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Drug Policies Beyond the War on Drugs

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An MCDA framework for evaluating and appraising government policy for psychoactive drugs

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London School of Economics

and

Facilitations Limited

LSE Works
Public Lecture
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Nutt, D. J., King, L. A., Phillips, L. D., & on behalf of the Independent Scientific Committee on Drugs. (2010). Drug harms in the UK: a multicriteria decision analysis. *The Lancet, 376(1558-65).*

Drug harms in the UK: a multicriteria decision analysis

David J Nutt, Leslie A King, Lawrence D Phillips, on behalf of the Independent Scientific Committee on Drugs

Summary

Background Proper assessment of the harms caused by the misuse of drugs can inform policy makers in health, policing, and social care. We aimed to apply multicriteria decision analysis (MCDA) modelling to a range of drug harms in the UK.

Method Members of the Independent Scientific Committee on Drugs, including two invited specialists, met in a 1-day interactive workshop to score 20 drugs on 16 criteria: nine related to the harms that a drug produces in the individual and seven to the harms to others. Drugs were scored out of 100 points, and the criteria were weighted to indicate their relative importance.

Findings MCDA modelling showed that heroin, crack cocaine, and metamfetamine were the most harmful drugs to individuals (part scores 34, 37, and 32, respectively), whereas alcohol, heroin, and crack cocaine were the most harmful to others (46, 21, and 17, respectively). Overall, alcohol was the most harmful drug (overall harm score 72), with heroin (55) and crack cocaine (54) in second and third places.

Interpretation These findings lend support to previous work assessing drug harms, and show how the improved scoring and weighting approach of MCDA increases the differentiation between the most and least harmful drugs. However, the findings correlate poorly with present UK drug classification, which is not based simply on considerations of harm.

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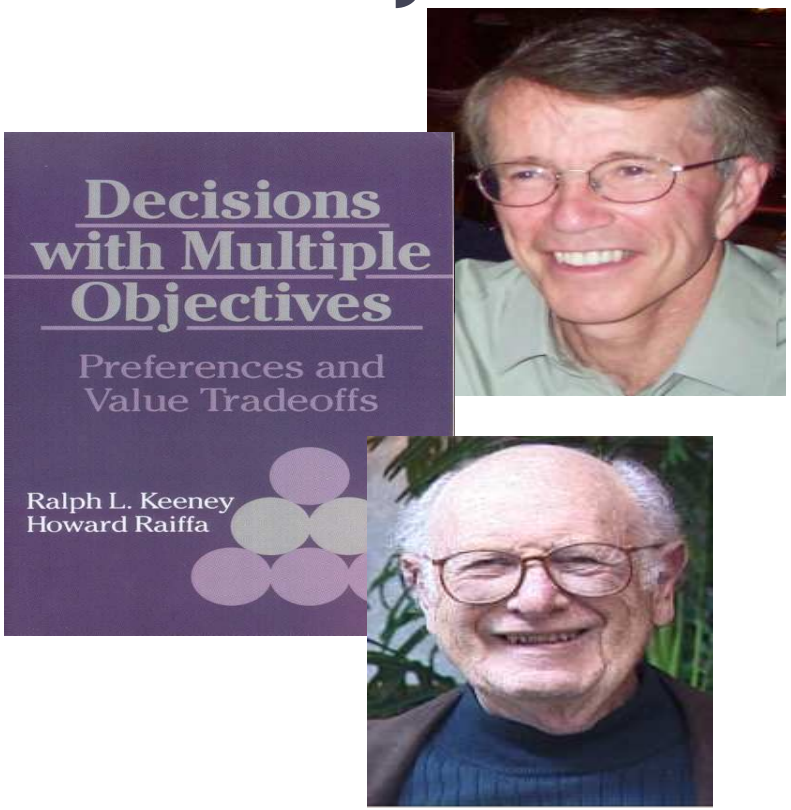
Multi-Criteria Decision Analysis

- A methodology for appraising options on multiple criteria, and combining them into one overall appraisal
- MCDA converts all input evaluations of decision outcomes into common units of *value added*



A system *not* based on MCDA

MCDA doesn't compare apples to oranges.

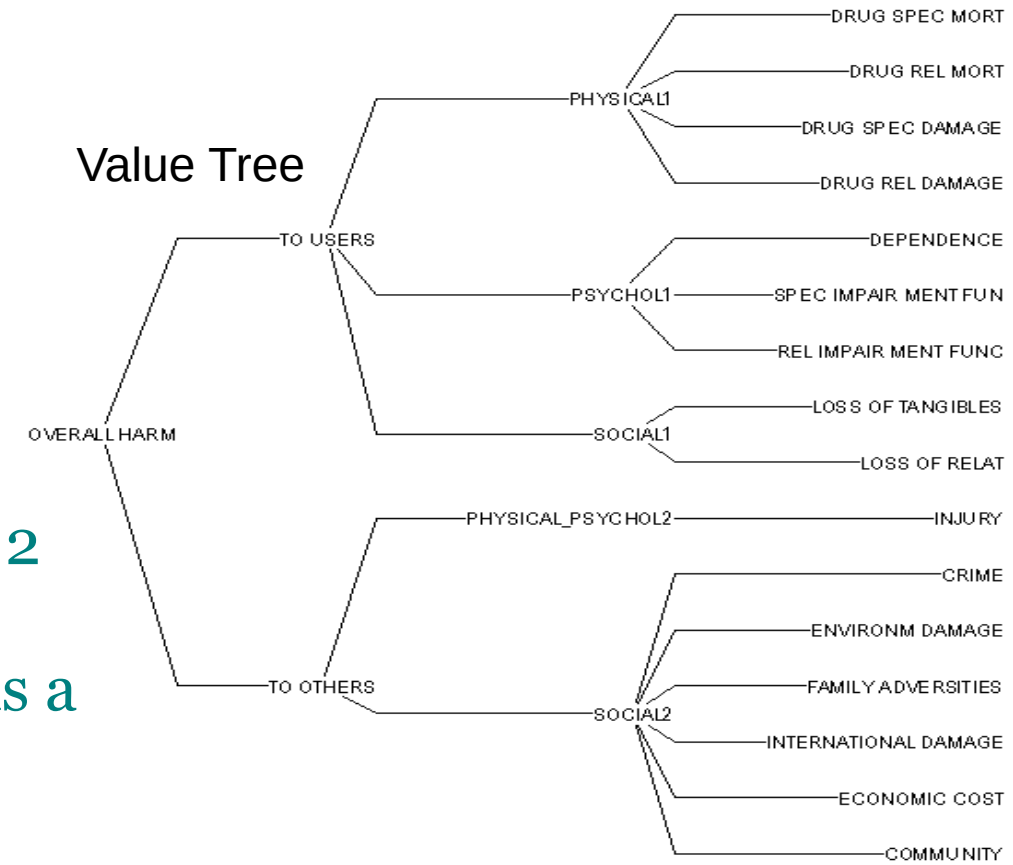
It compares the added values of apples and oranges for achieving your objectives.

Method

Study design

- 16 harm criteria developed by the UK's ACMD ⇨
- 20 drugs
- ISCD members plus 2 external experts
- Meeting facilitated as a decision conference

Value Tree

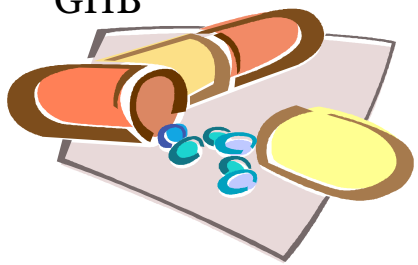


Decision Conference

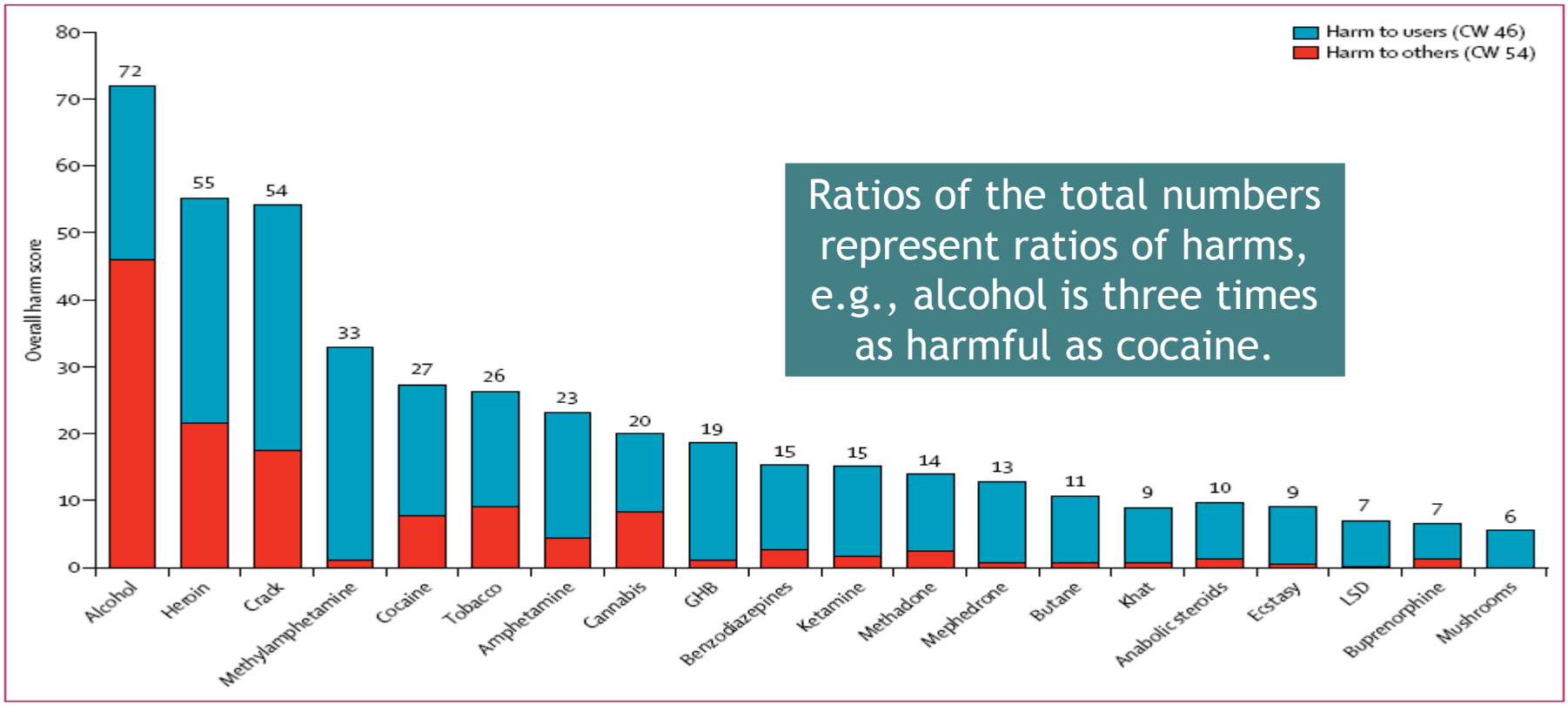
- A one-to-three-day workshop
- To resolve important issues of concern
- Attended by key players who represent the diversity of perspectives on the issues
- Facilitated by an impartial specialist in group processes and decision analysis
- Using a requisite (just-good-enough) model created on-the-spot to help provide structure to thinking

The 20 drugs

Heroin	Crack	Cocaine	Alcohol
Tobacco	Amphetamine	Mephedrone	Buprenorphine
Benzodiazepines	Cannabis	Anabolic Steroids	Ecstasy
Ketamine	LSD	Mushrooms	Methylamphet-amine
Khat	Butane	Methadone	GHB



Results


Harm to users (CW 46)
Harm to others (CW 54)
Overall harm score
0
10
20
30
40
50
60
70
80
72
55
54
33
27
26
23
20
19
15
15
14
13
11
9
10
9
7
7
6
Alcohol
Heroin
Crack
Methylamphetamine
Cocaine
Tobacco
Amphetamine
Cannabis
GHB
Benzodiazepines
Ketamine
Methadone
Mephedrone
Butane
Khat
Anabolic steroids
Ecstasy
LSD
Buprenorphine
Mushrooms
Ratios of the total numbers represent ratios of harms, e.g., alcohol is three times as harmful as cocaine.

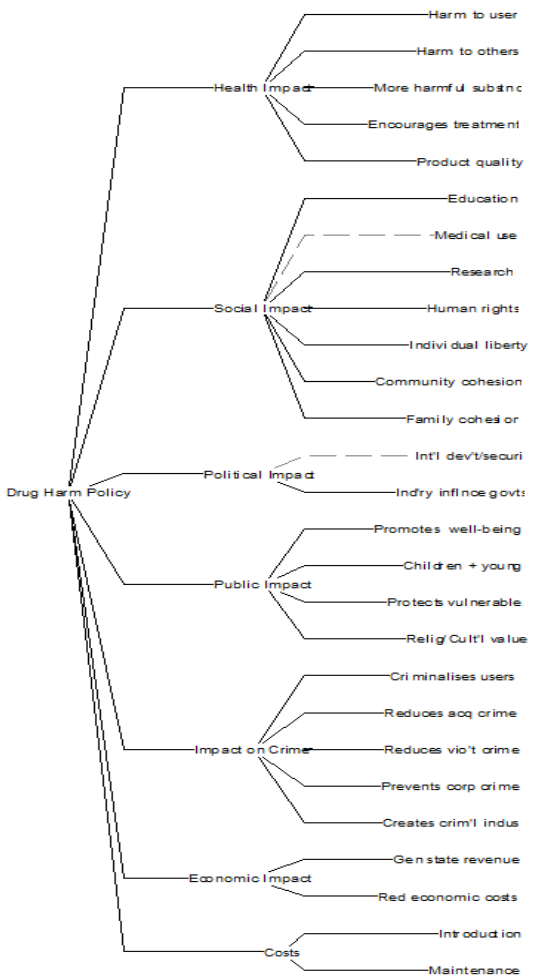
Drug Harm Policy project

- Collaboration: DrugScience + Frisch Centre
  - DrugScience (Professor David Nutt is founder and Chair)
  - Ragnar Frisch Centre for Economic Research (Ole Rogeberg is the lead researcher)
  - Funded by the Norwegian Research Council.
- Purpose
  - Develop an analytic *framework* for describing, measuring, assessing and discussing drug policy
- Decision conferences
  - 10-11 September 2015 and 20-21 January 2016
  - 18 participants, various backgrounds
  - Phillips & Nutt facilitating
  - Three models to test framework: alcohol, cannabis and heroin

Policy options

- Absolute Prohibition
- State Control
- Decriminalisation
- Free Market

Production	Sale/distribution	Purchase	Purchase volume (for legal users)	Possession	Use
Illegal (strong sanctions)	Illegal (strong sanctions)	Illegal (strong sanctions)	None - illegal	Illegal (strong sanctions)	Illegal (strong sanctions)
Illegal (weak sanctions - de jure or de facto decriminalized)	Illegal (weak sanctions - de jure or de facto decriminalized)	Illegal (weak sanctions - de jure or de facto decriminalized)	Per person quotas	Illegal (weak sanctions - de jure or de facto decriminalized)	Illegal (weak sanctions - de jure or de facto decriminalized)
State controlled	State-licensed retail stores or pharmacies	Only adults (age restrictions)	Per purchase quotas	Limited quantity per person (e.g., for personal use)	Only in specific licensed venues or private homes
No restrictions for companies or individuals	No restrictions - any retail store	No restrictions	No restrictions	No restrictions	No restrictions

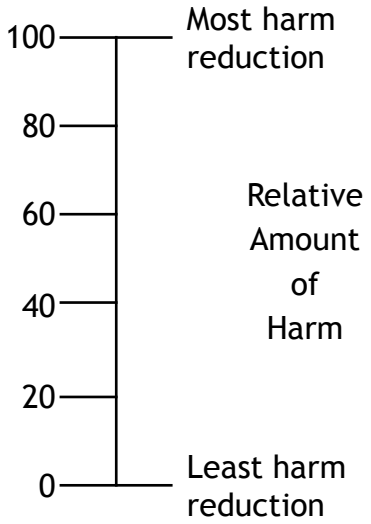


Drug Harm Policy value tree

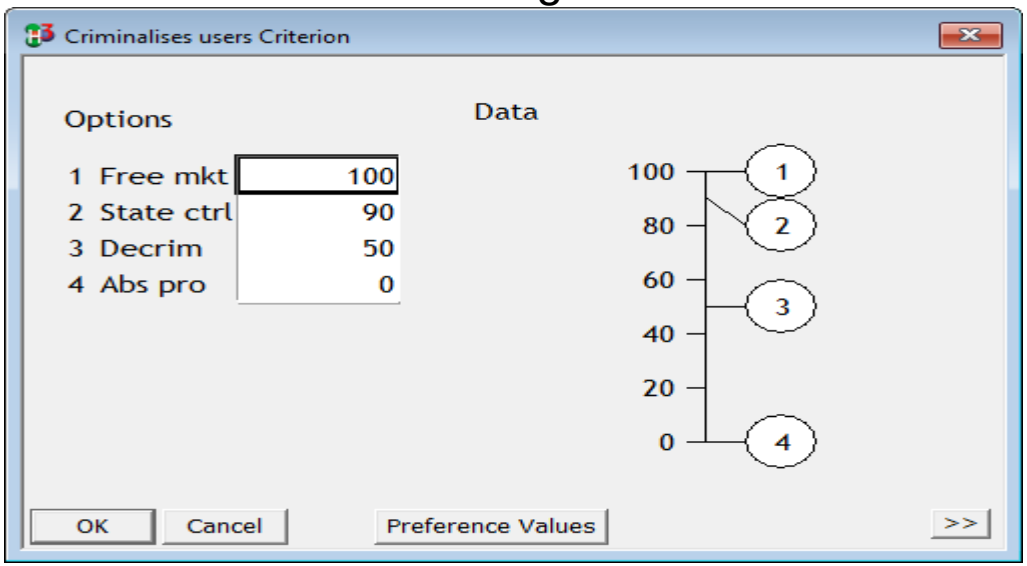
7 impacts
- Health
- Social
- Political
- Public
- Crime
- Economic
- Costs

27 evaluation criteria (with clear definitions)

Scoring the policy options

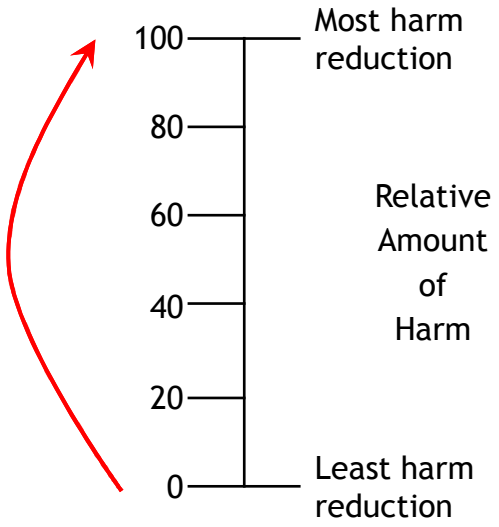


Direct scoring of harm



A cardinal scale: differences between scores are interpretable, not their ratios.

Weighting the criteria



- Some criteria represent more harm reduction than others.
- Swing-weights equate the units of harm on all the criteria: the reduction in harm from 0 to 100.
- The group considered this question to compare the levels of harm reduction on the criteria:

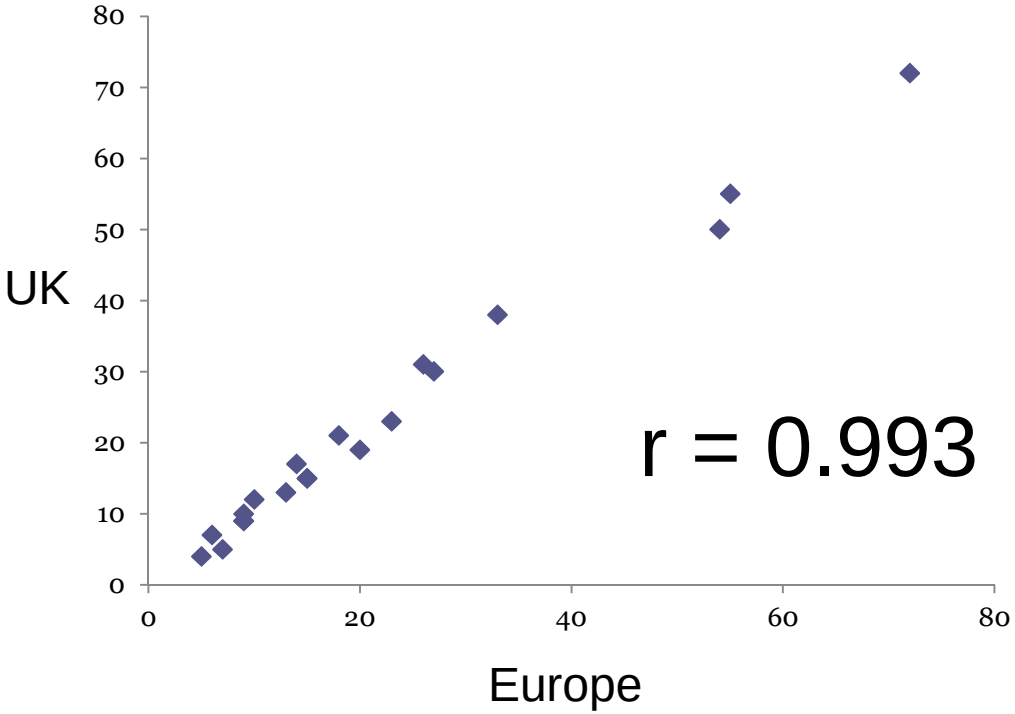
  "How big is the difference in harm reduction and how much do you care about that difference?"

But, the four policies are all
hypothetical states about the future.

There are no data about the future.

So, how reliable (repeatable)
and valid (represent actual harm)
are direct preference judgements?

Drug harm: UK 2010 vs. Europe 2013

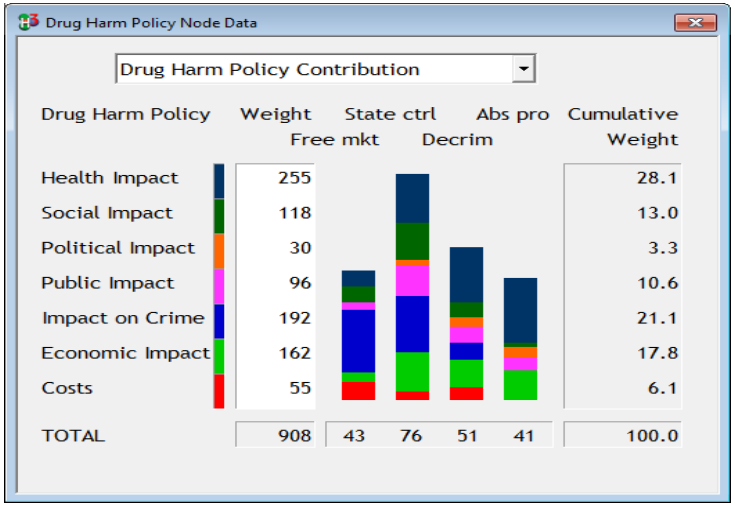


Direct preference judgements are reliable and valid in a decision conference if:

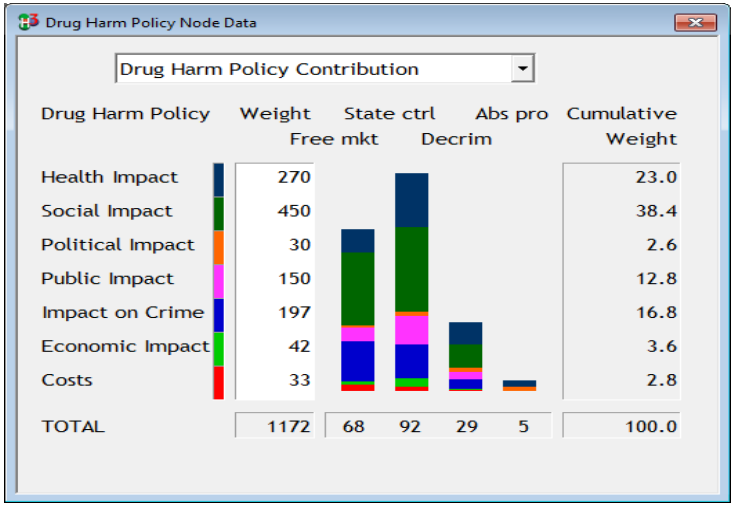
- Criteria are defined clearly
- Group members represent differing perspectives
- Peer review occurs face-to-face
- Group is properly facilitated

MCDA results

Alcohol



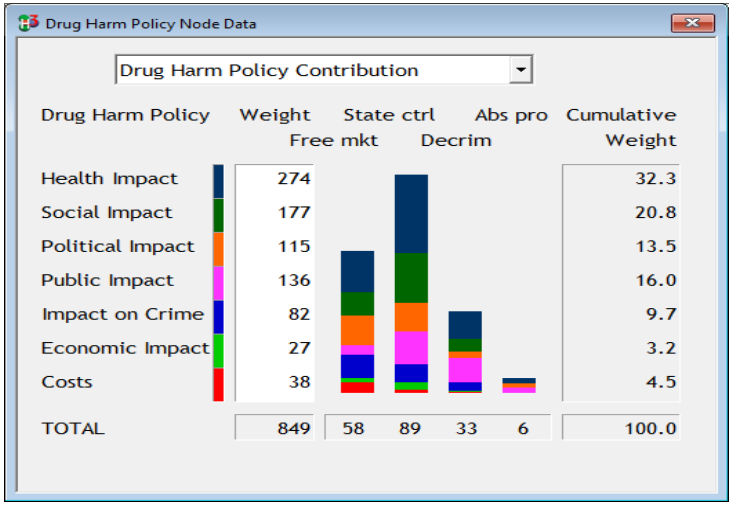
Cannabis



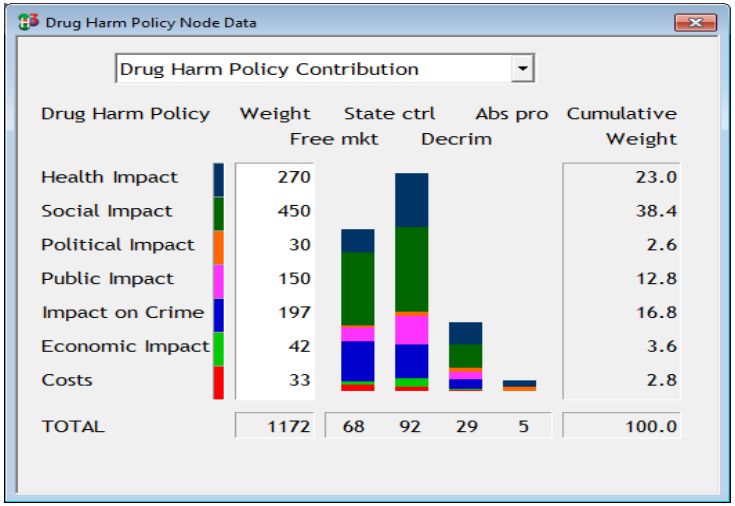
For both drugs, a legal but strictly regulated market is judged to yield the best reduction in harm overall.

MCDA results

Heroin



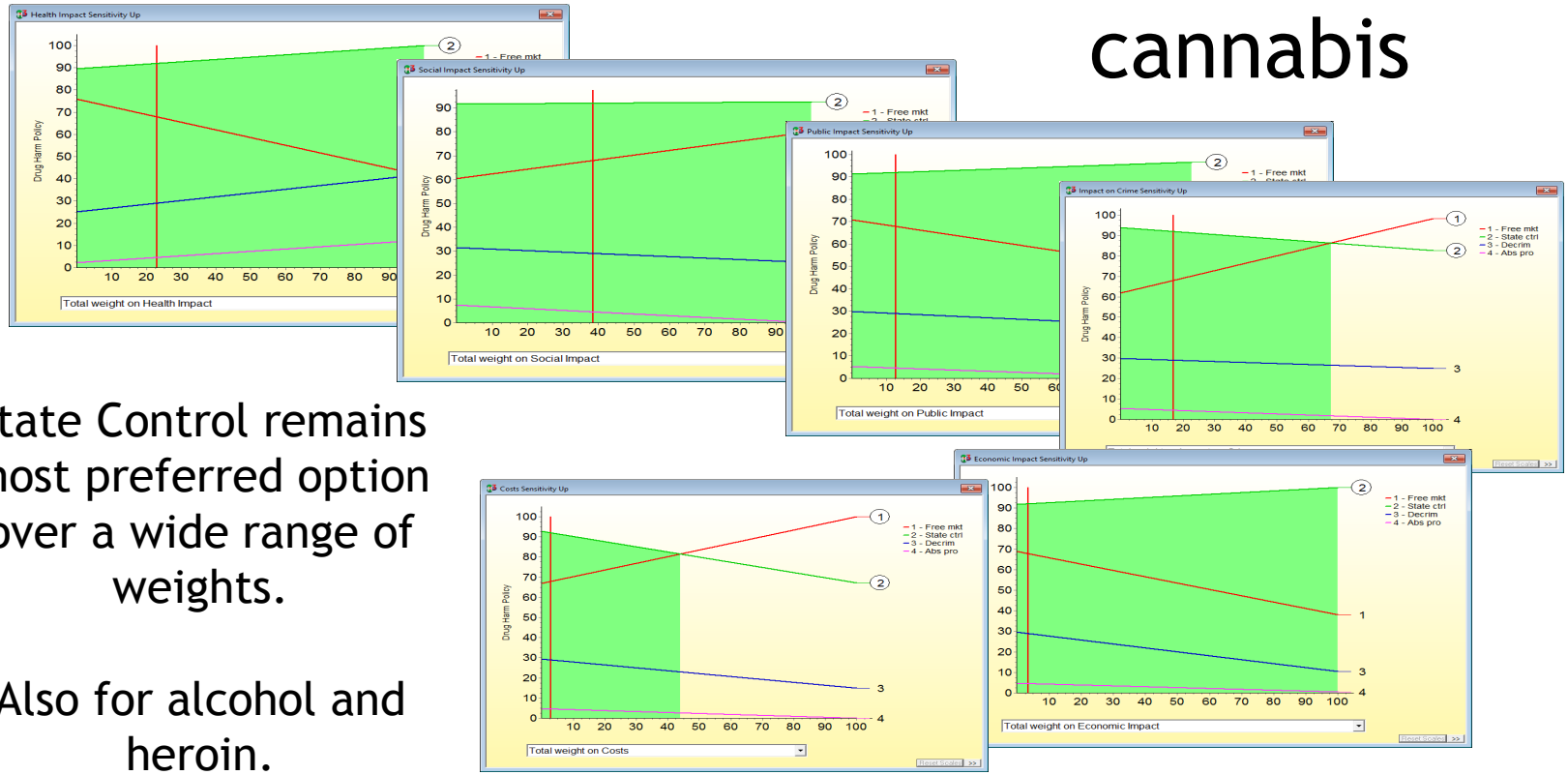
Cannabis



A strictly regulated market is best at reducing harm for both drugs.

Sensitivity analyses at each node

cannabis



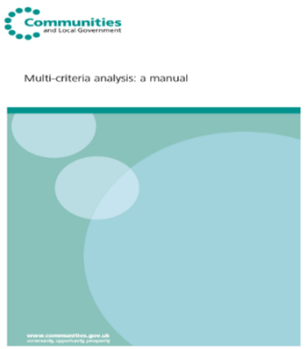
State Control remains most preferred option over a wide range of weights.

Also for alcohol and heroin.

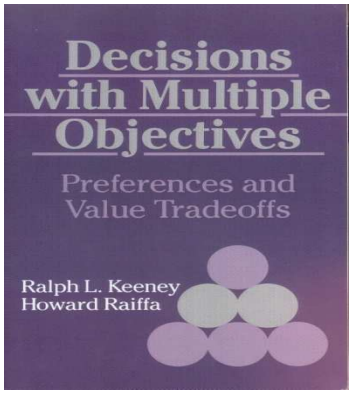
Current state

1. Alcohol results confirm current public health and medical opinion. Not so for cannabis or heroin.
2. For both substances, a legal but strictly regulated market is judged to yield the best reduction in harm.
3. Was there a ‘reformist bias’ in the group?
4. Need further research by other teams.
5. We now have the beginnings of a coherent analytic framework for describing, measuring, assessing and discussing drug policy

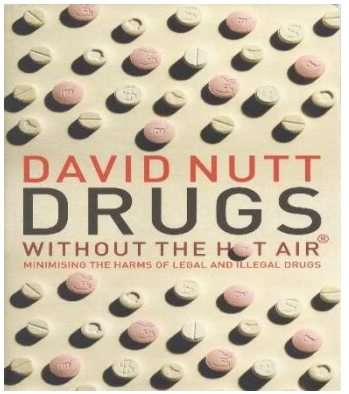
A guide to further reading



Multi-criteria analysis: a manual, 2000
(Dodgson, Spackman, Pearman & Phillips)
Chapter 6 is an MCDA tutorial.



Cambridge University Press, 1993
The book that introduced MCDA in 1976 (Wiley).



UIT Cambridge Ltd, 2012
Explains the harms of misusing psychoactive legal & illegal drugs.

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