An ethno-computational approach to friendship in SNS

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Outline

Motivation and background

- Studying online subcultures;
- Self-presentation, emergence of shared cultural patterns through SNS;
- Building social capital online (of bonding and bridging types);
- A general ethno-computational methodology;
  - SNA;
  - ABM;
  - Ethnographies;
- Opens the way to questions of social legitimation of styles and cultural traits.

Online presence, culture, and friendship formation

- Online presence through "traces" that reflect cultural traits and styles;
- Not only a matter of individual preferences and tastes;
- Inter-personal and collective dimension: interaction and feedback from others (friends) to legitimate and maintain these traces.

A general analytical framework

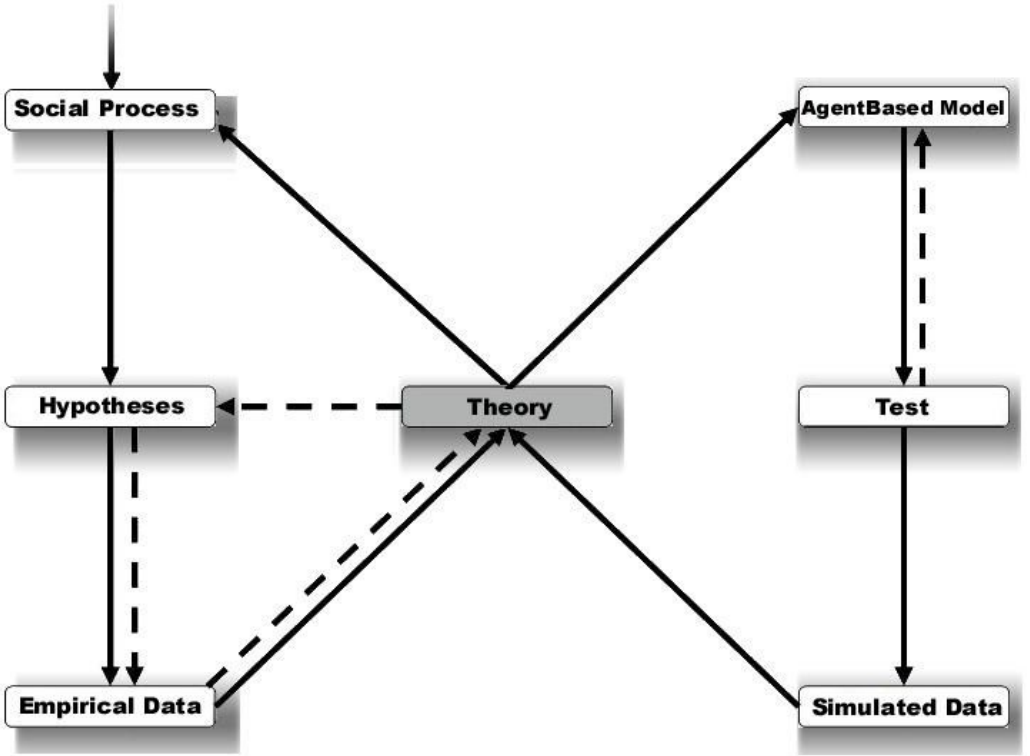


Figure: The logic of qualitatively-informed agent-based models in "butterfly" shape (Tubaro, P., Casilli, A. A. (2010), "An Ethnographic Seduction": how Qualitative Research and Agent-based Models can Benefit Each Other. *Bulletin de Méthodologie Sociologique*, 16(1), doi: 10.1177/0759106309360111)

Ethnographic study

- Insight from preliminary qualitative study* is that online network formation may depend upon:
  - Privacy settings, i.e. visibility of contents to others;
  - Self-display, i.e. personal and cultural traits exhibited.

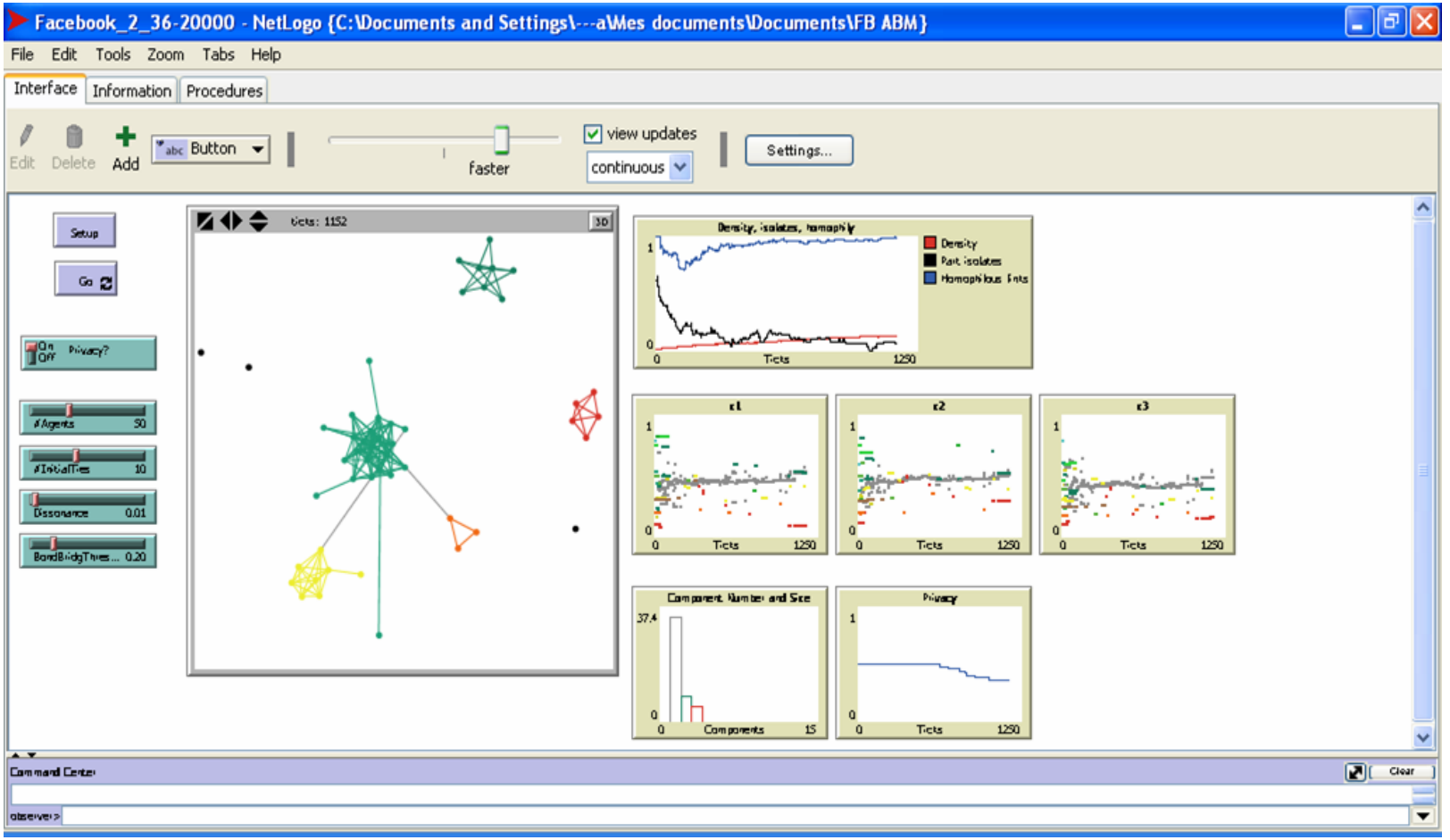
  and that traits may change with network composition.
- The model aims to problematize and enrich these results:
  - conducting thought experiments;
  - replicating and generalizing in simulated, larger networks.
- Qualitatively-informed model: insight into behavior and motivations of actors.

*Casilli, A. A. (2010). *Les liaisons numériques*. Paris, Seuil.

Variables and indicators

- We focus on the impact of:
  - tendency to conformism vs. dissonance in cultural traits;
  - preference for "bonding" vs. "bridging" in tie formation;
  - possibility to limit incoming ties through privacy protection.
- We measure impact through:
  - number and size of components;
  - homogeneity of traits within and between components;
  - evolution of privacy settings over time.

Model Interface



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Structure of the model: initialization

- At initialization, each actor is endowed with:
  - a vector (several dimensions) of traits;
  - a privacy setting (visible/invisible).
- Actors can be:
  - isolates;
  - connected;
- If connected:
  - they share most traits with their contacts;
  - but may differ on one dimension;
  - this depends on the "Dissonance" parameter

Structure of the model: a typical step

- At each step, an actor is randomly selected and makes two choices:
  - relational: form or delete a tie, or no change;
  - behavioral: adjust cultural traits to better fit with group.
- Choices depend on two parameters:
  - Bonding Propensity: whether tie formation/deletion is local or global;
  - Dissonance: extent to which an actor's traits conform to group.

Three possible configurations

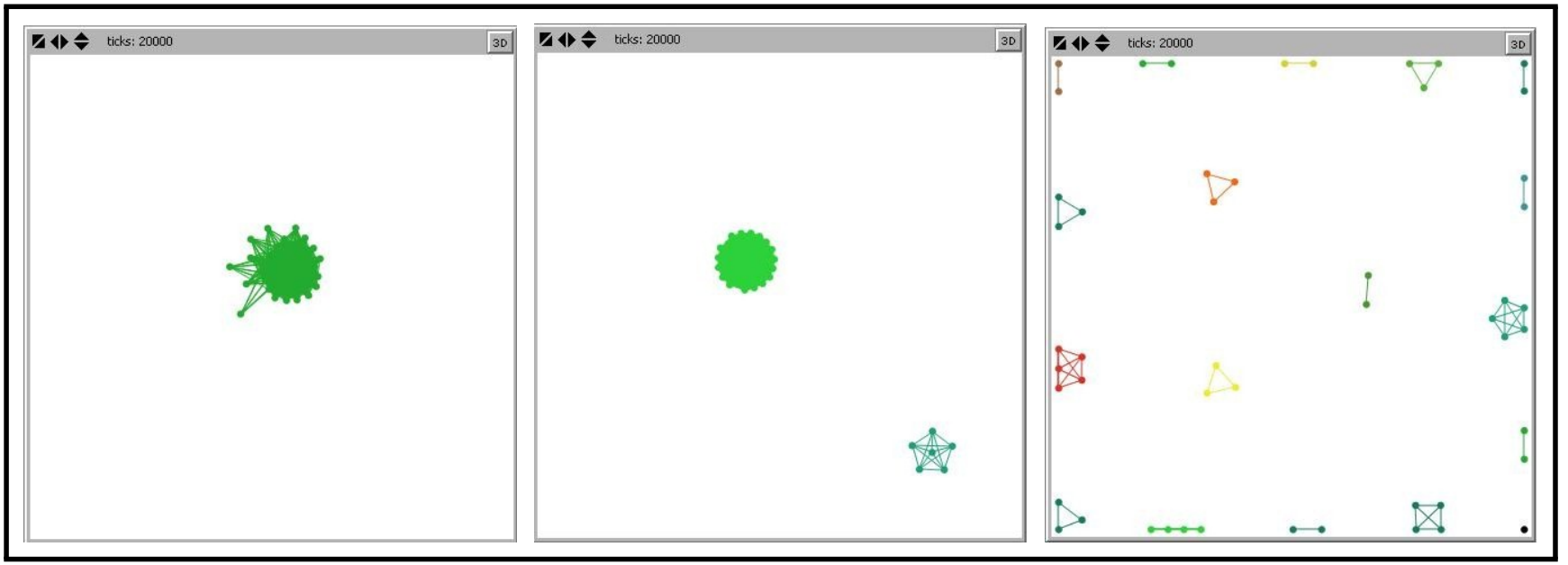

Figure: Three stable configurations: (1) Giant Component, (2) Hegemony and Resistance, (3) Little Boxes

Effects of varying parameters

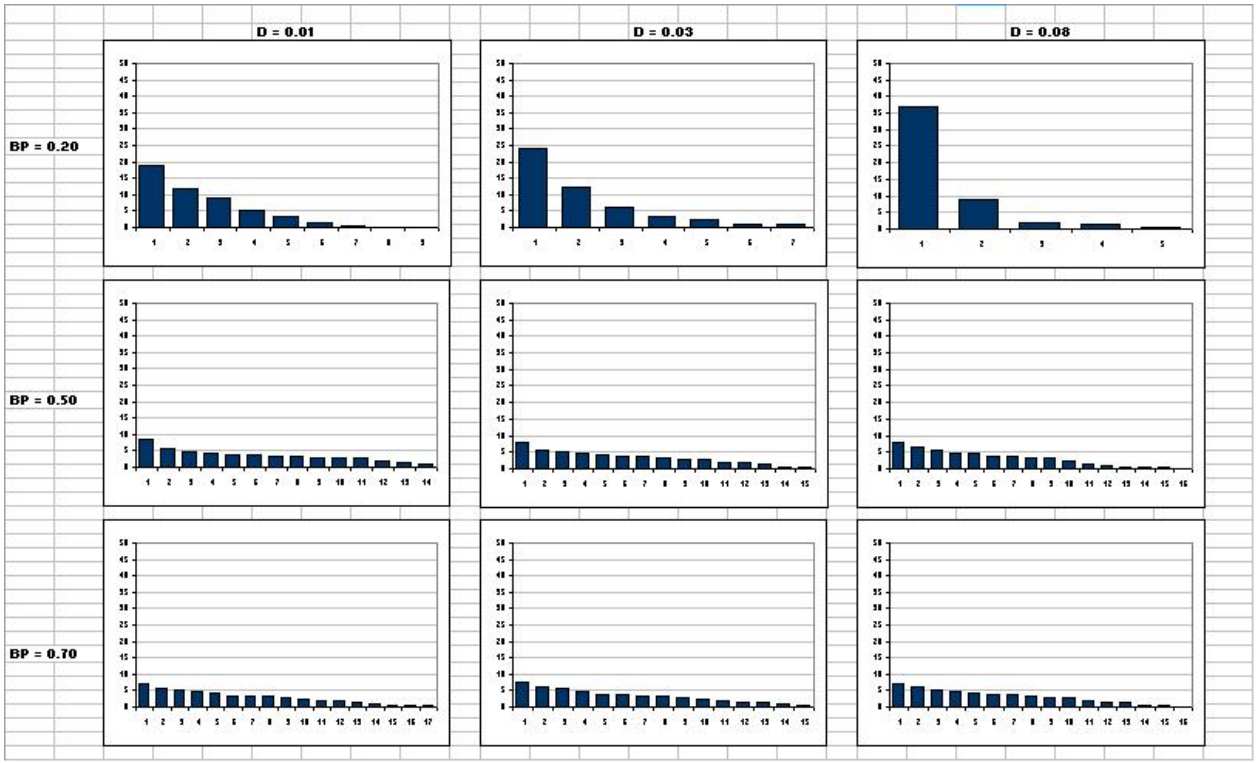

Figure: Number and size of components with different Dissonance and Bonding Propensity

When privacy protection is not allowed

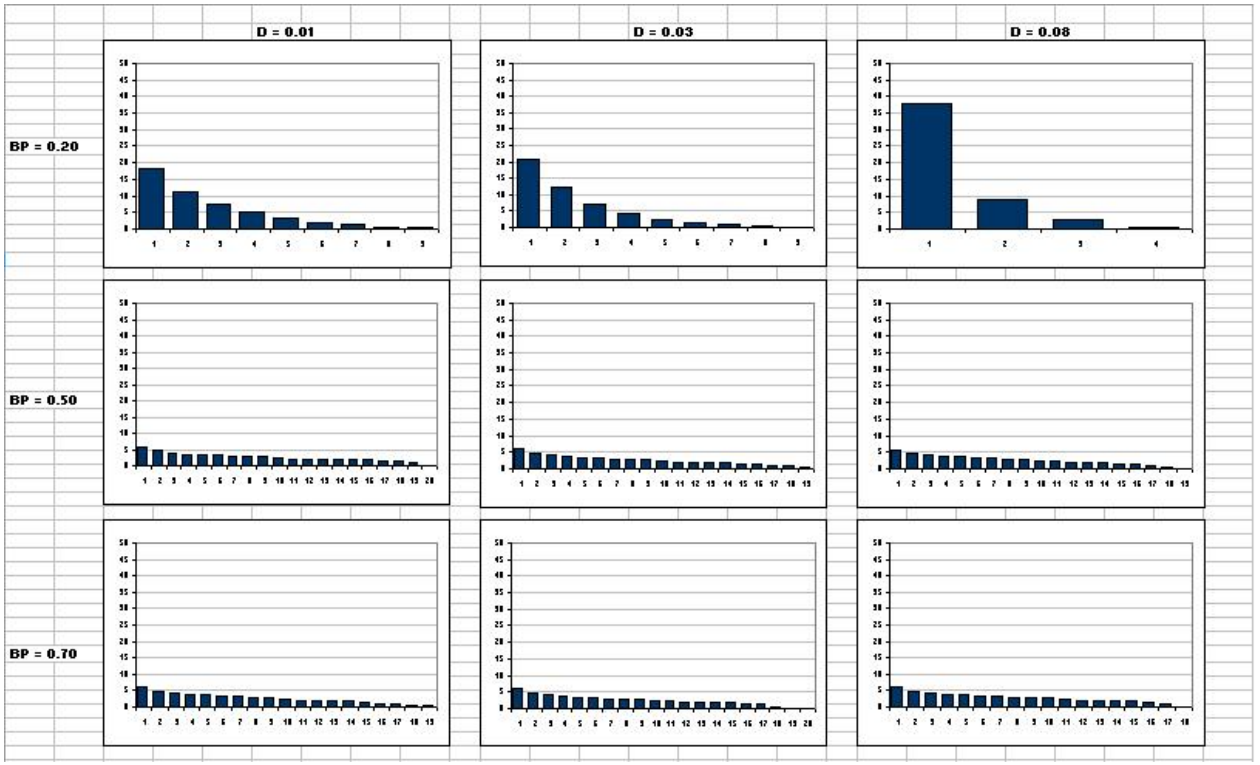

Figure: Number and size of components, varying Dissonance and Bonding Propensity, no privacy protection

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Explain the effects of parameters

- With lower propensity to bonding (=greater openness to bridging), only one or few components emerge;
- This effect is stronger with higher Dissonance;
- With higher propensity to bonding, many small communities emerge;
- In this case, differences in Dissonance have little impact;
- With no privacy protection, these effects are slightly amplified, because more ties can be formed.

Evolution of average privacy

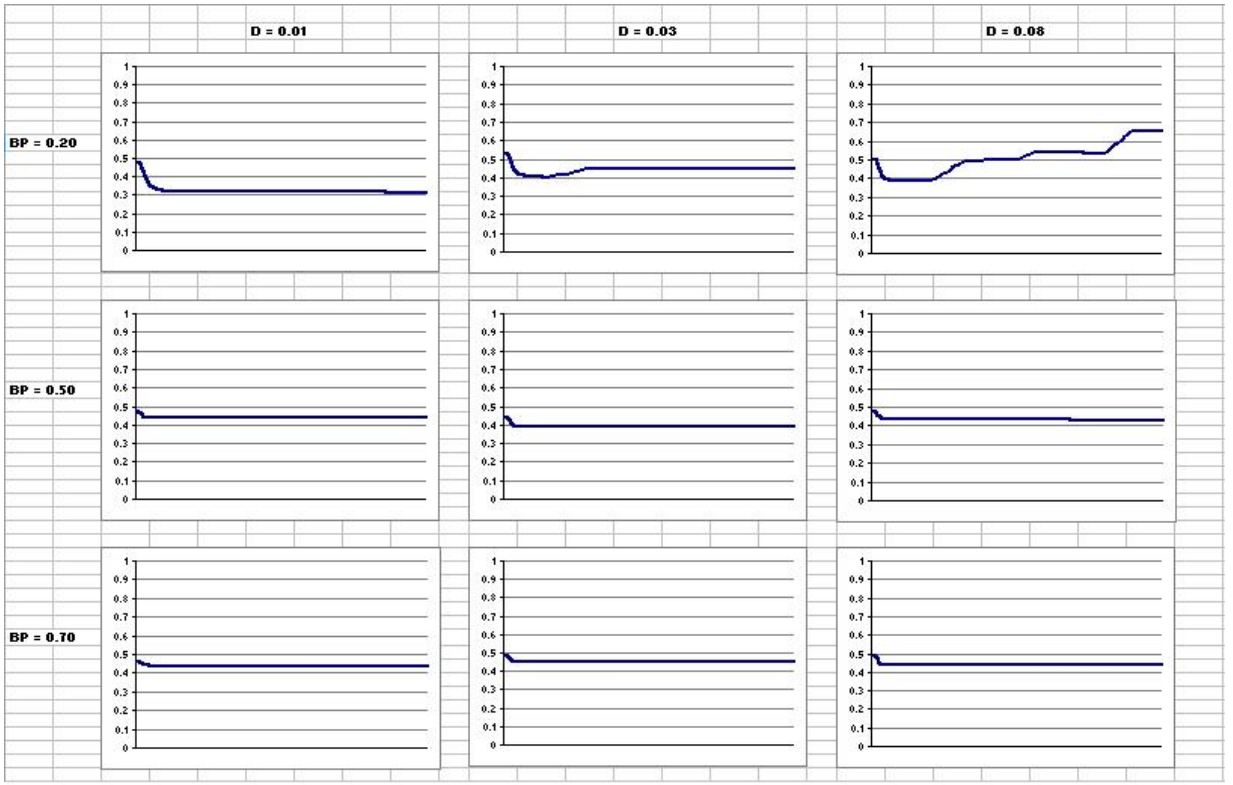

Figure: Average privacy over time, varying Dissonance and Bonding Propensity

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Explain changes in privacy over time

- Agents restrict access only when a giant component appears;
- This is the only case in which average privacy increases;
- Otherwise, average privacy diminishes until there are no more isolates, then is stable.

Final remarks

- Personal styles and tactics of online presence give rise to different sociability structures;
- Linkages between micro behavior (motivations, cognition, individual action) and macrolevel patterns (number and size of clusters, density, etc.)
- Further openings for future reflection:
  - Importance of cultural dissonance and inter-individual variations* vs. Bourdieu's *distinction*.
  - Complexify traditional dichotomy between hegemony and sub-cultures.

Lahire, B. (2004). *La culture des individus : Dissonances culturelles et distinction de soi*, Paris, La Découverte.

Final remarks on the methodology

- Agent-based models:
  - complement analyses based on small qualitative fieldwork;
  - enable cross-validation and generalization of findings;
  - are tools for empirically-informed theory generation.
- This method is particularly useful with subcultures, sensitive and hidden populations.
- More applications are needed to establish its generality and reliability.

Thank you!

Find this presentation on:
http://www.bodyspacesociety.eu
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