Appendix chapter 10
How to use the agent model

Henderien Steenbeek

Steps in the calculation of the agent model

1. Specify all parameter values.
2. Initialize the variables for calculation of the model.
3. Run main routine (420 times):

   Step 1: Calculate the preferred behavioral state (preferred proportion of involvement over autonomy) on the basis of the current values of the concerns.
   Step 2: Determine the value of the behavioral weights (i.e. the weights associated with the behaviors “Playing alone” and “Playing together”, respectively) on the basis of the current value of the corresponding drives.
   Step 3: Add the influence of the non-intentional principles of behavior (symmetry and continuity) to the behavioral weights.
   Step 4: Calculate the value of the random factor for both types of behaviour, and add the random factor to the behavioral weights.
   Step 5: Select the behavior on the basis of the highest value of the behavioral weights.
   Step 6: Determine the level of the realized behavioral state (i.e. concern realization) following the selected behavior, by means of the following substeps:

   i. Update the memory to cover the new level of concern realization.
   ii. Determine the influence of the selected behavior on the realization of the concerns depending on the memory.
   iii. Calculate the level of concern realization on the basis of the memory.

   Step 7: Calculate the drive on the basis of the difference between the preferred behavioral state (see Step 1) and the realized behavioral state.
   Step 8: Calculate the emotion level on the basis of the drive.
   Step 9: Calculate the emotional expression (positive, neutral, negative) on the basis of the emotion level.
   Step 10: Calculate the influence of the emotional expression on the value of the concerns (i.e. preferred behavioral states).
   Step 11: Return to Step 1.