

Evaluating group processes: methodological lessons from group model building

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COST
6 July 2012

Outline

- Relevance
- Group model building process
 - Conceptual and formal
- Evaluation
 - Phase 1: case studies
 - Phase 2: receiver perspective
 - Phase 3: sender perspective
 - Phase 4: interaction
- Conclusion



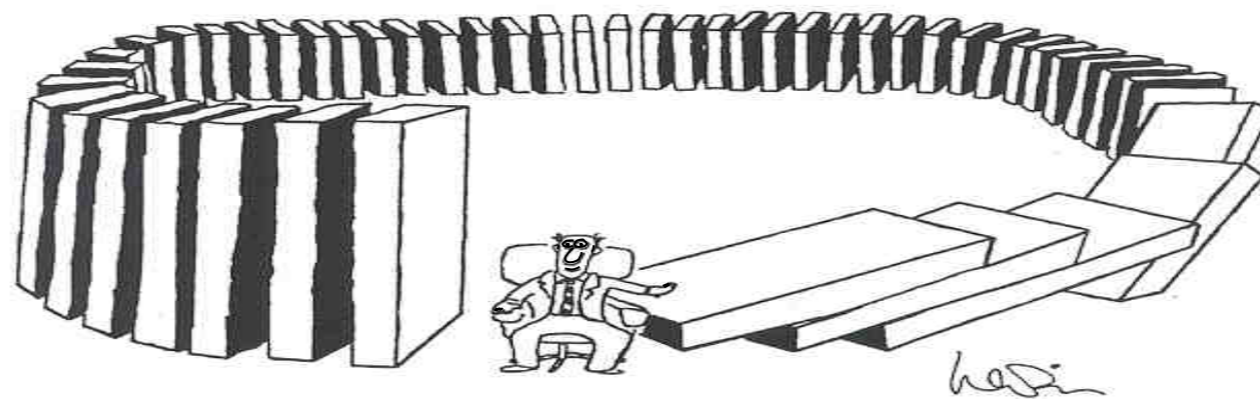
Relevance

- Insight into effectiveness tests our assumptions
- Clarifies impact (also to skeptics)
- Shows what works and why
- Enables us to train novices better



Group model building

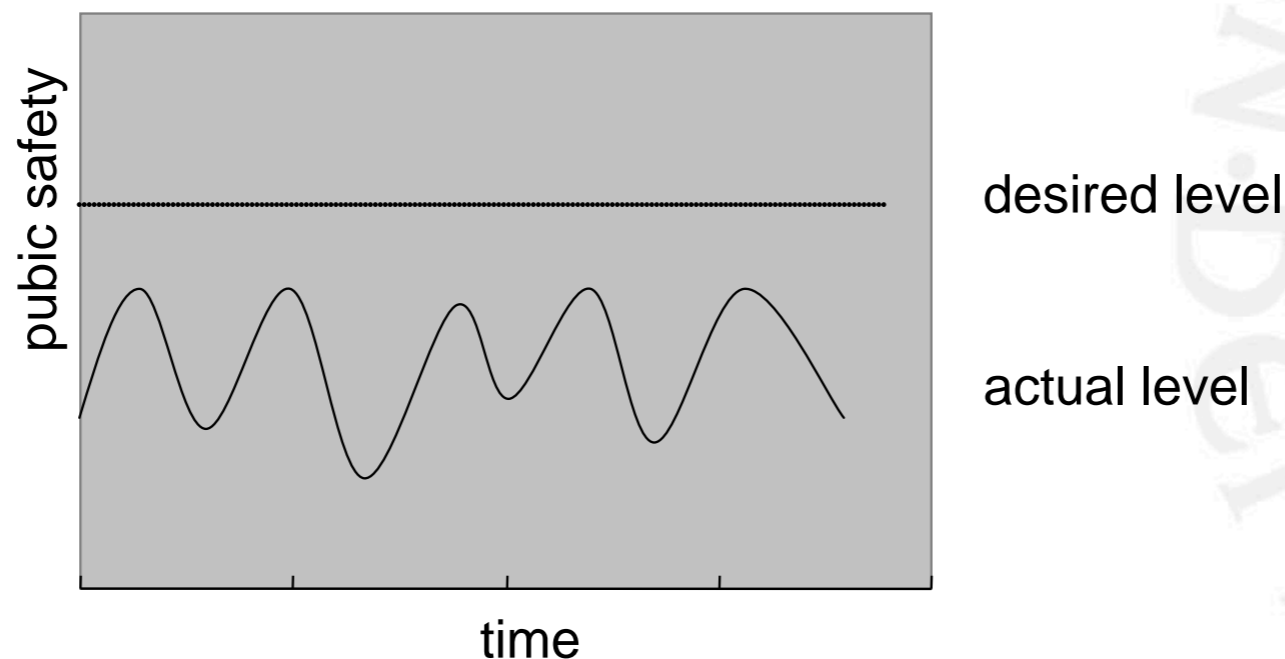
- Based on system dynamics
 - Information feedback
- Involves clients in modelling
 - Information and implementation
- Goals
 - Problem structuring, insight/ learning and consensus
 - High quality solutions and implementation



Group model building process - conceptual Safety in a city neighbourhood

About 20 participants from housing associations, primary school, municipality departments, police, inhabitants, social support

Central problem: **public safety**
Reference mode safety



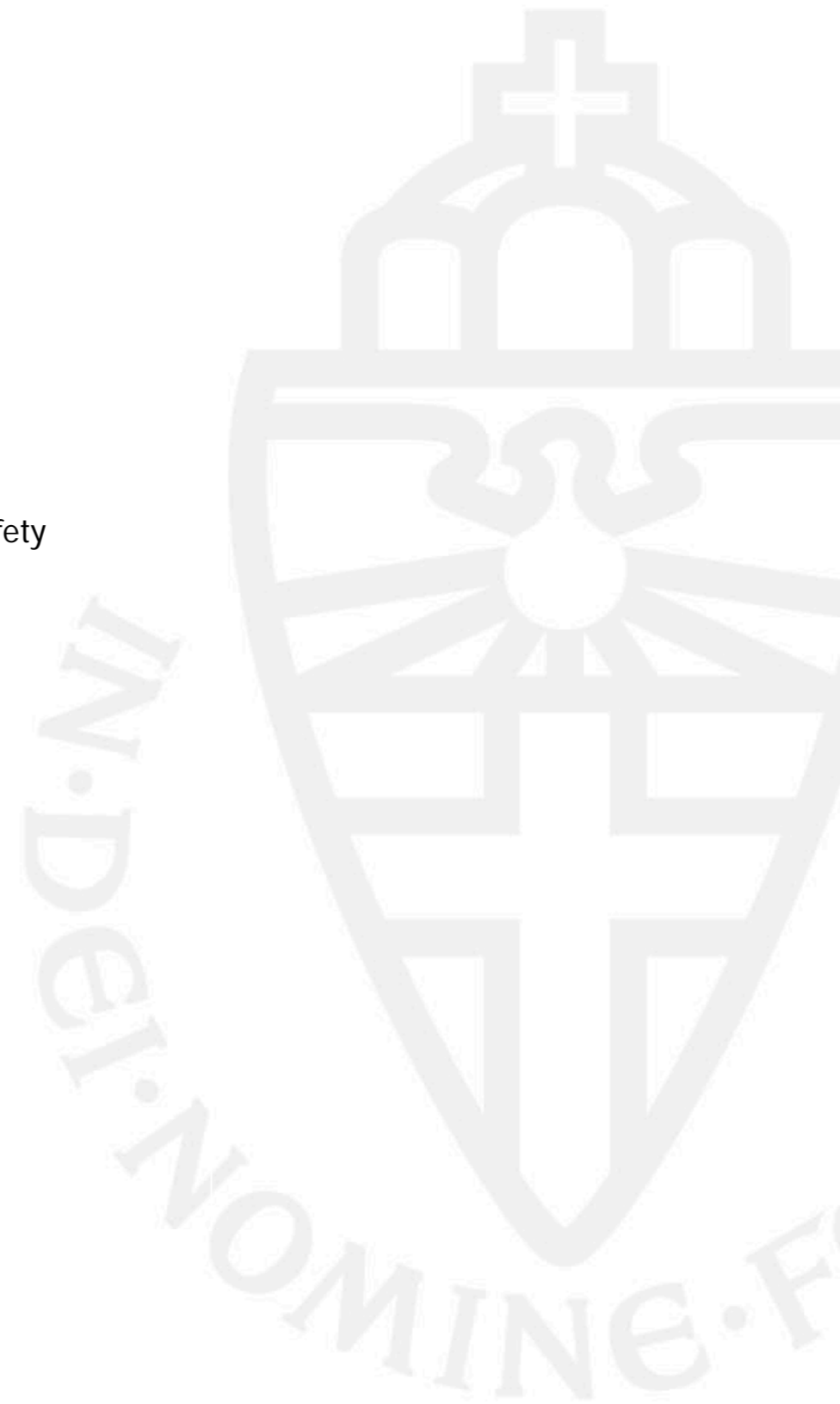
Central variable in centre of the screen
Nominal Group Technique

trespass against environmental laws
vandalism
social control
number of like-minded people in area
racism
violence
fear of violence
moving from area
unallowed use of public space

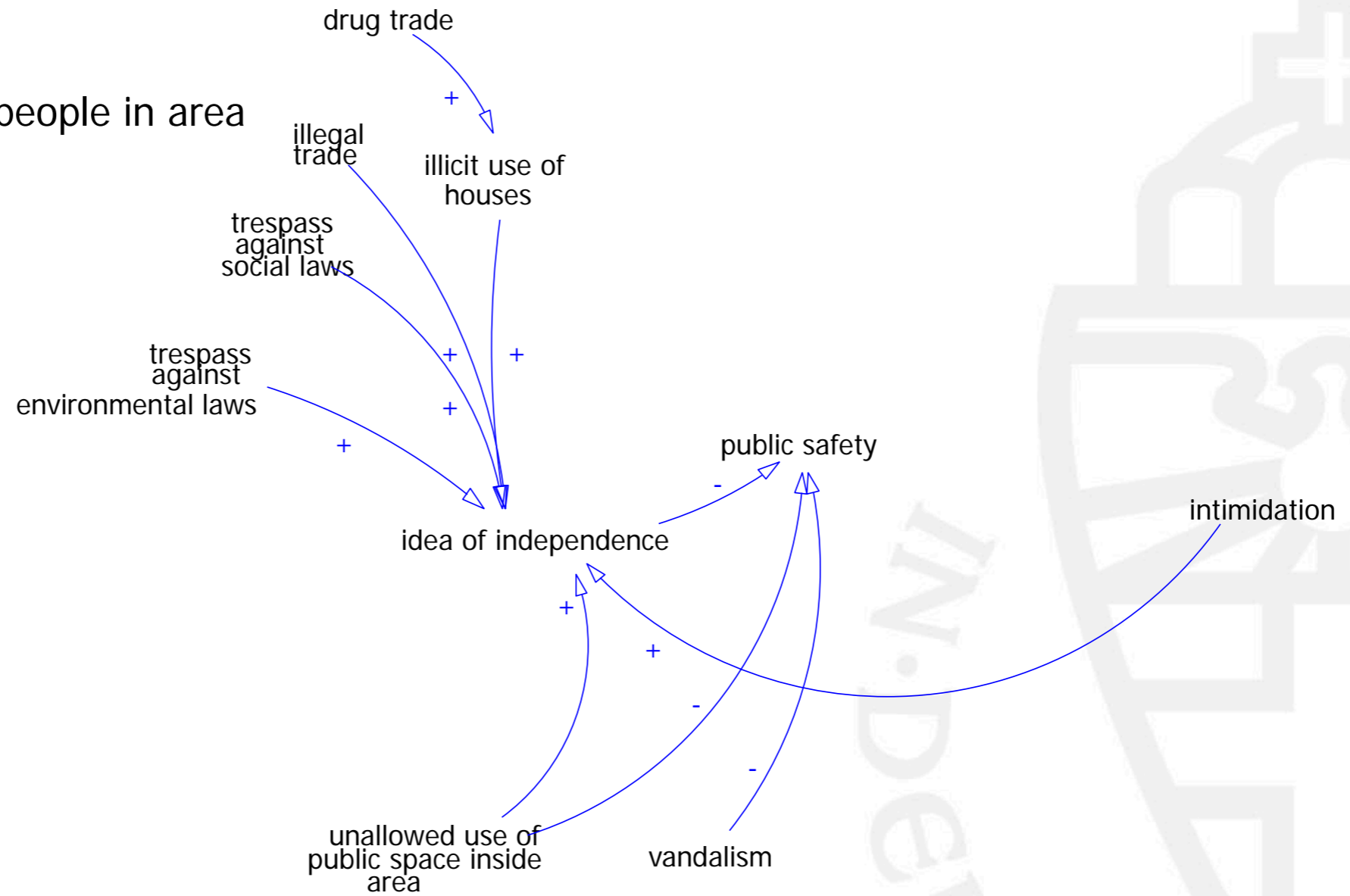
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public safety

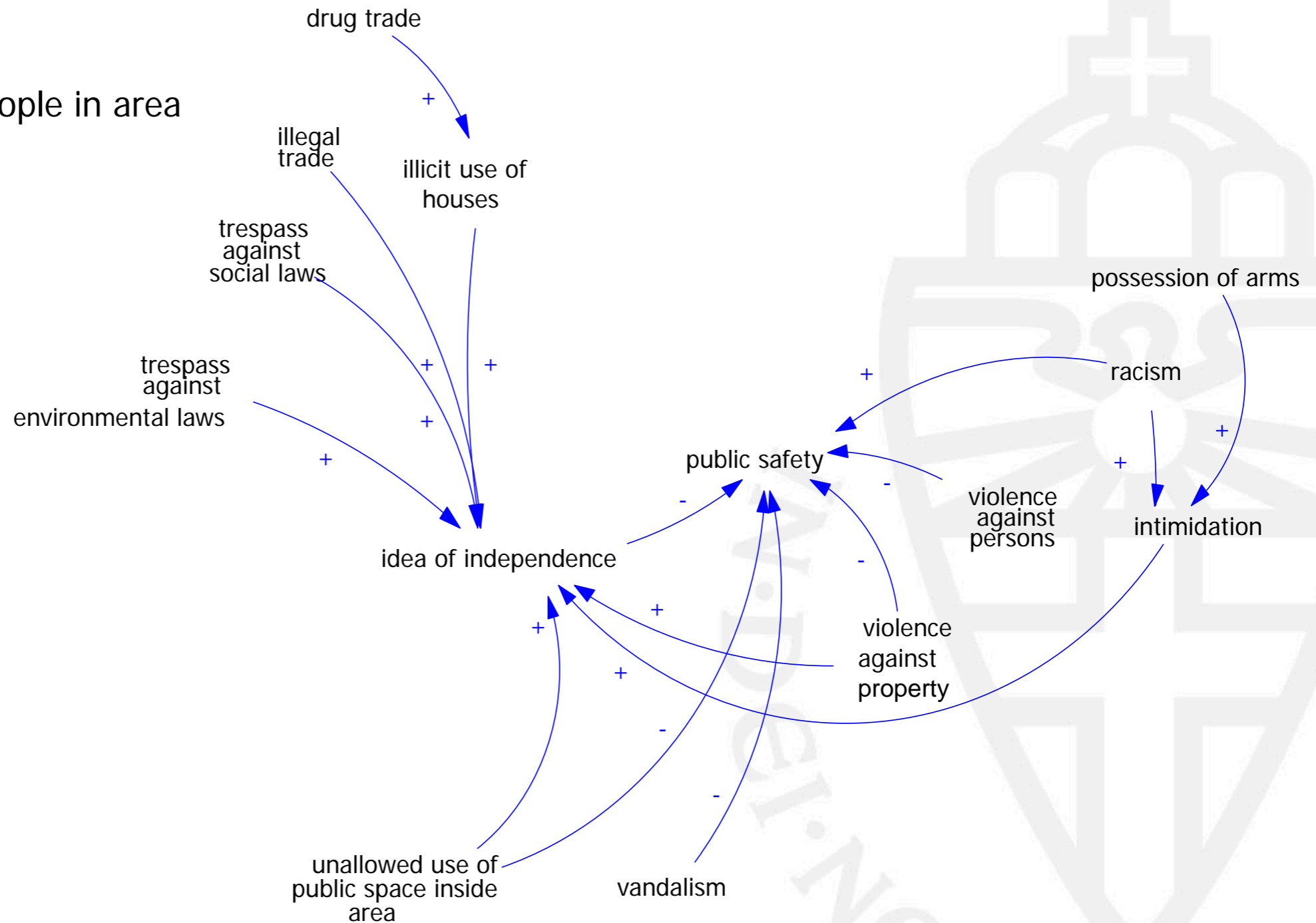


social control
number of like-minded people in area
racism
violence
fear of violence
moving from area
...
...

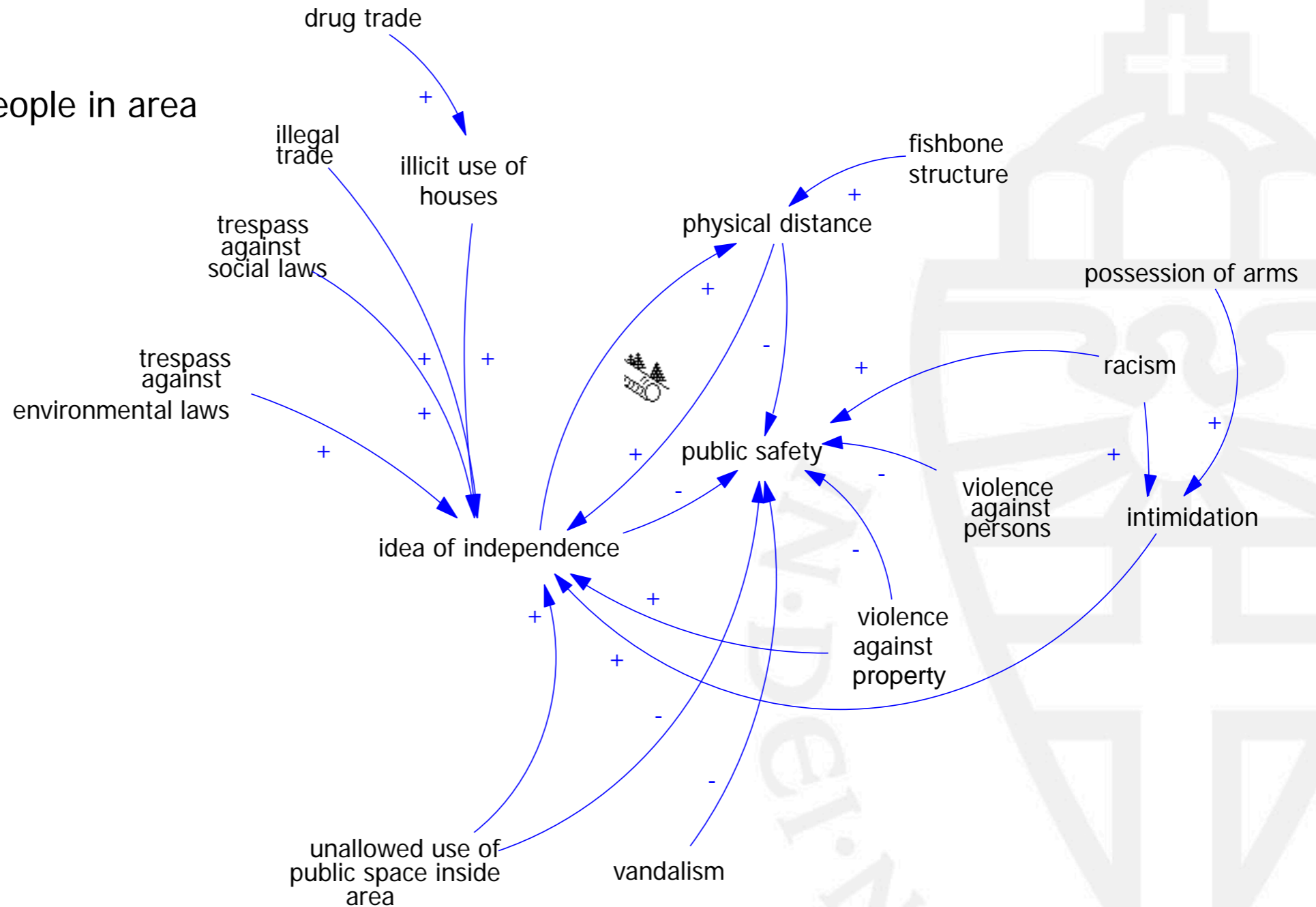


social control
number of like-minded people in area
fear of violence
moving from area

...
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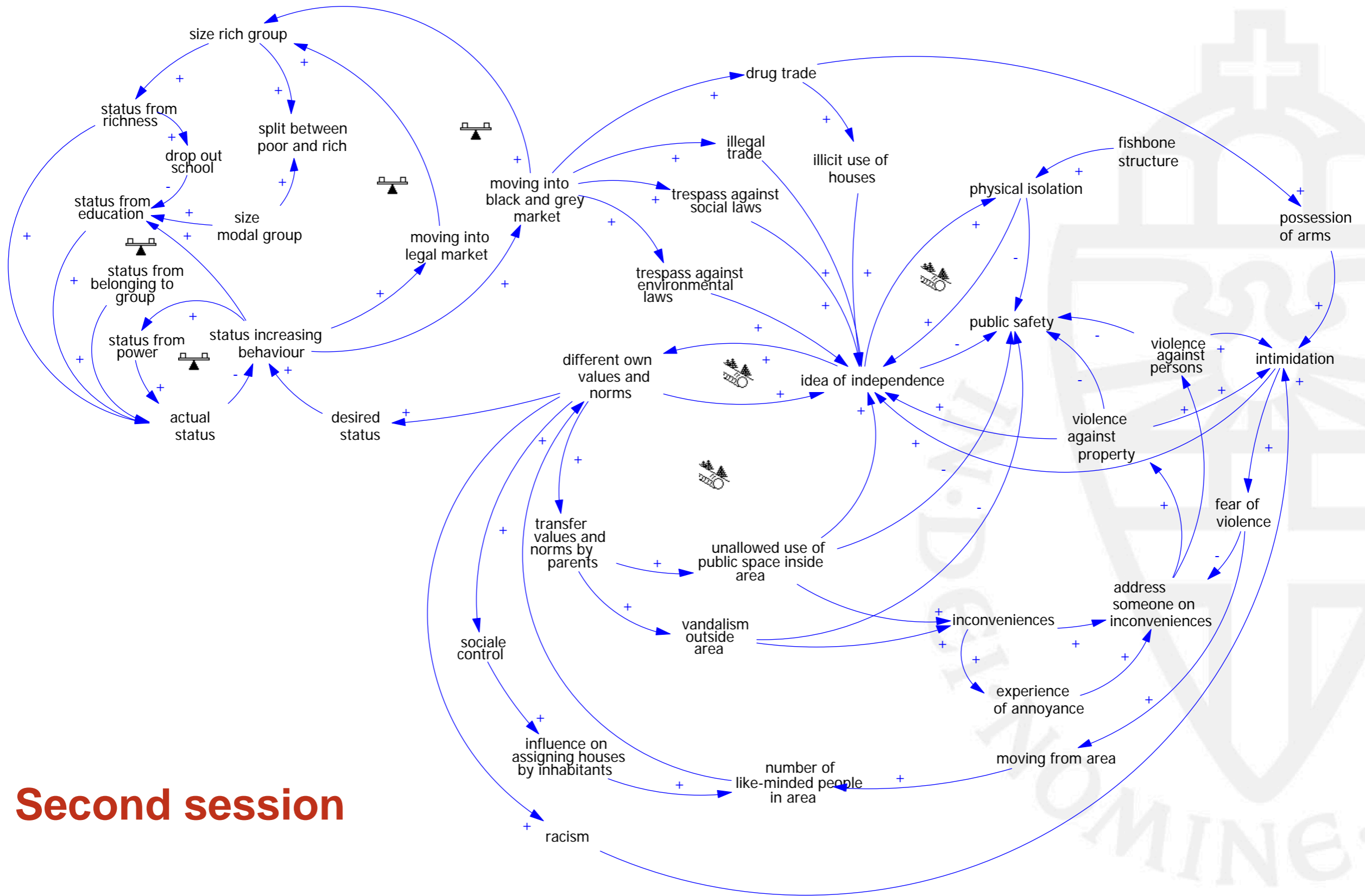


social control
 number of like-minded people in area
 fear of violence
 moving from area



After first session

- Workbook: report and questions



Second session

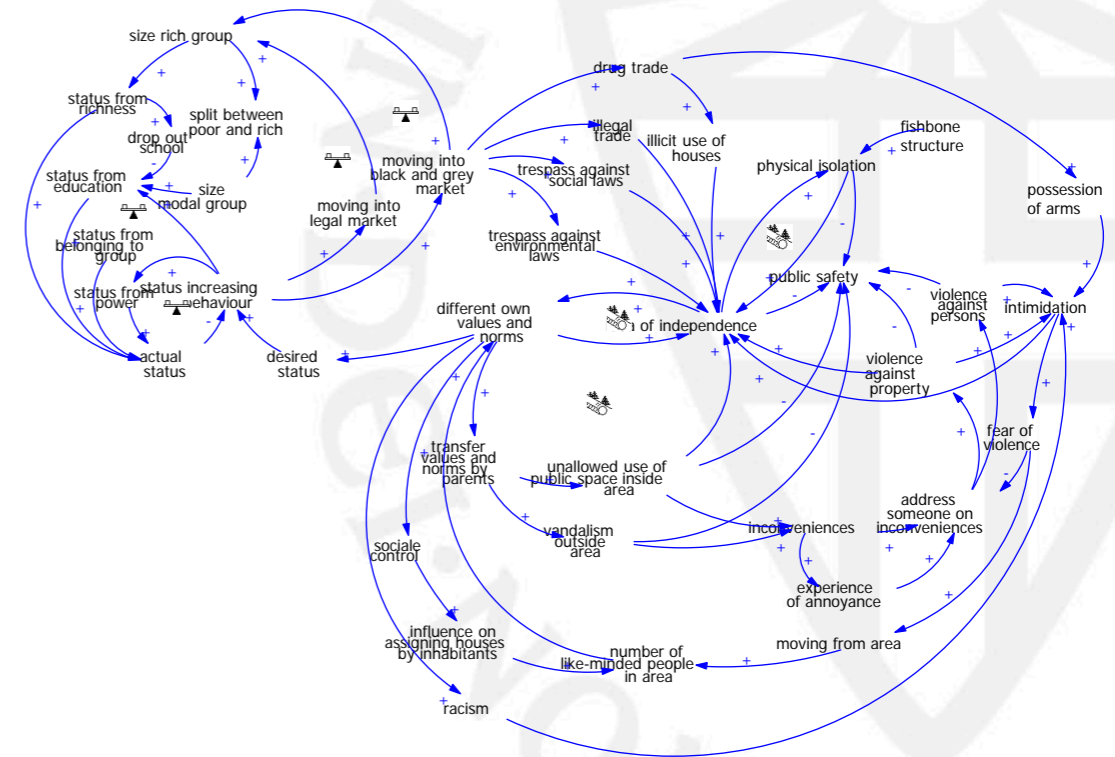
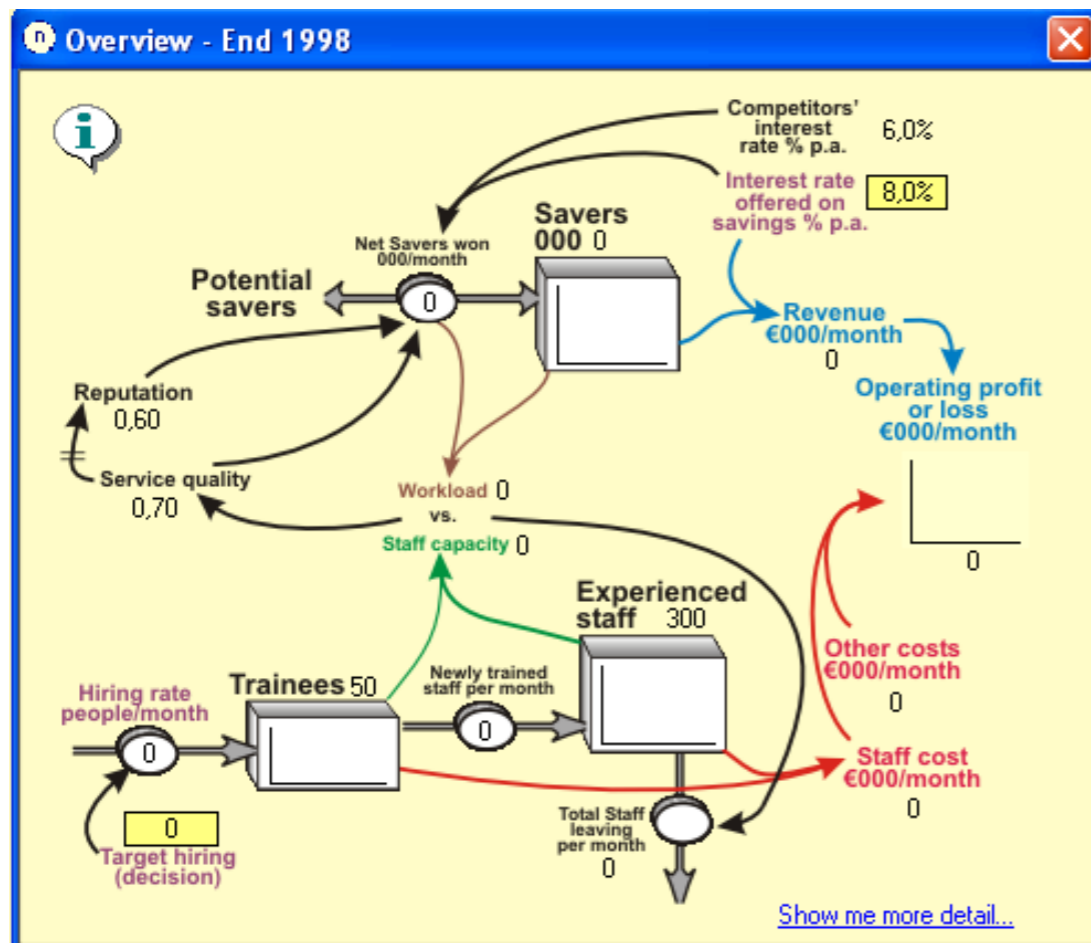
Group model building process - formal



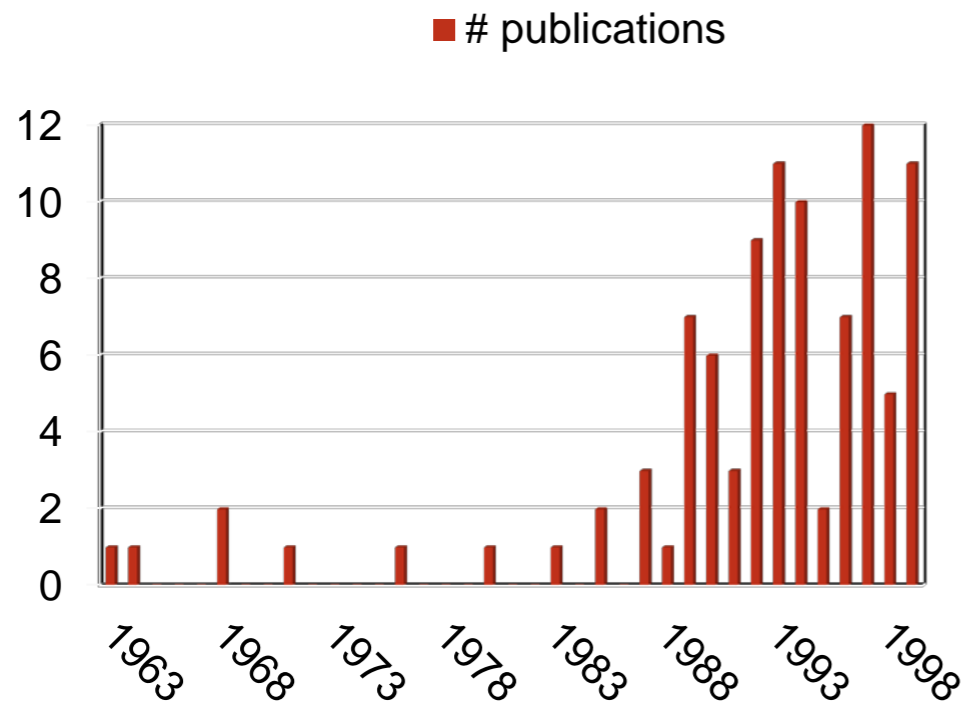
Group model building process

Formal/ quantitative
Stock&flows diagram

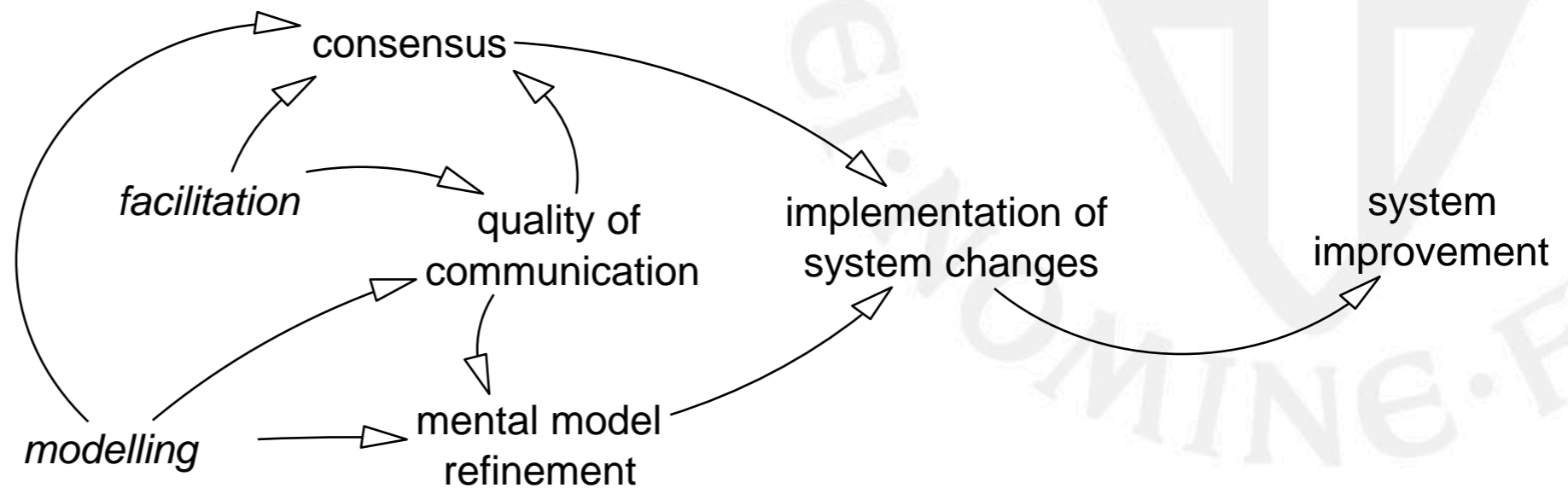
Conceptual/ qualitative
Causal loop diagram;
stock&flows diagram



Evaluation phase 1: case studies



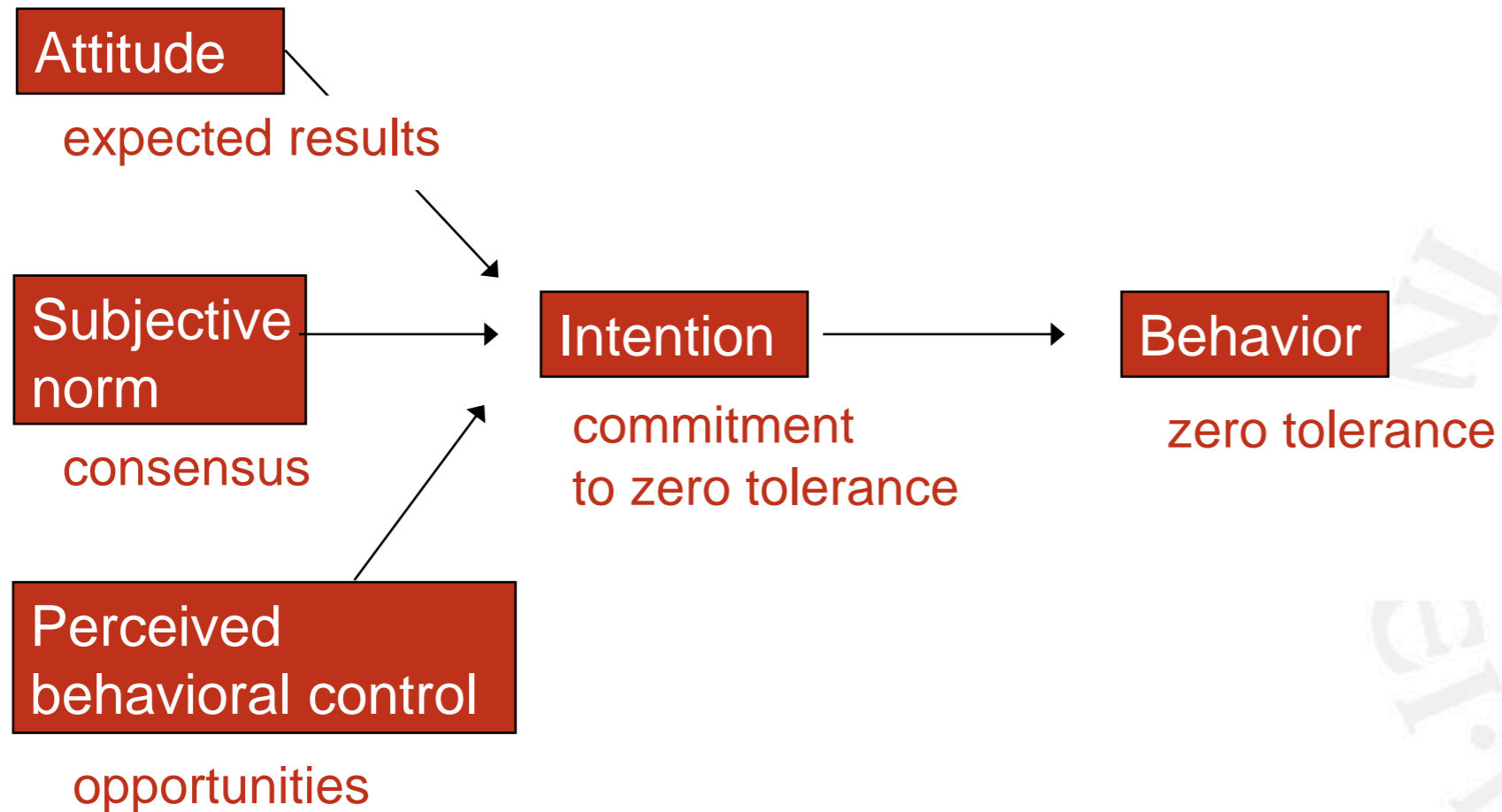
Cf. Rouwette, Vennix, and Van Mullekom, 2002



Evaluation phase 1: case studies

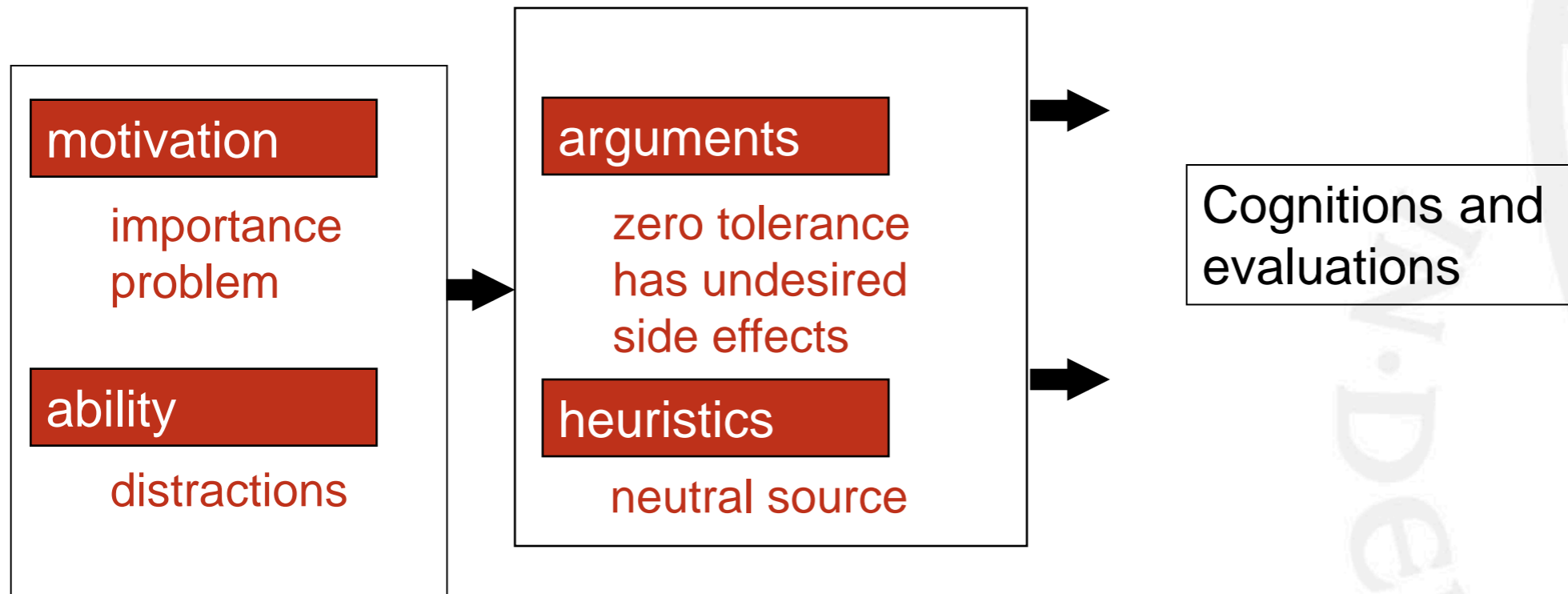
- Cases generally report increases in quality of communication, insight, consensus and commitment
- Failed cases underreported
- Some outcomes defined differently across cases (e.g. consensus)
- Few differences between effects of types of cases (e.g. qualitative versus quantitative models)
- Open questions
 - To what extent are these findings generalisable?
 - Why/ how does modelling lead to these outcomes?

Evaluation phase 2: receiver perspective



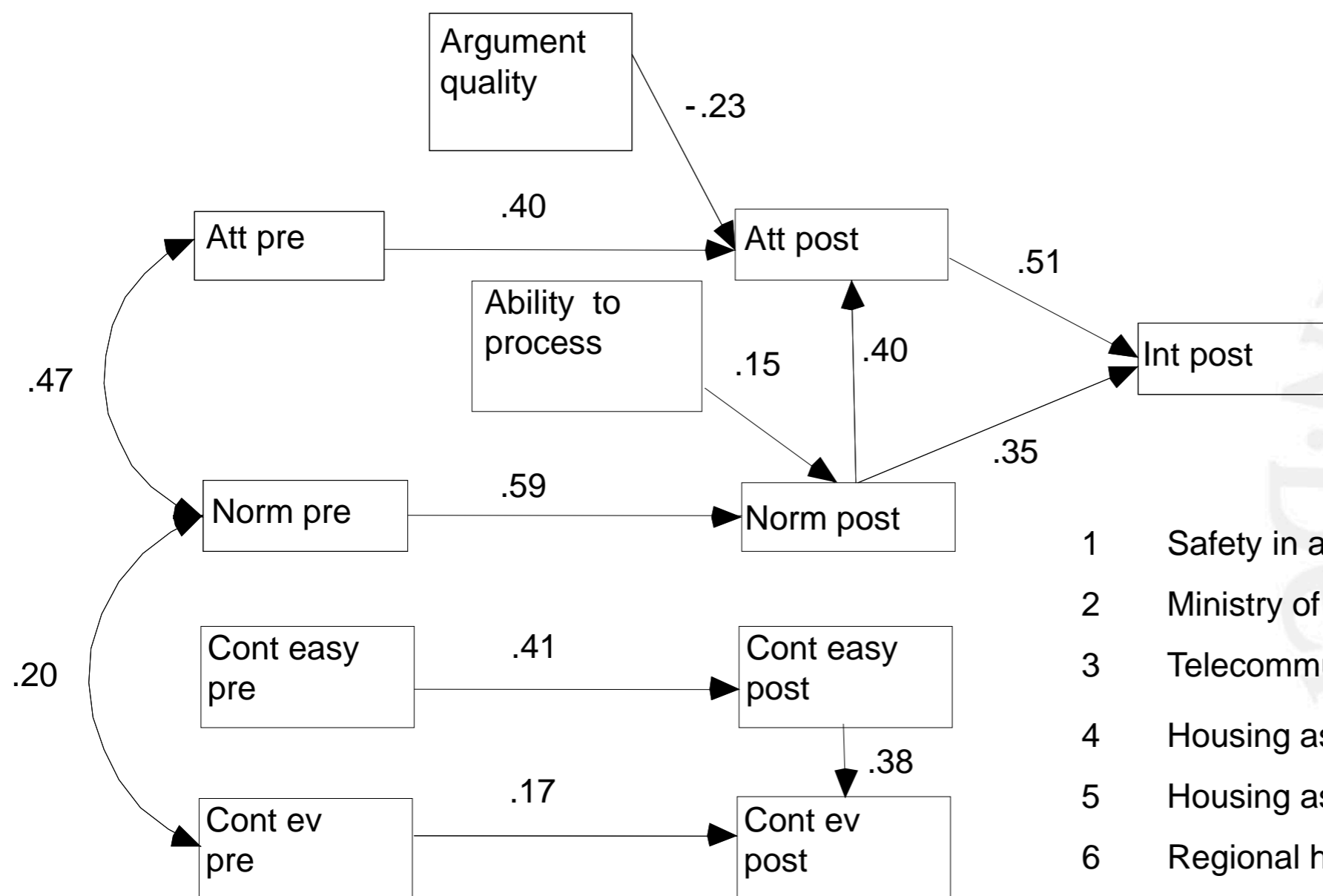
Cf. Ajzen, 1991; 2001

Evaluation phase 2: receiver perspective



Cf. Petty and Cacioppo, 1986

Evaluation phase 2: receiver perspective



	Part's	Att objects	
1	Safety in a city district	9	27
2	Ministry of transport	6	24
3	Telecommunication provider	7	14
4	Housing association east	3	9
5	Housing association west	4	12
6	Regional housing market	5	14
7	Oil company	8	24
	Total	42	124

Evaluation phase 2: receiver perspective

- What are good arguments?
 - in persuasion research: relevant and new information
 - in system dynamics: counterintuitive insights
- An alternative: incremental reconstruction of group's understanding, merging into agreement

Identifying ways for moving forward	Creates agreement on how to move forward and motivates to work together
Modifying relations and ideas	Contributes to a new shared understanding
Relating participants' ideas	Shows that participants are in this together and are all affected
Representing participants' ideas	Shows that any participant may change representation and separates ideas from persons

Cf. Black and Andersen, 2012

Evaluation phase 2: receiver perspective

- Theory of planned behaviour seems to capture variables of interest
- Survey results are in line with open interviews Cf. Rouwette, 2011
- Difficult to operationalise
- Open questions
 - Why does perception of control not improve?
 - What is the role of heuristics?
 - What are good arguments?

Evaluation phase 3: sender perspective

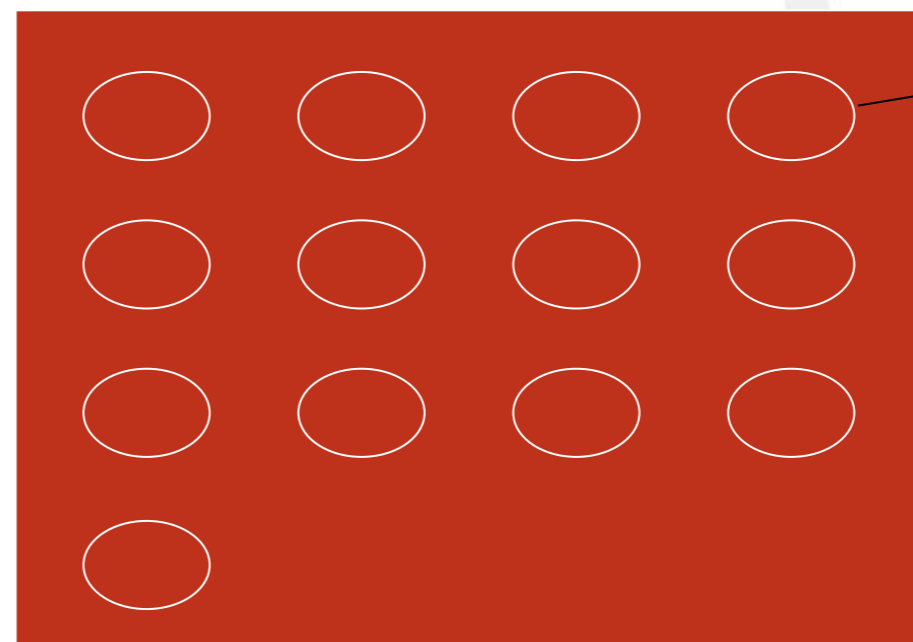
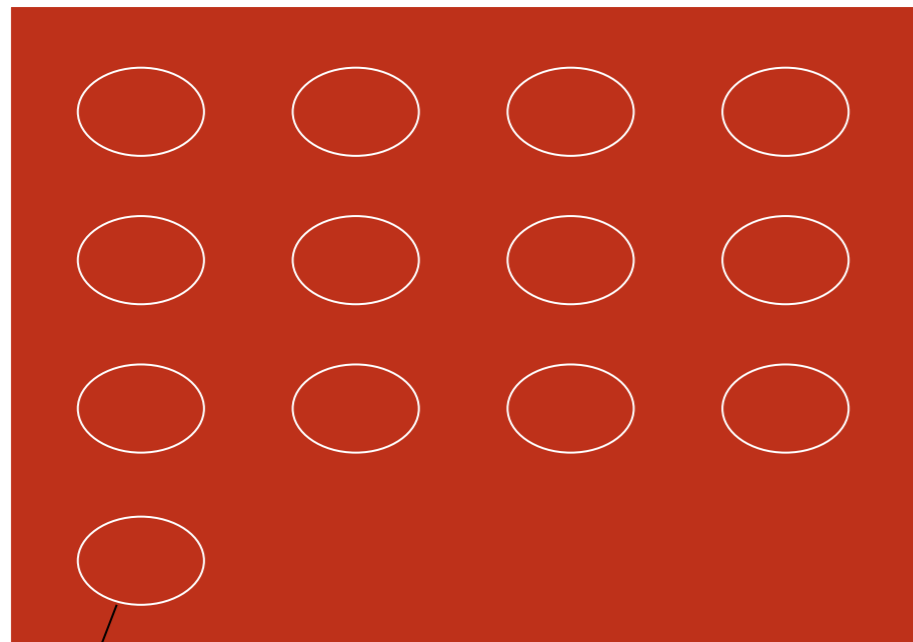
	member X	member Y	member Z
All information shared			
Pro-A	$a_1 a_2 a_3 a_4 a_5 a_6 a_7$	$a_1 a_2 a_3 a_4 a_5 a_6 a_7$	$a_1 a_2 a_3 a_4 a_5 a_6 a_7$
Pro-B	$b_1 b_2 b_3 b_4$	$b_1 b_2 b_3 b_4$	$b_1 b_2 b_3 b_4$
Mildly biased distribution			
Pro-A			
Shared	$a_1 a_2 a_3 a_4$	$a_1 a_2 a_3 a_4$	$a_1 a_2 a_3 a_4$
Unshared	a_5	a_6	a_7
Pro-B (All shared)	$b_1 b_2 b_3 b_4$	$b_1 b_2 b_3 b_4$	$b_1 b_2 b_3 b_4$
Severely biased distribution			
Pro-A			
Shared	a_1	a_1	a_1
Unshared	$a_2 a_3$	$a_4 a_5$	$a_6 a_7$
Pro-B (All shared)	$b_1 b_2 b_3 b_4$	$b_1 b_2 b_3 b_4$	$b_1 b_2 b_3 b_4$

Cf. Stasser and Titus, 1985

Evaluation phase 3: sender perspective



Pretest on individual decisions



Process measurement of information exchanged

Posttest
Consensual, political, rational empirical perspective
Satisfaction (on process and outcome)
Decisions

Posttest decision quality

Cf. McCardle, Rouwette, Vennix and Jacobs, 2009

Evaluation phase 3: sender perspective

- Hidden profiles seems to match modelling context
- Controlled condition leads to a number of issues
 - outcomes depend on self-assessment
 - task needs to generate discussion and be completed in one hour
- Results are being analysed



Evaluation phase 4: interaction

- Power differences and communication patterns
- With Alberto Franco: conflict and decision patterns

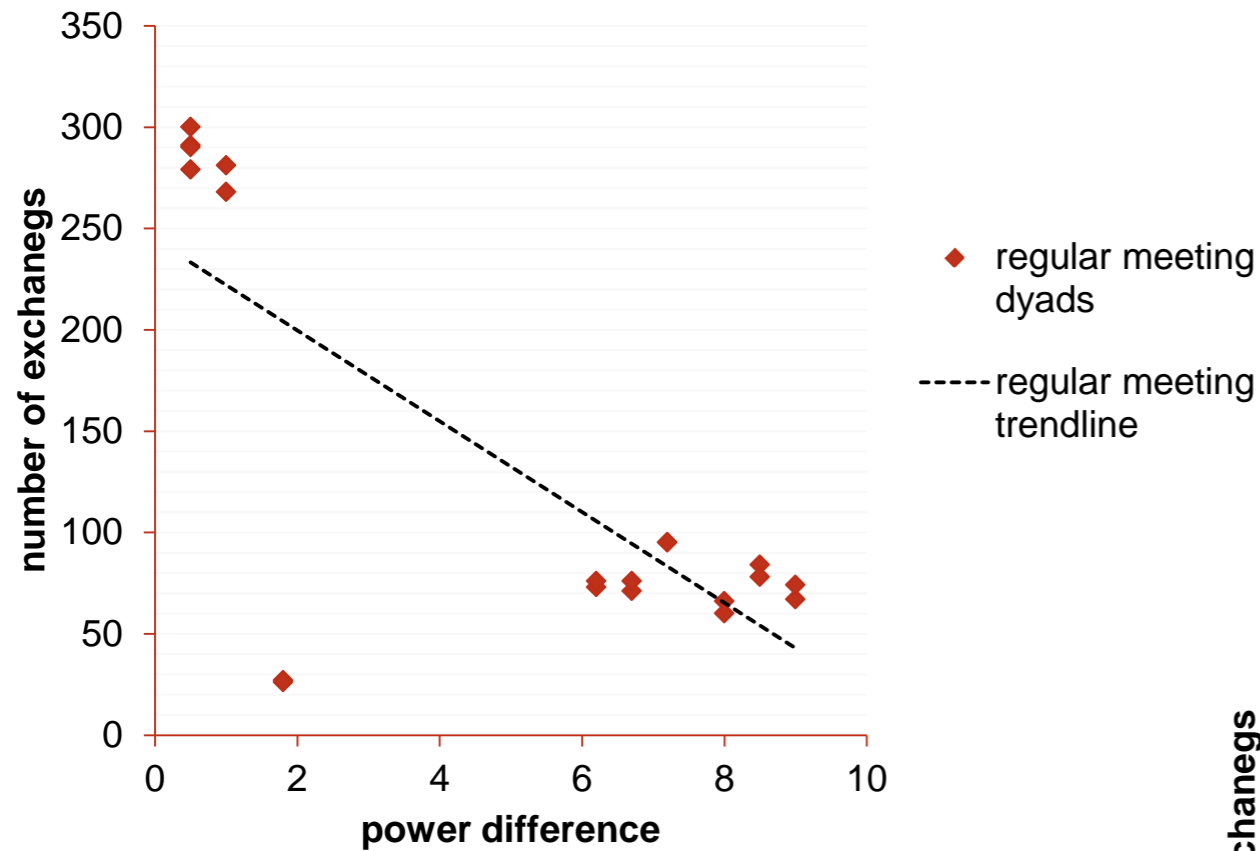


Evaluation phase 4: interaction

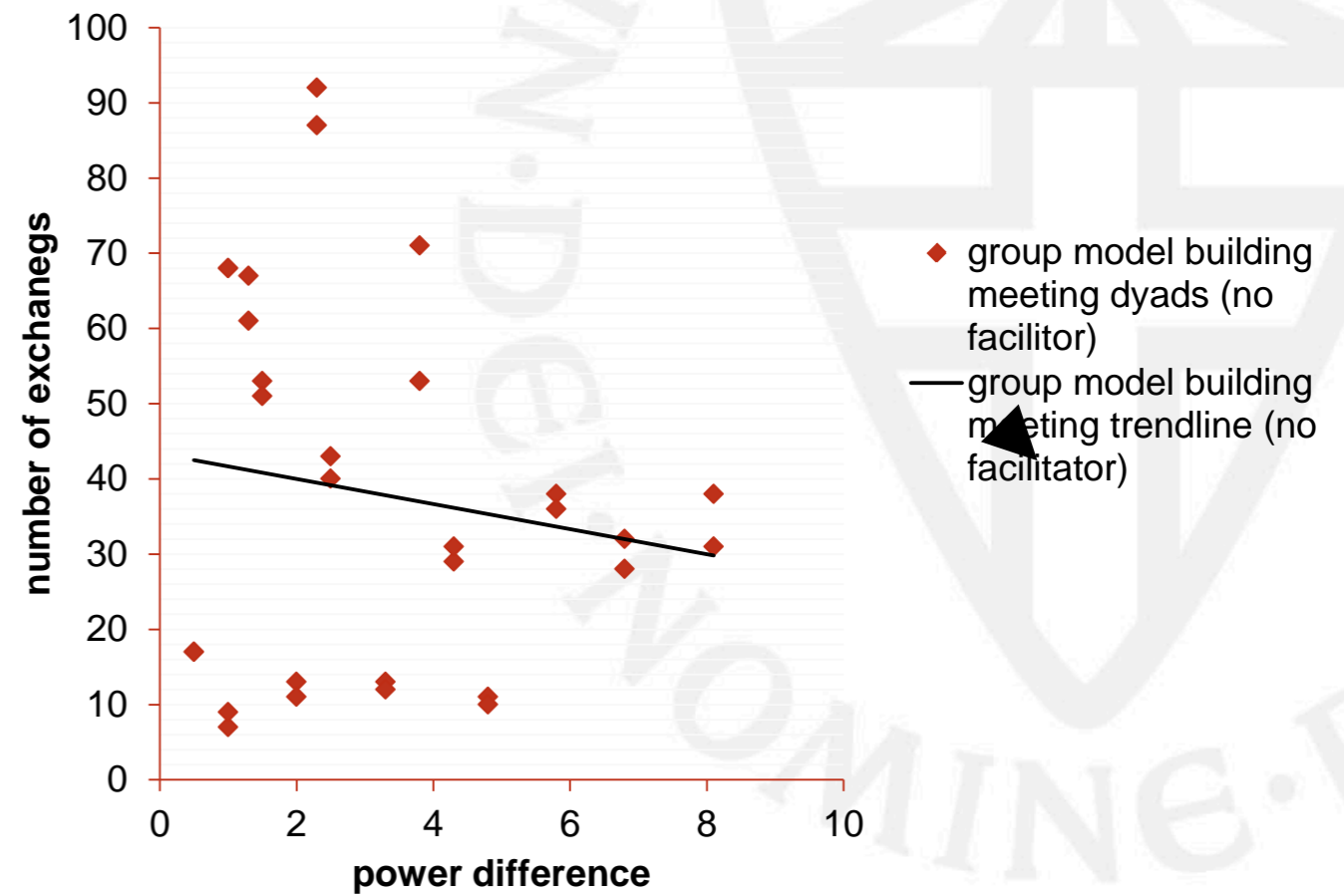
Expression number	Participant	Expression	Directed to and meant for subject:				
			ALL	?	A	B	C
1243	A	They stated in that report, yes we do not trust the local governments				X	
1244	B	Yes			X		
1245	C	Really, did they say that?			X		
1246	A	Yes they did					X
1247	B	Mmm			X		
1248	A	Yes nice statement, sounds really nice, but we are not convinced that the local governments will do it right				X	
1249	C	Article			X		
1250	A	And the argument was yes the ACP is not here to state that one local government acts ok and the other does not				X	

Cf. Van Nistelrooij, Rouwette, Verstijnen, Vennix, 2012

Evaluation phase 4: interaction



Cf. Van Nistelrooij, Rouwette, Verstijnen, Vennix, 2012

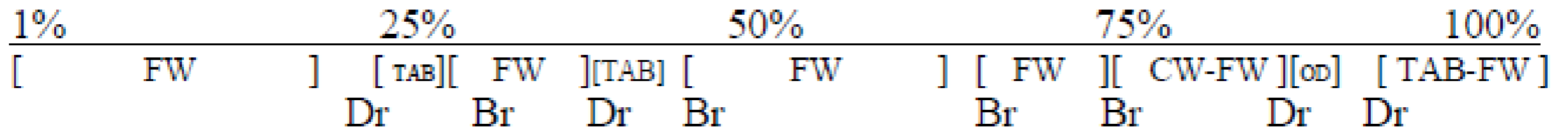


<i>Unit</i>	<i>Member</i>	<i>Transcript</i>	<i>DFCS code</i>	<i>GWRCs code</i>
1. 00s	4	I think we haven't really quite, it's been a very important question, we have a winner in terms of the aggregate score which guides our decision,	3a	1
2.		are we going to make one decision and put all our money there, or are we going to prorate our money in some way, the top two, the top three, and how do we do that?	2a	
3.	3	Yeah	5	
4.	5	Hm	5	
5.	3	Yeah	5	
6. 15s	2	I'll go for, one	3a	2
7.	3	I would go for one . . . I would go for like two	3a	
8.	1	Yup	5	
9.	4	I would go for two	3a	
10.	2	Max two, not more than that	3a	
11.	4	Uh, okay	5	
12.	3	Two would, yeah	3a	
13.	2	I would-		
14.	1	I would go for one	3a	
15.	5	I would go for one	3a	
16.	3	One? Oh, yeah?	3a	
17.	2	I would just go for shelter	3b	
18.	1	Shelter?	3d/	
19.	2	That's what we got here	3a	

20.30s	3	Democracy wins	2b	3a
21.	2	Yeah, yeah - actually, there is a point,	2b	
22.		if you look at the shelter, it's 7000, they are close, I mean, you can see everybody	3a	
23.	3	No, but-	3a	
24.	1	7000, yeah, it's all these things they are actually quite close as compared to what we see with the shelter	3a	
25.	4	We have to reach a unanimous decision, so how about this for a political compromise?	2a	
26.45s		I champion the shelter because I think it's a cause that's desperately important, but	3d+	
27.		I recognize that you guys gave some importance to tourism, and maybe we could trade off the library against tourism so that the whole board, everybody, gets something that they want,	3b	
28.		it isn't quite the rankings that we've come up with, but if that would buy your political support, I would be prepared to trade	2a	
29.60s	3	<u>Hm</u>		
30.	1	So you mean to say that, we distribute between shelter and tourism	2a	
31.	4	It's a proposal, I mean, I would be perfectly happy to distribute between shelter and library, but that's me getting everything I want, and I don't know that it's you guys getting anything you want;	2a	
32.75s		it's a conscious moving away from what the numbers tell us, but to reach a political consensus in the 90 seconds we've got left	2a	3d
33.	3	Yeah	5	

Evaluation phase 4: interaction

- Sequential analysis shows temporal structure of interaction
- May reveal 'rules of the game' (Hoppenbrouwers et al., 2010)



Abbreviations: FW: Focused Work, CW: Critical Work, OPP: Opposition, TAB: Tabling, OD: Open Discussion, Br: Normal Breakpoint, Dr: Disruption

Cf. Poole and Roth, 1989

Conclusion

- Sender perspective: theory of planned behaviour
- Receiver perspective: hidden profile
- Interaction: hierarchy, decision patterns, need for closure

- **Insight into effectiveness:** hidden profiles not relevant (for students?)
- **Clarifies impact:**
 - communication, insight, consensus, commitment
 - attitudes and norms
- **Shows what works and why:** incremental reconstruction, power
- **Train novices better:** arguments, power, incremental reconstruction