Prioritising actions

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TAPAS seminar
20th May 2021

which schools?

how many schools?

by when?

technical or behavioural?

what to measure?

which effects?

how much to spend?

what do we want to achieve?

what have we missed?

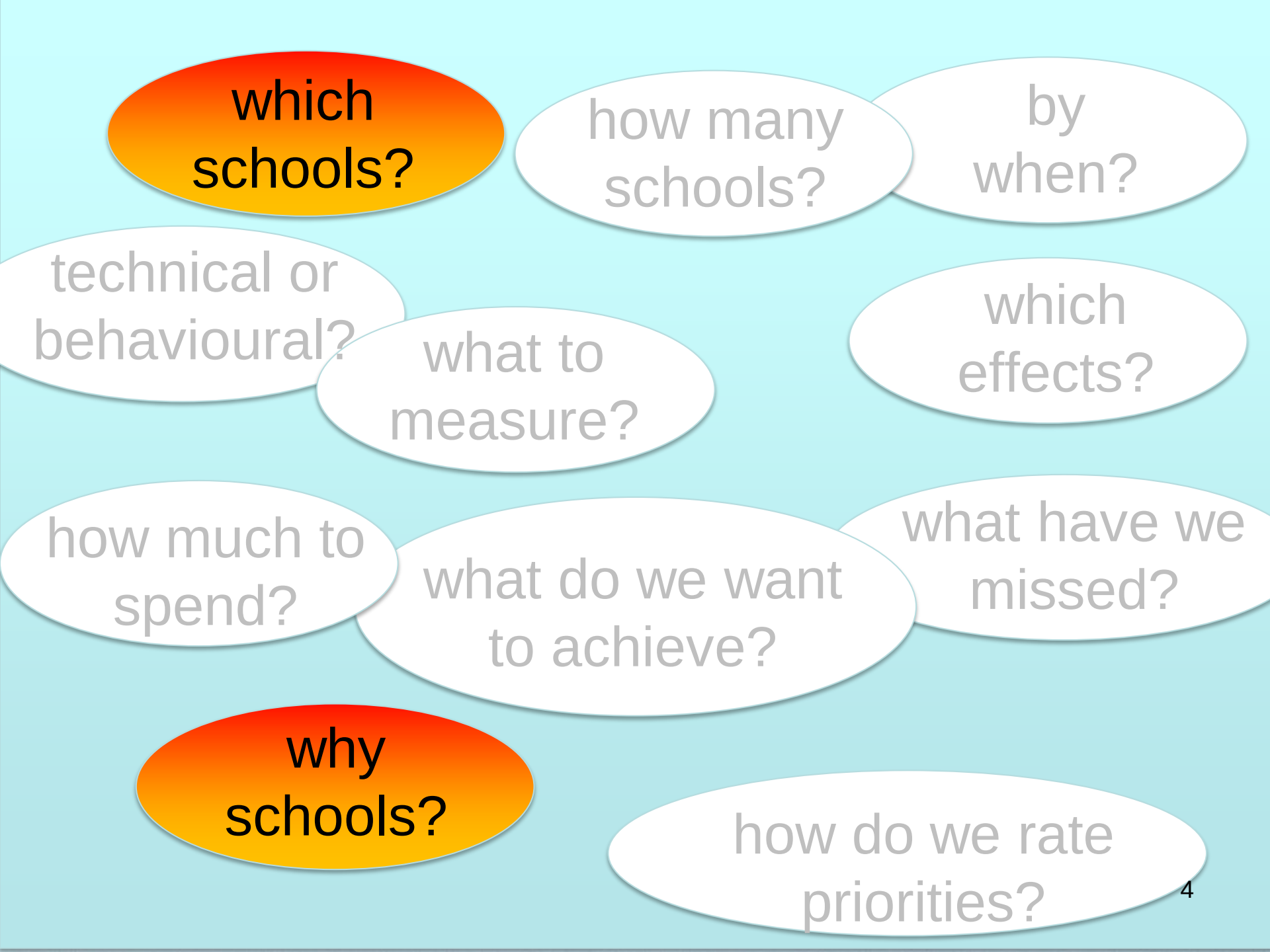
why schools?

does ‘one size fit all’?

how do we rate priorities?

Potential for misallocation of resource

- Well motivated parents, pupils, etc wanting action
- Pressure on spending budgets at end of year
- Lots of people promoting different products
- Variability in the needs of schools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Where does prioritisation start?

Homes?

Institutions?

- Schools?
- Hospitals?
- Care homes?

Why Schools?

- Sensitive population
- Motivated population of pupils, teachers and parents
- Lessons learned can be used in other settings

Are we focussing on the right schools?

- For pilot activities?
  - Schools expressing interest
  - Schools with identifiable problems
- For later rollout perhaps prioritise by?
  - Monitored pollution levels
  - Deprivation index
  - Type of building
  - Etc.

Review

Poverty and child health in the UK: using evidence for action

Sophie Wickham [1], Elspeth Anwar [1], Ben Barr [1], Catherine Law [2], David Taylor-Robinson [1, 2]

Correspondence to Dr David Taylor-Robinson, Department of Public Health and Policy, Whelan Building, University of Liverpool, Live UK; David.Taylor-Robinson@liverpool.ac.uk

Abstract

There are currently high levels of child poverty in the UK, and for the first time in almost two decades child poverty h rise in absolute terms. Child poverty is associated with a wide range of health-damaging impacts, negative education and adverse long-term social and psychological outcomes. The poor health associated with child poverty limits child and development, leading to poor health and life chances in adulthood. This article outlines some key definitions wit child poverty, reviews the links between child poverty and a range of health, developmental, behavioural and social c children, describes gaps in the evidence base and provides an overview of current policies relevant to child poverty i Finally, the article outlines how child health professionals can take action by (1) supporting policies to reduce child p providing services that reduce the health consequences of child poverty and (3) measuring and understanding the p assessing the impact of action.

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What are we trying to achieve?

Improve the school environment

Gain the most benefit for available resource

Quickly

Avoid harm

Benefits of actions

- Reduced pollution
- Improved health
- Reduced absenteeism
- Educational attainment
- Influencing behaviour
- Other benefits?

Possible harms

- Bringing pollutants into school:
  - Cleaning products
  - Building products
  - Furniture
  - Furnishings
- Increasing energy use
- Making buildings ‘unfriendly’
- Wasting resource
- …

Accept that many measures are not burden-free

Many measures have negative aspects

- Energy use
- Waste generation (filters, liquid wastes…)
- PFAS in insulation, heat pumps
- Material properties may be worse for more environmentally friendly goods

Understand pros and cons

Investigate better options

Make informed choices

How do we measure benefits of improved air quality in schools?

- Pollutant monitoring?
- Absenteeism?
- Use of asthma medication?
- Educational attainment?
- Staff opinion?
- Other measures?

Risk Attitude and Air Pollution: Evidence From Chess

Tinbergen Institute Discussion Paper 2020-027/VIII

26 Pages • Posted: 18 Jun 2020

Joris Klingen
VU University Amsterdam

Jos N. van Ommeren
Vrije Universiteit Amsterdam, School of Business and Economics; Tinbergen Institute

Date Written: May 20, 2020

Abstract

Medical research suggests that particulate matter (PM) increases stress hormones, therefore increasing the feeling of stress, which has been hypothesized to induce individuals to take less risk. To examine this, we study whether PM increases the probability of drawing in chess games using information from the Dutch club competition. We provide evidence of a reasonably strong effect: A 10µg increase in PM10 (33.6% of mean concentration) leads to a 5.8% increase in draws. Our results demonstrate that air pollution causes individuals to take less risk.

Keywords: air pollution, particulate matter, cognitive ability, risk taking

JEL Classification: Q53, D81, I18

Suggested Citation:

Klingen, Joris and van Ommeren, Jos N., Risk Attitude and Air Pollution: Evidence From Chess (May 20, 2020). Tinbergen Institute Discussion Paper 2020-027/VIII, Available at SSRN: https://ssrn.com/abstract=3609237 or http://dx.doi.org/10.2139/ssrn.3609237

ABSTRACT

Indoor Air Quality and Cognitive Performance*

This paper studies the causal impact of indoor air quality on the cognitive performance of individuals using data from official chess tournaments. We use a chess engine to evaluate the quality of moves made by individual players and merge this information with measures of air quality inside the tournament venue. The results show that poor indoor air quality hampers cognitive performance significantly. We find that an increase in the indoor concentration of fine particulate matter (PM2.5) by 10 µg/m3 increases a player's probability of making an erroneous move by 26.3%. The impact increases in both magnitude and statistical significance with rising time pressure. The effect of the indoor concentration of carbon dioxide (CO2) is smaller and only matters during phases of the game when decisions are taken under high time stress. Exploiting temporal as well as spatial variation in outdoor pollution, we provide evidence suggesting a short-term and transitory effect of fine particulate matter on cognition.

What are we trying to achieve?

Improve the indoor environment, gaining the most benefit for available resource quickly

Avoid harmful actions

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Understanding costs

Purchase price

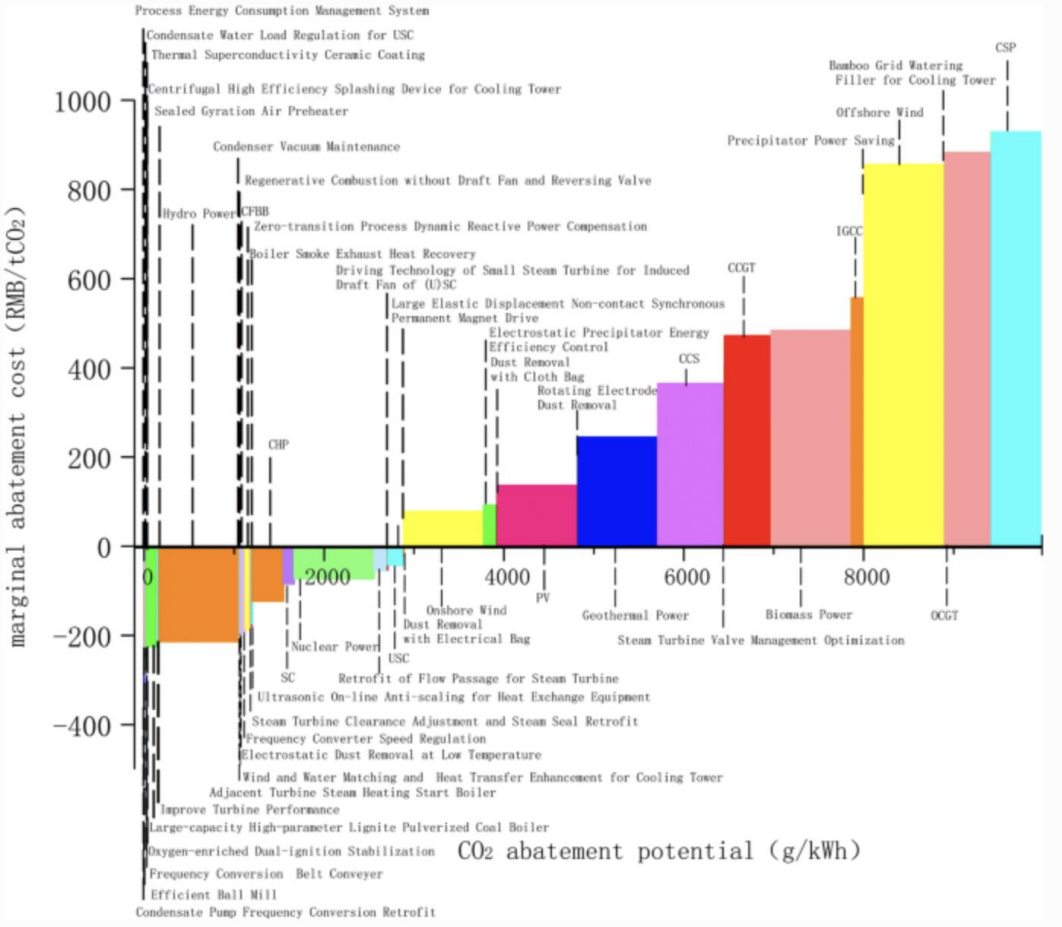
Installation costs

Running costs

- Servicing
- Repair
- Electricity, etc.

Marginal abatement cost curves

Fig. 1



MAC curves

Accounting for uncertainty?

One dimensional view of benefit

Coverage of behavioural measures

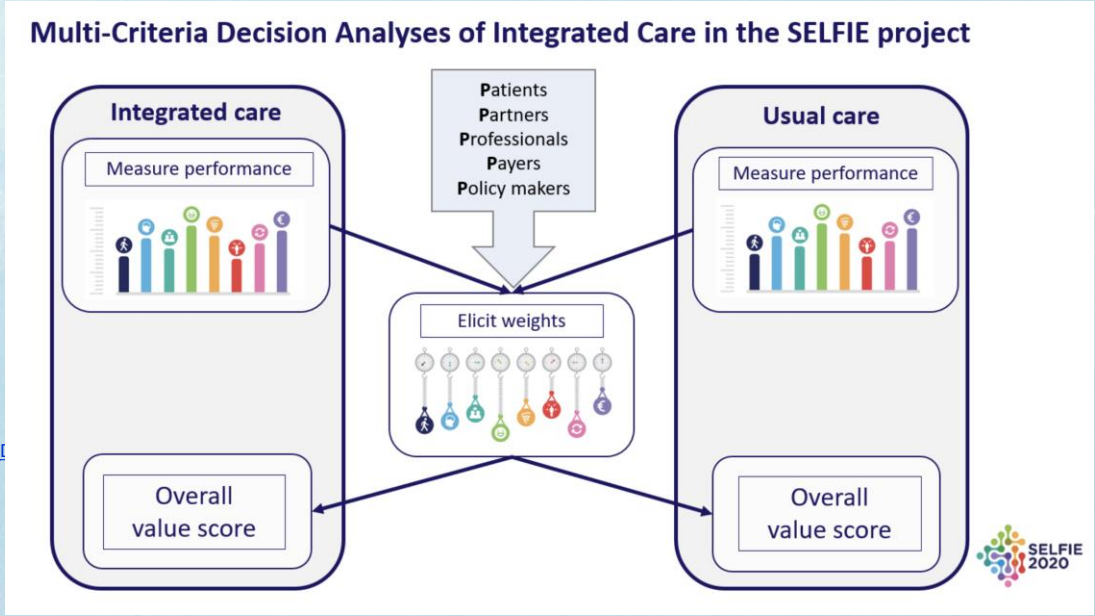
Available tools

- Cost effectiveness (MAC curves)
- Cost-benefit analysis
- Multi-criteria decision analysis

MCDA (multi-criteria decision analysis)

- Identify impacts
- Quantify or describe impacts for each option
- Define weights for each impact
- Combine data on impacts and weights to provide an overall score for each option
- Rank options
- Consider how alternative views affect rankings

- Example of MCDA methods in Chapter 3 of https://wedocs.unep.org/bitstream/handle/20.500.11822/9566/Planning_Pro_D



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Issues of time

- We agree that air quality is a problem, so action is needed now
- Important to get the right measures in
  - More research needed in some areas
  - Stratification approach?
- Need to consider future policy and technical developments