Consequence of the Pauli exclusion principle: the electron shell structure of atoms.

For example, the electron shell structure explains the variety of chemical elements.

Each shell can hold at maximum $2n^2$ electrons:
- $n=1$: 2 electrons,
- $n=2$: 8 (2+6) electrons
- $n=3$: 18 (2+6+10) electrons

**Electron Shell Structure: Example**

e.g. Ar (Argone)  
Z=18  

Shell structure:  
$1s^2, 2s^2, 2p^6, 3s^2, 3p^2$  
Number of electrons