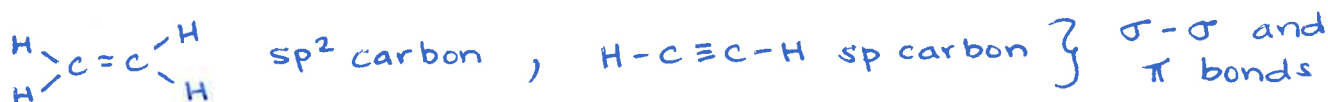
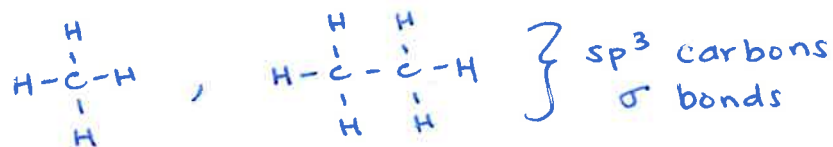


Course 343 Lecturer Gellman  
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 Notes Taken By Kirandeep Deol Total # of Pages \_\_\_\_\_

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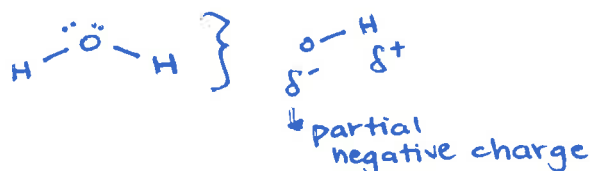
Recall: Bonding + structure, prototypical organic molecules



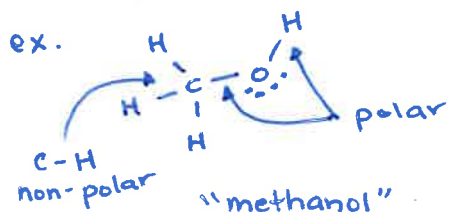
Polarity in bonds + Molecules ("the way e<sup>-</sup> are shared")

- Electronegativity [Table 1.1, pg. 9]
  - bonds between identical atoms are "non-polar"
    - ↳ atoms "tug equally" on shared e<sup>-</sup>
    - ie. H-H, F-F
- other extreme - complete e<sup>-</sup> transfer (no bond)
  - ie. Na<sup>+</sup> Cl<sup>-</sup>

• intermediate case - "polar bonds"

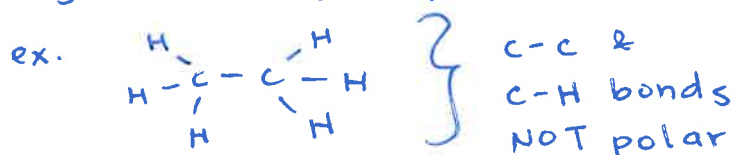


- many organic molecules have both polar & non-polar bonds



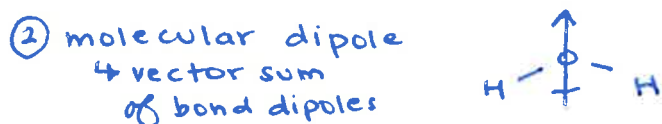
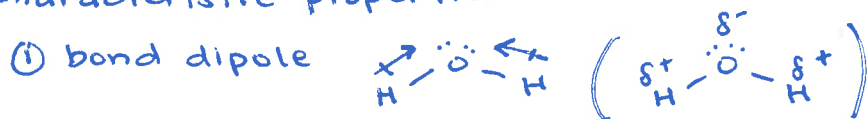
**Good Habit: DRAW LONE PAIRS**

- many ... do not (non-polar ONLY)



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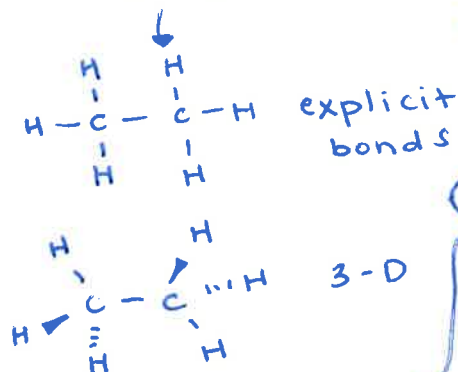
characteristic properties



Graphical Language of Ochem

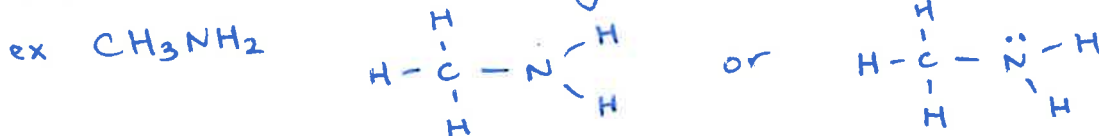
• "synonyms..."

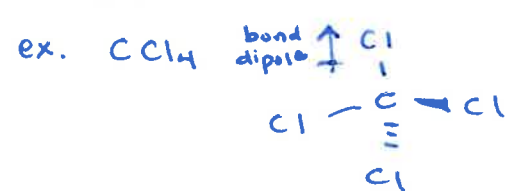
- consider - ethane  
 $C_2H_6$  or  $CH_3CH_3$



assumes "localized bonding"  
 - pair of e's shared by two  
 and only two nuclei

- extend to molecules containing "heteroatoms" - (O, N, halogens, ...)

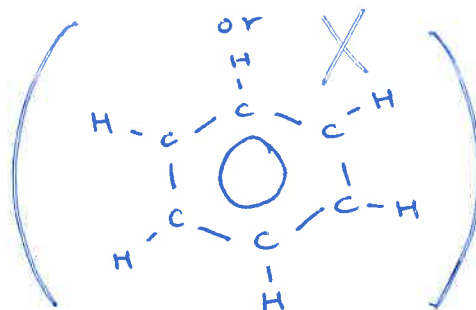
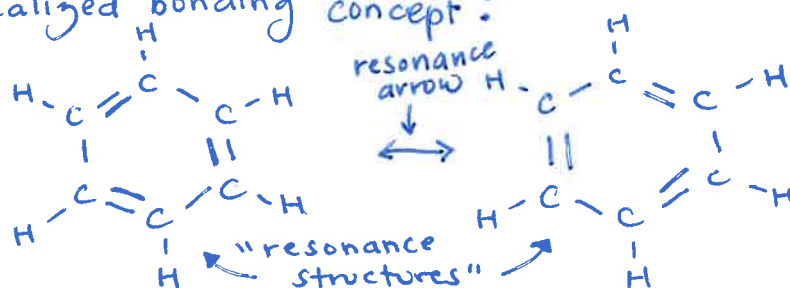


Note: molecules that contain polar bonds maybe non-polar, if the bond dipoles cancel one another out  
 ex.  $CCl_4$    
 - 4 bond dipoles cancel out  
 (NO MOLECULAR DIPOLE)

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Example of limits of "localized bonding" concept:  
 ex. benzene =  $C_6H_6$



Chapter 2 Material = alkanes

Rec. Problems - 1, 3-5, 11-15, 17-18, 23-24, 27-28, 30, 33, 35-41  
 46-50

alkanes = C + H, only single ( $\sigma$ ) bonds

$CH_4$  = methane

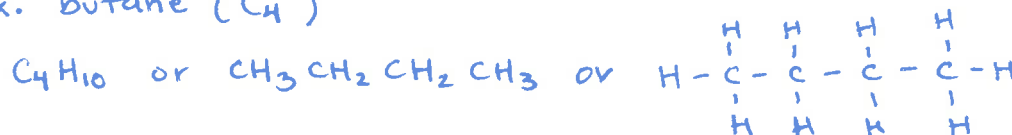
$C_2H_6$  = ethane

$C_3H_8$  = propane

} memorize names of 1<sup>st</sup> 10 linear alkanes  
 (Table 2.1)

• Drawing Conventions for longer alkanes

ex. butane ( $C_4$ )



or "skeletal"

line  $\Rightarrow$  C-C bond  
 junction of line  $\Rightarrow$  C atom  
 unspecified valence partners  
 $\Rightarrow$  H