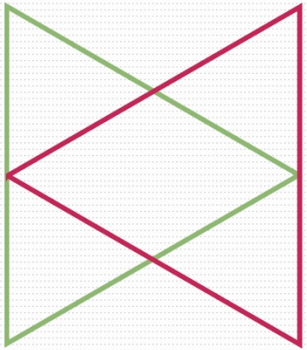

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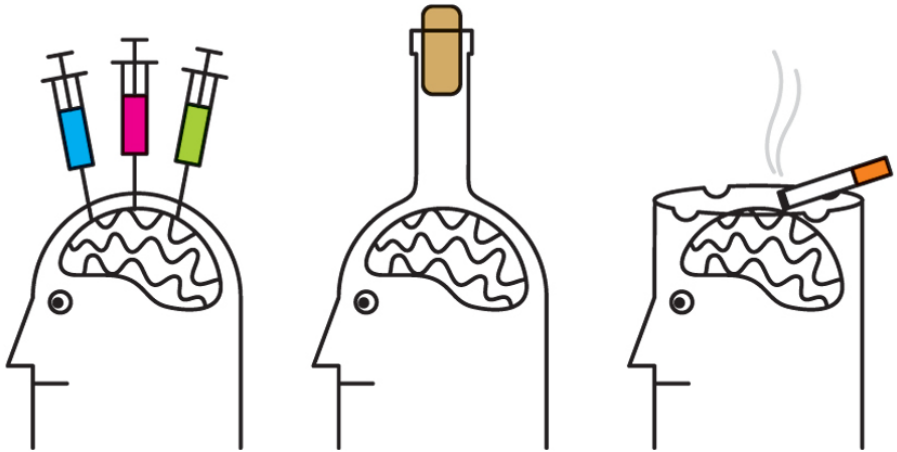
The Economics of Addiction: A Behavioural and Experimental Analysis

Andre Hofmeyr, PhD

The Economics of Addiction?



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The Disease Model of Addiction

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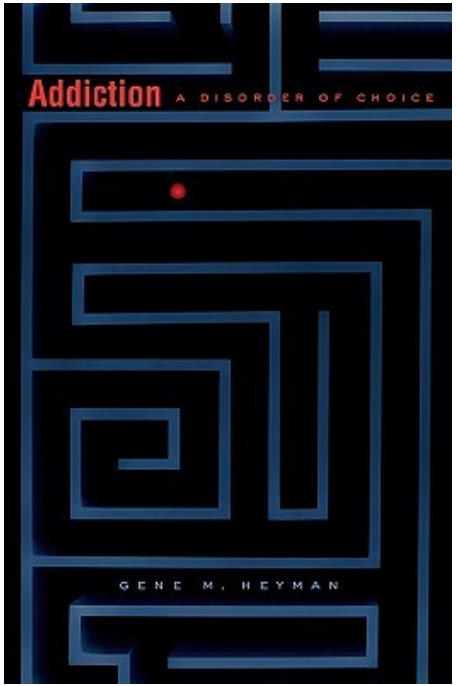
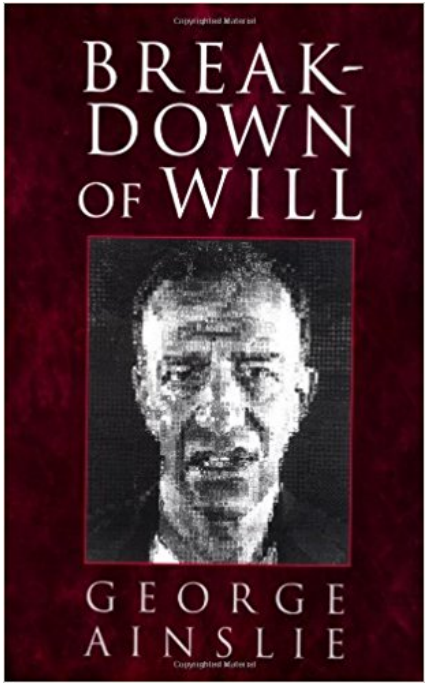
A Disorder of Choice?





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The Economics of Addiction

Addiction is an ideal puzzle for economic theory:

1. Why do most addicts expend resources to acquire their targets of addiction but simultaneously incur real costs to try to reduce or limit their consumption of these goods?
2. Why is the typical course of addiction characterised by repeated unsuccessful attempts to quit prior to final abstention?

From the standpoint of standard consumer theory in economics, these patterns of behaviour are difficult to rationalise

Economic Theories of Addiction

A Theory of Rational Addiction

JOURNAL OF POLITICAL ECONOMY

Gary S. Becker and Kevin M. Murphy

University of Chicago

IS ADDICTION "RATIONAL"? THEORY AND EVIDENCE*

JONATHAN GRUBER AND BOTOND KŐSZEGI

QUARTERLY JOURNAL OF ECONOMICS

Econometrica, Vol. 80, No. 1 (January, 2012), 1–42

TIMING AND SELF-CONTROL

BY DREW FUDENBERG AND DAVID K. LEVINE[1]

Modeling internal commitment mechanisms and self-control: A neuroeconomics approach to consumption–saving decisions

Jess Benhabib, Alberto Bisin *

New York University, New York, USA

Games and Economic Behavior 52 (2005) 460–492

A Dual-Self Model of Impulse Control

By DREW FUDENBERG AND DAVID K. LEVINE*

THE AMERICAN ECONOMIC REVIEW *DECEMBER 2006*

Willpower and Personal Rules

JOURNAL OF POLITICAL ECONOMY

Roland Bénabou

Princeton University, National Bureau of Economic Research, and Center for Economic Policy Research

Jean Tirole

Institut d'Economie Industrielle, Centre d'Enseignement et de Recherches en Analyse Socio-économique, and Massachusetts Institute of Technology

Addiction and Cue-Triggered Decision Processes

By B. DOUGLAS BERNHEIM AND ANTONIO RANGEL*

THE AMERICAN ECONOMIC REVIEW *DECEMBER 2004*

Harmful Addiction

FARUK GUL and WOLFGANG PESENDORFER

Princeton University

REVIEW OF ECONOMIC STUDIES

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The Behavioural Correlates of Addiction

Risk Preferences

Time Preferences

Intertemporal Risk Preferences

Subjective Beliefs

The Behavioural Correlates of Addiction

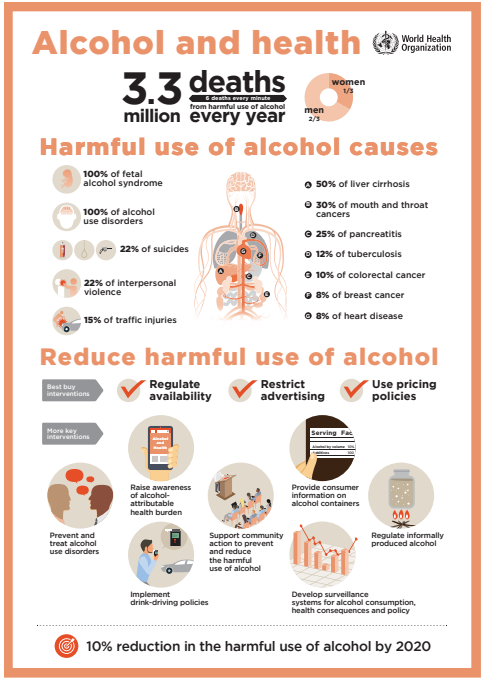
Risk Preferences

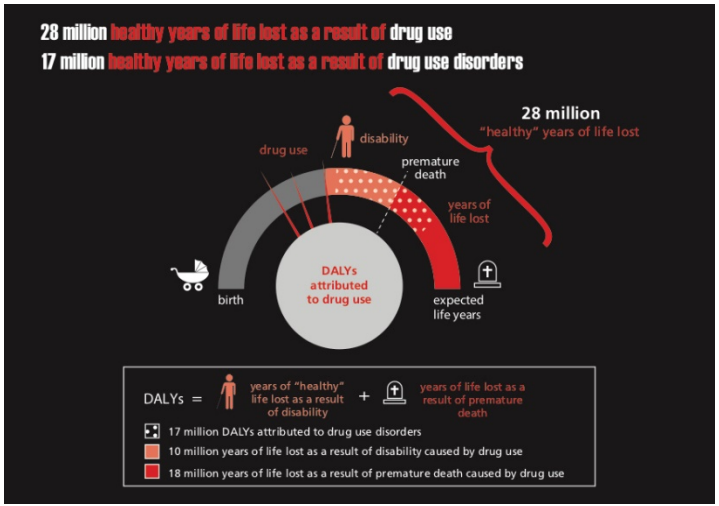
Time Preferences

Intertemporal Risk Preferences

Subjective Beliefs

Why do we care?





Source: United Nations Office on Drugs and Crime

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Four Studies

- Time Preferences of Smokers in Southern California
- Risk Preferences, Time Preferences, and Smoking Behaviour of Students in Cape Town
- The Behavioural Correlates of Smoking Behaviour in Cape Town
- A Contingency Management Smoking Cessation Programme

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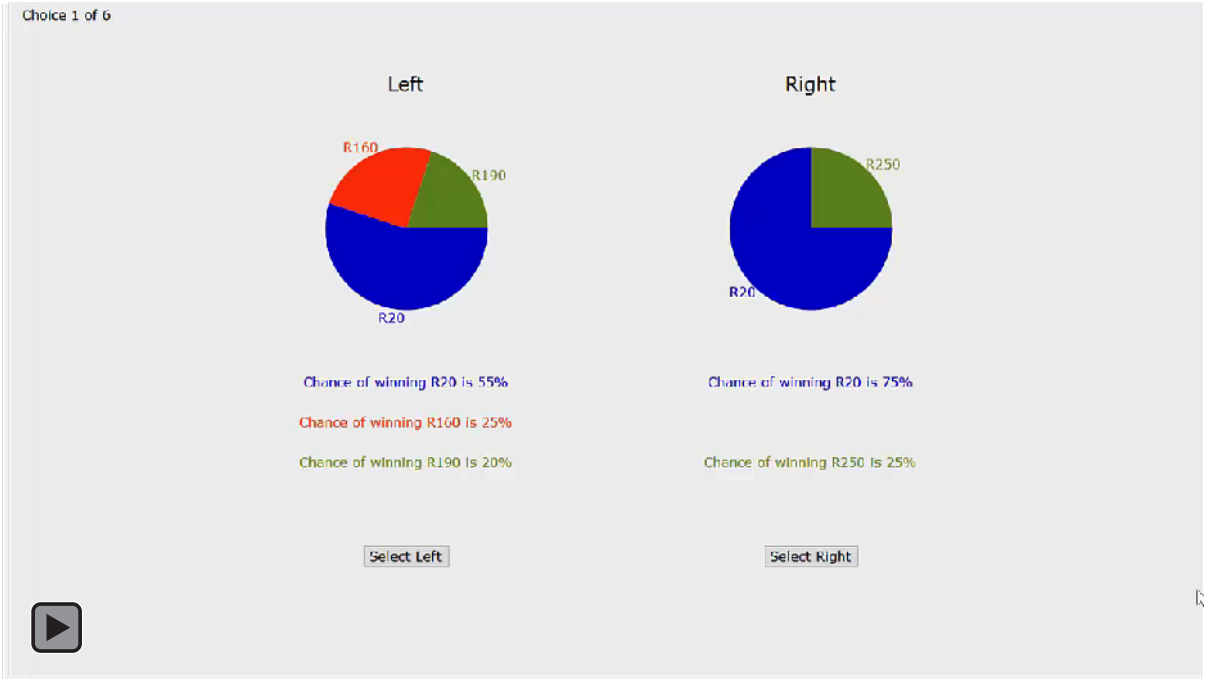
Risk Preferences



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Risk Preferences: Results

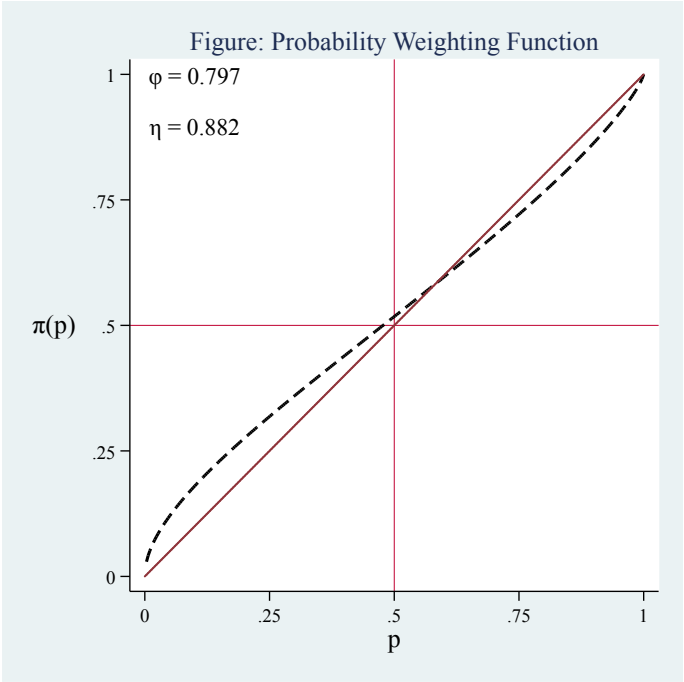

TABLE 4: RDU THEORY ML ESTIMATES
HETEROGENOUS PREFERENCES

	Model: Prelec	
	Estimate	Std Error
Power function parameter (r)		
Age	-0.004	0.011
White	0.029	0.051
Male	0.062	0.049
Commerce faculty	0.030	0.062
Financial aid	-0.051	0.058
Risk task first	-0.015	0.050
Smoker	-0.005	0.055
Constant	0.366	0.230
PWF parameter (φ)		
Age	-0.003	0.006
White	0.001	0.047
Male	-0.009	0.044
Commerce faculty	-0.084	0.120
Financial aid	0.034	0.056
Risk task first	0.054	0.080
Smoker	0.028	0.049
Constant	0.871***	0.206
PWF parameter (η)		
Age	-0.027	0.046
White	-0.062	0.121
Male	-0.166	0.137
Commerce faculty	-0.216	0.184
Financial aid	-0.014	0.139
Risk task first	0.166	0.153
Smoker	0.146	0.153
Constant	1.425**	0.676
Error (μ)		
Constant	0.166***	0.008
N	7000	
log-likelihood	-4119.762	

Results account for clustering at the individual level
* $p<0.10$, ** $p<0.05$, *** $p<0.01$

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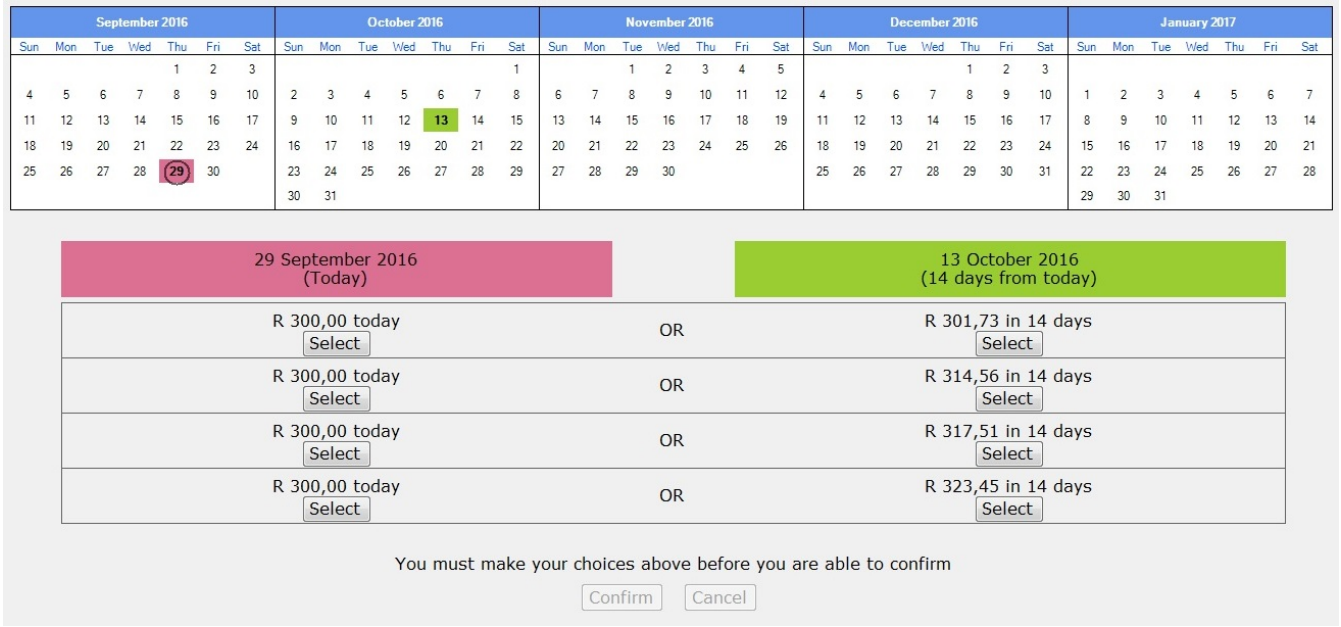
Time Preferences



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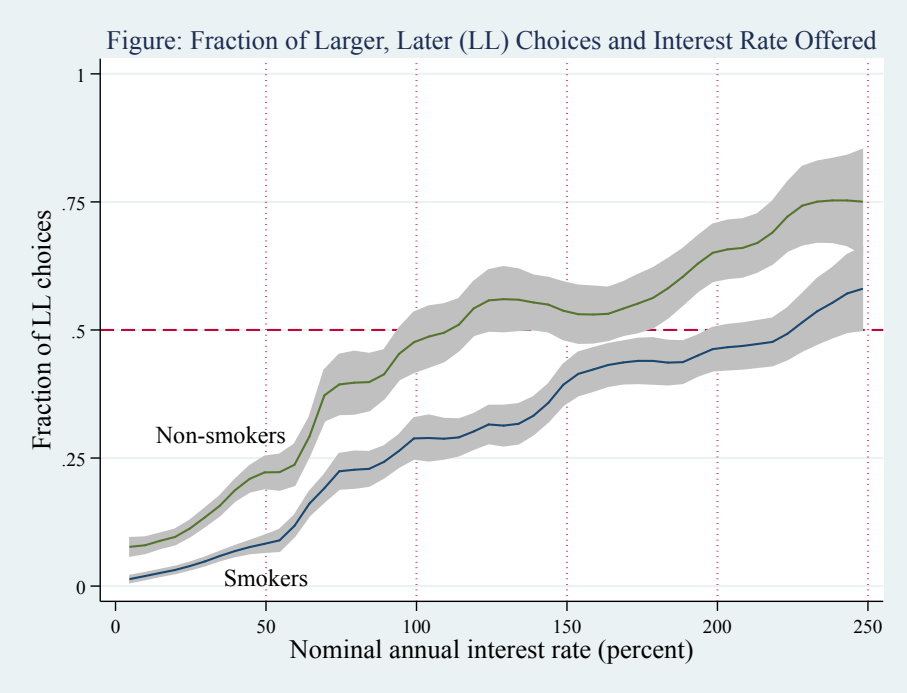
Time Preferences: Results



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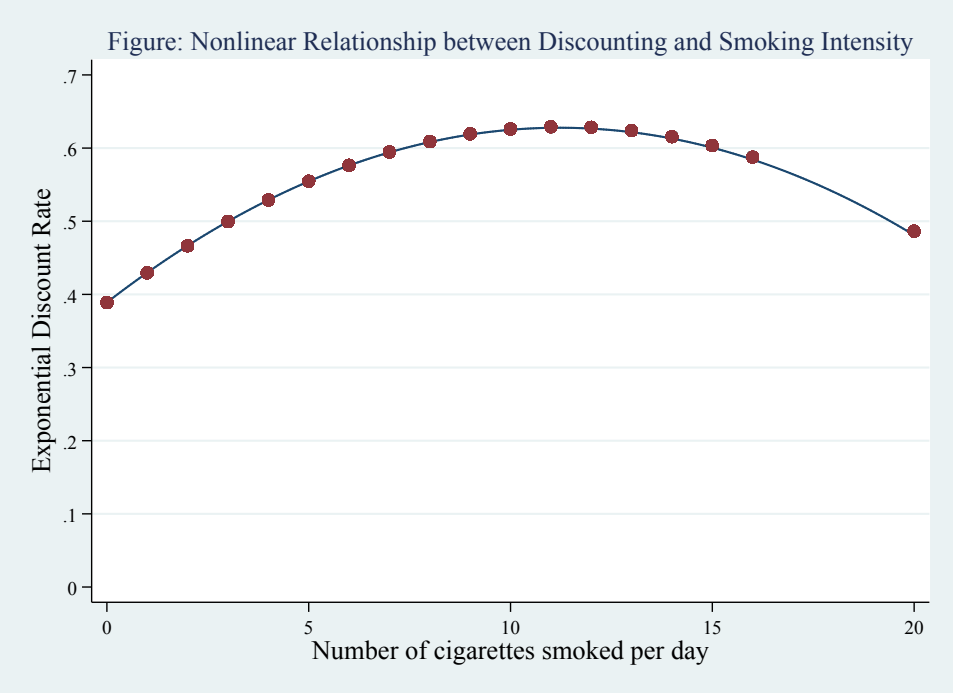
Time Preferences: Results



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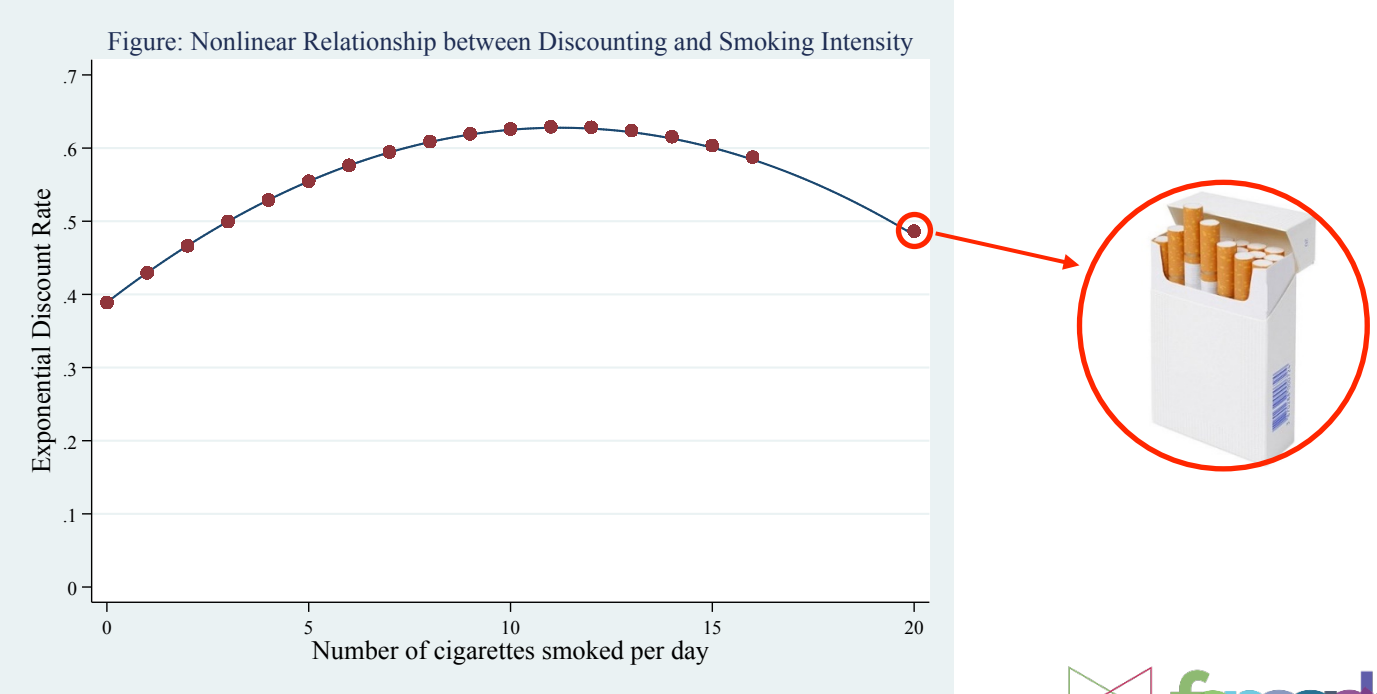
Time Preferences: Results



Time Preference Results and the Behavioural Puzzles

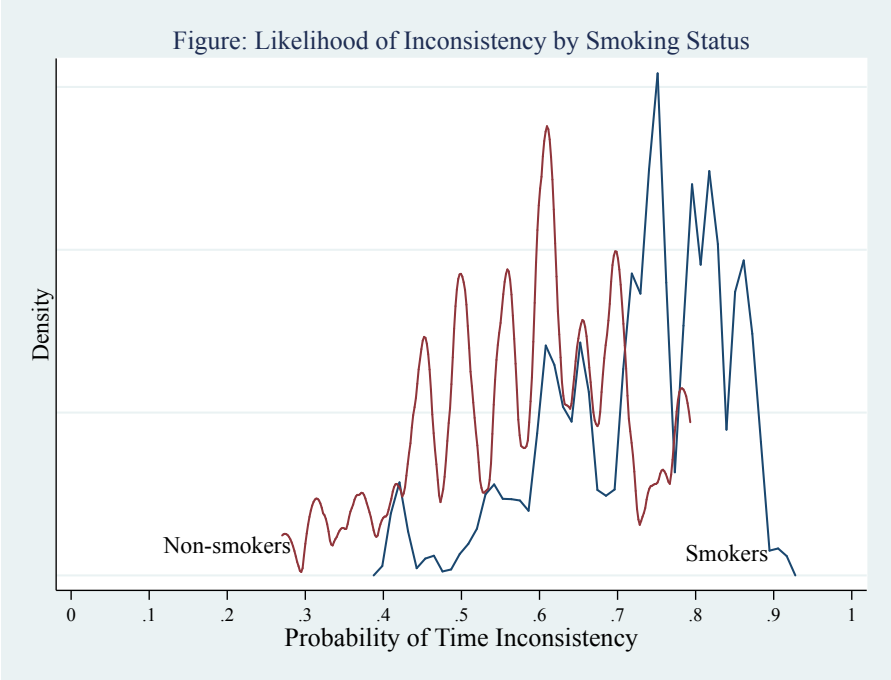
Behavioural puzzles:

1. Why do most addicts expend resources to acquire their targets of addiction but simultaneously incur real costs to try to reduce or limit their consumption of these goods?
2. Why is the typical course of addiction characterised by repeated unsuccessful attempts to quit prior to final abstention?

These puzzles suggest some level of time-inconsistent behaviour on the part of addicts in that they simultaneously want to quit but continue smoking. And then they finally stop but then relapse.

What's going on?

Smokers are more Time Inconsistent than Non-smokers



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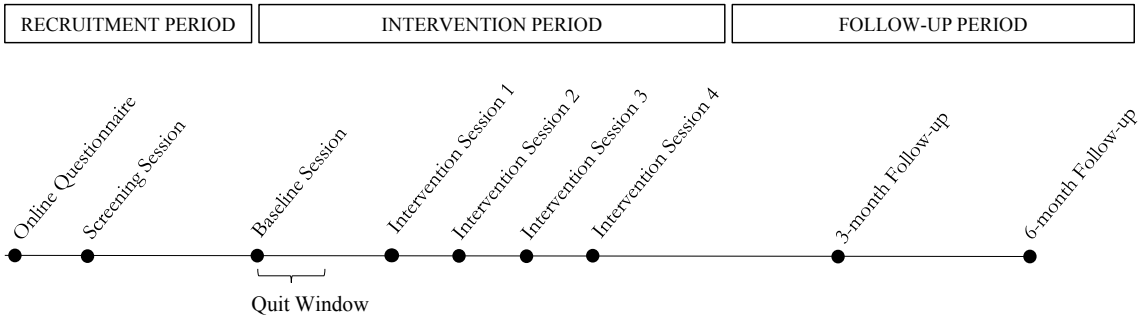
Smoking Cessation: Putting Behavioural Economics to Work

Contingency Management (CM) has been efficacious in the treatment of a number of psychoactive substance addictions, including tobacco, across a range of populations.

CM involves identifying an objectively defined target behaviour (quitting smoking), frequently monitoring that behaviour, and delivering incentives for reaching the target behaviour.

We designed a low-cost, low-intensity smoking cessation programme that we ran last year with UCT students.

Smoking Cessation: Putting Behavioural Economics to Work



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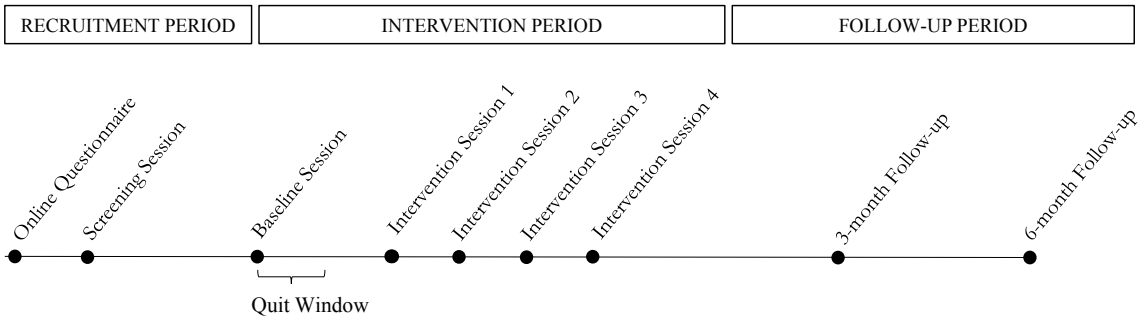
Smoking Cessation: Putting Behavioural Economics to Work



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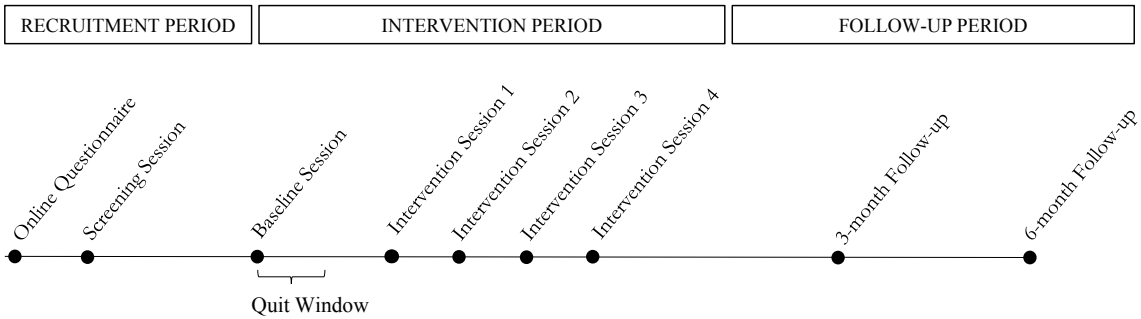
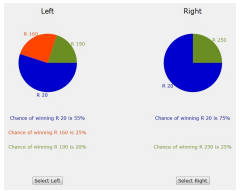
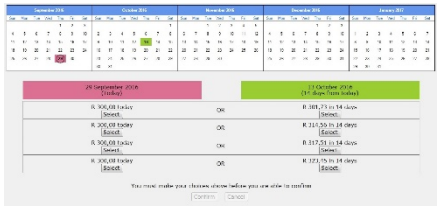
Smoking Cessation: Putting Behavioural Economics to Work







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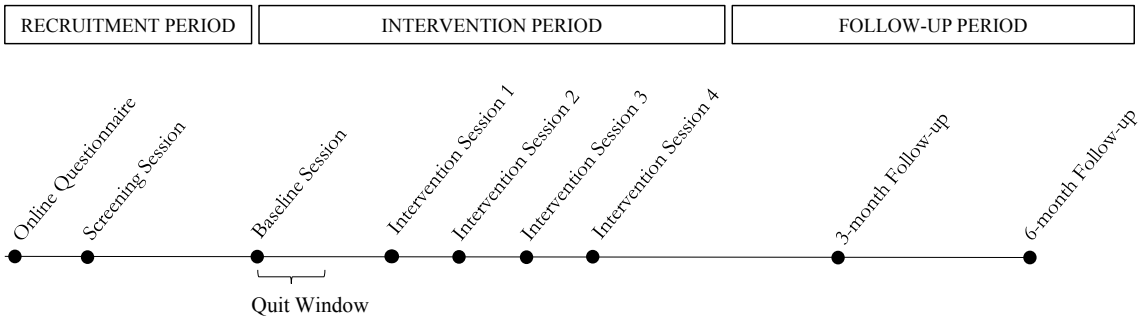
Smoking Cessation: Putting Behavioural Economics to Work



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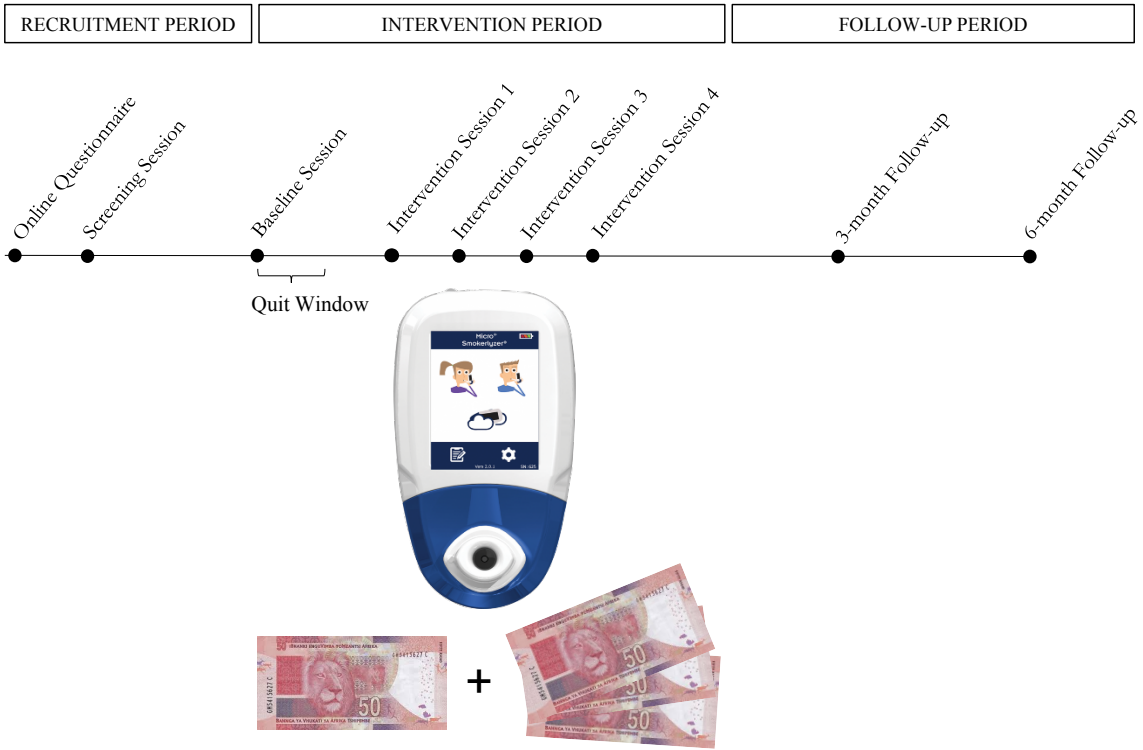
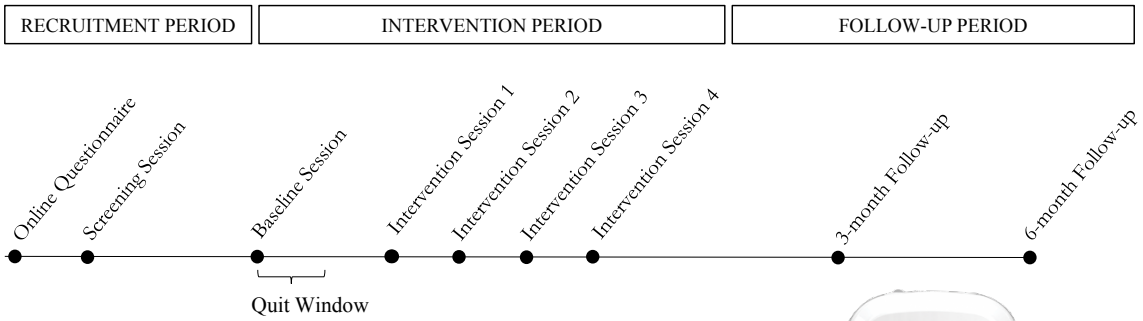
Smoking Cessation: Putting Behavioural Economics to Work



Smoking Cessation: Putting Behavioural Economics to Work



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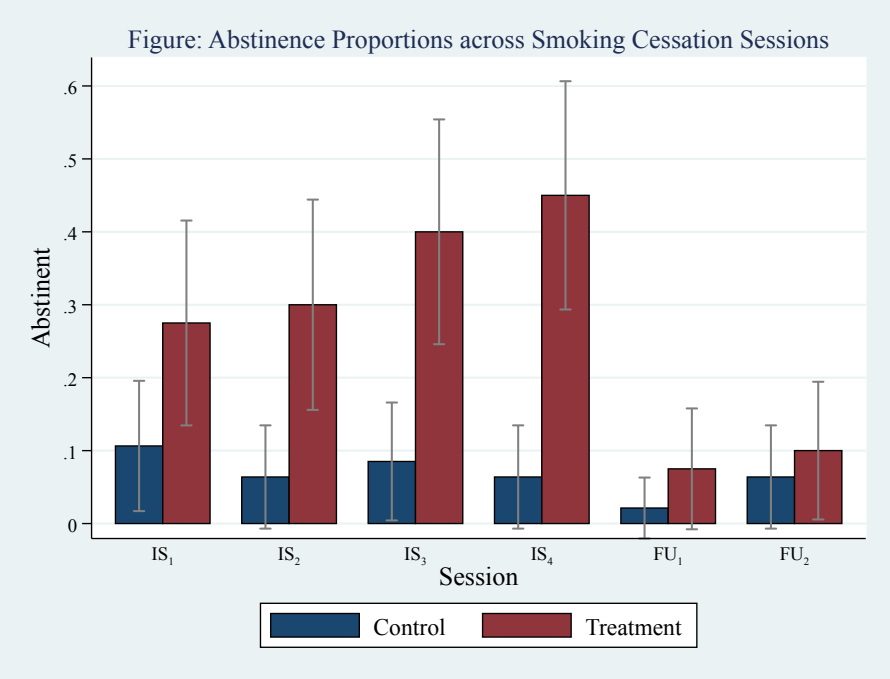
Smoking Cessation: Results



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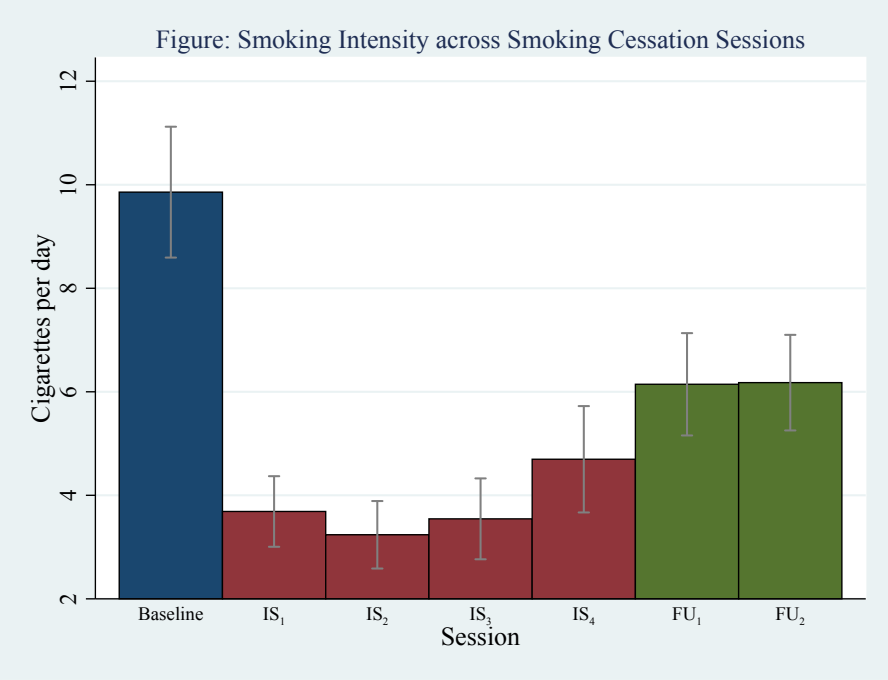
Smoking Cessation: Results



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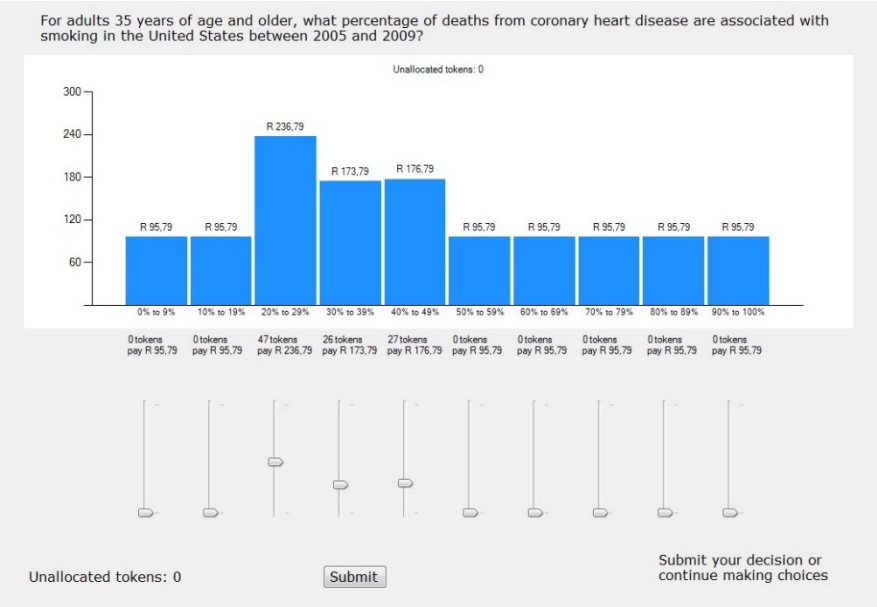
Next Steps

We elicited risk and time preferences during the baseline session of our cessation programme so we're going to analyse whether these predict the likelihood of abstinence.

Intuitively, smokers who are more risk averse and who discount the future at a lower rate may be more likely to quit, particularly if they receive abstinence-contingent incentives.

To the extent that this is true, cessation programmes could be tailored to the risk attitudes and/or impulsivity of people to help them to quit.

Next Steps



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