

Political Participation: Narrative Documentation

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This simulation models political participation after Milbrath (1965). I wrote the model in 2005 as part of my MSc thesis. The only changes in the code since were to make the model work in NetLogo 5 and NetLogo 6. Moreover, more extensive documentation is provided in the NetLogo file.

Overview

Purpose

Examine whether the description of political participation outlined in Milbrath (1965) is a realistic description of political participation. Milbrath provides an detailed description on how and why individuals participated in politics. The aim here is to check whether the descriptions in Milbrath add up to observed patterns of political participation.

The focus is on the different levels of participation, and not on vote choice and other related concepts. The main test is to check whether the dynamics of political participation occur. The main test is to check whether the dynamics of political participation occur. Furthermore, the impact of different political environments and the role of social contacts was also at the back of the mind when writing this model.

Entities, state variables, and scales

Milbrath's model of political participation was simplified. There are agents and global variables; patches do not play a role. Agents have individual characteristics, most of which are open to change according to the dynamics of the system. The characteristics are (opposites in square brackets): active [passive], overt [covert], autonomous [compliant], approaching [avoiding], continuous [episodic], outtaking [inputting], expressive [instrumental], and social [nonsocial]. Each characteristic is modelled as a continuous variable. Agents also have a specific socio-economic status (SES), contacts in the community, and time is tracked to determine the time agents have spent in a community. Political participation is represented in levels, ranging from 0 (apathetic) to 12 (holding office).

Process overview and scheduling

Agents are subject to stimuli with probability p , then interact with other agents with probability q , and then move to another community with probability r . Levels of political participation are updated at the end of each round, assumed to be 1 week. The values of p , q , and r are determined by the political environment (put differently, the political environment is determined by p , q , and r). Agents keep a history of their level of political participation.

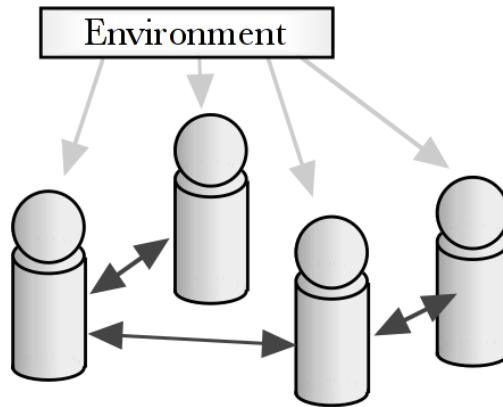


Figure 1: Agents receive stimuli from the environment and interact with each other

Design Concepts

Basic principles

The simulation implements a simplified version of the model of political participation presented in Milbrath (1965). It implements the idea that both the environment and interpersonal interaction affects individuals' propensity to participate, while both are moderated by individual characteristics.

Emergence

The level of political participation is determined by a set of rules, but is a result of individual characteristics, the political environment, as well as the nature of interpersonal interaction. Depending on how these variables are changed, the patterns of political participation change. These patterns of participation do not emerge when parts of the model are turned off (e.g. no interpersonal interaction).

Adaptation

The agents do not have adaptive behaviour. Their actions are determined by global variables (p , q , r) as well as individual characteristics. The level of participation is determined following a set of rules, thus making the assumption that individuals with a given propensity to participate actually have the opportunity to participate. For example, in the model there are no limits on the number of individuals who could hold and office.

Objectives

The agents do not have a particular objective, but will participate in politics if they can. The decision to participate considers the state variables of the agents.

Learning

The agents do not learn, but the interpersonal interaction can change most of the individual characteristics.

Prediction

Agents have no sense of time.

Sensing

When agents interact with other agents, they do so quite intensively, affecting each other in most state variables. For agents, the environment exists only in the sense that it sends stimuli.

Interaction

Agents interact directly with each other, affecting each other's states. Whether agents initiate interaction depends on their sociability and overtiness. Interaction is with a random other agents. The impact agents have on each other depends on individual characteristics.

Stochasticity

Most aspects of the model include stochasticity to include the probabilistic nature of human behaviour without modelling the underlying causes thereof.

Collectives

There are no real collectives. Communities exist only as a variable of individual agents. Agents are assumed to be member of a community, and after each round they have spent more time in that community – unless they move. All contacts they have are assumed to be within the community. When they move, their contacts are reset. The underlying assumption is that the simulated agents form a single community. If an agent is set to move, this is as if it moves to a different community, and at the same time a new agent moves to the community in question. This way, there is no need to model communities explicitly.

Observation

The main output is the distribution of agents into different levels of participation: How many agents participate in politics to what level.

Details

Initialization

Initialization necessitates that a political environment is set, either from the presets or via the sliders for p, q, and r.

Input data

No data are input; agents and their characteristics are generated randomly.

Submodels

There are submodels for (1) stimuli from the political environment, (2) interaction with other agents, (3) moving to another community, and (4) updating. Separate submodels colorize agents according to their level of participation and plot.

Additional information

Further model description in

- Ruedin, D. 2007. “Testing Milbrath’s 1965 Framework of Political Participation: Institutions and Social Capital.” *Contemporary Issues and Ideas in Social Sciences* 3(3).
- Ruedin, D. 2005. “A Simulation of Political Participation.” *MSc Thesis*. Oxford University.

Code also used in

- Ruedin, D. 2011. “The role of social capital in the political participation of immigrants: Evidence from agent-based modelling.” SFM Discussion Paper 27.

Note on hard-coded numbers

Numbers that are assumed are declared using `*/` in the comments, other numbers are backed by some data/literature.

Known limitations and comments

- “Check Agent Smith” is implemented to monitor turtle 4 (could be any turtle).
- Export only works when called manually.
- Some presets are purely for testing.
- Some values of presets have not yet been checked against the literature.
- Presets are possibly still incomplete.
- Some open tasks remaining (indicated with asterisks ****)
- The model should probably use random-normal rather than its own code to generate normally distributed values

Reference

- Milbrath, L. (1965) *Political Participation: How and Why Do People Get Involved in Politics?*, Chicago. Rand McNally.

Release Notes

- Original version: 20 May 2005.
- Upgraded to NetLogo 4.1.1: 20 April 2011.
- Additional comments and information: 5 September 2012.
- ODD description and yet more comments: 22 March 2014, 12 April 2014.
- Updated to NetLogo 6.1.1: 14 April 2020.
- Now using MIT Licence: 14 April 2020.

Licence

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