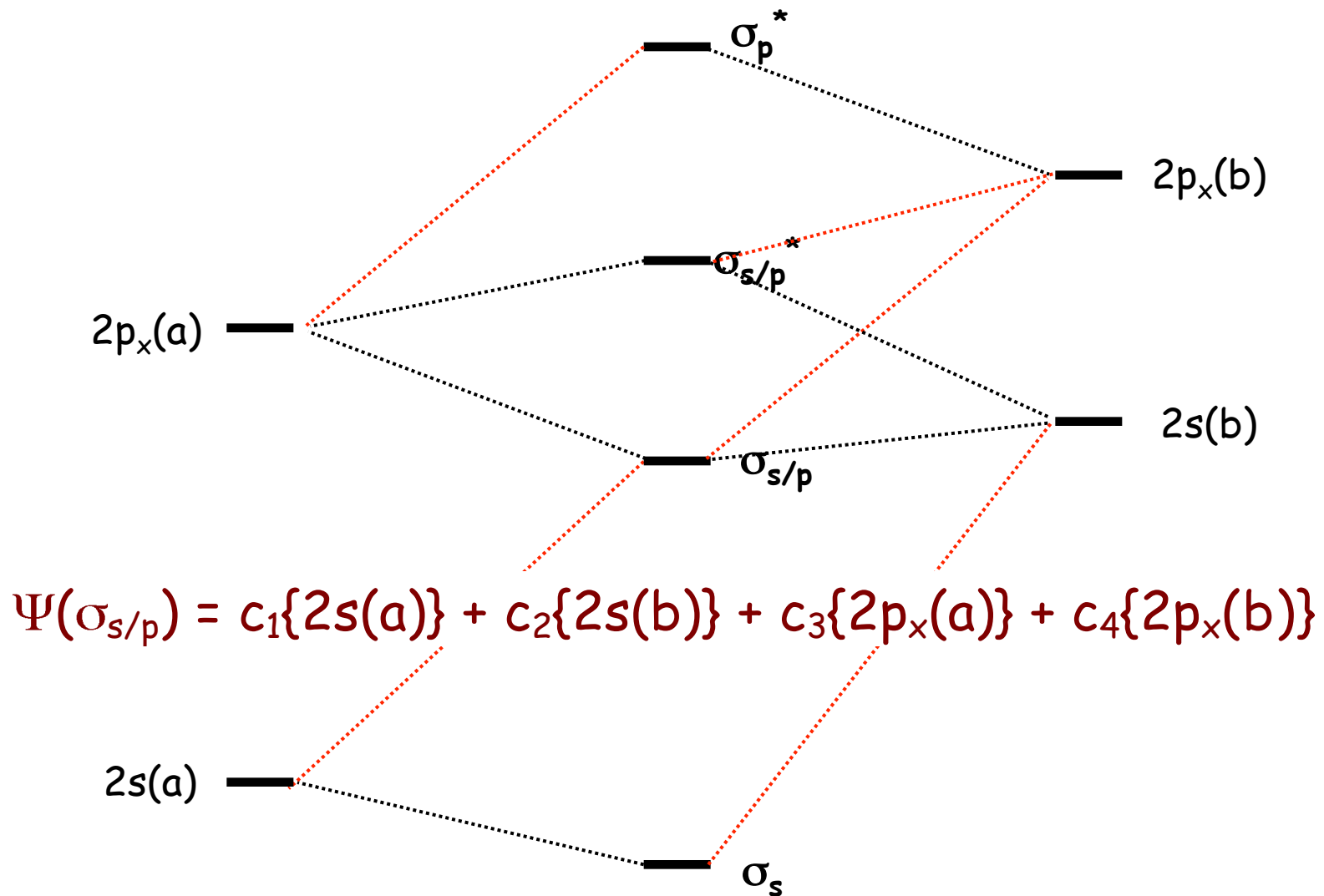


# Beyond Pairwise Combinations: Little of This, Little of That

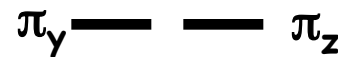
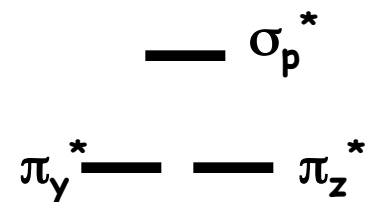
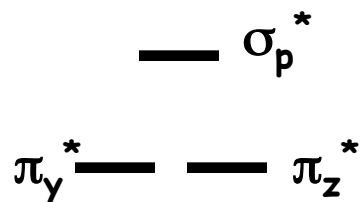
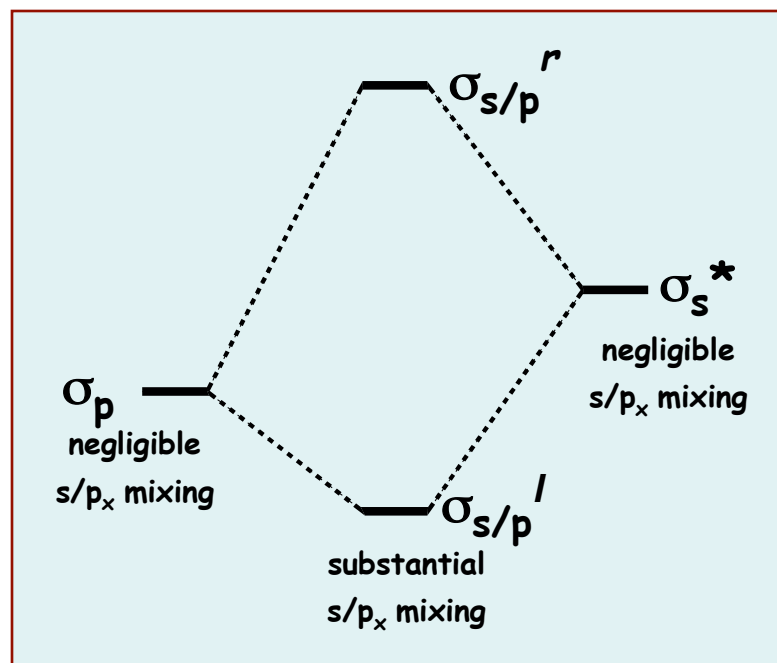
MO theory predicts that orbitals of identical symmetry will mix. As a practical consequence of this mixing, the resultant molecular orbitals become blended. The extent of this mixing (or blending) depends on the relative energies of the like-symmetry MO's.



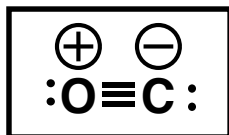
# An Alternative Approach to Construct the CO Diagram: Mix the MOs

Before  $s/p_x$  mixing

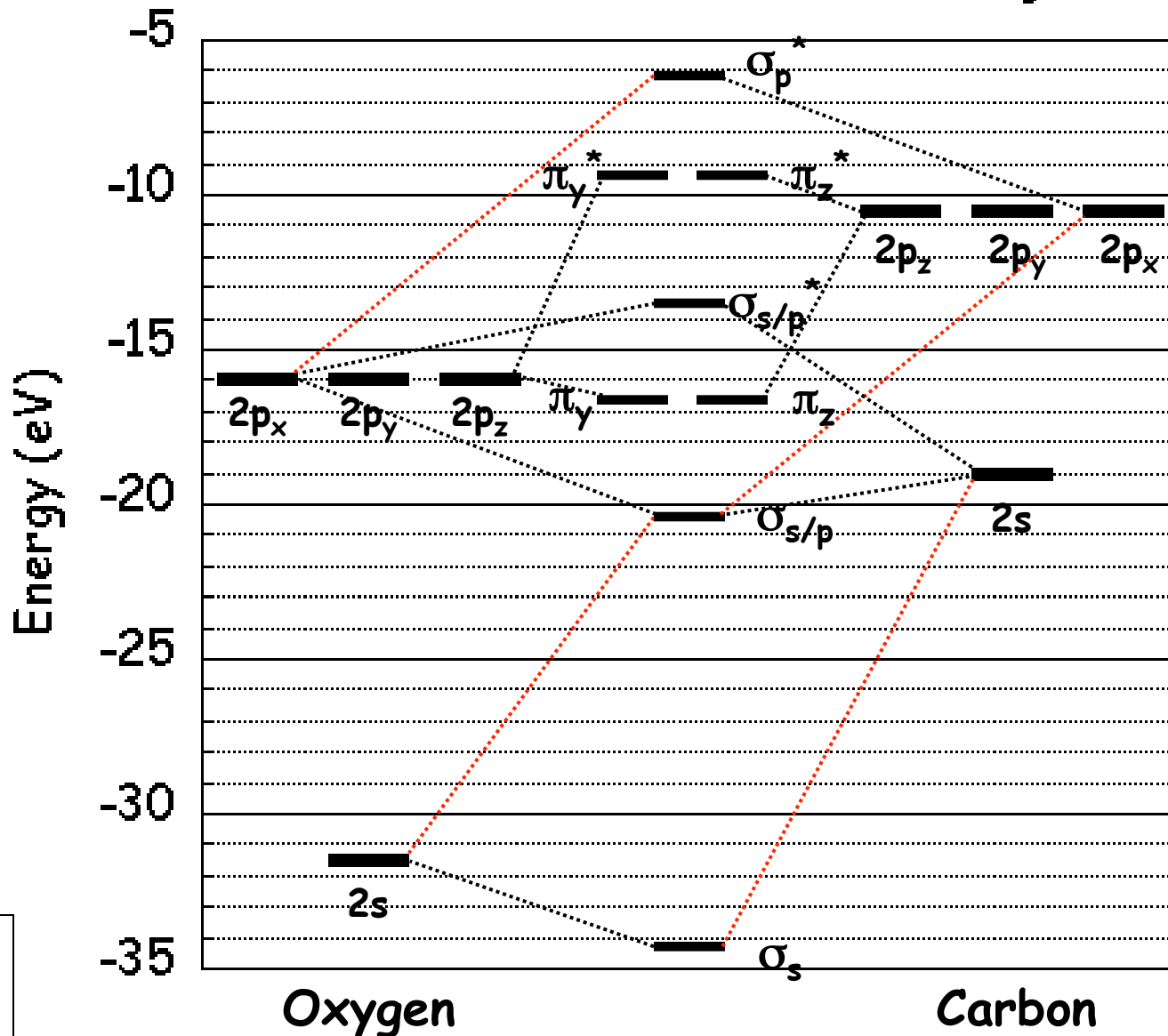
After  $s/p_x$  mixing



# New Diagram After C2s + O2p<sub>x</sub> Mixing



Carbon Monoxide Orbital Interaction Diagram



Replace  $\sigma_p$  and  $\sigma_s^*$   
with  $\sigma_{s/p}$  and  $\sigma_{s/p}^*$

..... Secondary (i.e.,  
less significant  
interaction)