

F. Serre<sup>1</sup>, M. Fatseas<sup>1</sup>, C. Denis<sup>1,2</sup>, J. Swendsen<sup>3</sup>, M. Auriacombe<sup>1,2</sup>

<sup>1</sup>Addiction Psychiatry, CNRS USR 3413 SANPsy, Univ. Bordeaux, Bordeaux, France

<sup>2</sup>Center for Studies of Addiction, Perelman School of Medicine, University of Pennsylvania, Philadelphia, USA

<sup>3</sup>INCIA, CNRS UMR 5287, Bordeaux, France

## INTRODUCTION

Craving : major contributor to relapse in addiction (Serre et al., 2015)

Influence of mood on craving and substance use (Serre et al., 2015)

**Hypothesis: Validity of these predictive associations may vary according to the type of substances**

## OBJECTIVE

- To examine and compare the prospective links between emotions, craving and substance use
- Among four groups of patients beginning treatment for alcohol, tobacco, cannabis, and opiate addiction.

## METHODS

### Participants

Current substance use disorder for :

alcohol, tobacco, cannabis or opiates

Outpatient addiction clinic

Bordeaux, South West, France

Enrolled at treatment entry

### EMA: Ecological Momentary Assessment (EMA)

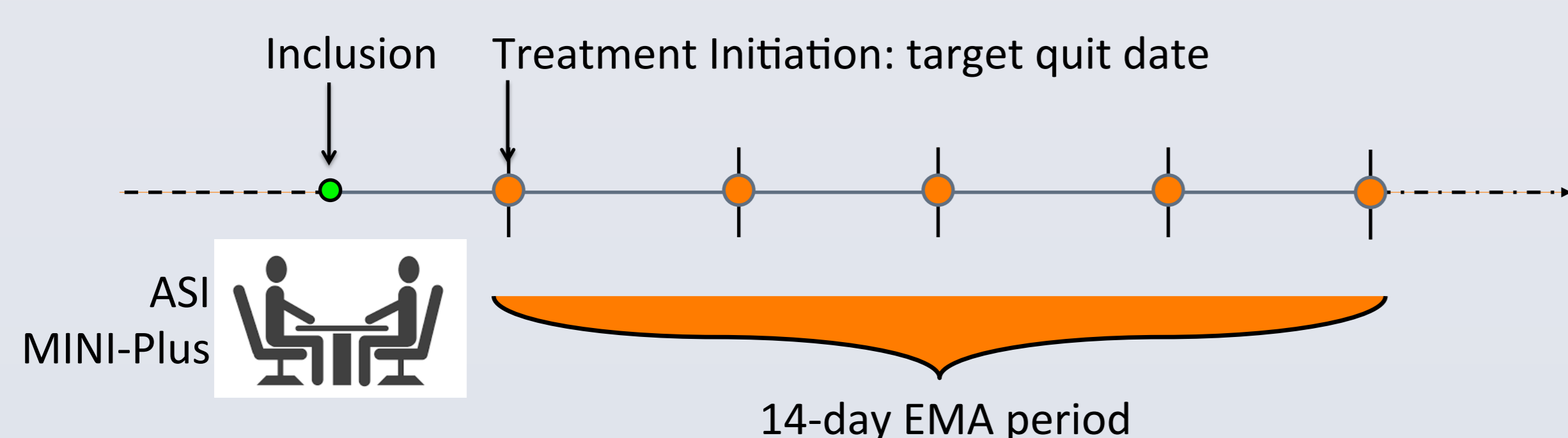


Real-time data collection

Evaluation in the natural environment of the subject

Repeated assessments across the day

### Procedure



#### Substance use

Substance that initiated treatment

#### Craving intensity (Seven-point scale)

Maximum level since the last assessment

#### Negative mood states (Seven-point scales)

Sad mood

Anxious mood

#### Negativity of event (Seven-point scale)

Electronic Interviews  
 ○ 4 per day  
 ○ Beep call



### Statistical Analyses

Hierarchical linear and non-linear models :

Substance groups → EMA variables

EMA variables T0 → EMA variables T1 (4 hours later)

## RESULTS

### Sample characteristics

- N=159, 36.7 y.o. (SD: 11)
- 67 % males
- 61% mood and/or anxiety disorder

Sample characteristics	Alcohol (N= 48)	Tobacco (N= 43)	Cannabis (N=35)	Opiates (N=33)	p
Sex (female) (%), n	27.1 <sup>a,b</sup> 13	48.8 <sup>a</sup> 21	17.1 <sup>b</sup> 6	36.4 <sup>a,b</sup> 12	0.020
Age (mean, SD)	39.8 <sup>a</sup> 9.3	42.4 <sup>a</sup> 11.4	32.4 <sup>b</sup> 9.1	29.2 <sup>b</sup> 7.8	<0.001
Addiction severity ASI ISR (0-9) (mean, SD)	6.4 <sup>a</sup> 0.8	6.4 <sup>a</sup> 0.9	6.7 <sup>a</sup> 0.6	6.8 <sup>a</sup> 0.6	0.066
Current pharmacological ttt for addiction (%), n	87.5 <sup>a</sup> 42	93.0 <sup>a</sup> 40	14.3 <sup>b</sup> 5	93.9 <sup>a</sup> 31	<0.001

### EMA Reports

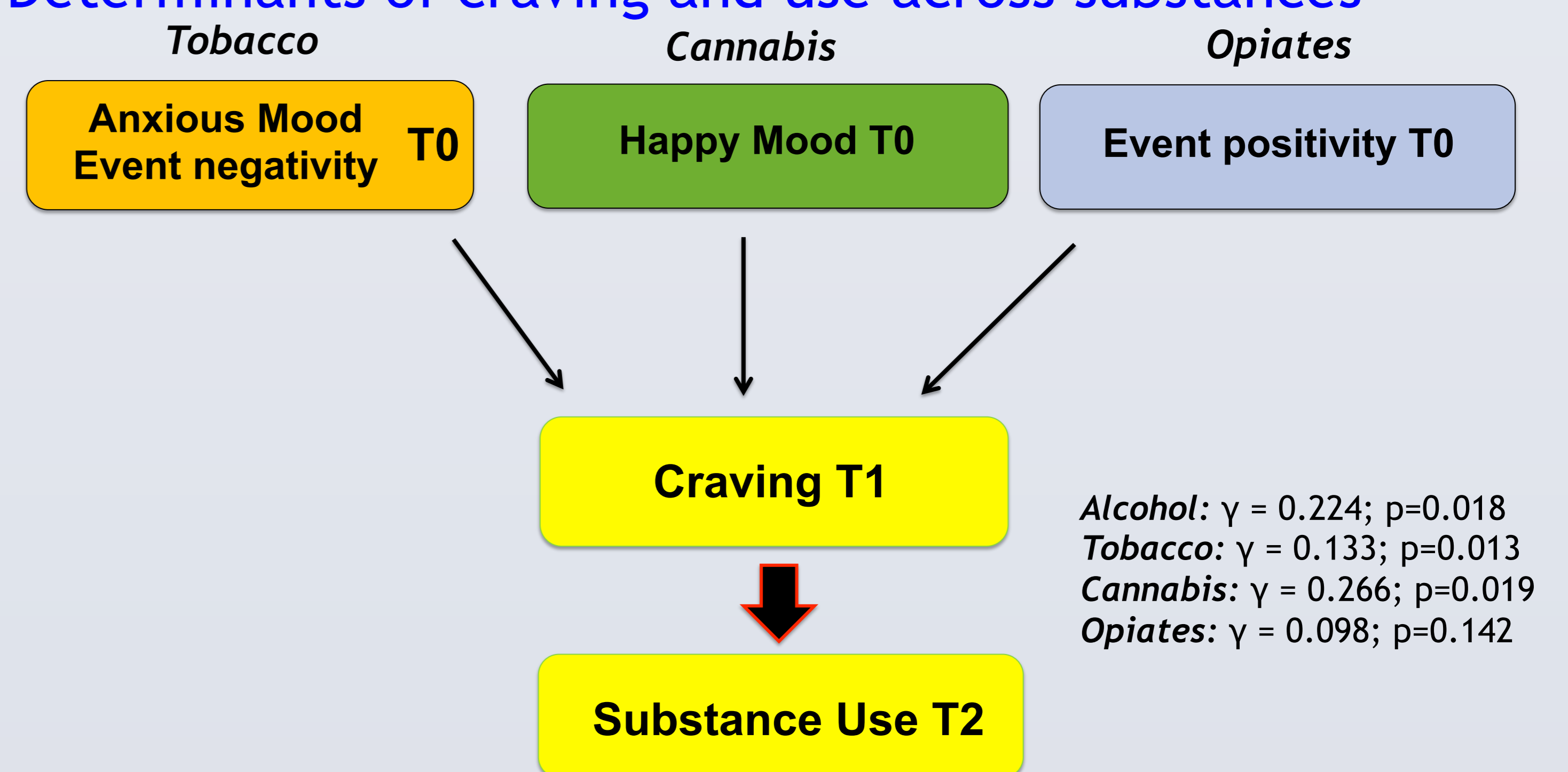
Response rate to electronic interview: 80 - 88%

EMA variables #	Alcohol (N= 48)	Tobacco (N= 43)	Cannabis (N=35)	Opiates (N=33)
Main substance use (%),n	31.5 <sup>a</sup> 588	59.6 <sup>b</sup> 1078	45.5 <sup>a,b</sup> 613	10.5 <sup>c</sup> 138
Other substances use (%),n	78.7 <sup>a</sup> 1469	19.4 <sup>b</sup> 350	75.6 <sup>a,c</sup> 1017	95.4 <sup>d</sup> 1257
Craving episodes (%),n	55.0 <sup>a</sup> 1027	85.0 <sup>b</sup> 1539	79.9 <sup>b</sup> 1077	64.4 <sup>a</sup> 849
Craving intensity during episodes (2-7) (mean, SD)	4.1 <sup>a</sup> 1.4	4.8 <sup>b</sup> 1.5	5.0 <sup>b</sup> 1.5	4.6 <sup>a,b</sup> 1.6
Sad mood intensity (1-7) (mean, SD)	3.8 <sup>a</sup> 1.3	3.6 <sup>a</sup> 1.2	3.8 <sup>a</sup> 1.3	3.7 <sup>a</sup> 1.5
Anxious mood intensity(1-7) (mean, SD)	3.8 <sup>a</sup> 1.4	3.5 <sup>a</sup> 1.6	3.7 <sup>a</sup> 1.5	3.7 <sup>a</sup> 1.7
Event negativity (1-7) (mean, SD)	3.8 <sup>a</sup> 1.7	3.7 <sup>a</sup> 1.4	3.8 <sup>a</sup> 1.6	3.9 <sup>a</sup> 1.8

# Frequencies, percentages and means are based on the total number of valid electronic surveys over the EMA assessment period.

Superscript labels with different letters (a,b) reflect significant group difference after Bonferroni correction (significance level  $\alpha = 0.0125$ ).

### Determinants of craving and use across substances



## DISCUSSION

### Craving intensity predictive of later substance use

In alcohol, tobacco and cannabis groups

Trend but not significant in the opiate group

Lower levels of use (10.5% of observations)

Pharmacological treatments (buprenorphine and methadone)

### Associations between mood states and craving

Differed according to type of substances

## CONCLUSION

**Benefit of targeting craving in addiction treatment regardless of the substance of addiction**

