(no matter the values of q) and for $q = 5$ and $\epsilon = 0.05$. For the case of $\epsilon = 0.05$ and $q = 10$ and 30 the system ends in a multicultural state for almost all the range of noise levels. Nevertheless, for sufficiently high noise level the system is abruptly driven to a monocultural state, as in all the others cases.

Here we advance an analysis for possible explanation of the results obtained on this experiment. There are three parameters involved: the initial cultural diversity q, the strength of the super-agent ϵ and the noise level r, and two different error mechanisms: the copying and including error. For low values of ϵ the super-agent will appear on the set of influence I_i with low frequency. This frequency increases for increasing ϵ. For low values of q the majority of the neighbors of the target agents will be included on I_i because of the low cultural diversity, while the opposite occurs for large enough values of q. Nevertheless, as can be seen from the Figure, this complex interplay does not has an important impact on the dynamics of the system along a wide range of noise levels and the value of $< S >$ remains almost constant. When $r \geq 0.1$ the copying error becomes the dominant mechanism because independently of the cultural trait an agent has copied from its neighbors, the copying error changes it to any one randomly selected and as it was already said, it deletes the boundaries between different cultural regions. It is also of importance that the error mechanism stops when the agent becomes inactive. Hence, the social influence is the mechanism which allows an agent to be active/inactive and it is also the mechanism which switch on/off the copying error. Then, as the copying error connects two completely different cultures the homogenization is favored and agents become inactive (and noise stops) when its culture is completely equal to its neighbors. Therefore the final monoculture obtained at $r = 0.45$.

At lower values of noise a non monotonic behavior is obtained for $q = 10$ and 30 when the strength ϵ has low values ($\epsilon = 0.05$ in this case). The value of $< S >$ first decreases for increasing noise reinforcing the multicultural state. This effect is much pronounced at $q = 30$. In these cases, the initial diversity makes that the set I_i be formed only by the target agent and some of its neighbors. More neighbors will be present on the set of influence for $q = 10$ than for $q = 30$. For increasing noise the including error makes the set I_i populated by both agents from cultures which share some traits with the target agent and also with agent neighbors which do not. The super-agent will also be included. This interplay seems to produce strong local convergence and it drives the system to a multicultural state for a range of noise between 0.01 and 0.1. Finally, as already noted, the copying error drives the