Innovation fronts in Qualitative Comparative Analysis (QCA): exploiting new possibilities of Set-Theoretic Methods

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Masterclass

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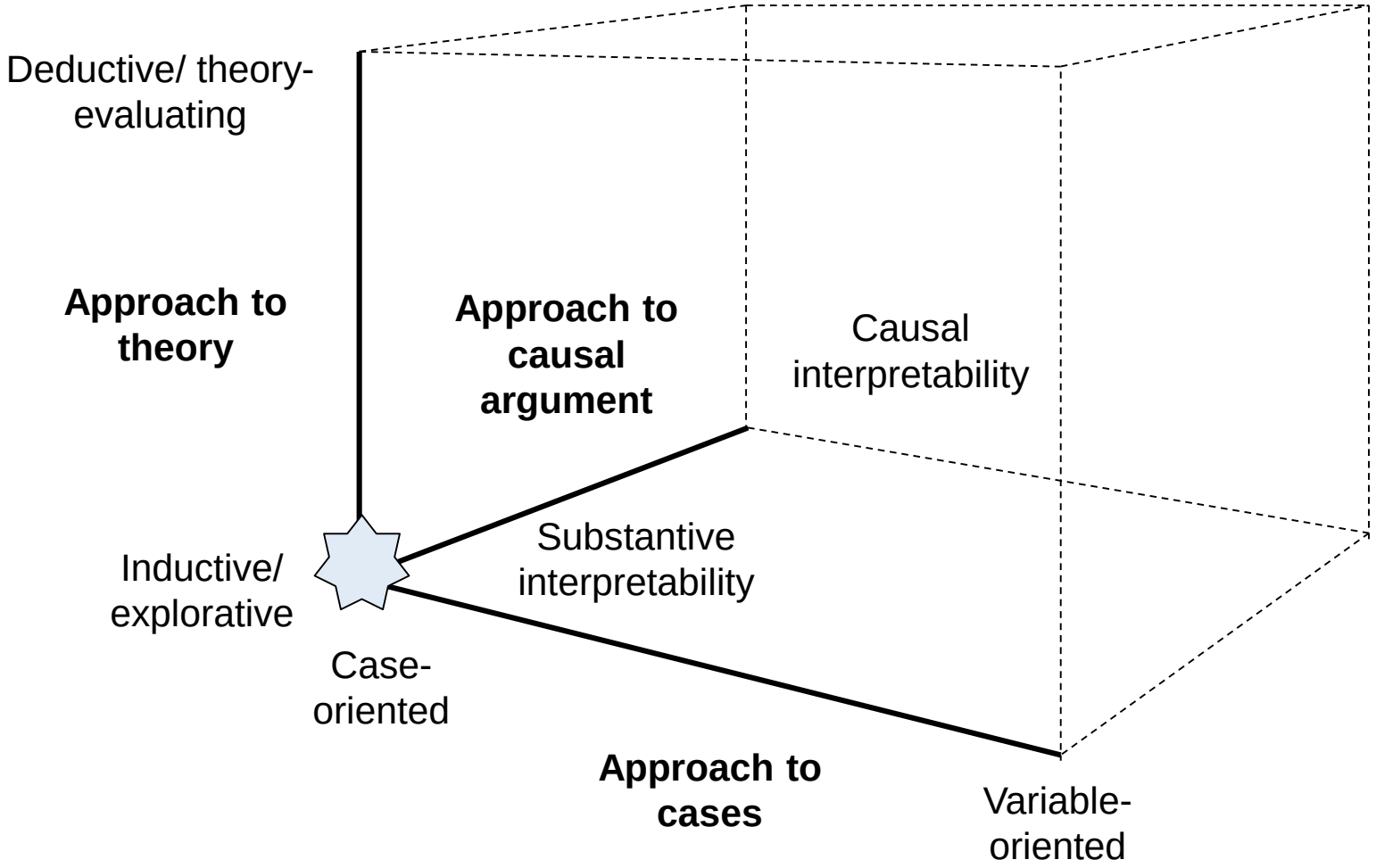
http://www.compasss.org

Emerging approaches to QCA (Thomann)



Thomann & Maggetti 2015

- Designs
  - Very small N
  - Intermediate N
  - Large N
- More complex models (e.g. 2-step)
- Mix of condition types (cs/mv/fs)
- Calibration strategies / thresholds-setting strategies (eg. Tosmana)
- Parameters of fit
  - Consistency (& PRI)
  - Coverage (raw & unique)
- Robustness tests (eg Skaaning, …)
- Benchmarks (ratio Nr cases/conditions; Marx & Dusa)

Complex, parsimonious and intermediate solution (Standard Analysis)

Used for logical minimizations are…	Empirically observed truth table rows	All remainders	
		Remainders that contribute to a more parsimonious solution (simplifying assumptions)	
		Easy counterfactuals	Difficult counterfactuals
Complex solution term	X		
Intermediate solution term	X	X	
Parsimonious solution term	X	X	X

- The 3 solution terms…
  - never contradict the empirical observations
  - describe different subsets of the same reality, differing in their complexity
  - are „contained in each other“: if S is the solution, and ST the solution term:
  - CST < IST < PST, therefore PS < IS < CS

Schneider and Wagemann 2012: 160-177, 197-219; Ragin 2008a: 160-175.

Visualize your results: The Fiss (2011) variant

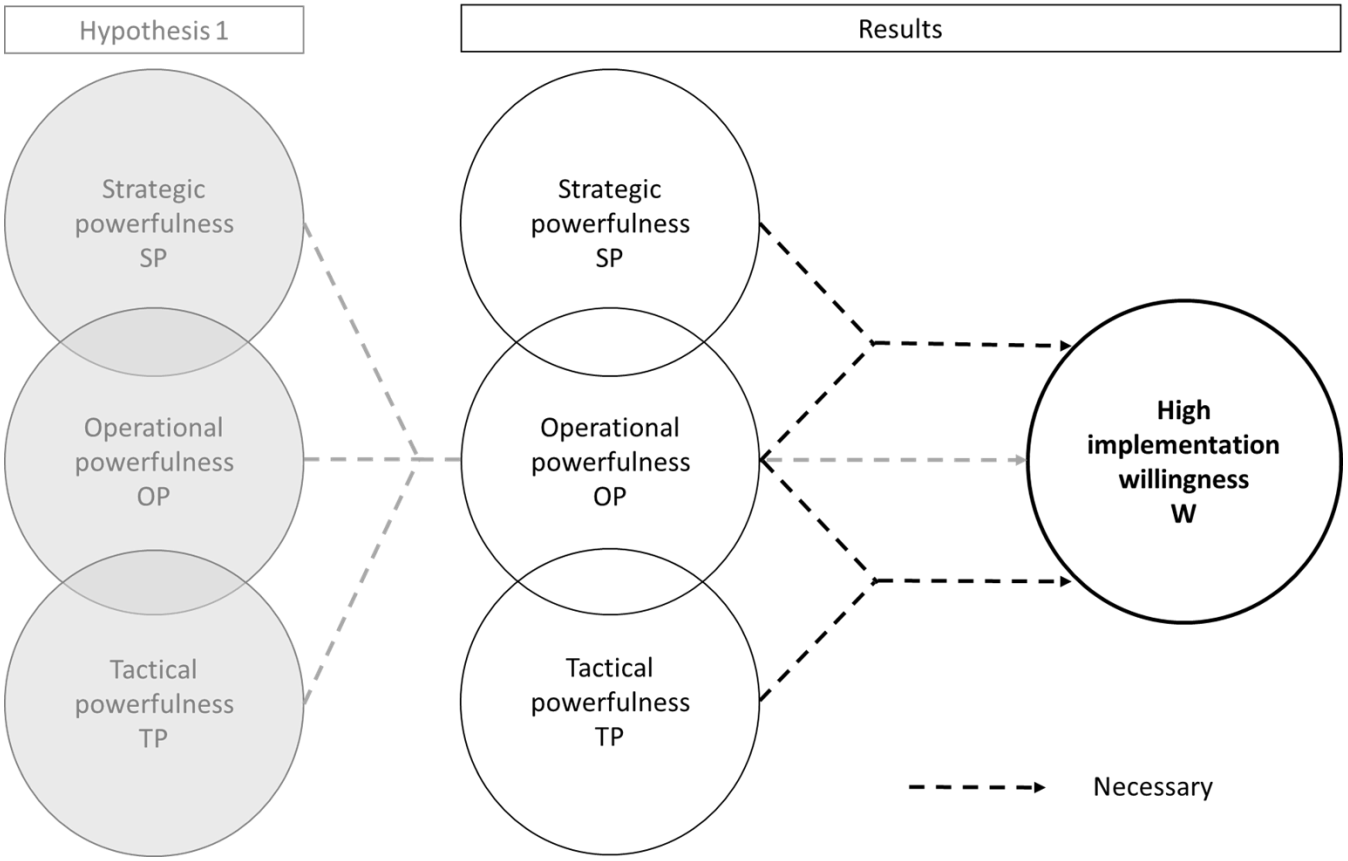
Table 4: Sufficient conditions for negative evaluation (intermediate solution)

Outcome: Negative evaluation of austerity program by IMF (pos)	*Intermediate solution*			
	Path 1	Path 2	Path 3	Path 4
Highly ambitious program AMB	●	●		●
Decentralized political system DC	•		●	
Effective state administration EFF			○	●
Strong Centre-Right government CR		○		
High economic competitiveness COM		○	○	○
Existence of an IMF program PRG	○	○	○	
Single case coverage	ITA2,ITA3; GBR;ESP	PRT1;ESP	ESP;CZE; ITA1	IRL
Consistency	0.969	1.000	0.946	1.000
Raw coverage	0.421	0.212	0.404	0.212
Unique coverage	0.099	0.084	0.084	0.084
Solution consistency 0.931				
Solution coverage 0.643				

Black circles indicate the presence of a condition, and white circles its absence. Blank spaces indicate the irrelevance of a condition.
Large circles represent the causal core, i.e., directly causally interpretable factors. Small circles indicate the causal periphery, i.e. they delimit the scope of the causal core to the counterfactual arguments posited by the intermediate solution.

Visualize your results: Set diagrams

> Venn/ set diagrams (Mahoney and Sweet Vanderpoel 2015)



Thomann, Tummers and van Engen

Visualize your results: Path diagrams

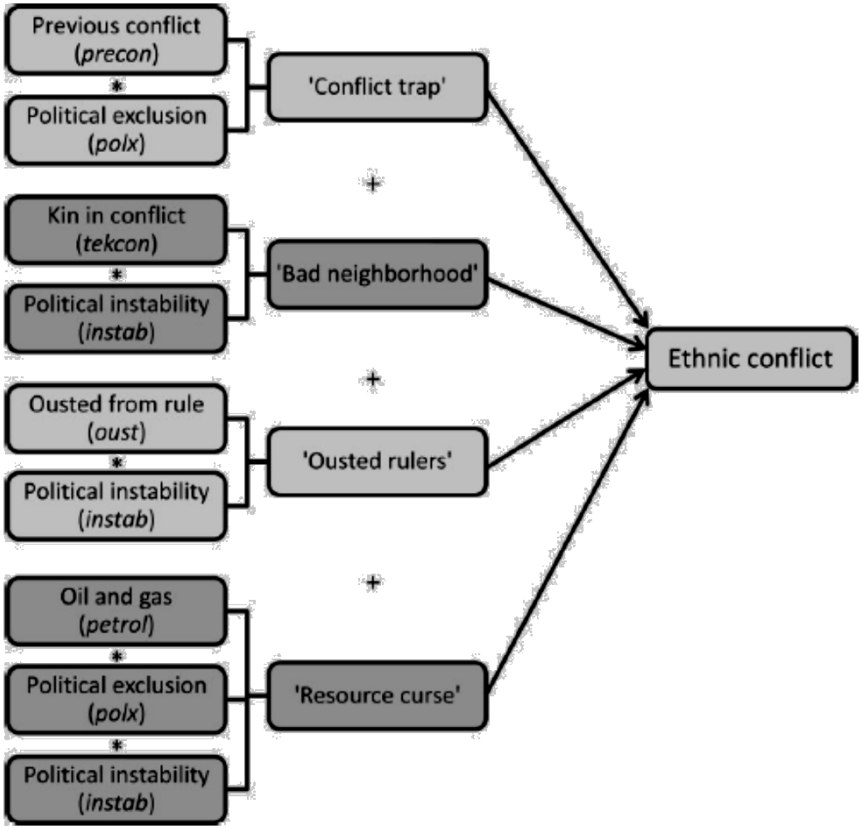


Figure 1. Configurational model of ethnic conflict, 1990–2009

Adapted from Goertz & Mahoney (2005). * = logical AND (conjunction of conditions); + = logical OR (substitutable/equifinal paths); → = quasi-sufficient relationship.

Bara 2014

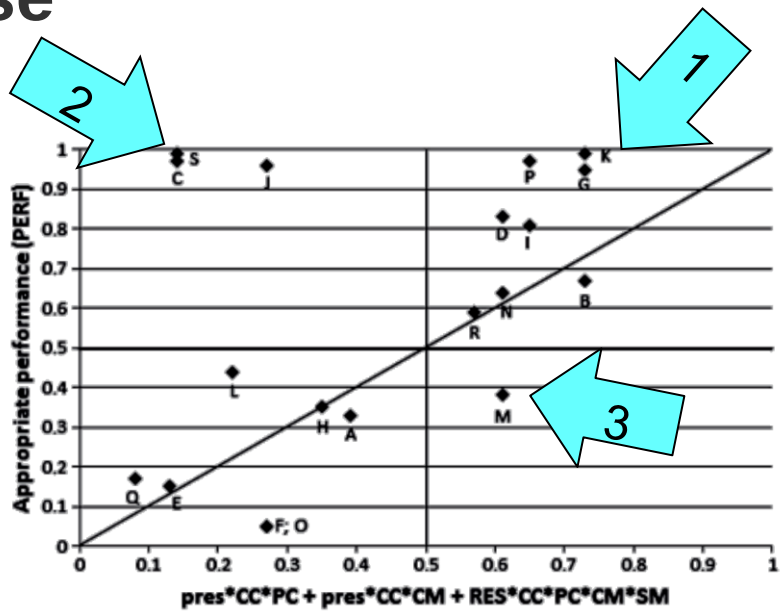
Performing complex Boolean calculations with Tosmana

- Tosmana‘s Boolean calculator can be useful to..
  - Find out whether two solutions / expressions overlap (e.g., to identify untenable statements)
  - Indicate the simplifying assumptions.

- Start Tosmana. *File -> import -> excel or fsqca -> vetcrisp.csv*
  - *Analysis -> Boolean calculator*
  - Select variable, indicate value(1 or 0)
  - Select operation (AND or OR)
  - Add expression to list
  - Mark the expressions you wish to select
  - Calculate the intersection or the complement of several expressions

- Example
  - PRES*pc + CM
  - pres*cm

The principles of post-QCA case selection: learning from cases



> After the analysis:
  - Typical cases: illustrate causal mechanism
  - Contradictory cases: help correct/refine/ complement explanatory framework
  - Unexplained cases: point to overlooked explanations

1. **Most typical cases**: highest member-ship in path & Y (K)
2. **Most deviant cases coverage**: highest membership in Y & lowest membership in solution term (S)
3. **Most deviant cases consistency**: highest membership in solution term & lowest membership in Y (M)

→ Deviant cases are compared to cases with similar constellations of explanatory factors (→ truth table rows!), but the opposite outcome. *What made the difference?*

Schneider and Rohlfing 2013; Schneider and Wagemann 2012: 305-312.

- Going multilevel? (Denk, Thomann & Manatschal, Rohlfing)
- MMD / sequencing (various options) – Schneider & Rohlfing; Fiss
- Software options (++!)