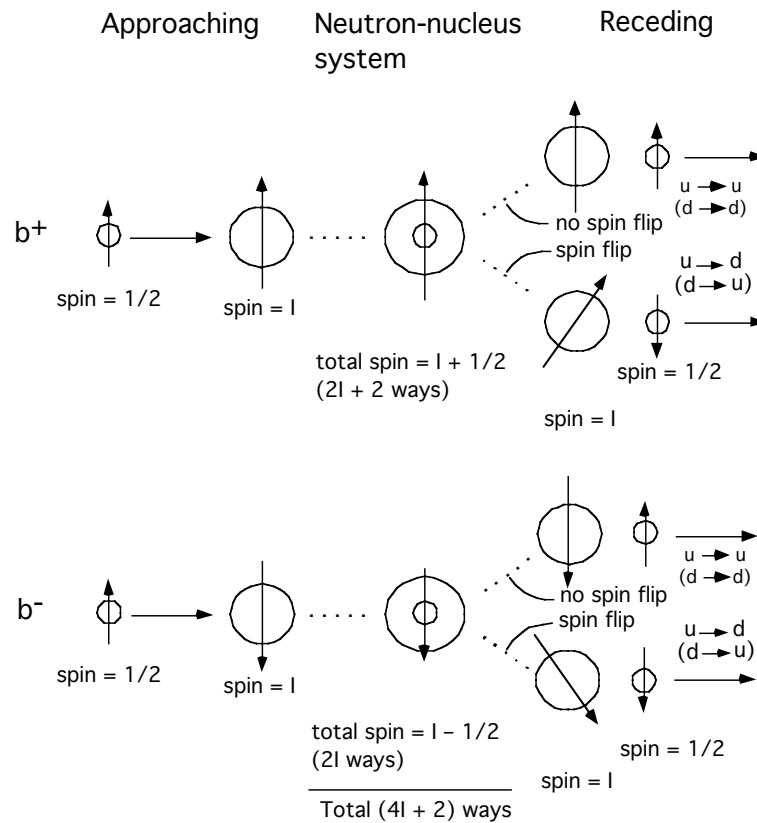


[Scattering Illustration]
 (Chapter 1.2.1 in *Elements*)

The following figure illustrates the possible results of a scattering interaction. The figure is nothing more than a schematic diagram, or perhaps only a mnemonic one. Working out the scattering cross sections and the results of spin-flipping and wave interference requires quantum mechanical calculations.



Low-energy neutron scattering from a single nucleus. Quantum mechanical calculations indicate the number of ways that each process can take place. The compound state exists only for a very short time ($< 10^{-15}$ s).