

TABLE 21.3. The major transitions in evolution all involve fundamental changes in the way hereditary information is passed on

Replicating molecules	→	Populations of molecules in compartments
Unlinked replicators	→	Chromosomes
RNA as gene and enzyme	→	DNA and protein (<i>genetic code</i>)
Prokaryotes	→	Eukaryotes
Asexual clones	→	Sexual populations
Single-celled organisms	→	Animals/plants/fungi (<i>cell differentiation</i>)
Solitary individuals	→	Social colonies (<i>nonbreeding castes</i>)
Primate societies	→	Human societies (<i>language</i>)

From Maynard Smith J. and Szathmary E. 1997. *The major transitions in evolution*. Oxford University Press, Oxford.

Apart from the evolution of the genetic code, all these transitions involve the coming together of previously independent replicators, to cooperate in a higher-level assembly that reproduces as a single unit.