person) predictor
  - All level 1 x level 2 interactions examined
  - Outcome was state gambling motive (CWNA or CWS) on gambling days

Predictor	State Coping with Negative Affect Motives			
	B	SE	t-ratio	P
Intercept	36.81	6.21	5.93	<.001***
Level 1 main effects				
Daily negative affect	0.02	0.09	0.26	.79
Level 2 main effects				
Trait CWNA motives	29.22	4.12	7.10	<.001*** ✓
PGSI status	7.85	6.13	1.28	.20
Gender	-7.88	5.40	1.46	.15
Cross-level interactions				
Trait CWNA motives	0.04	0.09	0.49	.62
PGSI status	-0.08	0.16	0.50	.62
Gender	0.01	0.12	0.09	.93

Daily Diary Results: Coping with Negative Affect

Main finding: Trait CWNA motives on GMQ-R were associated with more days of gambling motivated by CWNA on daily diary

***p<.001

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Daily Diary Results: Coping with Negative Affect

***p<.001

	State Coping with Stress Motives			
	B	SE	t-ratio	P
Intercept	35.99	6.18	5.83	<.001***
Level 1 main effects				
Daily stress	-0.02	0.08	0.24	.81
Level 2 main effects				
Trait CWS motives	24.35	3.64	6.69	<.001*** ☑
PGSI status	20.25	6.02	3.37	.001**
Gender	-10.31	5.81	1.78	.08
Cross-level interactions				
Trait CWS motives	0.05	0.06	0.90	.37
PGSI status	-0.13	0.06	1.71	.09
Gender	0.08	0.08	1.07	.29

Daily Diary Results: Coping with Stress

Main finding: Trait CWS motives on GMQ-R and Problem Gambling Status (PGSI) were associated with more days of gambling motivated by CWS on daily diary

**p<.01; ***p<.001

	State Coping with Stress Motives				
	B	SE	t-ratio	P	
Intercept	35.99	6.18	5.83	<.001***	
Level 1 main effects					
Daily stress	-0.02	0.08	0.24	.81	
Level 2 main effects					
Trait CWS motives	24.35	3.64	6.69	<.001***	
PGSI status	20.25	6.02	3.37	.001**	
Gender	-10.31	5.81	1.78	.08	
Cross-level interactions					
Trait CWS motives	0.05	0.06	0.90	.37	☒
PGSI status	-0.13	0.06	1.71	.09	
Gender	0.08	0.08	1.07	.29	

Daily Diary Results: Coping with Stress

Main finding: Trait CWS motives on GMQ-R did not interact with daily stress to predict state gambling motivated by CWS on daily diary

**p<.01; ***p<.001

Study 2: Conclusions

- Provides additional data on validity of the GMQ-R coping with negative affect (CWNA) and coping with stress (CWS) scales, in the context of a daily diary study

- Gamblers who say they usually gamble to cope with negative affect on the GMQ-R showed greater gambling for this reason over 32 days; ditto for CWS

- Why were the interactions with daily negative affect/ daily stress and the relevant coping motive on the GMQ-R not observed?
  - Only examined gambling days
  - Perhaps related to timing of two daily surveys?

Overall Conclusions

- GMQ-R promising tool for examining gambling motives including two types of coping motives

- Further research to determine why CWA vs. CWD with drinking but CWNA vs. CWS with gambling

- Motivation-matched treatments for problem gambling (e.g., BEAT Gambling; Stewart et al., 2016) could be refined to target coping with stress vs. coping with negative affect motivations

Acknowledgements