The problems shed

Framing your research object

Peter Mollinga

IUSF-TIAS Autumn School

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pm35@soas.ac.uk
Contextuality

1. How generally valid or situation specific is water knowledge, and can or should it be?
2. To what extent can water studies focus on water only, that is, how much of the relationship with other resources and social dynamics need to be taken into account in water focused analysis?
3. To what extent should water specific theory be embedded in broader theory on socio-natural transformation?
Selectivities in framing

- Ontological
- Epistemological

Framing and interdisciplinarity

Technique of framing


Figure 1 Realist research in practice
Technique of framing-2

“We suggest the following steps and principles for conducting a critical realist data analysis. (...).
1. Description of events
2. Identification of key components
3. Theoretical re-description (abduction)
4. Retroduction: Identification of candidate mechanisms
5. Analysis of selected mechanisms and outcomes
6. Validation of explanatory power”
(Bygstad and Munkvold (2011:5))
Employment, labour and caste in local water distribution

Three paradoxes in local water distribution:

1. ‘Caste’ was not obviously a structuring factor in water distribution in this caste ridden society;
2. An accepted and acknowledged set of local irrigation rules with ‘equal irrigation time per unit area’ as its principle, combined with clearly unequal distribution in practice;
3. This evidently unequal pattern of distribution was not accompanied by conflict and contestation (while conflict and contestation were rampant at higher levels of the canal system).

Question

• Should we aim to ‘generalise’ our knowledge?

or

• Should we aim to determine the ‘validity domains’ of our knowledge?
Escapes from contextuality as ‘local specificity’

1. Abstraction
2. Validity domains
3. Look for widely valid (single) mechanisms
Back to the starting questions on the contextuality of knowledge

1. How generally valid or situation specific is water knowledge, and can or should it be?
2. To what extent can water studies focus on water only, that is, how much of the relationship with other resources and social dynamics need to be taken into account in water focused analysis?
3. To what extent should water specific theory be embedded in broader theory on socio-natural transformation?
End of part 1
Group discussion

• Groups of 4-5 participants
• Have a conversation on:
  – How have you been ontologically and epistemologically selective in your research framing (or: in defining your problems/field)? (15 min)
  – Does your research aim to ‘generalise’ in one way or the other if so, how? (15 min)
  – Which questions has this conversation led to? (10 min)

The questions will be briefly presented in the plenary (10 min)
Stepwise comparison: what is your ‘case’?

Peter Mollinga
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pm35@soas.ac.uk
**internal validity ********  >

<table>
<thead>
<tr>
<th>MOST-SIMILAR SYSTEM RESEARCH DESIGN</th>
<th>Mill’s Method of Difference (MMD)</th>
<th>Mill’s Method of Agreement (MMA)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MSSD</td>
<td>MSSD + MDD (dealing with differences in similar cases)</td>
<td>MSSD + MMA (dealing with similarities in similar cases)</td>
</tr>
<tr>
<td><strong>Unequal water distribution:</strong></td>
<td>three secondary canals from one South Indian system, one water-abundant (head), two water-scarce (tail), exhibiting different spatial patterns of unequal water distribution.</td>
<td>Unequal water distribution: additional canals, across degrees of scarcity, from the same and similar South Indian systems, exhibiting similar variation in the spatial pattern of unequal water distribution.</td>
</tr>
<tr>
<td><strong>Economic reform:</strong></td>
<td>Anglo Saxon countries, opting for either liberalisation or nationalisation, with assumedly different outcomes.</td>
<td>Economic reform: Anglo Saxon countries, all liberalising, with assumedly similar outcomes.</td>
</tr>
<tr>
<td><strong>PRIMARY CASE</strong></td>
<td>MSSD + MDD (dealing with differences in similar cases)</td>
<td>MSSD + MMA (dealing with similarities in different cases)</td>
</tr>
<tr>
<td><strong>Unequal water distribution:</strong></td>
<td>secondary canals from a South Indian, a North Indian system, and a Western Indian system with different water rationing rules, and different attempts at irrigation reform, with different patterns of inequality/differential access; secondary canals from a South Indian and a Khorezmian (Uzbekistan) system, with different infrastructure designs and different governance regimes, with different patterns of inequality/differential access.</td>
<td>Unequal water distribution: secondary canals from an Indian and a Mexican system, with similar time-share based rationing rules, with similar patterns of inequality/differential access; secondary canals from a water-scarce system (Pakistan) and from a water abundant system (Indonesia, Philippines), with similar irrigation reform programmes implemented, reproducing similar patterns of inequality/differential access.</td>
</tr>
<tr>
<td><strong>Economic reform:</strong></td>
<td>Anglo-Saxon and continental European countries, with dissimilar educational policies, having assumedly different outcomes.</td>
<td>Economic reform: Anglo-Saxon and continental European countries, with similar monetary policies, having assumedly similar outcomes.</td>
</tr>
</tbody>
</table>

**SECONDARY/TERTIARY etc. CASES**
A route not traveled: Identifying variables

Dependent variable:
Pattern of unequal distribution

Control variables taken into consideration:
1. water supply to secondary canal (abundant/scarce) [MSSD + MMD and MSSD + MMA]
2. rationing principles&rules in protective design (localisation, warabandi and block system) [MDSD + MMD]
3. state form/political regime/governance system (post-Soviet authoritarian, liberal democratic) [MDSD+MMD] (liberal democratic with weight on province-level water governance and corporatist with weight on national level water governance) [MDSD+MMA]
4. infrastructure design principles (scarcity by design with dependent small local units in a queue and abundance by design with largely independently supplied large local units) [MDSD+MMD]
5. Overall water availability in the system (low rainfall, short monsoon, design for low water using crops and high rainfall, spread over the year, designed for high water using crops) [MDSD+MMA]

It would not be difficult to extend this list by adding new independent variables, or by specifying and subdividing the already identified.
The envisaged route

Figure 4: Stepwise comparative analysis for theorising structured diversity

<table>
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<td><strong>MMD</strong></td>
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<td>MSSD + MDD (dealing with differences in similar cases)</td>
<td>MSSD + MMA (dealing with similarities in similar cases)</td>
</tr>
<tr>
<td>PRIMARY CASE</td>
<td>PRIMARY CASE (extended)</td>
</tr>
</tbody>
</table>

**Most-Similar System Research Design**

- MSSD
  - Development of a conceptual model of a structure and its emergent properties (often through a multiple location/multiple case intensive study)

**Most-Different System Research Design**

- MDSD
  - Identify types (develop a typology) by comparing (elements of) the conceptual model with the ‘logic(s) of structuration’ of situations that are qualitatively different

- MSSD + MMA (dealing with similarities in different cases)
  - Develop theory that encompasses the structured diversity that is mapped by the typology

- NEW THEORY DEVELOPMENT

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1. SOAS University of London
What is a ‘case’?

• What is *my* case in the envisaged research?

• A ‘case’ in Levi Faur’s/critical realist’s comparative research design is a ‘set of theoretical attributes’
QCA: Levi-Faur’s approach

“The major goal of the social sciences (...) is to generalize in a way that reflects the diversity and complexity of the social world in general and cases in particular.”

“....a controlled, reasoned increase in the number of cases without compromising the strength of case-oriented analysis.”

“The way to go about increasing the number of cases involves redefining the nature of the case while still keeping the focus directly on evidence for or against the theory.”

“...a case is a particular configuration of attributes...”

(Levi-Faur Question of Size?)
The ‘case’ I can’t yet talk about: Amrita Lamba’s PhD research

Title:
Strong State-Society Synergy for Inclusive Natural Resources Governance: Comparing Brazil and South Africa

“In this thesis, using the conceptual – analytical framework of Judith Tendler’s and Peter Evans’s State-Society Synergy approach and Francis Fukuyama’s State Building model, I describe a novel institutional architecture, which I call the Strong State-Society Synergy (4-S) approach by knotting the aforementioned threads of thinking about governance. The 4-S heuristic approach provides a fine-grained analysis of the mechanisms at work in the fuzzy space created by the overlap of formal and informal institutions. (...) I attempt a comparative natural resources governance analysis to understand how the events unfolding/unrolling (in this space) in the water, wetlands and forestry sectors in Brazil and South Africa – countries for which there is good reason to expect very similar responses, but in which quite different outcomes are observed (Gauri and Lieberman, 2004) [which] can be understood and evaluated from the 4-S perspective. “ (Upgrade paper)
<table>
<thead>
<tr>
<th>Stepwise Comparative Analysis</th>
<th>Difference</th>
<th>Agreement</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Most Similar System Design</strong></td>
<td><strong>Step 1</strong>: Extraction of generalization from diversity: The 4-S approach</td>
<td><strong>Step 2</strong>: Configuration of attributes mapped against localities/sectors to confirm suitability of both the attributes and the localities/sectors for the research purpose</td>
</tr>
<tr>
<td><strong>Most Different System Research Design</strong></td>
<td><strong>Step 3</strong>: Interrogating diversity</td>
<td><strong>Step 4</strong>: Framing of a new generalization for natural resources governance through a rethinking of the 4-S heuristic model by a process of adaptation, specification and exclusion of attributes on an examination of the fieldwork findings</td>
</tr>
</tbody>
</table>

*(Internal Validity) (External Validity) (Theory Building)*
Table 2: Mapping the particular configuration of attributes of the 4-S model across the water, wetlands and forestry sectors in Brazil and South Africa to test the assumption that the localities/sectors and the attributes of the 4-S heuristic model are suitable for the research purpose (Step 2/internal validation).

<table>
<thead>
<tr>
<th>Case/Attributes</th>
<th>Brazil</th>
<th>South Africa</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Water</td>
<td>Water</td>
</tr>
<tr>
<td>Presence of Synergy</td>
<td>Jaguaribe river basin, Ceará</td>
<td>Crocodile river catchment, Mpumalanga</td>
</tr>
<tr>
<td>a) Embedded formal and informal</td>
<td>Traditional &amp; modern water management practices coexist</td>
<td>Fuzzy institutional landscape; Role of leadership; Self organization</td>
</tr>
<tr>
<td>institutions</td>
<td>Users Commission as oversight organizations</td>
<td>Feedback loops set up by ICMA (innovation)</td>
</tr>
<tr>
<td>b) Locally borne out norms of trust/n</td>
<td>RESEX established through grassroots initiatives</td>
<td>trust in leadership;</td>
</tr>
<tr>
<td>networks of civic engagement</td>
<td></td>
<td>Wetlands in communal areas managed by local rules &amp; norms</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Presence of a Strong State</td>
<td>Democratization wave at national level since mid 1980s</td>
<td>IWRM instigated by democratization wave since the 1990s</td>
</tr>
<tr>
<td>a) Institutional capacity/will</td>
<td>Entrepreneurial state government</td>
<td>Strong boundary institutions</td>
</tr>
<tr>
<td>b) Proactive state</td>
<td>State and Federal Water Laws stress on IWRM; Users Commission &amp; sub-basin committees created by the state</td>
<td>National Water Act based on IWRM; establishment of ICMA</td>
</tr>
<tr>
<td></td>
<td>Reform of Brazilian forestry law in 1998 &amp; 2006 for community timber management</td>
<td>National Water Act has not granted recognition to wetlands</td>
</tr>
</tbody>
</table>
Step 3: The configuration of attributes that characterizes the 4-S model will be broken down into sub-questions and significant differences and similarities in the localities and sectors can be sought out by interrogating diversity in experiences across the water, wetlands and forestry sectors in Brazil and South Africa. In Table 3, I have operationalized the attributes of the 4-S model by listing out the sub-questions that will inform the comparison for this study. However, these sub-questions will evolve in the fieldwork and just define the starting point for that fieldwork.

**Table 3: Operationalization of the attributes of the 4-S heuristic model: the Sub-Questions**

<table>
<thead>
<tr>
<th>Sub-Questions</th>
<th>Jaguaníhe river basin, Ceará, Brazil</th>
<th>Verde para Sempre, Brazilian Amazon</th>
<th>Cuyabeno River Catchment, Amazonas, South America</th>
<th>Granero wetlands, SRC, South Africa</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Is the prior existence of social capital an imperative for synergy to thrive across the public-private divide?</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Do embedded (overlap of the formal/informal) institutions predicated on locally borne out norms of trust enhance synergy?</td>
<td>X</td>
<td>X</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>3. Do locally borne out norms of trust and networks of civic engagement lead to non patron-client state-society engagement in all scenarios?</td>
<td>X</td>
<td>X</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>4. Does a strong/proactive state almost always ensure increased civic engagement and state responsiveness?</td>
<td>X</td>
<td>X</td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>
| 5. a) When institutional embeddedness and locally borne out norms of trust exist, is decentralization and accountability always bottom-up?  
b) Is decentralization always accompanied by a larger role for the state in synergistic arrangements? | X                                    | X                                  |                                                   | X                                   |
| 6. Can state-society synergy exist in the absence of a strong state? | X                                    | X                                  |                                                   | X                                   |
| 7. Does state-society synergy prevail in all instances where state and civic engagement are dominant/prevalent? | X                                    | X                                  |                                                   | X                                   |
Discussion

What is your ‘case’?