hate: no choice

agent simulations

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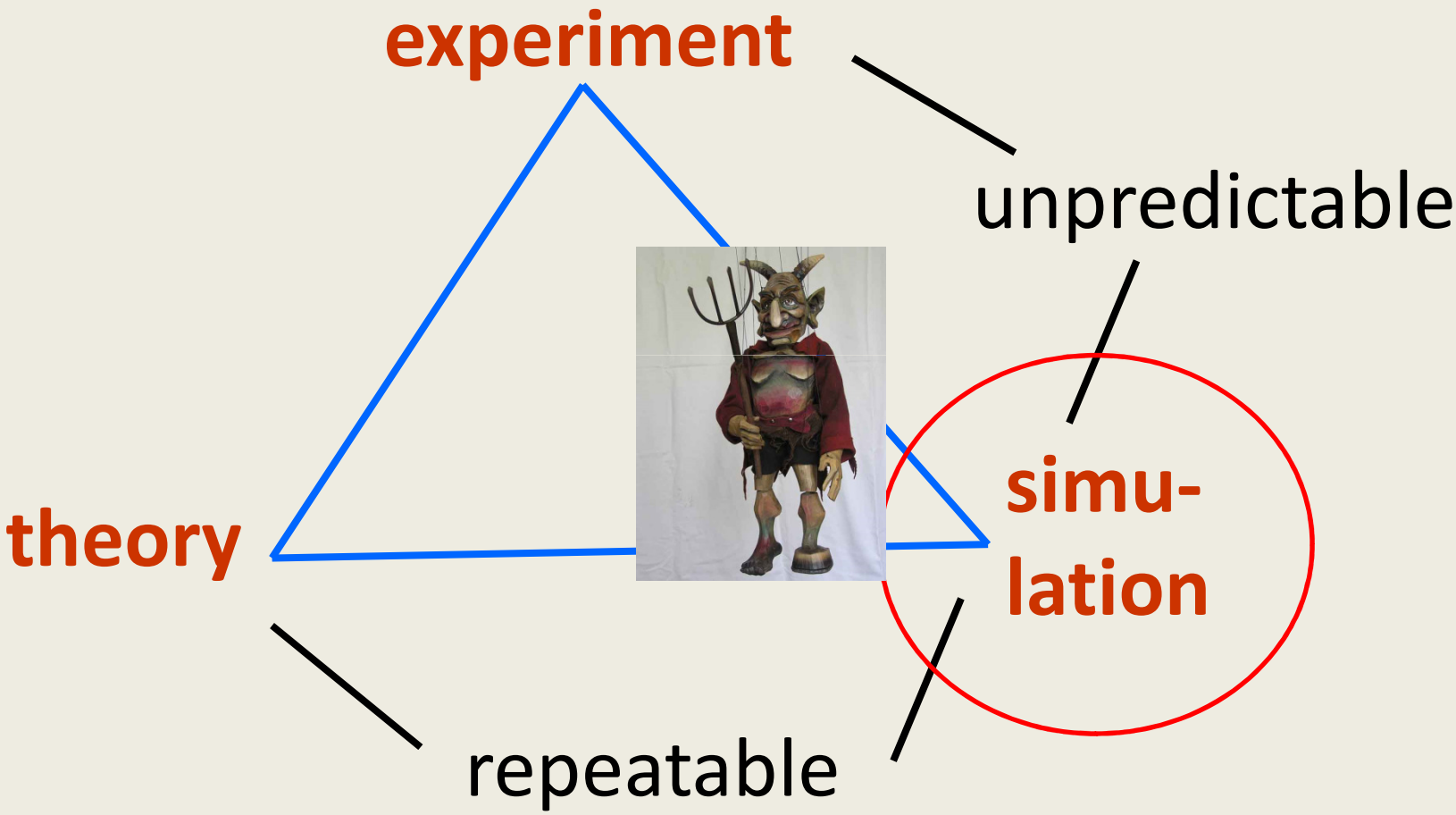
SOCIONICAL

SEVENTH FRAMEWORK PROGRAMME

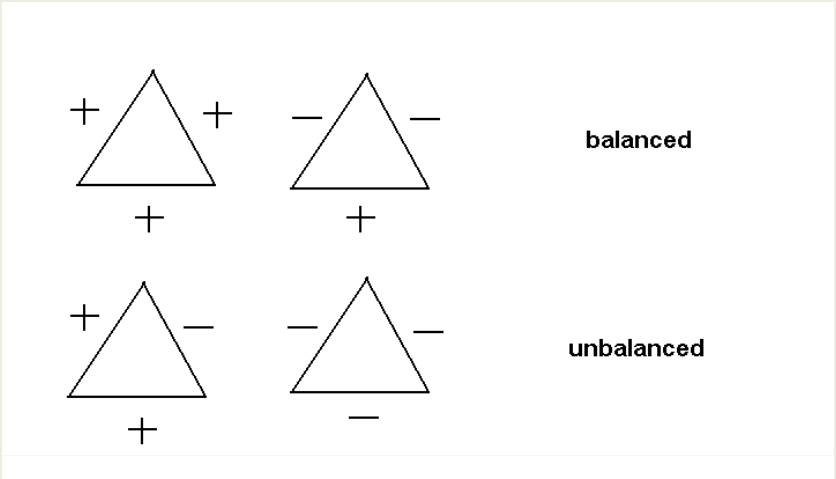

experiment
unpredictable
theory
simu-
lation
repeatable

outline

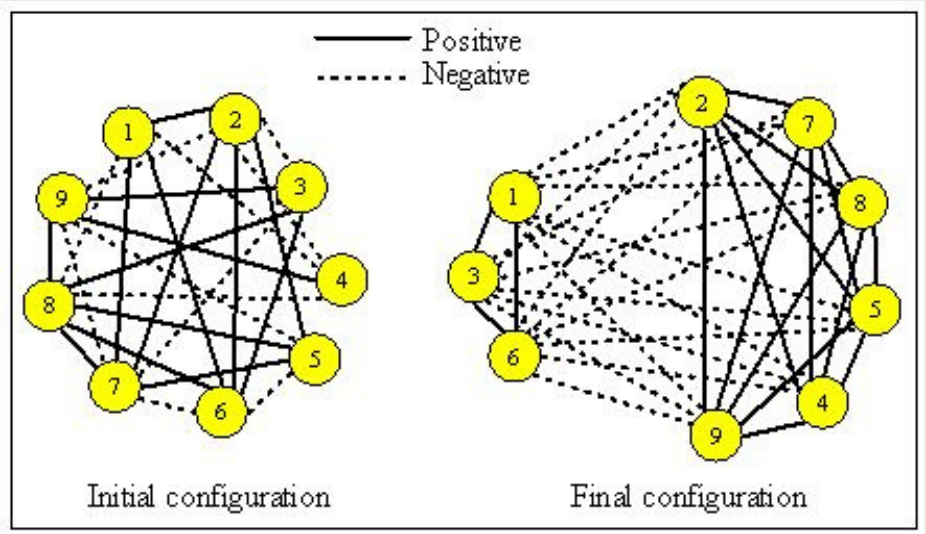
- Four simulations:
  - Heider balance
  - In-group cooperation
  - Biased learning
  - Case of ghetto
- Conclusion: no individual choice

Heider balance

Friend of my friend is my friend
Enemy of my friend is my enemy
Friend of my enemy is my enemy
Enemy of my enemy is my friend



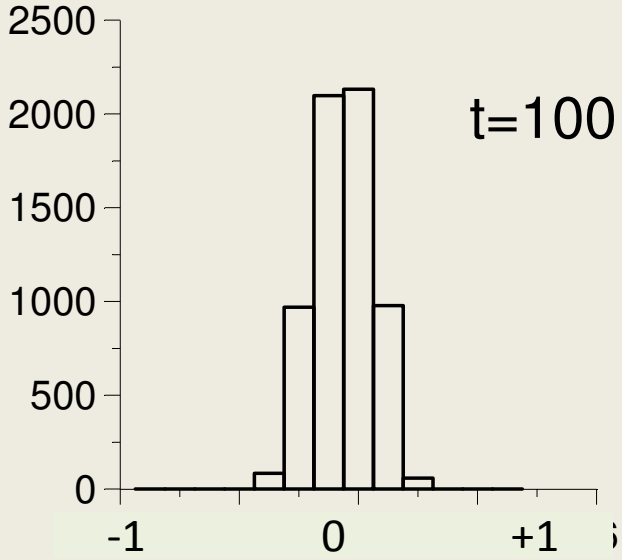
Outcome:

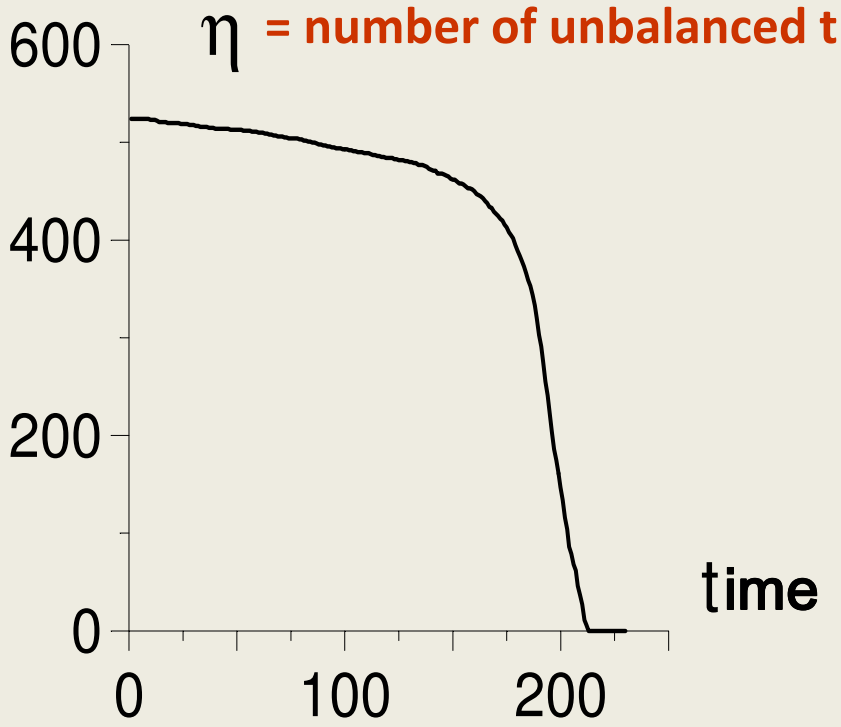


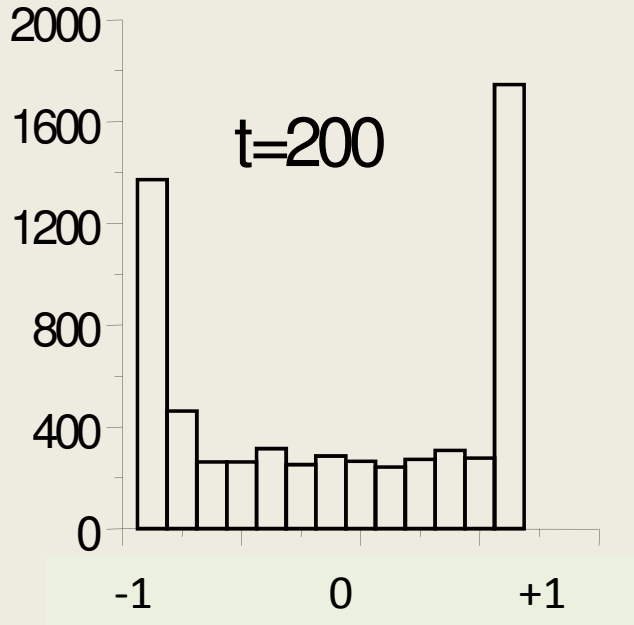
[Z.Wang, W.Thorngate, JASSS, Vol 6, No 3 (2003)]

Heider balance
- dynamics of r(i,j)

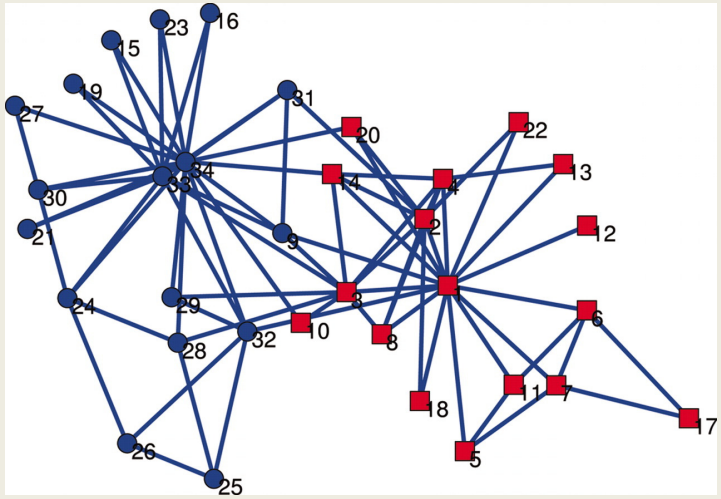
$$\frac{dr(i,j)}{dt} = \sum_k r(i,k)\,r(k,j)$$







Heider balance – related experiment



Network of frienship of members of a karate club,
as constructed by Zachary after 2 years of observations

The equations

$$\frac{dr(i,j)}{dt} = \sum_k r(i,k)\,r(k,j)$$

where *r(i,j)* were limited to (-1,1), reproduced the experimental partition.

W. W. Zachary, Journal of Anthropological Research 33, 452 (1977).
E. Weinan et al., PNAS 105 (2008) 7907.

A minimal model of cooperation

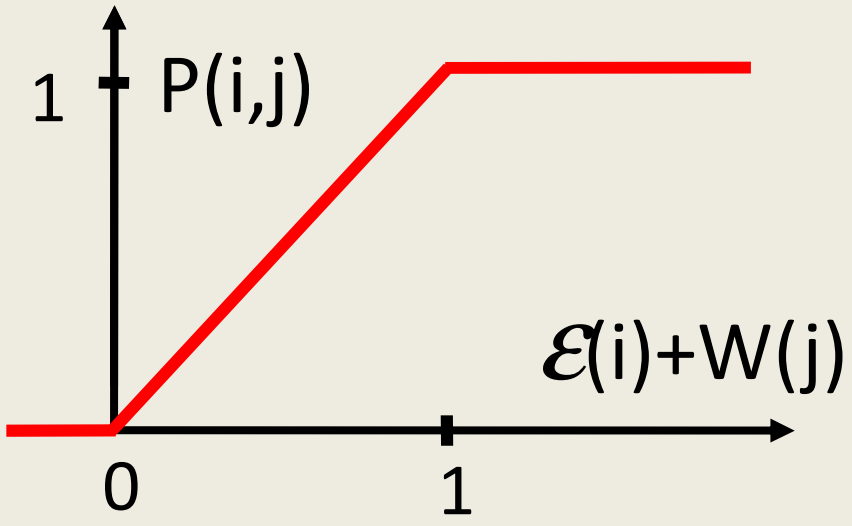
1. Individuals $i = 1,\ldots,N$ are characterized by two parameters:

- altruism $\mathcal{E}(i) = const$, $-1/2 < \mathcal{E}(i) < 1/2$
- time-dependent reputation $W(i)$, $0 < W(i) < 1$

2. The probability $P(i,j)$ that i cooperates with j *is calculated as*

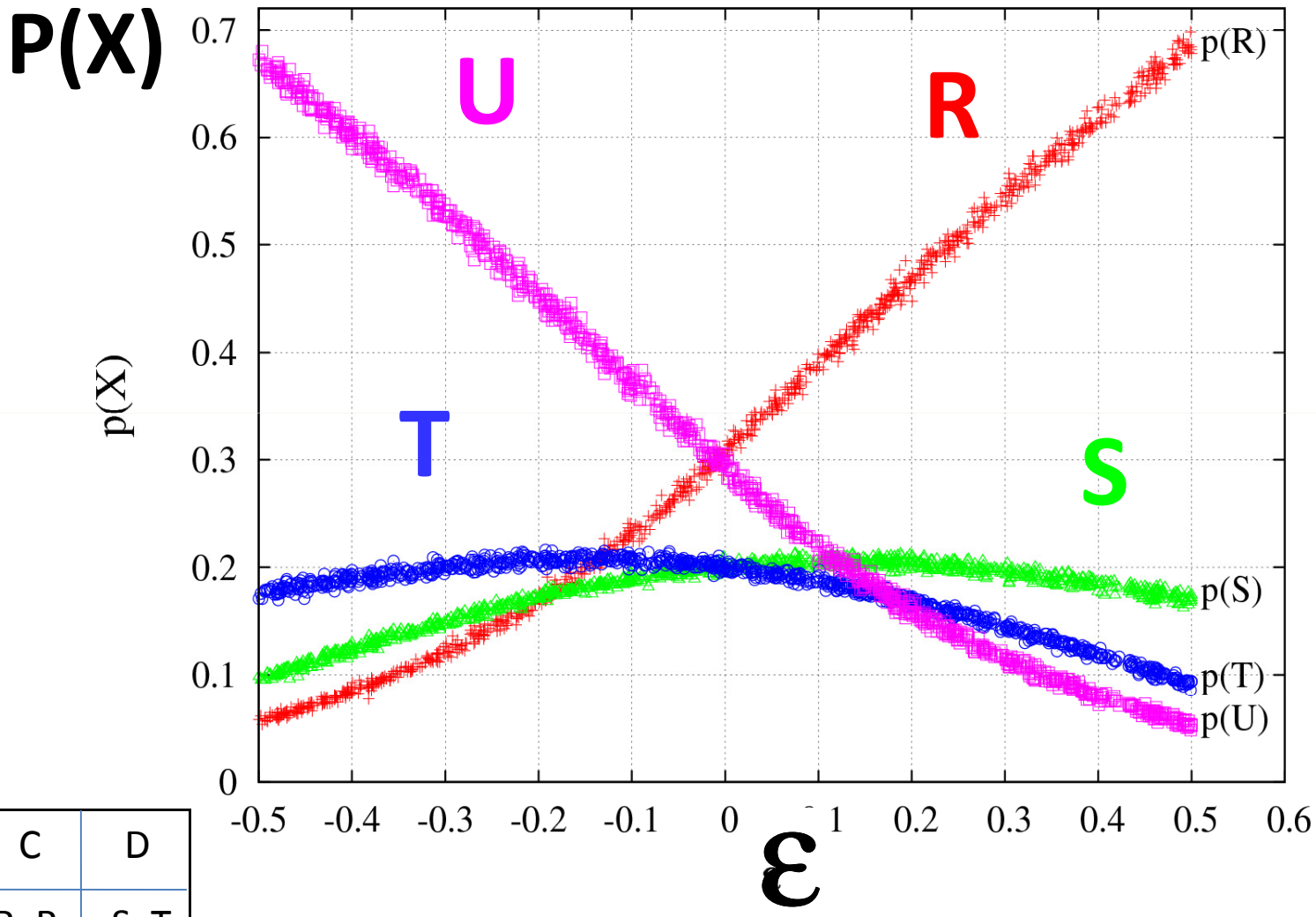
3. When i cooperates, her/his reputation $r(i)$ increases
$W(i) \Rightarrow (W(i)+1)/2$

3. When i defects, her/his reputation $r(i)$ decreases
$W(i) \Rightarrow W(i)/2$



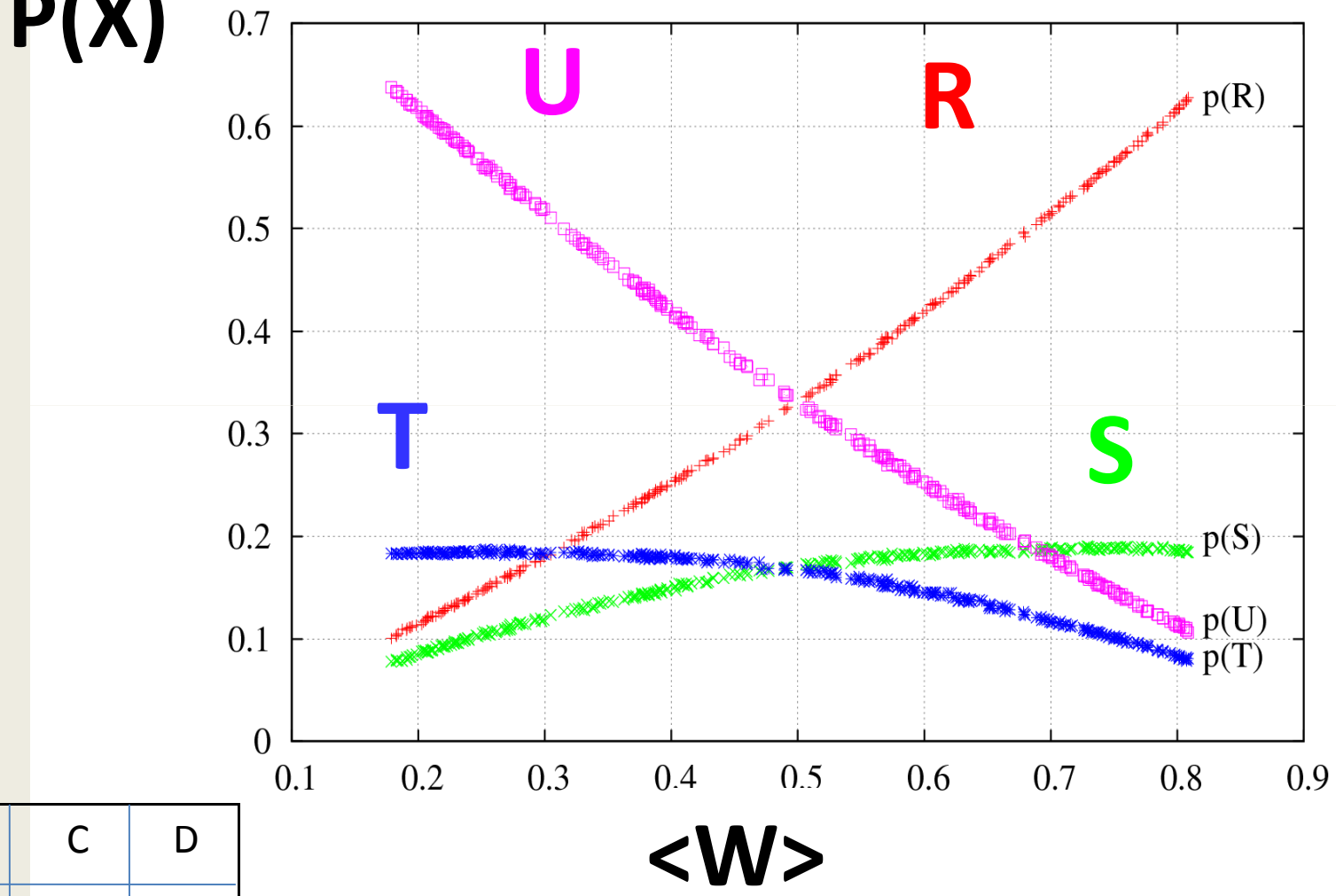
(no payoff parameters)

Probability of successful cooperation (R) vs altruism



	C	D
C	R, R	S, T
D	T, S	U, U

Probability of successful cooperation (R) against mean reputation.



	C	D
C	R, R	S, T
D	T, S	U, U

In-group cooperation – related experiment

Prisoner's Dilemma experiment with platoons of males formed for 4-week period of officer training in the Swiss army

1. **The intra-group cooperation was found to be clearly stronger than the inter-group one.**
2. **Individuals believed that members of their own platoons were more willing to cooperate.**

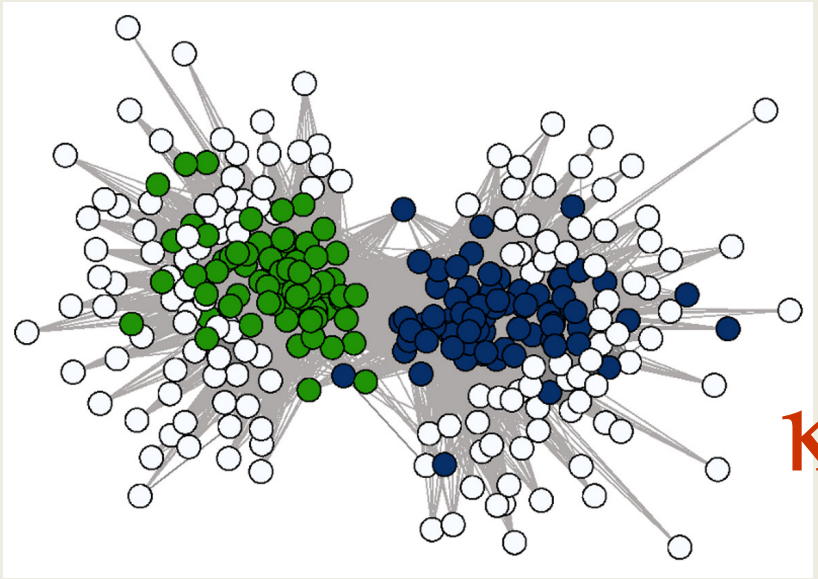
L.Goette, D.Huffman, S.Meier, *The impact of group membership on cooperation and norm enforcement,* (March 2006), FRB of Boston Working Paper No 06-7.

In-group preference: $N \Rightarrow N/2 + N/2$

Implementation of the bias:

$\varepsilon(i)+W(j) \Rightarrow \varepsilon(i)+W(j) + \kappa$ if *i,j* belong to the same group

$\varepsilon(i)+W(j) \Rightarrow \varepsilon(i)+W(j) - \kappa$ if *i,j* belong to different groups



κ=0.3

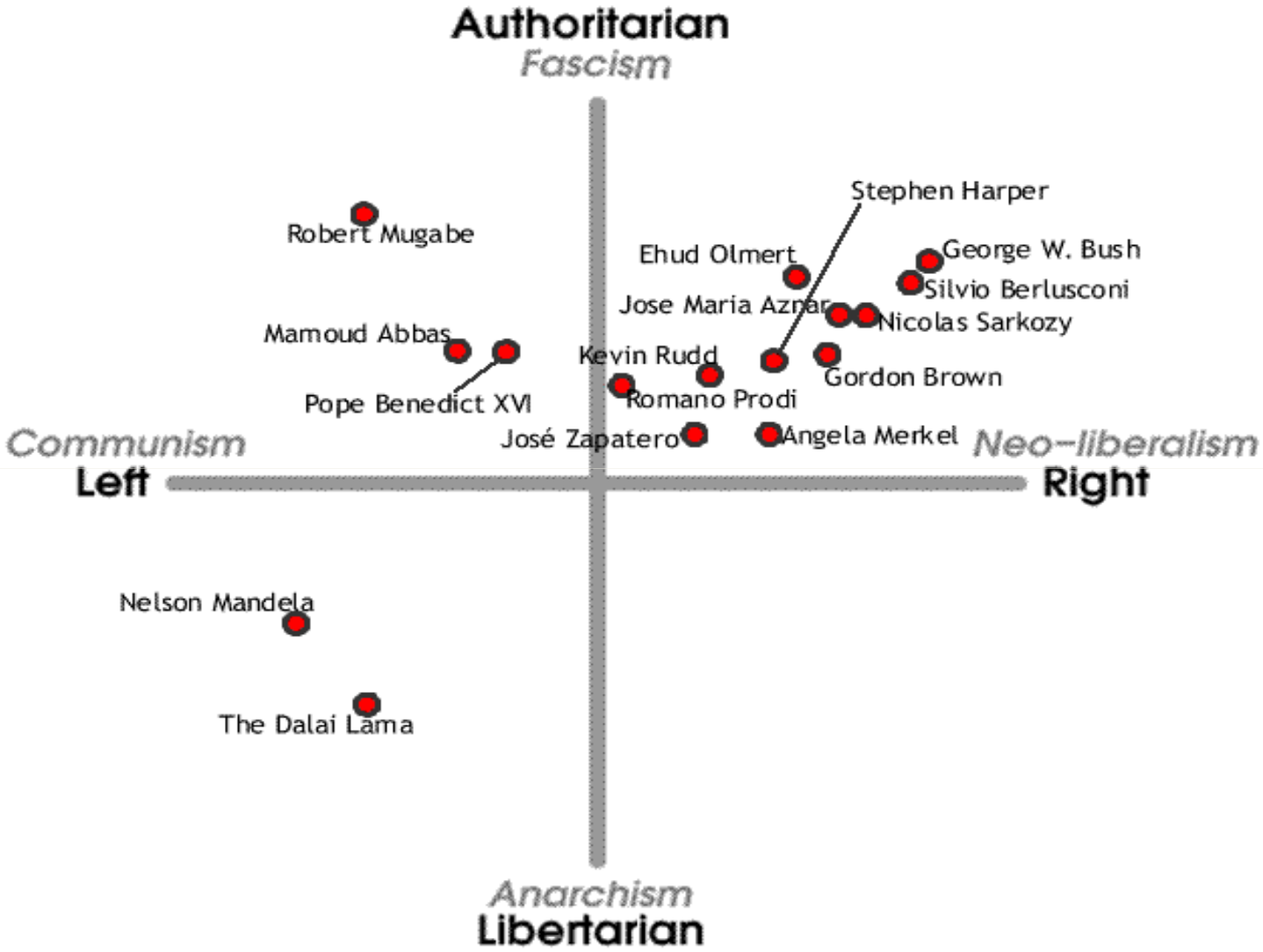
The outcome is

the frequency-of-cooperation-matrix *F(i,j)*

and we search for the communities in this matrix,

i.e. for clusters which are connected more tightly.

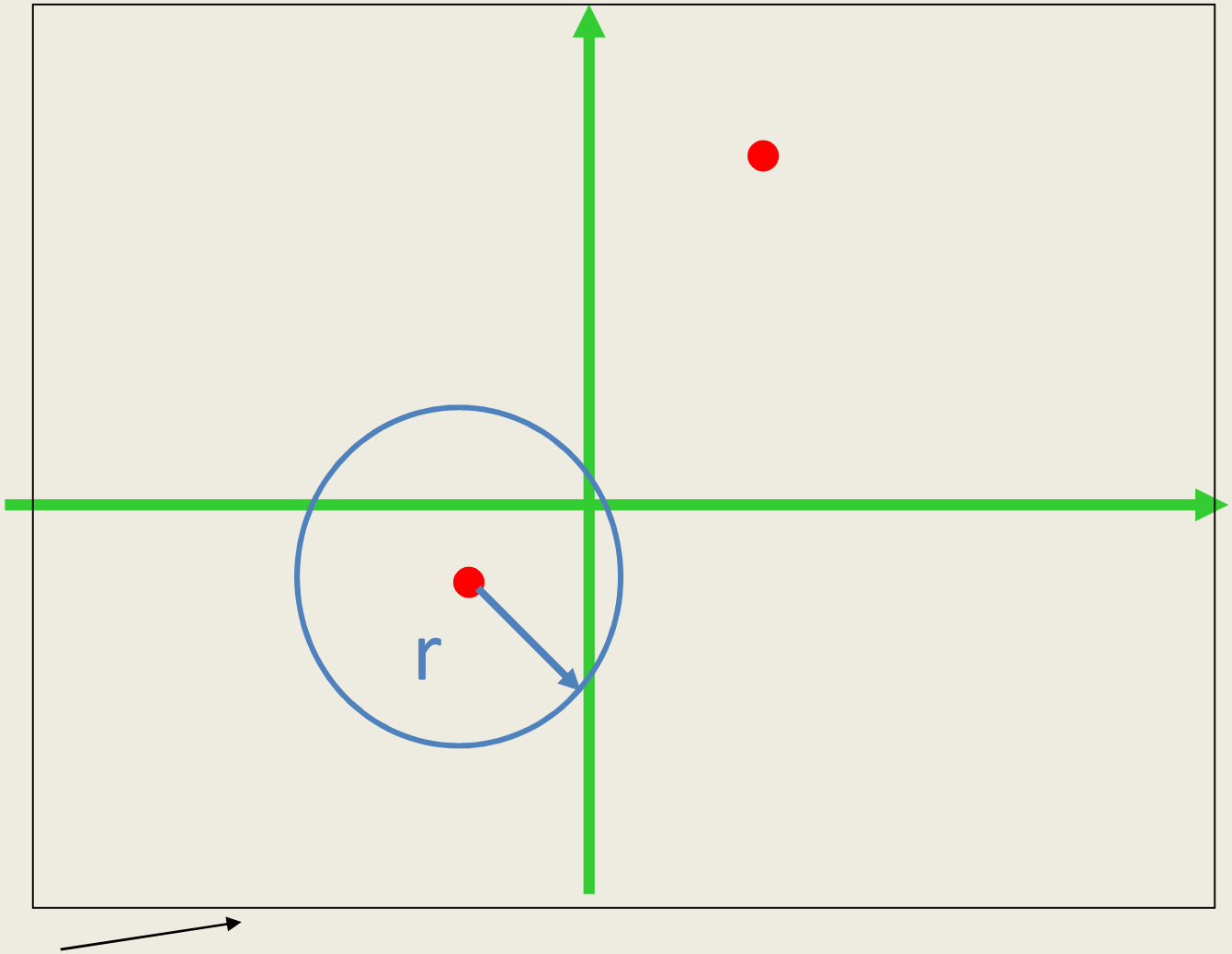
Biased learning



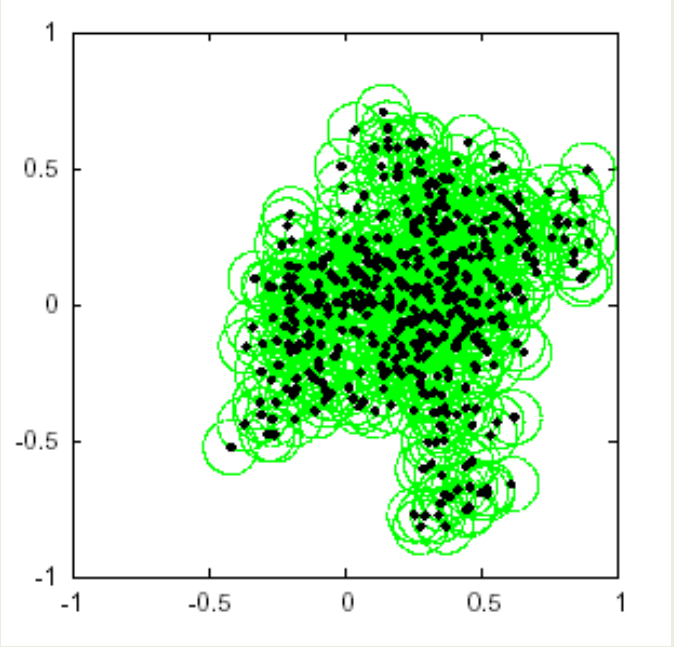
http://www.politicalcompass.org/

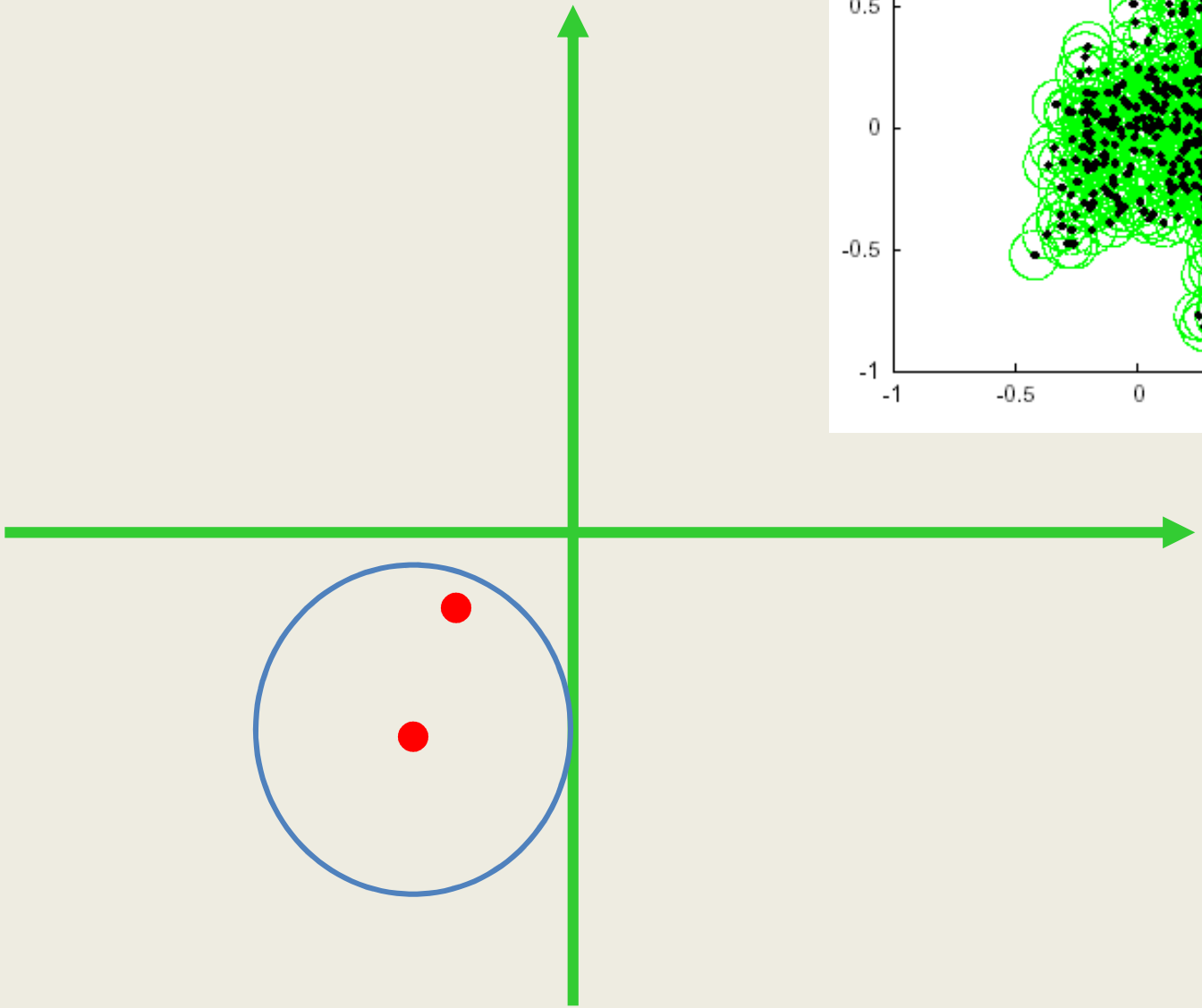
Biased learning

Biased learning

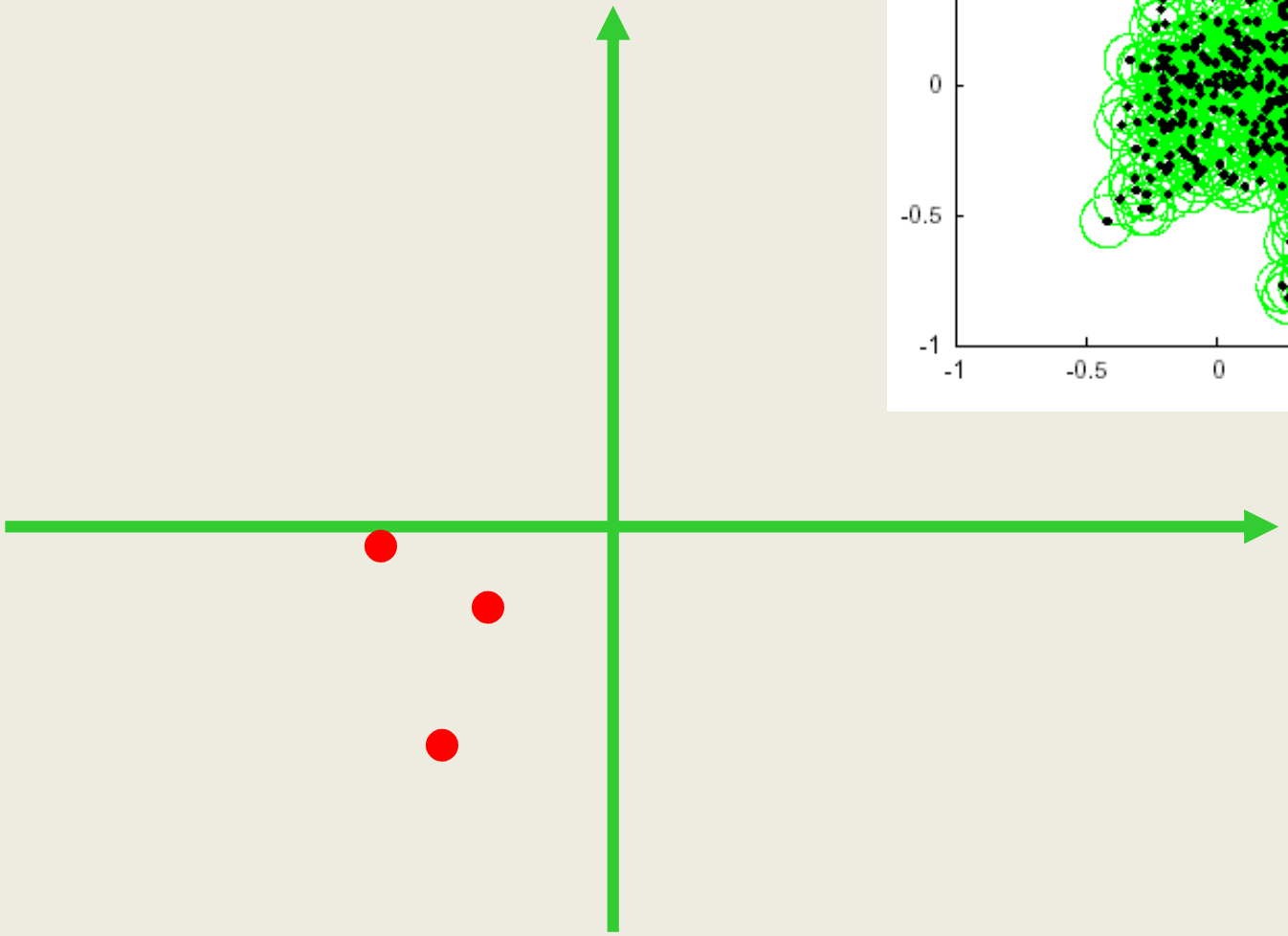


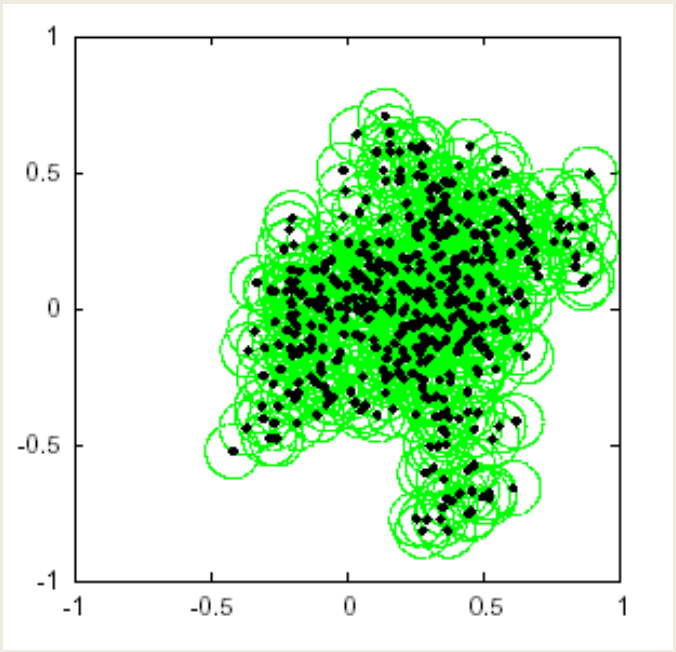
Biased learning



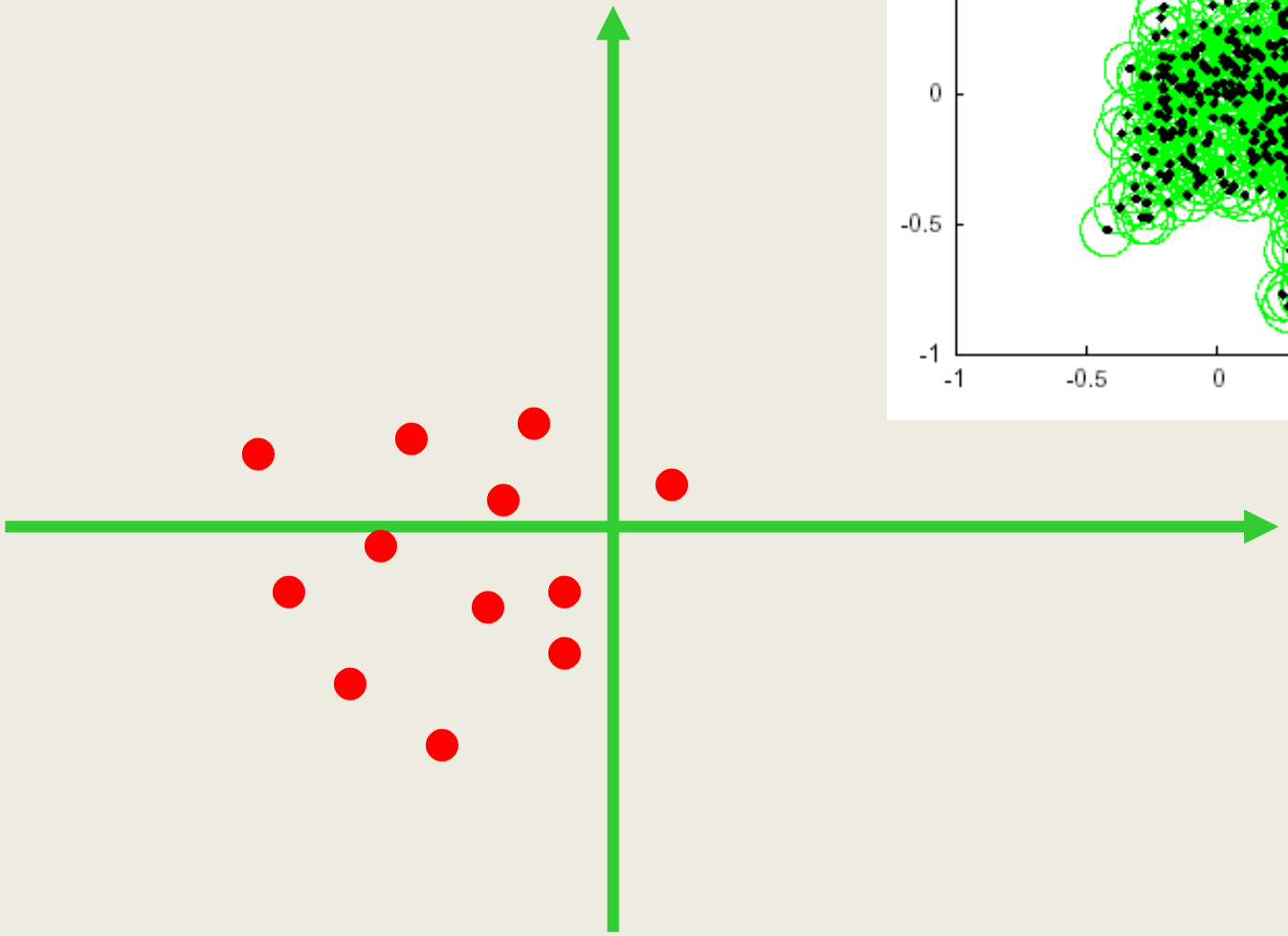


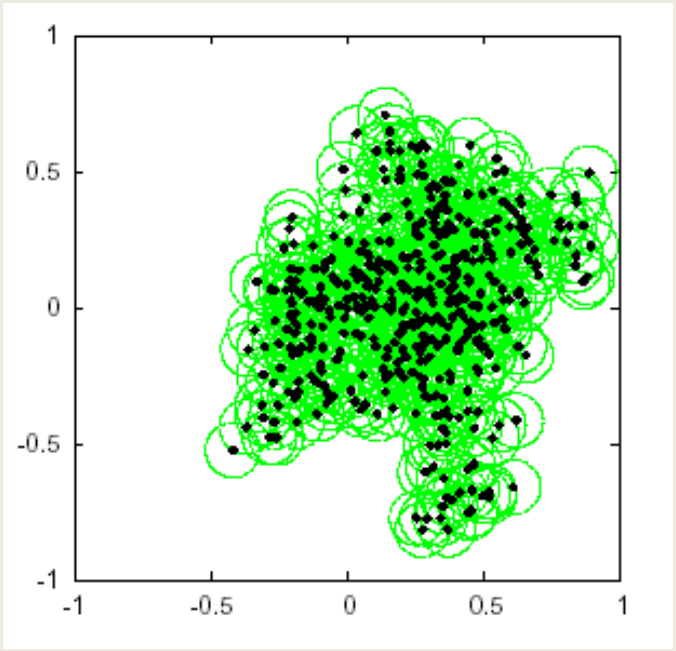
Biased learning





Biased learning





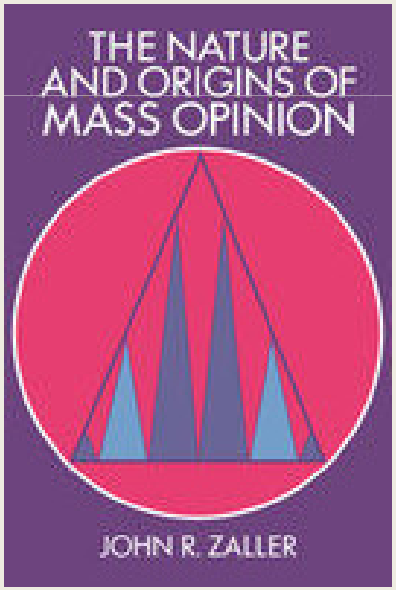
‘Related’ experiments

Table 5.1. *Effect of question form on support for Contra aid*

	Level of political awareness		
	Low	Middle	High
Intercept	0.93	0.93	0.04
Anticommunism attitudes	0.03	0.36	0.51
	(0.34)	(3.70)	(5.24)
Domestic spending attitudes	–0.37	–0.50	0.54
	(2.01)	(2.32)	(3.16)
Form	–0.51	–0.29	0.26
(1 = communism frame, else 0)	(2.25)	(1.34)	(1.46)
Form x anticommunism attitudes	0.34	0.01	–0.10
	(1.91)	(0.04)	(0.69)
Form x domestic spending attitudes	0.50	0.31	–0.10
	(1.63)	(0.98)	(1.01)
Adjusted r^2	0.07	0.15	0.38
N	97	114	119

Note: *T*-ratios are in parentheses. Variables, all scored in the liberal direction, are described in Measures Appendix.

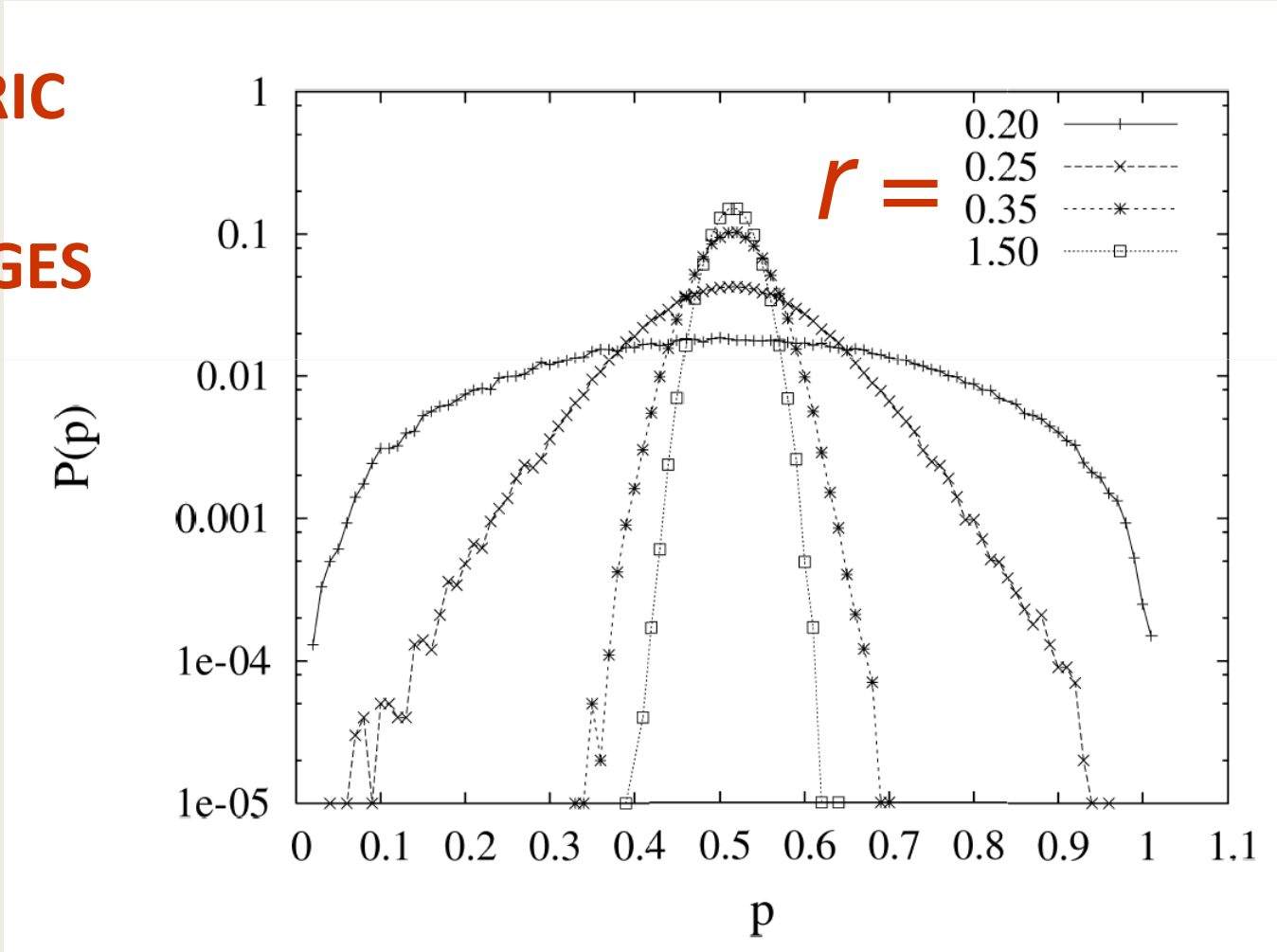
Source: 1989 NES pilot survey.



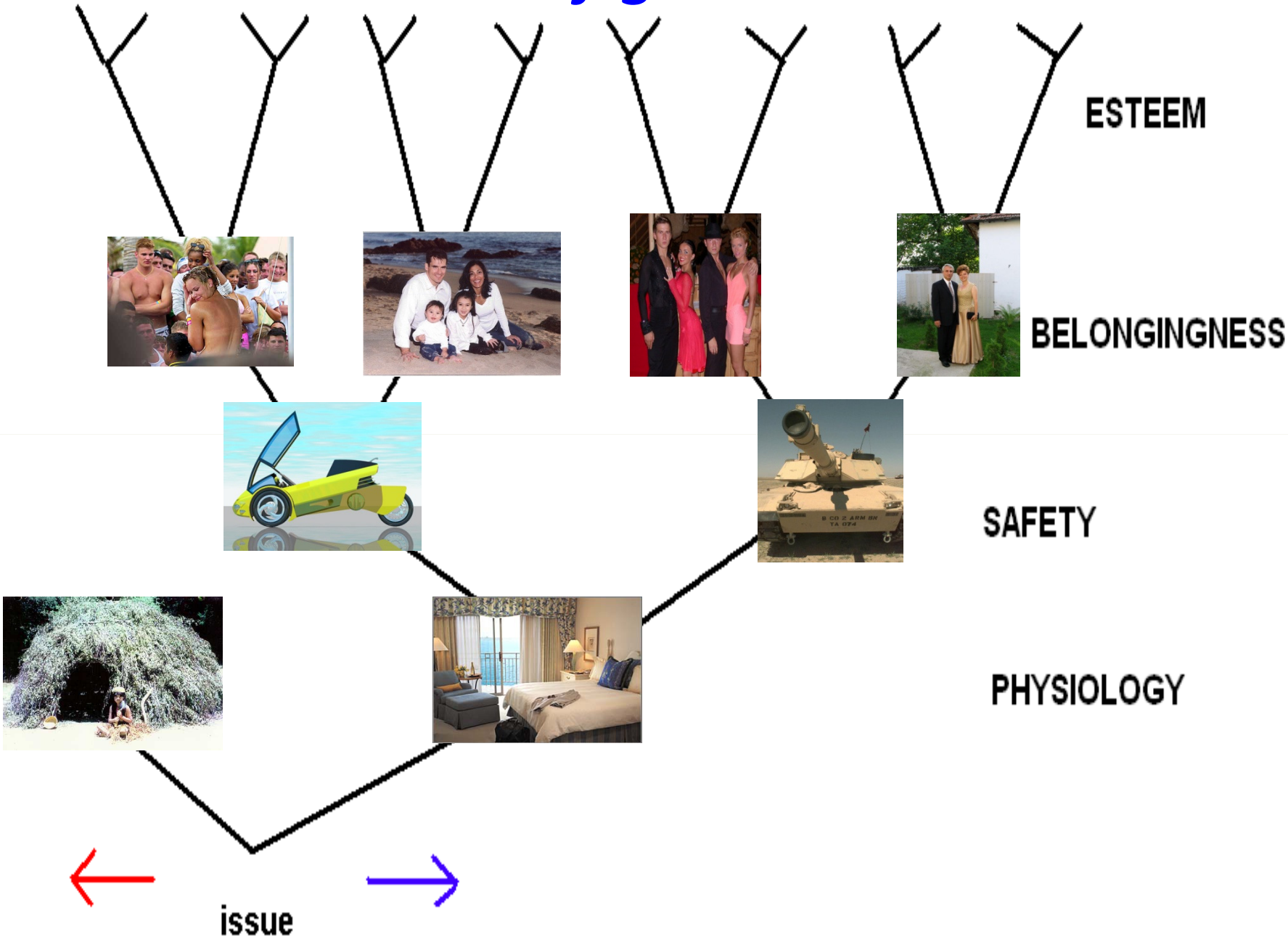
Biased learning

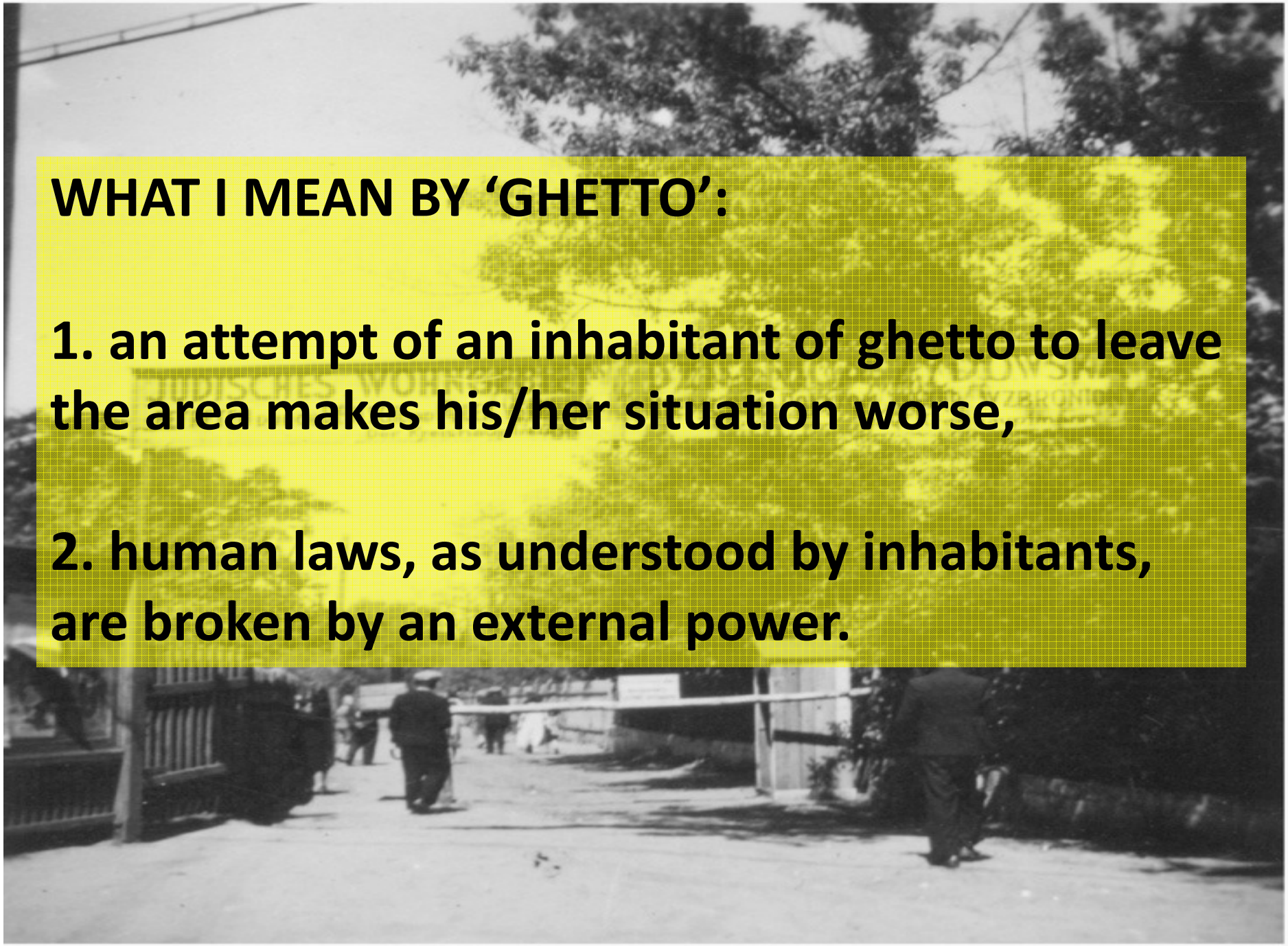
$$p = \frac{\sum_{x>0} x_t}{\sum_x |x_t|}$$ = probability of YES

a test:
SYMMETRIC STREAM OF MESSAGES



Towards the case of ghetto: a decision tree



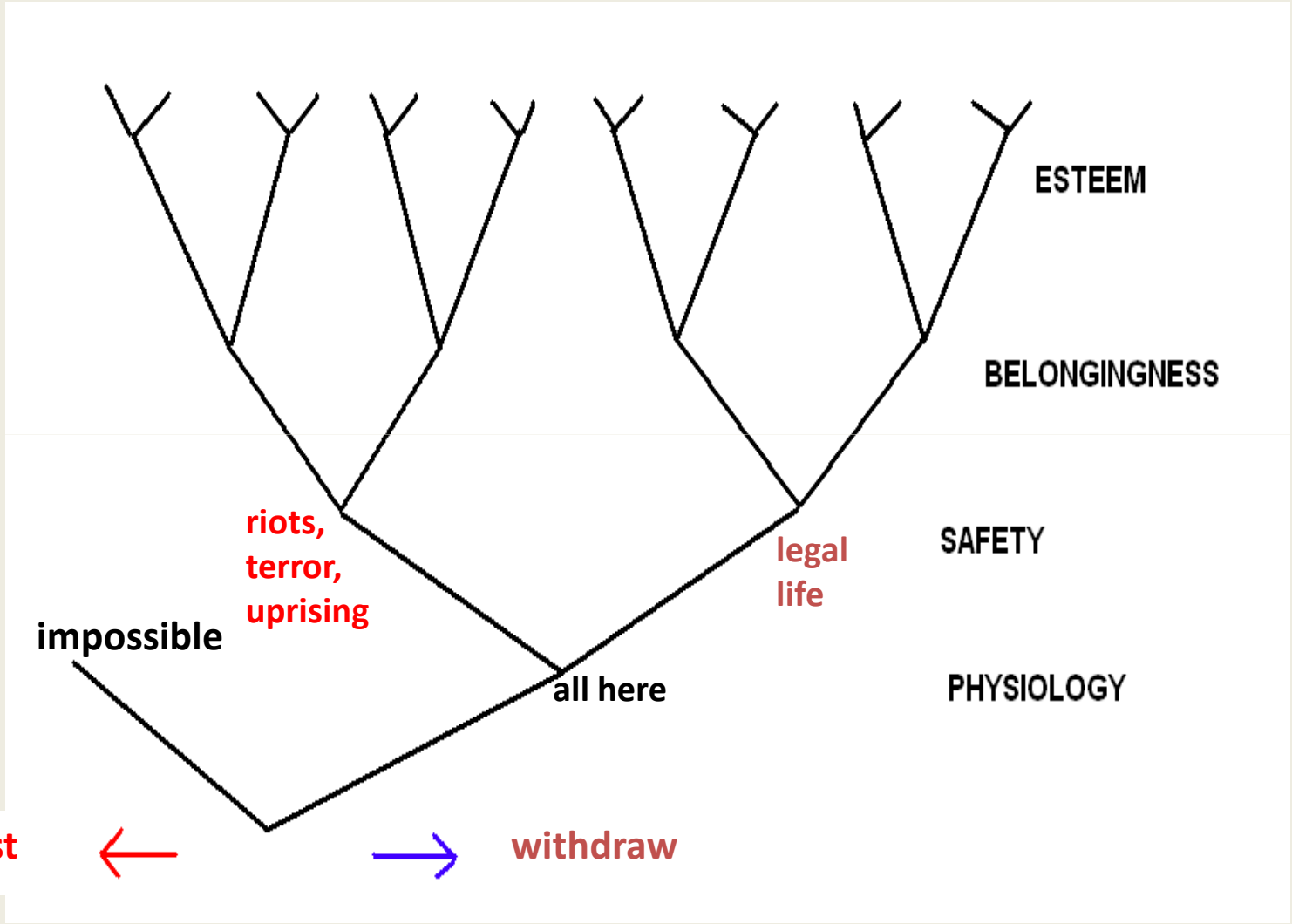


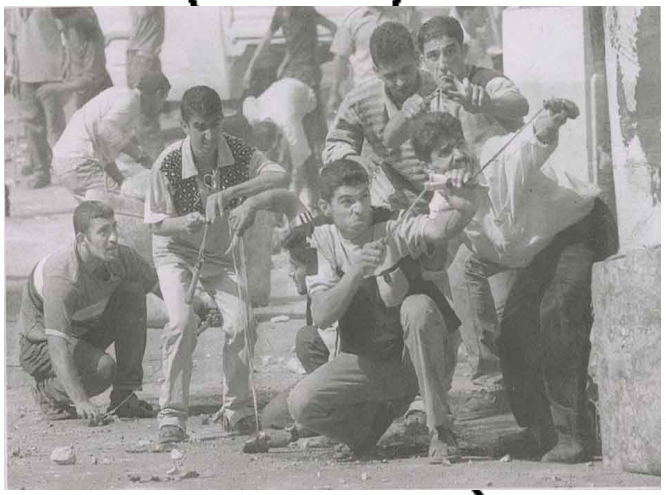
WHAT I MEAN BY ‘GHETTO’:

1. an attempt of an inhabitant of ghetto to leave the area makes his/her situation worse,

2. human laws, as understood by inhabitants, are broken by an external power.

The issue of resistance in ghetto





SAFETY

PHYSIOLOGY

Case of ghetto

SAFETY

PHYSIOLOGY

Case of ghetto

Case of ghetto

Simple mean-field equation:

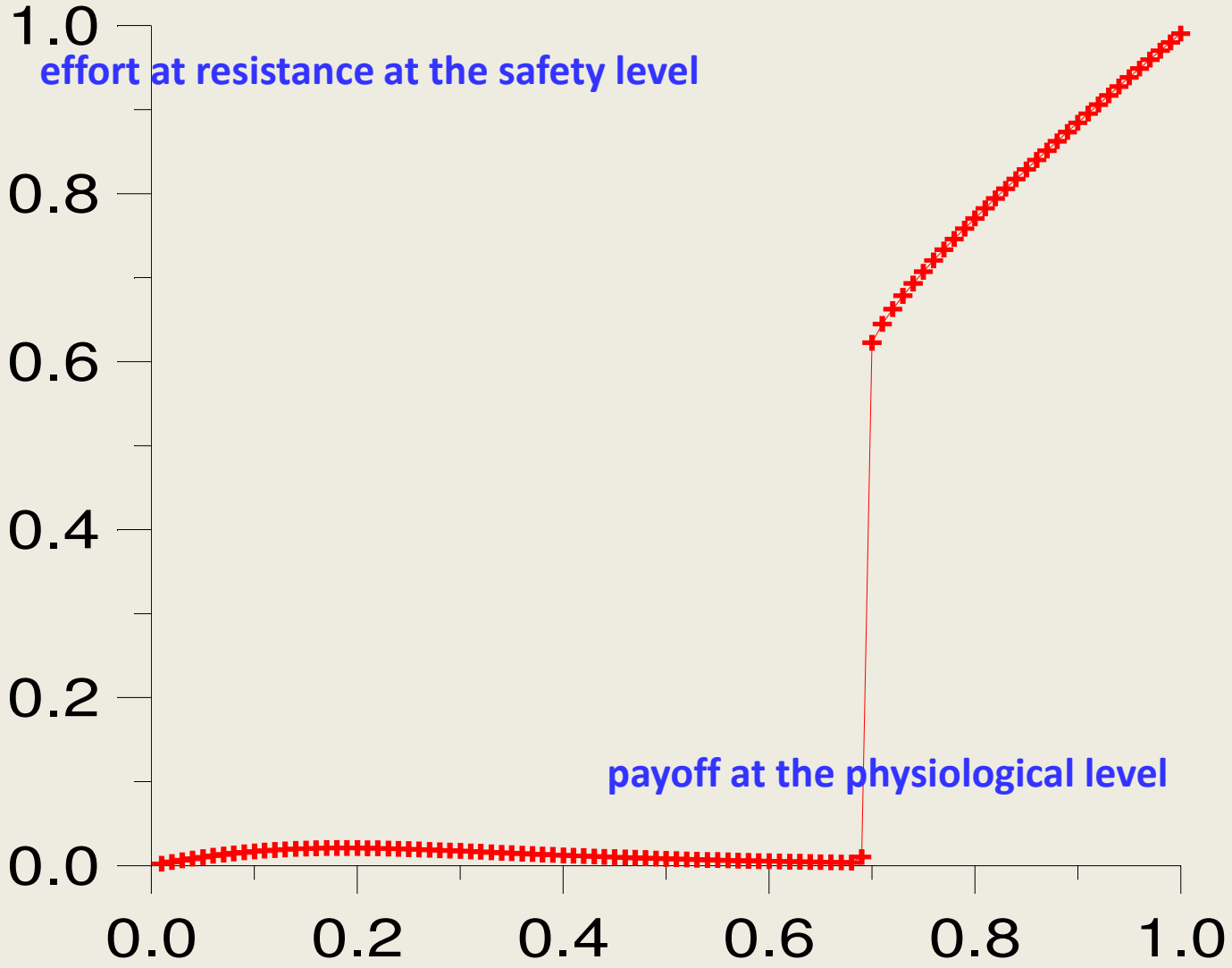
$$\frac{dR}{dt} = e^{aR+h}(1-R) - e^{-aR-h}(1+R)$$

where *R* = attitude to resist

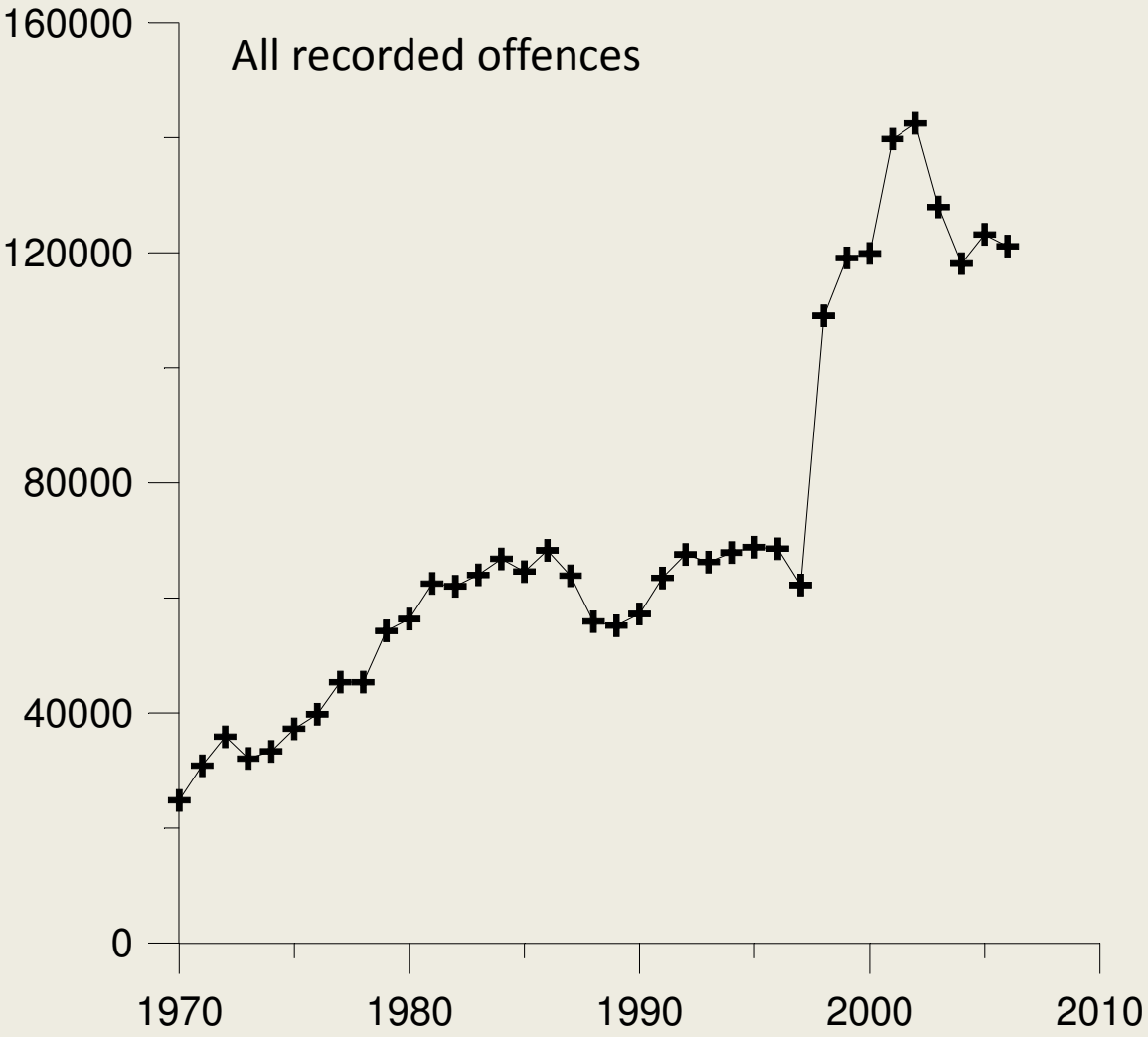
reflects a positive feedback of resistance,
where *a* = strength of the feedback, *h* = an external bias

At some critical value of the parameter ***a*** we observe a sudden appearance of resistant phase, where ***R*** sharply increases.

Case of ghetto – a more detailed theory



Related example: crime in Northern Ireland



Since mid-1997, the main paramilitary group, the Provisional IRA, has observed a ceasefire.

[Wikipedia]

http://epp.eurostat.ec.europa.eu/

Conclusion: no individual choice

- ***1st*** **: opposite groups can emerge from negative emotions randomly distributed in social network**
- ***2nd*** **: cooperation and trust form a loop with positive in-group feedback; others are excluded**
- ***3rd:*** **messages which do not fit the commonly accepted picture are usually ignored**
- ***4th:*** **faced with conflict between groups/societies, an individual adopts norms of her/his own group**

hate is a social effect

Abstract => summary

We report our recent simulations on four social processes.

First simulation deals with the so-called Heider balance where initial purely random preferences split the community into two mutually hostile groups.

Second simulation shows that once these groups are formed, the cooperation between them is going to fail.

Third simulation provides a numerical illustration of the process of biased learning; the model indicates that lack of objective information is a barrier to new information.

Fourth simulation is devoted to the possibility of cooperation with enemies in the presence of a strong conflict.

We treat hate as a socially mediated state of mind. From this point of view, hate as topic overlaps with themes which are well established in socially oriented simulations: social norms, cooperation & public opinion. Their common content is a picture of a heterogeneous community, where **seemingly unimportant differences can lead to a split into groups. As a consequence, cooperation & contact between the groups is deteriorated, mutual understanding is substituted by ignorance, finally the social labeling & hostility emerge between members of different groups.**

These processes lie at the bottom of hate.

Published in: *Psychology of Hate*, ed. Carol T. Lockhardt,
Nova Publishers, 2010, in print.

Available at: arxiv.org/PS_cache/arxiv/pdf/0908/0908.2692v1.pdf
or just: arXiv:0908.2692

Thanks to web pages:
marionette.cz/images/T/devil-01.jpg
jasss.soc.surrey.ac.uk/6/3/2.html
huntoftheseawolves.net/blog/wp-content/uploads/2009/06/swiss-army-22.jpg
www.politicalcompass.org/
and some others

Thank you