

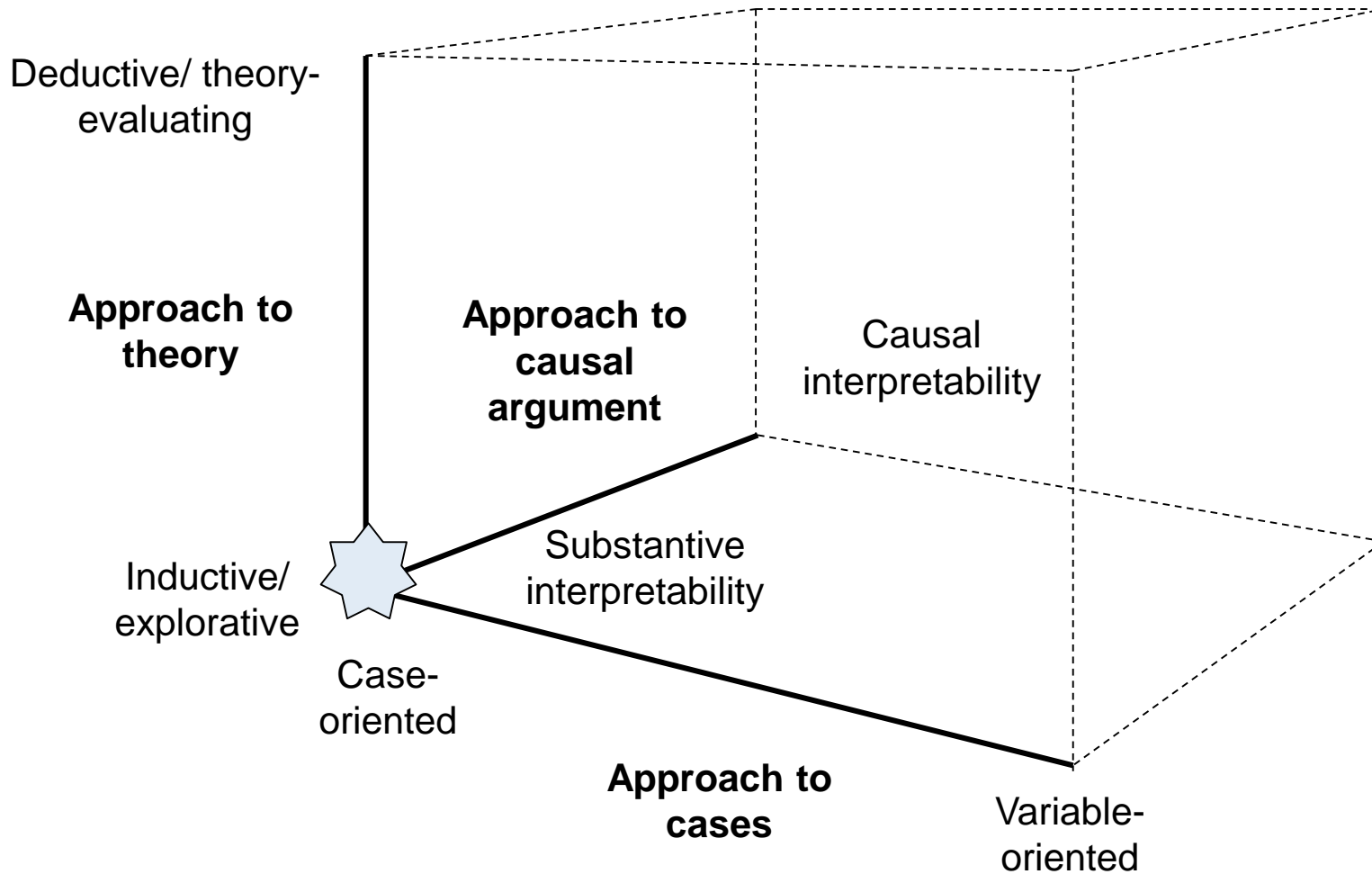
# **Innovation fronts in Qualitative Comparative Analysis (QCA): exploiting new possibilities of Set-Theoretic Methods**

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**Masterclass**

**Prof. Benoît Rihoux, UCLouvain**

**<http://www.compass.org>**

# Emerging approaches to QCA (Thomann)



- 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	
<b>Complex solution term</b>	X			
<b>Intermediate solution term</b>	X	X		
<b>Parsimonious solution term</b>	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  $PS < IS < CS$

# 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	○	○	○	
<i>Single case coverage</i>	ITA2,ITA3; GBR,ESP	PRT1;ESP	ESP,CZE; ITA1	IRL
<i>Consistency</i>	0.969	1.000	0.946	1.000
<i>Raw coverage</i>	0.421	0.212	0.404	0.212
<i>Unique coverage</i>	0.099	0.084	0.084	0.084
<i>Solution consistency</i>	0.931			
<i>Solution coverage</i>	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: Path diagrams

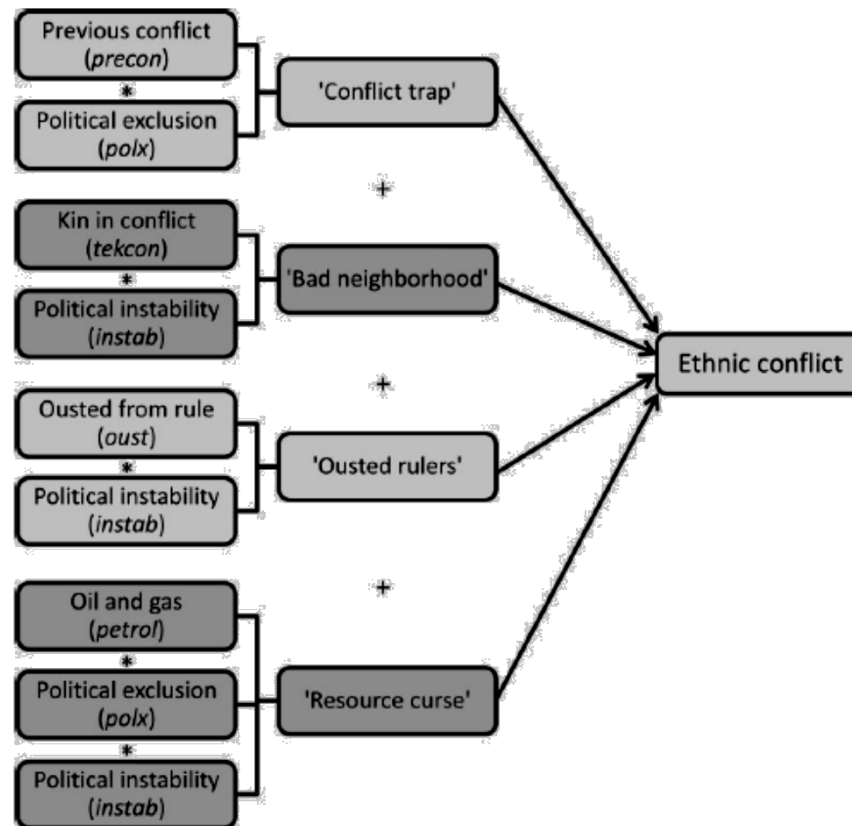


Figure 1. Configurational model of ethnic conflict, 1990–2009

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

# Performing complex Boolean calculations with Tosmana

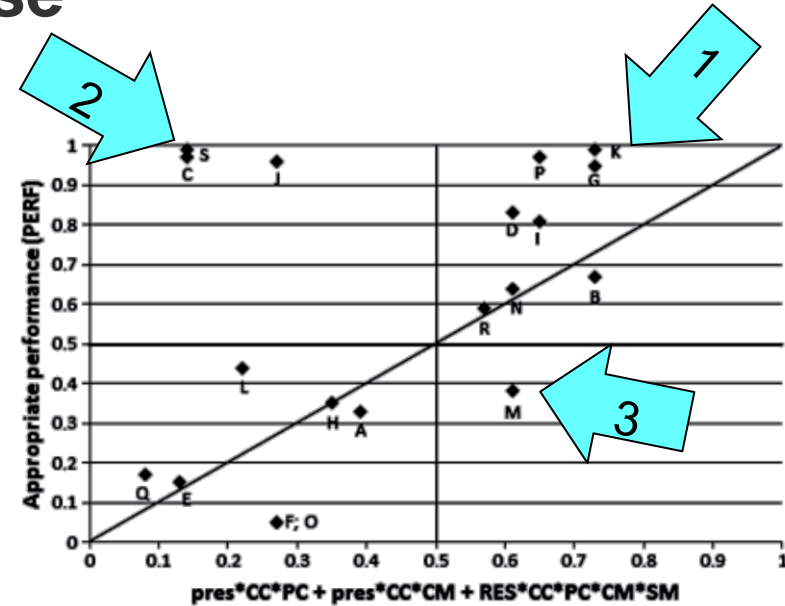
- > Tosmana's Boolean calculator can be useful to..
  - Find out whether two solutions / expressions overlap (e.g., to identify untenable statements)
  - Indicate the simplifying assumptions.
  
- > Start Tosmana. *File -> import -> excel or fsqca -> vetcrisp.csv*
  - *Analysis -> Boolean calculator*
  - 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 membership 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?*

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