Two facets of self-assembly are described. The first concerns one of the basic forces responsible for organization in soft matter, the so-called the "hydrophobic interaction." There is a crossover length below which hydrophobic interactions are weak, and above which hydrophobic interactions are collective and strong. The crossover length, about 1 nm, is related to the radius of the critical nucleus of the underlying first-order phase separation of oil and water. Strong interactions are required for robust self-assembly, but even when strong, self-assembly need not be successful, which relates to the second facet of this lecture. In particular, hierarchical self-assembly can occur only when strong interactions are not so strong as to freeze disordered configurations. In other words, robust self-assembly requires the ability to anneal. This situation, where kinetics can trump thermodynamics, is illustrated by the self-assembly of virus capsids.