INCENTIVE-COMPATIBILITY IN DATA SECURITY

Richard Welpton,

Secure Data Service (UK Data Archive)

Felix Ritchie,

formally of Virtual Micro-data Laboratory,

(UK Office for National Statistics)

IASSIST 2012, Washington D.C.

OVERVIEW

- Trust in 'security' vs Trust in 'people'
- Re-aligning Data Owner Risk and Research Risk

- How does this work contribute to thinking about data access?

RESEARCH DATA CENTRES

- Controlled facility for accessing sensitive data

- Safe room in an institution
  - Good start but:
    - Costly
    - Inconvenient
    - Inequitable

- Enjoying resurgence as 'virtual RDCs' – e.g. NORC, SDS
  - Exploit benefits of RDC
  - Avoids physical access problems

- 'People risk' is key to security
  - Involves a different way of working

TRADITIONAL THINKING: PARAMETERS
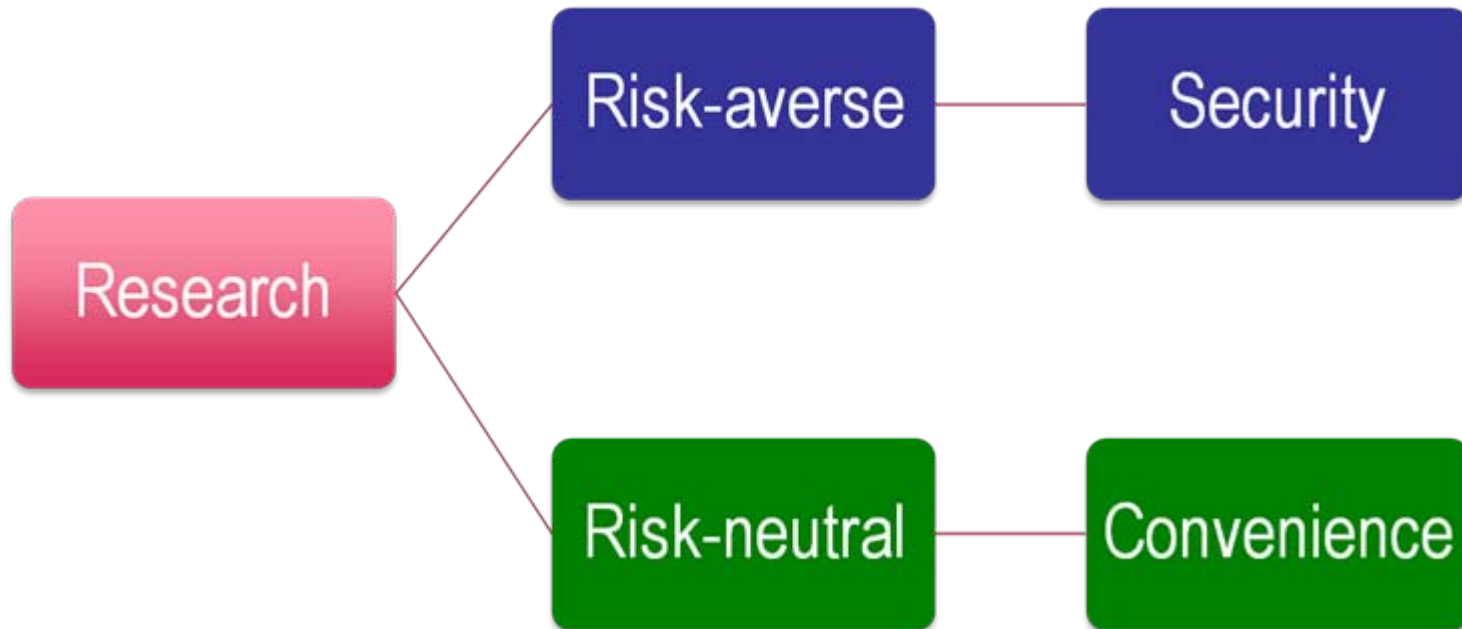
OBJECTIVE FUNCTIONS

- V (Data Owner) = U [Risk (-ve), Research (+ve), Control (-ve)]

- V (Researcher i) = U [Research (+ve), Control (-ve)]

So both Data Owners and Researchers face:
- 'negativity' in terms of control,
- 'positivity' in terms of Research

- we just need to deal with Risk

IF WE DON'T?

- Leads to inefficient outcomes: **'them and us'**

- Data Owner
    - Little incentive to develop trust
    - Access controls focus on deliberate misuse

- Researcher
    - Access controls are a cost to research
    - No incentive to build trust

- Data Owners don't benefit from research
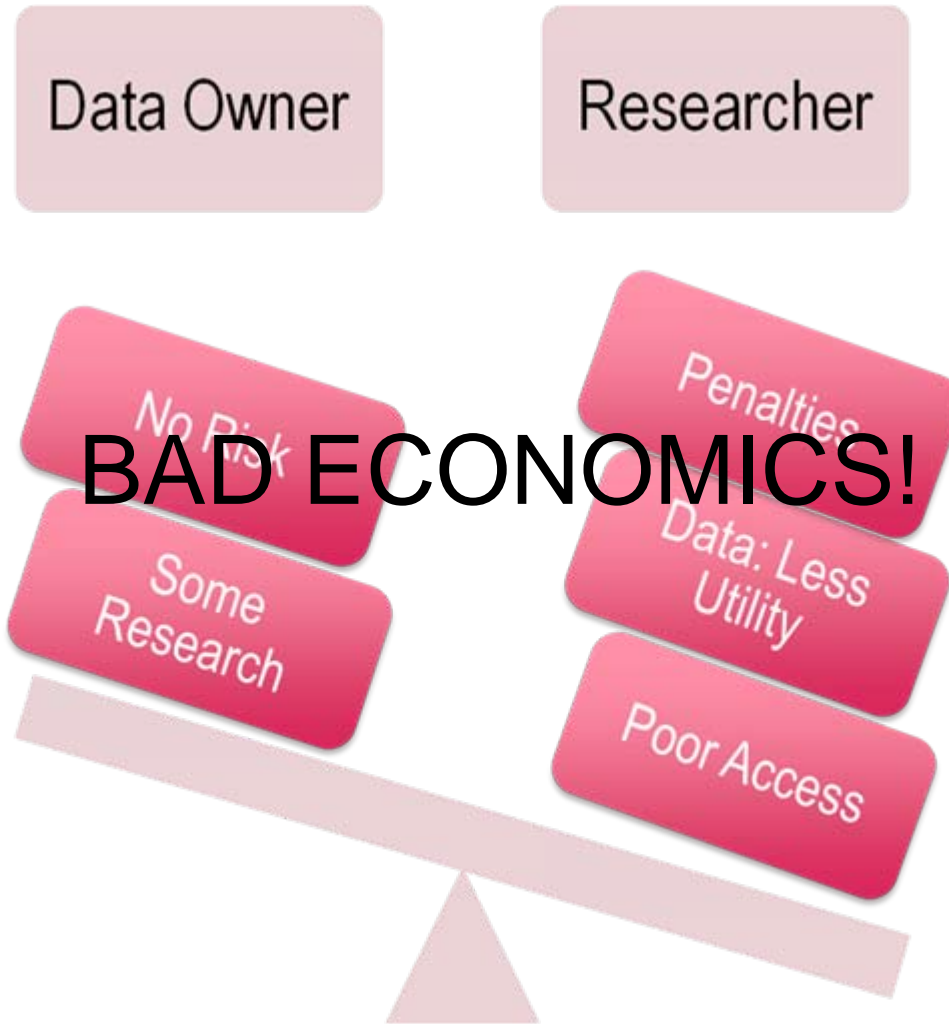- Researchers become frustrated, Data Owners gain 'bad' reputation

So we need to manage this 'risk'

SECURE
DATA
SERVICE   enabling the research **community**

WE CAN CONTROL EVERYTHING…..
EXCEPT PEOPLE!

- Safe Projects

- Safe Outputs

- Safe People

- Safe Settings

- Safe Data

Risk derives from
People

After Ritchie 2004

INCENTIVE COMPATIBILITY FOR RDCs

CHANGING THE MESSAGE (1): BEHAVIOUR OF RESEARCHERS

- Aim
  - researchers see risk to facility as risk to them

- Message
  - we're all in this together
  - no surprises, no incongruities
  - we all make mistakes

- Outcome
  - giving something back
  - fessing

CHANGING THE MESSAGE (2): BEHAVIOUR OF DATA OWNER

- Aim
  - positive engagement with researchers
  - realistic risk scenarios

- Message
  - research is a repeated game
  - researchers will engage if they know how
  - contact with researchers is of value per se

- Outcome
  - improved risk tolerance
  - Increased range of 'useful' data

NEW THINKING: PARAMETERS

SECURE DATA SERVICE — enabling the research community
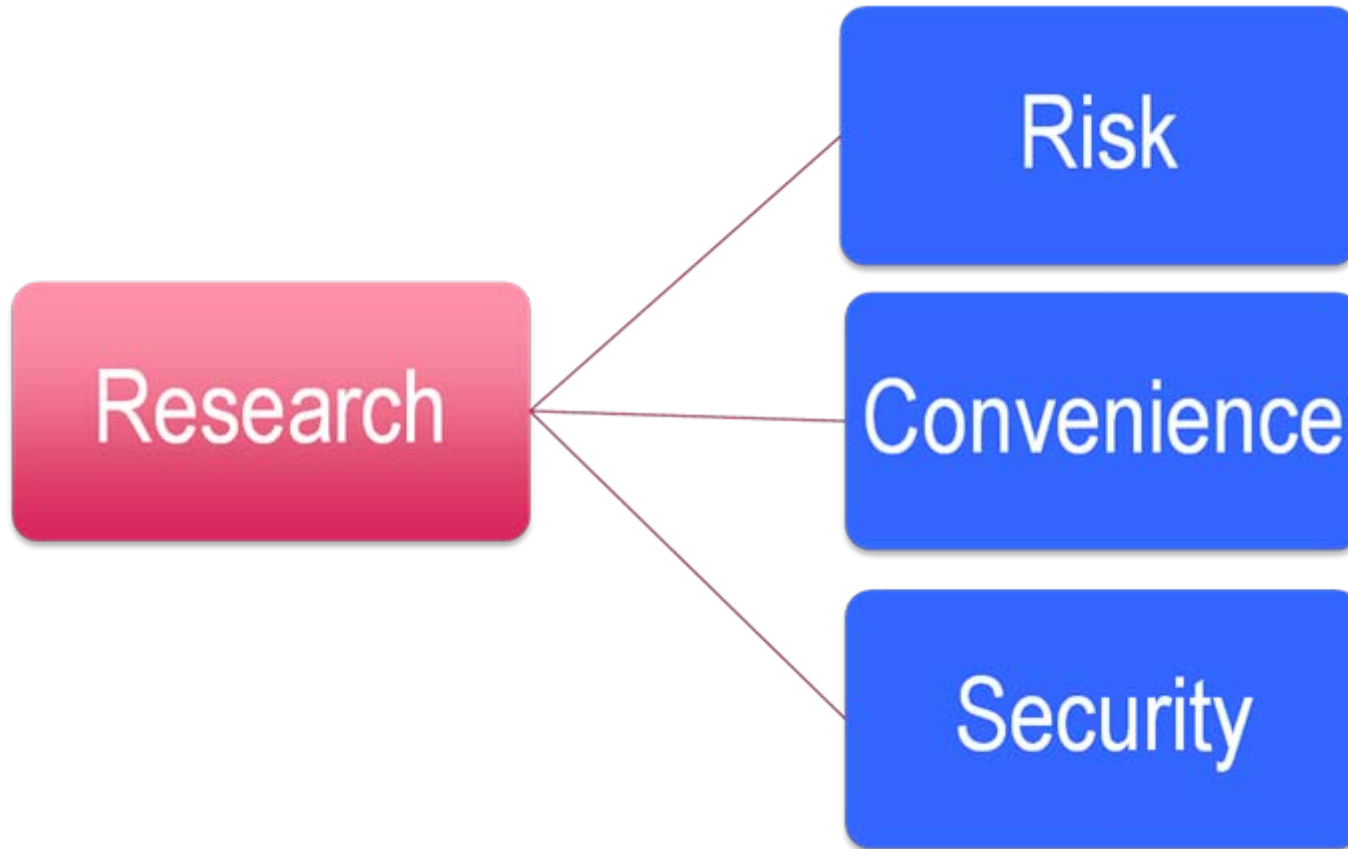
DOES THIS WORK?

- Objectives / Incentives more aligned

- Secure Data Service – intermediary between data owners and
  researchers

- Secure Data Service – audit reveals 'self-monitoring' by researchers

- Number of Data Owners: 2011: 2,   2012: 6

YES!!

THANKS FOR LISTENING!

rwelpton@essex.ac.uk

Search for Richard Welpton / Felix Ritchie on academia.edu