Self-Coding of Memory Associations: A Simple Method to Resolve Ambiguity and Improve Prediction of Behaviours

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Background and Methodology

Coding of open-ended responses is often labor-intensive and costly, and ambiguity may not be resolved. Participants self-coding their own responses has been suggested as a way to remedy these issues.

For this study we evaluated self-coding procedures for the assessment of memory associations for video gaming and gambling.

Sample: 3,047 Canadians (48% male) ages 18-91 (M = 43.95, SD = 15.75) recruited through Leger as part of a national study investigating video gaming and gambling.

Measures:
- Word Associates (WA)
- Behaviour Associates (BA)
- Self-Coding of Associative Measures
- Frequency of Gambling and Video Gaming
- Behavioral Addiction Measure for Video Gaming (BAM-VG)
- Problem and Pathological Gambling Measure (PPGM)

Coding and analytic procedure:

During the survey, participants were presented with their previous responses to the associative measures and asked to select which categories applied to their responses from the following categories: recreation/leisure, gambling, alcohol, family/friends, video gaming, food, collectible card play, and other. On top of participants self-coding their responses, researchers coded the responses both conservatively and liberally.

- Conservative coding included only those responses that directly referred to the target category (Conservative WA and Conservative BA respectively).
- Liberal coding included responses that *likely* included the target category (Liberal WA and Liberal BA respectively).

Kendall Tau-b associations were run between all forms of coded scores with their respective problem and frequency measures.

Sequential regressions were conducted to compare conservative, liberal, and self-coded association scores and their relationship with concurrent behaviours and problems.

Results

Table 3. Sequential Regressions of Coding Method on Video Game Frequency, BAM-VG Classification, Gambling Frequency, and PPGM Classification.

	Video Game Frequency			BAM-VG Classification			Gambling Frequency			PPGM Classification		
	B	R	Δr^2	B	R	Δr^2	B	R	Δr^2	B	R	Δr^2
Model 1		.274	.074***		.317	.100***		.309	.095***		.291	.084***
Constant	2.604***			0.820***			1.921***			1.061***		
BA Conservative	0.833***			0.196***			0.667***			0.554***		
WA Conservative	0.540***			0.423***			0.398***			0.196***		
Model 2		.304	.017***		.356	.025***		.318	.005***		.292	.001***
Constant	2.374***			0.720***			1.847***			1.054***		
BA Conservative	0.552***			0.289***			0.029			0.346		
WA Conservative	0.352***			0.119***			0.276***			0.189***		
BA Liberal	0.305***			0.147***			0.625**			0.206*		
WA Liberal	0.144***			0.056***			0.114**			0.006		
Model 3		.427	.089***		.492	.116***		.406	.065***		.450	.116***
Constant	2.121***			0.612***			1.643***			0.887***		
BA Conservative	0.411***			0.227***			-0.201			0.127		
WA Conservative	0.220**			0.065**			0.225***			0.154***		
BA Liberal	0.124*			0.067***			0.481**			0.058		
WA Liberal	-0.060			-0.027			0.007			-0.065*		
BA Self-Coded	0.203***			0.095***			0.233***			0.266***		
WA Self-Coded	0.266***			0.107***			0.179***			0.110***		

* = $p < 0.05$, ** = $p < 0.01$, *** = $p < 0.001$

Results

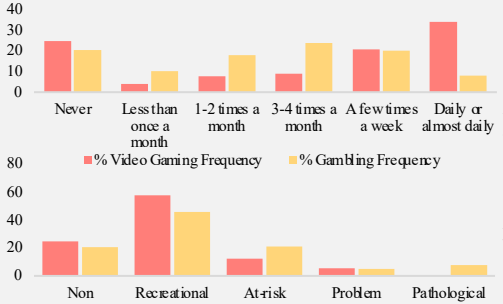

Figure 1. Participant frequency of video gaming and gambling engagement. The majority of the sample indicated engaging in either video gaming or gambling in the past 12 months.

Figure 2. Participant frequency of BAM-VG classification (note that pathological is not a category of the BAM-VG) and PPGM Classification.

Table 1. Average participant word and behaviour associate scores by coding type (standard deviation in brackets).

	Video Gaming		Gambling	
	WA	BA	WA	BA
Conservative	.48 *(.81)*	.18 *(.57)*	.86 *(1.00)*	.17 *(.65)*
Liberal	1.34 *(1.26)*	.63 *(1.01)*	1.45 *(1.25)*	.21 *(.73)*
Self-Coded	1.95 *(2.14)*	1.08 *(1.53)*	1.85 *(1.79)*	.71 *(1.49)*

*** = $p < 0.001$

Table 2. Kendall Tau-b Associations for Associate Measures, Frequency of Engagement, and BAM-VG/PPGM Classification. Asymptotic z-tests reveal that self-coded scores were significantly greater in magnitude than both forms of researchers coding.

	Video Gaming		Gambling	
	Frequency	BAM-VG Classification	Frequency	PPGM Classification
Conservative WA	.198***	.250***	.235***	.228***
Conservative BA	.196***	.256***	.215***	.246***
Liberal WA	.166***	.218***	.216***	.200***
Liberal BA	.202***	.253***	.226***	.248***
Self-Code WA	.318***	.400***	.290***	.325***
Self-Code BA	.297***	.373***	.291***	.381***

Conclusions

Correlations between coding type and frequency/problems were larger in magnitude for self-coded scores versus both forms of researcher coding as demonstrated using asymptotic z tests.

Sequential regression analyses for both video gaming and gambling revealed that self-coding significantly improved the prediction of video gaming and gambling frequency and problems when added to regression analyses using typical coding methods (Model 3).

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