

# Modeling Genocide: Complexity and Criticality

David L. Sallach  
Social Science Research Computing  
University of Chicago  
sallach@uchicago.edu

Association of Genocide Scholars

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# Conceptualizing Genocide

- Complex Adaptive Systems
- Conceptual Structures
- Computational Social Science

# Complex Adaptive Systems

- Life & freedom versus entropy
  - the boundaries of creation and destruction
  - better: un/restricted competition
- Complex behavior is always created by a long process of evolution
  - “systems in balance are not complex”
  - Self-organizing criticality is so far the only known mechanism to create complexity

# Self-Organized Criticality

- Structures
  - criticality: between frozen & chaotic states
  - complexity as a consequence of criticality
  - ecological networks: self-consistent & complex
    - » REREAD
- Transitions
  - seismological asperities
  - power laws & scale invariance
  - change arising from extremal dynamics

# Human Communities

- Far-from-equilibrium, multiply dependent
- Complex, self-organizing phenomena in high-dimensional space
- Defined by diverse, shifting and frequently porous boundaries
- Pattern infrastructures yield emergent dimensions of spontaneity

# Conceptual Structures

- Representations
  - semantic data models
  - conceptual graphs
  - unified modeling language
- Representing complex social structures
- Andrew Abbott: “groups of boundaries”
  - boundary definition as formative (isolating)
  - violence in the history of boundary definition

# Defining Genocide I

- The perpetrating agent
  - a dominant group vested with formal authority and with predominant access to the overall resources of power (Dadrian)
    - dominant (ecological sense)
  - a state or other authority (Chalk & Jonassohn)

# Defining Genocide II

- The target group
  - a national, ethnical, racial or religious group, as such (UN)
  - a [vulnerable] minority group (Dadrian)
  - defined by the perpetrators (Chalk & Jonassohn)

# Defining Genocide III

- The act
  - killing, inflicting conditions of life to bring about its physical destruction (UN)
  - successful attempt to reduce [a minority group] by coercion or lethal violence (Dadrian)
  - sustained purposeful action to physically destroy a collectivity, directly or indirectly (Fein)
  - [one-sided] mass killing (Chalk & Jonassohn)
  - the mass killing of substantial numbers of human beings (Charney)

# Defining Genocide IV

- The intent
  - to destroy, in whole or in part (UN)
  - [inferred from purposeful action] (Fein)
  - to destroy a group (C&J)
  - [not applicable] (attributed to Charney)

# Defining Genocide V

- The context
  - whether in peace or in war (UN)
  - regardless of surrender or lack of threat (Fein)
  - one-sided [mass killing] (Chalk & Jonassohn)
  - when not in the course of military action against the military forces of an avowed enemy, under conditions of the essential defenselessness and helplessness of the victims (Charney)

# Prototype Concepts

- Usual method of categorization & definition
  - don't correspond to human practice
  - categories as used lack unambiguous definition
    - e.g., “necessary and sufficient”
    - thus, in practice, lack sharp boundaries
  - defined relative to actual or idealized prototype
    - each concept as a reference point
    - instances are categorized as more or less representative of the category

# Genocide as a Prototype

- Mass killing
  - relative & absolute
- One-sided: defenseless, non-threatening target: surrender doesn't stop the process
- Group definitions less central (still in prototype)
  - state as perpetrating agent
  - ascriptive minority as target
- Intent explicit (more distant if inferred)

# Computational Models

- Complex adaptive systems
  - genetic algorithms, neural networks
- Artificial life, artificial society
- Agent-based simulation
  - microsimulation
- Relation-based simulation?
  - Firstness as an implicit link
    - value, attribute, entity

# Computational Social Science

- Third branch of science (Axelrod)
  - Along with theory and empirical research
- Applicability
  - Experimental approach to complex domains
  - Investigate long-duration or rare events
  - Explore undesirable or destructive processes

# Artificial Social Processes

- From games to evolutionary games
  - ecology of games, agent simulation
- Toward complexity of actions and motives
- Emergence of groups (cf., Axtell)
  - cf., issues in defining perpetrators & targets
- Dimensional frameworks?
  - landscapes & hyperscapes

# Computational Models of Genocide?

- Possible components
  - Group dynamics
    - perpetrating agents
    - target collectivities
  - Shared & complimentary intent
  - Destructive action
- Evolving hermeneutics?
- Prerequisite: solve the ‘social problem’?

# Multiple, Simultaneous Motives

- Fear
- Status
- Revenge
- Conformity
- Material gain
- In-group solidarity
- Accumulation of power

# Group Porosity

- Definitions of perpetrating and target groups: shifting & minimal
- Ethnic markers, imaginary communities
- Collectivities of boundaries
- Salient clusterings in attribute space
- (Multiple, simultaneous) motives as affordances (in niche enhancement)

# Destructive Action

- Discrepancy of power | organization, tech
- Prior destructive exchanges | prior chain
- Probability of agent rewards/penalties for destructive action | prior chain, local pattern
- Salience of imputed differences
  - clarity of subjective cluster & classification (in/out)
  - location within discrete/continuous fluctuation
    - cluster coherence, migration, prior destructive chain
    - isolating mechanisms