Metals and their Compounds
Lecture 6.4
Transition metals (23.7 and Ch 24 BLB)

All ligands are Lewis *bases* and *donate* a pair of electrons.

All metal ions are Lewis *acids* and *accept* a pair of electrons from a ligand.

The *pair of electrons* we talk about is a *lone pair* of electrons, which are not used in bonding in the ligand

Cu^{2+} metal ion - Lewis *acid* (positive ion is lacking in electrons)
NH_3 (ammonia) has a lone pair of electrons

The resulting coordination compound is the ADDUCT of the Lewis acid-base reaction

$[Cu(H_2O)_6]^{2+} + 4NH_3 \rightarrow [Cu(NH_3)_4]^{2+} + 6H_2O$

acid *base* *adduct*