Phase transition in the Sznajd model with nonconformity.

Katarzyna Sznajd-Weron
Institute of Theoretical Physics
University of Wrocław
Nonconformity in simple models – anticonformity or independence?

Katarzyna Sznajd-Weron
Institute of Theoretical Physics
University of Wrocław
Can we treat people like particles?

• SOCIOPHYSICS: Do humans behave like atoms?

• Social psychology – situation more important than individual traits

• Social influence (Latane, 1981)
  – Informational influence (Sherif 1935)
  – Normative influence (Asch 1956)

• Conformity: obedience to authority, peer pressure, social validation
Points to remember...

• Conformity - the main mechanism of collective actions.
  – Informational: “when in doubt, imitate”
  – Normative: “when in Rome, do as the Romans do.”

Aversion to standing out in the crowd
• Conformity (social validation)
• Group size – a threshold of 4-5 persons (Latane, 1981)

*Graph showing the relationship between the size of the group and conformity.*

Asch (1956)
Unanimity is the key!

% conformity

unanimous majority

one ally

critical trial

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Conformity in simple models

- Ising model with Glauber dynamics
- Voter model
- Majority model (Galam)
- Outflow and Unanimity (Sznajd)
Example: unanimity in 1D
Conformity – individual behaves according to norm expectations
Independence – individual behaves independently of norm expectations
Anticonformity – individual behaves opposite to norm expectations
Variability – individual invariably changes responses if given opportunity

Individual realizes the norm expectations
Independence and Anticonformity

- Independent – evaluate situations independently of the group norm
- Anti-conformists – similar to conformers, both take cognizance of the group norm
- Anticonformity – asserting uniqueness
Responses to social influence

(preexposure)

(postexposure)

agreement
disagreement

conformity

independence

congruence

anticonformity

In sociophysics ...

Conformity

Independence

zealots
(Mobilia, 2003)
inflexible
(Galam, 2007)

Congruence

Anticonformity

contrarian (Galam)

Conformity and independence

• Independent individuals evaluate situations independently of the group norm

\[ \begin{align*}
  p_f & \quad \text{to} \quad \text{group norms} \\
  p(1-f) & \quad \text{to} \quad \text{group norms} \\
  1-p & \quad \text{to} \quad \text{group norms}
\end{align*} \]

• K. Sznajd-Weron, M. Tabiszewski and A. M. Timpanaro
\[ p_c = \frac{1}{1 + \alpha f} \]
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Conformity and anticonformity

- They are similar in the sense that both acknowledge the group norm

Anticonformity on a complete graph

Piotrek Nyczka
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Anticonformity
Time evolution of public opinion

\[ p_2 = 0.15 \]

\[ p_2 = 0.20 \]

\[ p_2 = 0.25 \]

\[ p_2 = 0.30 \]
• What is the difference between anticonformity and individualism?
  – Very important from social point of view!
  – In simple microscopic models?