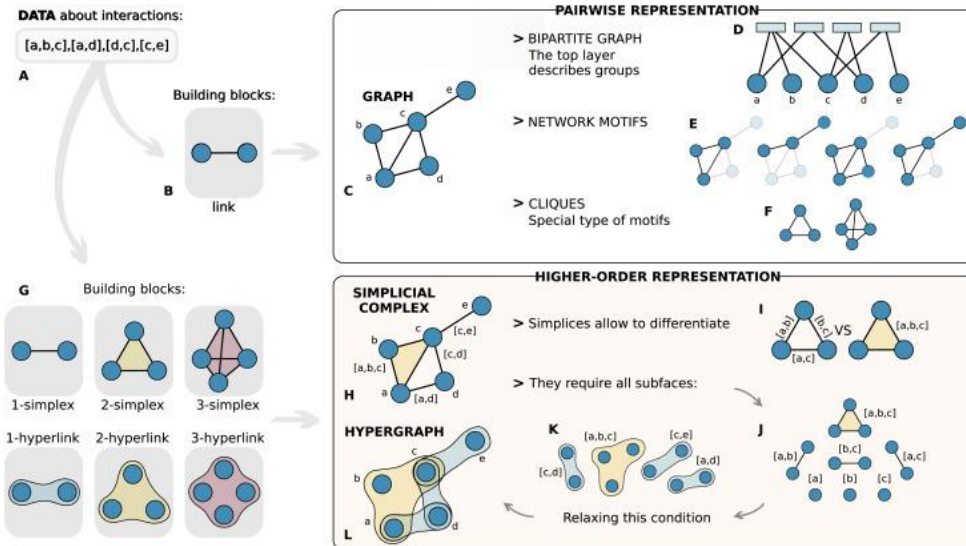# When networks must describe multivariate behavior, a pairwise representation is not enough, fundamentally and statistically
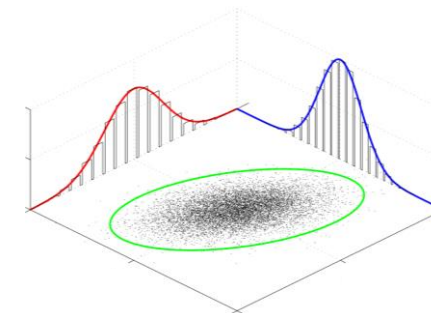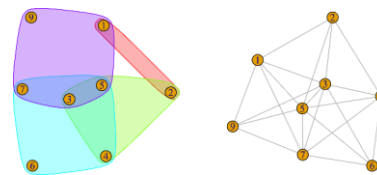
Higher order: big in network science

Networks beyond pairwise interactions:
Structure and dynamics

Federico Battiston [a] ✉, Giulia Cencetti [b], Iacopo Iacopini [c, d], Vito Latora [c, e, f, g] ✉, Maxime Lucas [h, i, j], Alice Patania [k], Jean-Gabriel Young [l], Giovanni Petri [m, n] ✉

- Inferring motifs/cliques from "networks" of pairwise statistical dependencies is problematic

- Same issue for detecting and interpreting higher order complexes

- Infer these quantities from the data

- This way we focus on the behavior and not only on the underlying structure

https://github.com/danielemarinazzo/HOI

https://github.com/danielemarinazzo/HOI

Main goal: translate some matlab stuff to python