

CUSTOM AND PRACTICE – REVISITED

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Origins of talk title

J. Rosenhead

‘Custom and Practice’

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Election Manifesto excerpt 1984

“If elected I would regard this as a mandate for initiatives to find a more significant social role for operational research. We need to expand the range of OR’s clients – it is not only business, military and government who have problems of decision-making under uncertainty. We need to make the Society more of a forum for the profession to question its assumptions and methodology, which currently exclude it from the larger and messier problems”

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Custom and Practice

JONATHAN ROSENHEAD

Inaugural Address as President of the Operational Research Society, Society for Long-Range Planning,
London, 15th January 1986

I stand here today as a result of a long series of accidents, mistakes and misjudgements. Not all of them have been mine. However, this is not the occasion for recriminations, and I, for one, plan to make the most of what is still to come.

Nevertheless, I will try not to be bland. Nobody, I am sure, thinks that I was elected President to be statesperson-like. Other people can do that better. So I will do my best to be forthright—and in case anyone should feel provoked, I have waived my right to a respectful post-Address silence. Please feel free to start an argument immediately—with luck it could last at least two years.

It is customary for those who have been elected to any post to claim a mandate for their proposed changes (though this is harder for those elected unopposed). Naturally I do so too—the more so since I came out ahead of not one but two competitors for the post of President. However, when I have rehearsed this claim during my year as President Elect, a surprising number of people have revealed themselves as hyper-democrats. "Split votes", they have murmured, or "minority rule". To which one response might be to point out that on this argument, the current Prime Minister's authority would be highly suspect. On reflection, however, I prefer to take a less exposed position, namely that my mandate is, at any rate, better than anyone else's.

You will notice that I have already broken one of the great Unwritten Rules, which is "Keep politics out of operational research". (The other rules are "Keep politics out of sport", and "Don't bring religion into politics".) I intend to continue the trespass during the rest of this Address. Not because I wish to shock, but because it can't be helped. Politics is already there within O.R., and only a limited number of worthwhile statements about the practice and the future of operational research can be made without touching on the political domain. Indeed, to talk, write and act as if there were no politics in operational research is itself a distinctly political posture. These statements must stand for the moment as assertions. The justification will be provided in what follows.

The subject of this Address, *Custom and Practice*, covers the questions of *who* O.R. works for ('custom'), as well as *what* we do and *how* we do it ('practice'). These were, by and large, the issues raised in the statement with which I offered myself for election. Since this must be the basis for my claim to a mandate, it may be helpful to quote a key section of it here. Thus: "If elected, I would regard this as a mandate for initiatives to find a more significant social role for operational research. We need to expand the range of O.R.'s clients—it is not only business, military and government who have problems of decision-making under uncertainty. We need to make the Society more of a forum for the profession to question its assumptions and methodology, which currently exclude it from the larger and messier problems". This passage alludes to the three topics I wish to discuss here, namely—who O.R.'s 'customers' are, how we go about helping them, and with what sort of problems. I will take them in sequence, though in reality the three issues are intermeshed. I should also stress that the thoughts expressed here are preliminary and provisional. Any defects I intend to blame on the general paucity and poverty of O.R. discussion on these issues.

O.R.'s CUSTOMERS

There really is no appropriate generic word to describe the people or groups who give operational researchers work to do. Any particular word presupposes a particular form of relationship. So 'customer' implies a principally financial relation of buying and selling a service; 'client' appears to arrogate to O.R. a role of custodian of professional expertise which the client

Presidential address 1986

Questioned traditional assumptions on OR practice

about

- Customers

proposed focus

community groups

- Methods

participation

- Problems

pressing social issues

The title

“The subject of this Address, *Custom and Practice*, covers the questions of

- *who* OR works for (‘custom’)

as well as

- *what* we do and *how* we do it (‘practice’)”

CUSTOM

Operational Research's Traditional Clients

- military formations
- infrastructural industry
- large-scale private industry
- government departments and agencies
- commerce
- financial institutions

What else is there out there?

- consumer groups
- political parties
- charities
- residents associations
- trades unions.....

(Steve Cook, circa 1970)

Operational Research Society supported units

- Northern College
- University of Lincoln
- Hull University

Community client groups

- exist to protect or advance the interests of their members
- possess scant physical or financial resources
- have no articulated management hierarchy
- operate internally through consensus or democracy

A range of clients

- community centres
- health advocacy groups
- housing cooperatives
- parent-teacher associations
- production cooperatives
- tenants associations
- trade union branches
- Third Sector organisations

General Reading on Community OR

Midgley, G., Ochoa-Arias, A. (eds.) 2004

Community Operational Research: OR and Systems Thinking for Community Development. Kluwer Academic/Plenum, New York.

J. Rosenhead 1993

‘Enabling Analysis: across the developmental divide’, *Systems Practice*, **6**, 117-38

M. Johnson 2012

Community-Based Operations Research, Springer, New York

PRACTICE (i)

Methods: *how* we do (what we do)

Standard Operational Research Techniques

- Linear Programming
- Combinatorial Optimisation
- Data Envelopment Analysis
- Simulation
- Critical Path Analysis
- Heuristics
- Game Theory
- Inventory Control
- Replacement Theory

Practical achievements of traditional OR

- logistics
- service planning and implementation
- equipment maintenance
- project planning and monitoring
- manpower planning and budgeting
- risk scoring
- performance measurement

C&P on 'hard OR'

Traditional hard OR is characterised by

- *a uniformly positivist/managerialist approach*
- *taking only quantitative knowledge as worthwhile*
- *assuming there is only 1 perspective on any problem*
- *taking its aim as to provide a solution to a unitary decision-maker*

Hard OR

- Suitable for traditional clients?
(or is it the explanation for OR's limitation to tactical problems?)
- Complete barrier for engagement with an alternative clientele
- Serves top-down control rather than democratic decision-making

Slinging insults

Russ Ackoff (on 'hard' OR, 1979):

“mathematically sophisticated but contextually naïve”

Robert Machol (on an early PSM paper, 1980):

“It didn't say anything about anything....time for someone to stand up and shout that the emperor isn't wearing any clothes....no content in any of this”

30 years later

Richard Eglese (*President of UK Operational Research Society*)

“....methodologies for problem structuring and techniques suited to help the understanding of those involved have been part of what has been taught in postgraduate OR courses for many years and continue to evolve”

Eglese, R. (2011) 'The Age of OR?' Inside OR No 486, June 2011 pp24-25.

Problem Structuring Methods

- are a family of model-based group decision support methods. Their general characteristics include
- ability to structure complexity of content and represent it in a transparent manner
 - deployment in a facilitated group environment
 - interactive development of model structure
 - tools to encourage participation and generate commitment to actions

Use PSMs where ...

- goals are not clear or shared
- who are the stakeholders?
- important things can't be measured
- the questions to be tackled may only emerge *during* the engagement
- the consequences of what we decide depend on uncertain events and the decisions of others
- etc

Leading Methods

- SSM (Soft Systems Methodology)
- SODA (Strategic Options Development and Appraisal); also Oval Mapping Technique
- SCA (Strategic Choice Approach)
- Robustness Analysis

Some Applications of PSMs

Organisational re-structuring at Shell (Checkland and Scholes 1990)

Opposition to hospital closure in Tower Hamlets (see Mingers and Rosenhead 2004)

Developing models to support a claim for damages (Ackerman et al.1997)

Supporting a tenants co-operative (Thunhurst and Ritchie 1992; Thunhurst et al. 1992)

Developing an IT strategy for a supermarket chain (Ormerod 1995)

Netherlands policy on transport of hazardous materials (Hickling, in Rosenhead and Mingers 2001)

Paediatric Care Strategy for Camden and Islington (Cushman and Rosenhead, 2004)

President Hugo Chavez promoting Strategic Choice



Reading about PSMs

J Rosenhead and J Mingers (eds)

Rational Analysis for a Problematic World Revisited

Wiley 2001

European Journal of Operational Research

Special Issue on Applications of Problem Structuring
Methods (ed RVV Vidal)

Vol 152 (2004)

PRACTICE (ii)

Big problems: *what* we do

Untackled problems

- “The world is beset by overwhelming predicaments which have a systemic aspect”
- “The 1980’s find the world’s social and economic systems in crisis, indeed in a turmoil probably more intense than that of the 1930’s”
- “Why does OR effectively exclude itself from contributing to the resolution of major social problems?”
- “[who OR works for, and how it works] unless severely modified, largely exclude OR from involvement”

OR's progress in contributing to the resolution of major social problems

United Nations – Global Issues

Africa

Ageing

Agriculture

AIDS

Atomic Energy

Children

Climate Change

Decolonization

Demining

Democracy

Development

Disarmament

Environment

Family

Food

Governance

Health

Human Rights

Human Settlements

Humanitarian Assistance

International Law

Oceans/Law of the Sea

Peace and Security

Persons with Disabilities

Populations

Refugees

Terrorism

Volunteerism

Water

Women

Problems/debates we haven't worked on

- Sustainability
 - Climate change
 - Drugs epidemic
 - Health service reforms
 - Banking crisis
 - Congestion charging
- etc etc

25 years on

- Community OR is alive, but the OR community is less engaged with it
- Problem Structuring Methods have taken great strides but i) they are not easy to embed within organisations; and ii) academic traditionalists are obstructive
- The world is still having to manage without OR's help on its most difficult problems

Copies of these slides can be obtained by writing
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