

## ## BASIC DESCRIPTION OF THE MODEL

In the context switching with segregation model, a society of agents engages in a simple abstract game: the consensus game. Each agent has to choose towards one of two possible choices which are basically arbitrary. The objective of the game is to reach a global consensus, but the particular choice that gets collectively selected is irrelevant. What is important is that overall agreement is achieved. Agents can change their choice. Agents have the chance of changing the choice when they have an interaction with another agent in its neighbourhood (context), by playing the majority game: agents keep track of their previous interactions and select the choice that they have seen most often in the past.

The agents are embedded in multiple relations represented as static social networks. They switch context first by avoiding undersirable neighbourhoods by using a tolerance  $_T$  associated with each relation and second by a switching probability  $_S$  also associated with each social relation.

The agents are only active in one context at a time and can only perform encounters with available neighbours of the current context. We can think of context switching as a temporary deployment in another place, such as what happens with temporary immigration.

## ## AGENT BEHAVIOUR OVERVIEW ##

1. Compute the ratio  $_r$  of agents present in the current context  $_C<sub>i</sub>_$  with a choice opposite from the current agent's choice.

2. If  $_r > _T<sub>C<sub>i</sub></sub></sub>_$  (if the ratio is not within the social tolerance of the current context):

- \* switch to a randomly selected social context context  $_C<sub>j</sub>_$

3. Otherwise:

- \* switch to context  $_C<sub>j</sub>_$  with a probability  $_S<sub>_C<sub>i</sub></sub>_</sub>_$  (the probability of switching from the context  $_C<sub>i</sub>_$  to the selected context  $_C<sub>j</sub>_$  when the social tolerance requirements fail).

## ## GUI BASIC EXPLANATION

**\*\*population:\*\*** the number of unique agents to be generated.

**\*\*switching?:\*\*** enables or disables the switching mechanism.

**\*\*segregation?:\*\*** enables or disables the segregation mechanism.

**\*\*note:\*\*** if switching is disabled the model uses a "shake" mechanism when the agents encounter a deadlock situation and increments the number of deadlocks.

**\*\*consensus-ratio:\*\*** the ration of agents in consensus necessary to the termination criteria.

**\*\*planet-n-switching:\*\*** parameter that determines the switching probability from the referred plane. This is used in the context switching mechanism.

**\*\*plane-n-tolerance:\*\*** parametar that determines the tolerance associated with a given

plane n. This is used for the segregation mechanism. The agents only tolerate opinions different to their own up to this threshold.

**\*\*plane-n-network:\*\*** the network to be built in the referred plante. In this case the user can choose between an ER Network, Regular Network or a Scale-free network (Barabasi Albert Model)

**\*\*k-regular:\*\*** the parameter k for the construction of the k-regular networks.

**\*\*num-planes:\*\*** number of network layers to be created in the 3D CUBE.

## ## CREDITS AND REFERENCES

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