Orbital Model of Electronic Structure

In virtually all models of the electronic structure of atoms, molecules and solids, the many electron wavefunction describing the system is constructed from one-electron functions called orbitals. Very loosely these orbitals describe the motion of electrons as if they moved independently of the other electrons in the system. The more sophisticated the wavefunction, the less the orbitals admit a physical interpretation. Indeed, even in the best of circumstances, when the orbital model works well, it is prudent to remember that they are not unique and that the fundamental entity is the many electron wavefunction and the electron density derived from it.