



# The Affect Misattribution Procedure and Cannabis Cognitions: Early Use Among a Sample of Canadian Adolescents

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Funding for this conference was made possible in part by grant R13DA016280 from the National Institute on Drug Abuse. The views expressed in written conference materials or publications and by speakers and moderators do not necessarily reflect the official policies of the Department of Health and Human Services; nor does mention by trade names, commercial practices, or organizations imply endorsement by the U.S. Government.

## Introduction

- Cannabis initiation and use in adolescence is complex.
- Research suggests that substance use is influenced by both explicit and implicit cognitions<sup>1</sup>.
- While much work has been done on explicit cognitions, the field is now exploring the role of implicit cognitions in adolescent substance use<sup>2,3</sup>.
- Implicit cognitive tasks measure substance-related cognitions that are spontaneous and activated without causing the participant to engage in introspection about the cause of their attitude<sup>4</sup>.
- Implicit measures are less sensitive to the effects of social desirability, thus providing a different measure of attitude than explicit measures offer.
- Explicit reports are more likely to be influenced by self-presentation biases<sup>5</sup>.
- Implicit measures also may help explain circumstances where behavior appears to be incongruent with explicitly held beliefs or attitudes<sup>5</sup>.
- Collectively, studies utilizing implicit measures suggest that participants who respond with higher frequency of drug or alcohol related responses are more likely to report greater levels of substance use<sup>4</sup>.
- The Affect Misattribution Procedure<sup>6</sup> (AMP) measures the affective impact of implicit cognitions by examining their influence on neutral stimuli presented in rapid proximity.
- This study is the first to use the AMP to predict the trajectory of cannabis use in a sample of Canadian youth.

## Methods

- The present study examined the utility of an implicit cognitive measure to predict adolescent cannabis use longitudinally over a 1-year period.
- 438 (48.1% male; 51.9% female) 8<sup>th</sup> grade ( $M=13.24$  years,  $SD=0.44$ ) participants from British Columbia, Canada were surveyed.
- Data was collected at three time points: baseline (Time 1), 6 months (Time 2), and 12 months (Time 3).
- Participants self-reported substance use and cannabis outcome expectancy liking (COEL) ratings at each time point.
- Implicit cognitions were measured using 133 trials on the AMP (see Figure 1). This procedure measured automatic reactions to visual stimuli through affective misattributions.
- At each time point, a logistic regression analysis was conducted with AMP score, gender, and COEL variables as the predictors and cannabis user status as the dependent variable.

## Results

- At Time 1, 5.5% of participants had used cannabis in their lifetime. Participants were between ages 8 and 13 years ( $M=12.74$  years,  $SD=0.84$ ) when they first used cannabis. At Time 2 and 3, 14% and 17% of participants had used cannabis in their lifetime, respectively.
- Cannabis use correlated significantly with COEL scores at each time point with the exception of Time 1 cannabis use and Time 2 COEL (see Table 2).
- AMP scores correlated significantly with cannabis use at each time point although the magnitude of correlation decreased over time. AMP scores also correlated significantly with COEL scores at each time point (see Table 2).
- At Time 1, the AMP predicted cannabis user status ( $\beta = 2.17$ , 95% CI = 8.77 [1.25-61.71],  $p = 0.03$ ) when included independently in the model (see Table 2).
- At Time 2, the AMP predicted cannabis user status again ( $\beta = 1.25$ , 95% CI = 3.50 [1.24-9.85],  $p = 0.02$ ).
- At Time 2, the AMP no longer predicted cannabis user status ( $\beta = 0.81$ , 95% CI = 2.25 [0.83-6.13],  $p = 0.11$ ). Alternatively, COEL outperformed the AMP at Time 2 ( $\beta = 1.02$ , 95% CI = 2.79 [2.01-3.85],  $p = 0.01$ ) and Time 3 ( $\beta = 0.99$ , 95% CI = 2.70 [1.99-3.67],  $p = 0.01$ ) when included as a covariate.

## Discussion

- Assessing implicit cannabis cognitions among youth is valuable for informing public policy in Canada. Exploration of drugs and alcohol often occurs during adolescence, carrying the potential to shape a young person's future.
- This research contributes to the broader research base that examines the mediating role of implicit cognitions in adolescent cannabis use. This was the first study to examine implicit cognitions surrounding cannabis use with the AMP in a non-clinical sample of adolescents.
- Results suggest that this procedure is able to predict adolescent cannabis use at 6 months after being assessed. As such, the AMP may be an accurate, simple, and cost effective method of screening for problematic cannabis use in the school system.
- Results also provides further support for the theory that cognitions related to cannabis use predict substance use initiation in adolescent samples.

Figure 1: Affect Misattribution Procedure<sup>6</sup>

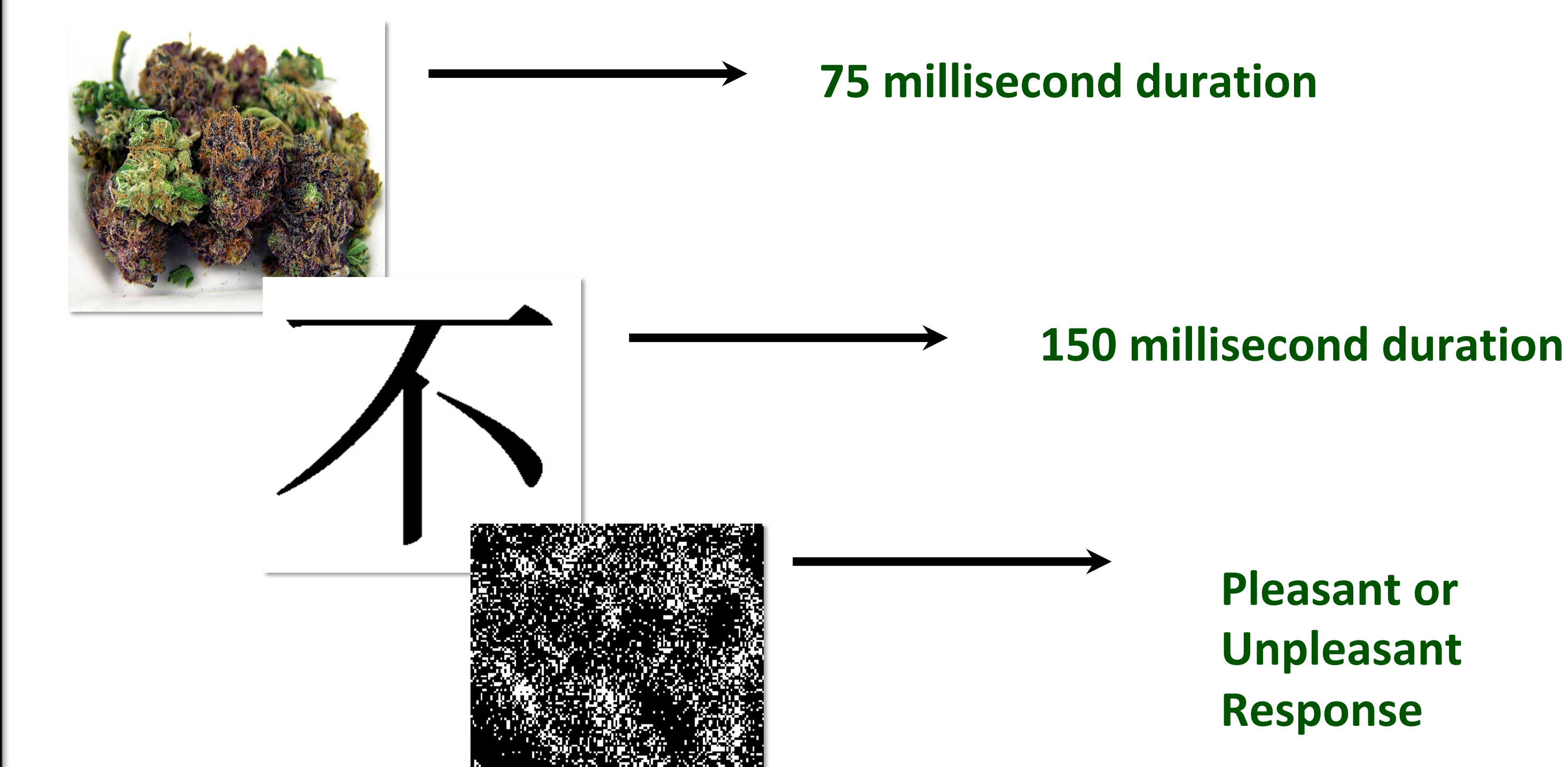


Table 1: Pearson Correlation Analysis

	Time 1 cannabis use	Time 2 cannabis use	Time 3 cannabis use	Time 1 COEL	Time 2 COEL	Time 3 COEL
Time 2 cannabis use	.56*	–				
Time 3 cannabis use	.52*	.71**	–			
Time 1 COEL	.54**	.32**	.28**	–		
Time 2 COEL	.32	.43**	.33**	.51**	–	
Time 3 COEL	.42**	.43**	.42**	.47**	.59**	–
AMP score	.40**	.20**	.12*	.18**	.21**	.24**

Note: \* = sig at 0.05; \*\* = sig at 0.01

Table 2: Logistic Regression Analyses

	Exp(B)	p	95% CI		Wald	B(SE)
			Lower	Upper		
AMP Score Time 1	8.77	0.03	1.25	61.71	4.76	2.17(1.00)
AMP Score Time 2	3.50	0.02	1.24	9.85	5.60	1.25(0.53)
AMP Score Time 3	2.25	0.11	0.83	6.13	2.53	0.81(0.51)

Note: CI = confidence interval; SE = standard error.

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