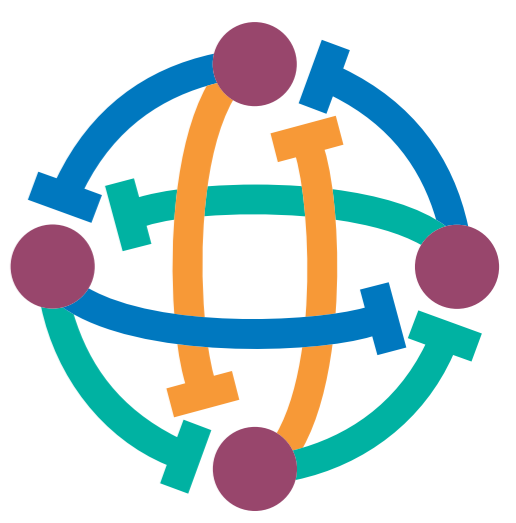


From BlenX to SBML

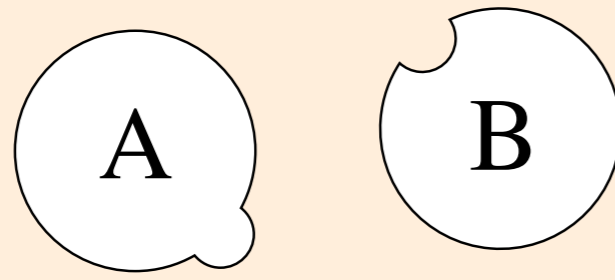


Roberto Larcher

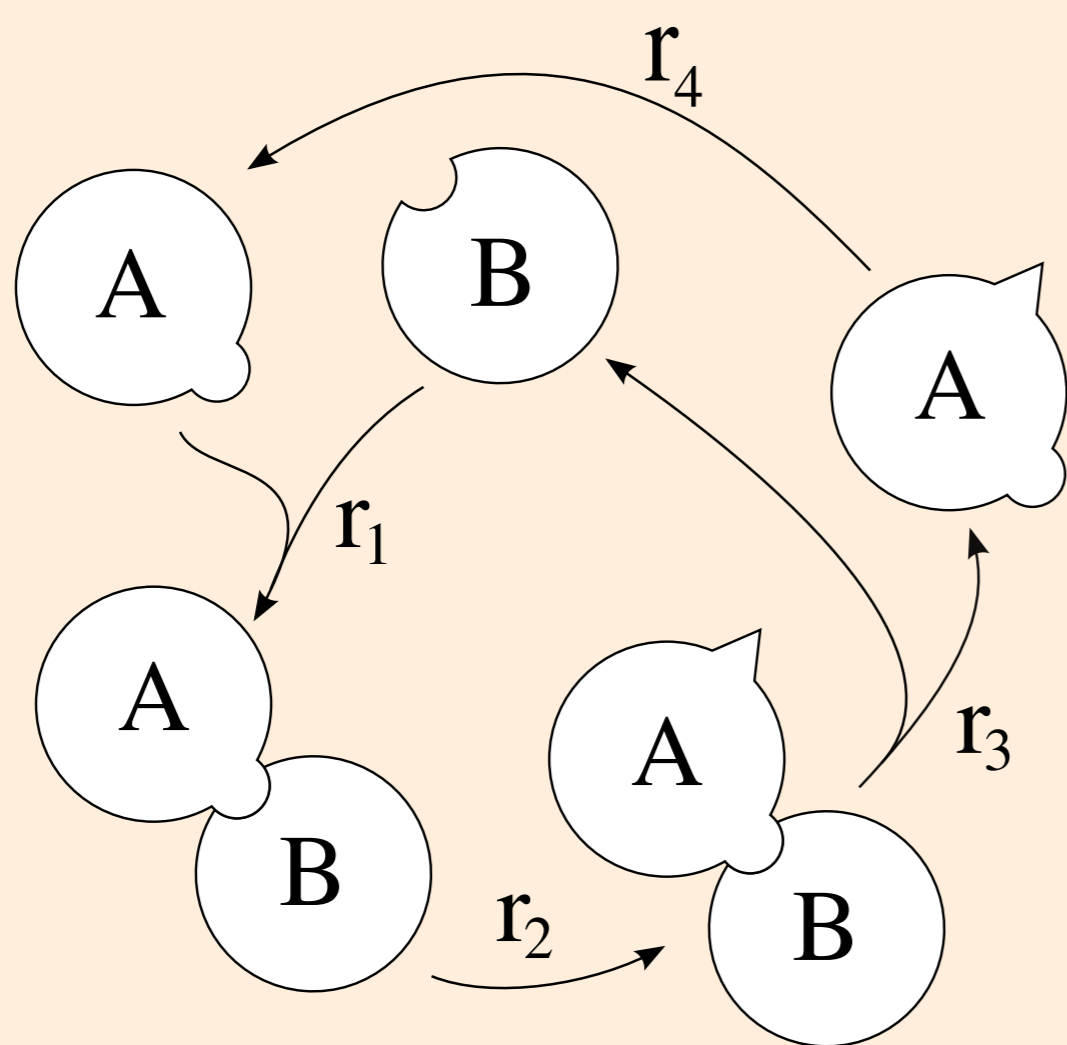
Microsoft Research - University of Trento - CoSBI

Two different approaches to model biological systems

BlenX approach: the program defines the molecules present in the initial state of the system of interest:



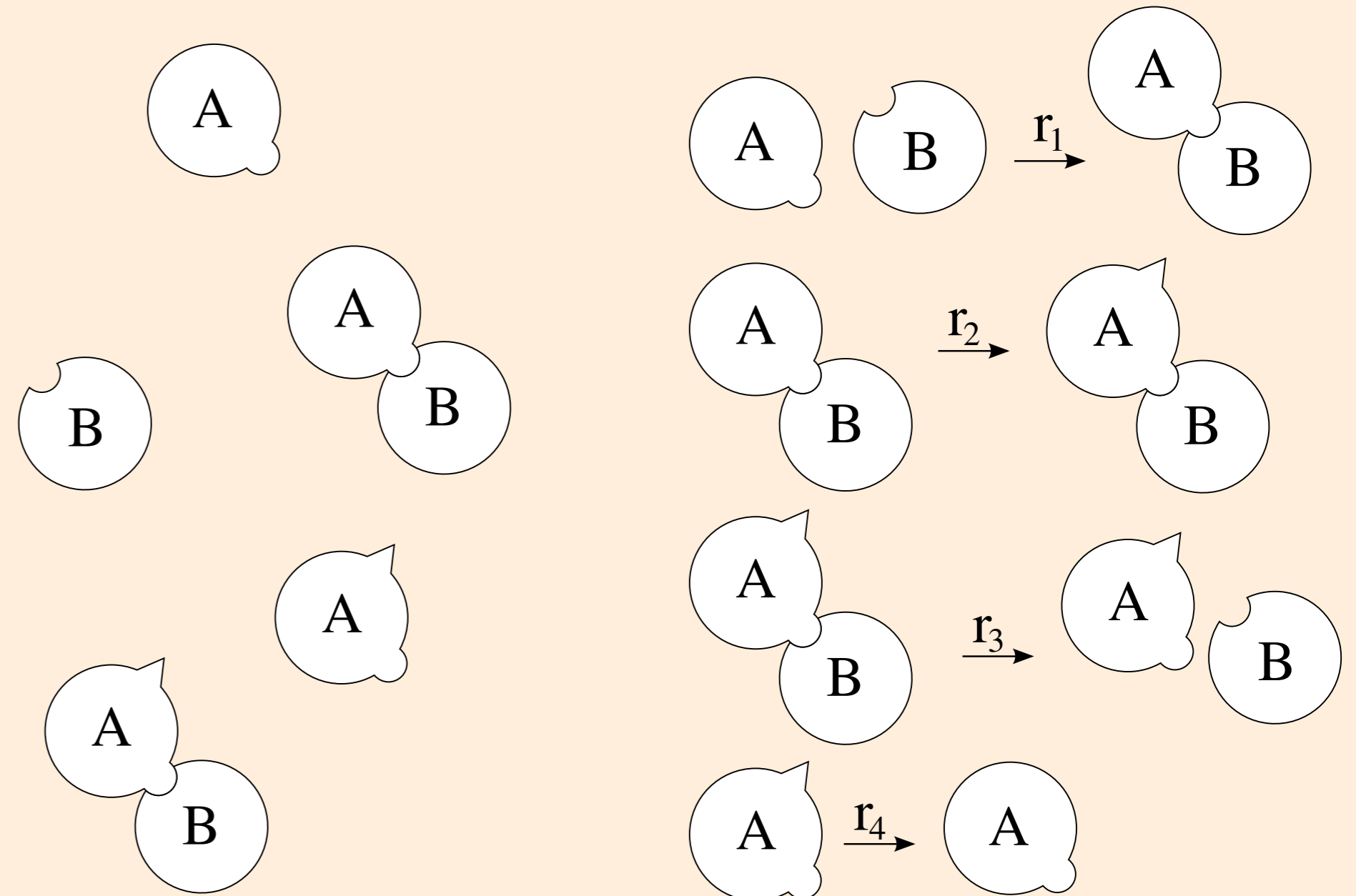
As the program runs, the molecules stochastically interact together governed by their internal processes and by their interacting capabilities giving place to reactions that create new kinds of molecules:



SBML approach: all the species that can appear in the system have to be defined. The same applies to the reactions that can take place:

Species

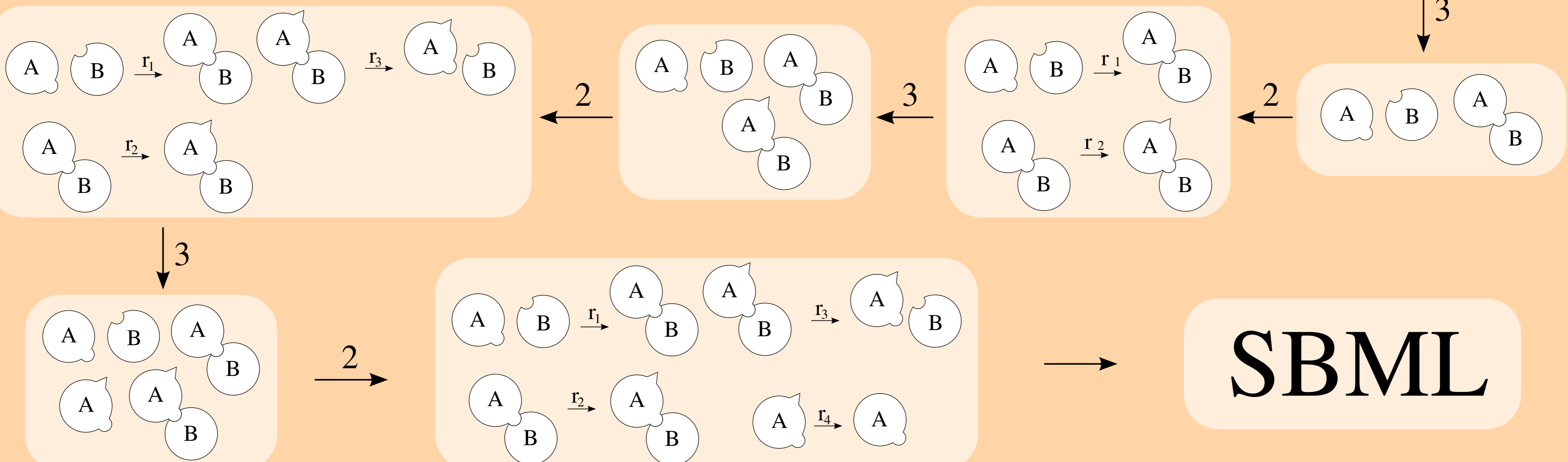
Reactions



The SBML file can be read by numerous tools that perform simulation following the file specifications.

Solution to export BlenX program in SBML format

- 1) Read the BlenX program and find out the defined molecules
- 2) Make the known molecules react in order to find which reactions they can perform
- 3) Add molecules created by the reactions executed at the previous step to the set of the known molecules
- 4) If new molecules have been found at previous step go to step 2 otherwise the algorithm ends and the SBML file is created



SBML