

chance of at least one having the same trait, so to say enabling an interaction, is simply higher. For this reason with a higher number of features in the cultural vector the final zone/region count decreases.

3.2. Other factors that affect the dynamics

Besides the amount of features and traits there are other parameters that influence on the dynamics. One is the grid size L . The initial number of zones which in Fig. 2-4, for the 10x10 grid was around the number of total agents (≈ 100). This also applies to larger grids (see Fig. 5) but the way the number of zones decays differently for the different grid sizes. Note that in Fig. 5 the amount of zones was divided by the initial number of zones (so roughly divided by the total grid size respectively) in order to visualize all the graphs in one figure and compare their relative decay of zones.

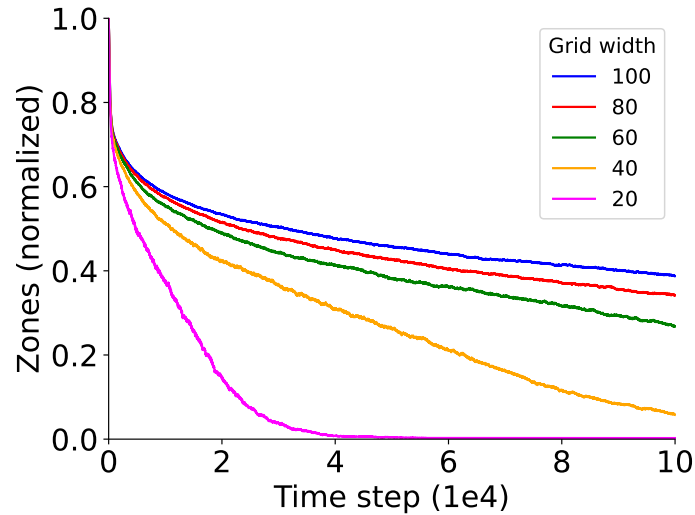


Figure 5. Zones over time steps for different grid sizes for agents with a cultural vector of 7 features with 5 possible traits. Note that the amount of zones was normalized. Results were averaged over 100 simulations.

The simulations for Fig. 5 were only performed up to 10000 time steps. For most of the evaluated grid sizes, namely the larger ones, this was not enough for the system to reach its equilibrium state. But it was already enough roughly guess where that state will be. It can be seen that for a larger grid size the final amount of zones will be much higher for a fixed number of features and traits. If the grid is large enough it allows for a higher amount of fragmentation so that more there will be more zones in the end.

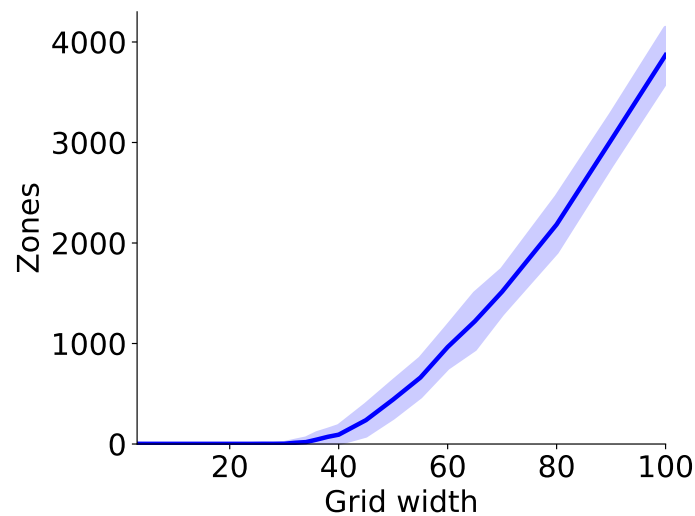


Figure 6. Zones over grid size after 10000 time steps. Agents with a cultural vector of 7 features with 5 possible traits. Results were averaged over 100 simulations.