(self-)replicating molecules \longrightarrow modular replication of populations of molecules independent replicators \longrightarrow chromosomes

RNA as both genes and enzymes \longrightarrow DNA as genes and proteins as enzymes

prokaryotes — eukaryotes

asexual clones — sexual populations

unicellular protists — multicellular organisms

solitary individuals \longrightarrow colonies with non-reproductive castes

societies without language — societies with language