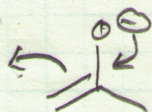
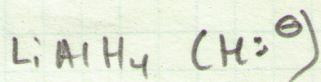
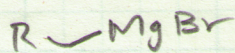


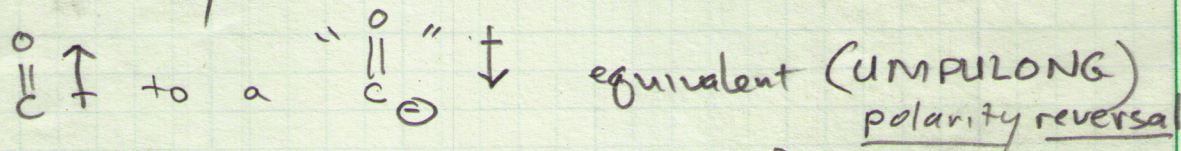
We have viewed $\text{C}=\text{O}$ with a dipole $\uparrow$ vector pointed towards the oxygen. This feature makes the carbonyl functional group serve as an electrophile.

We have seen nucleophiles like:

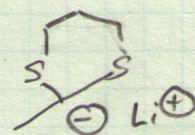
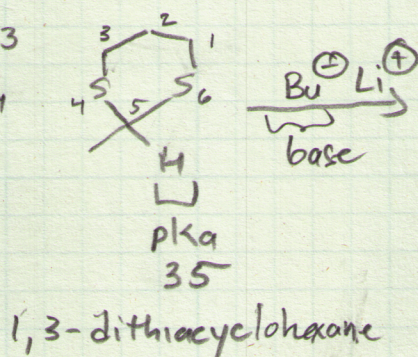
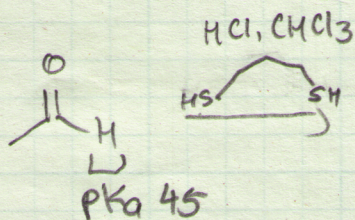


react with $\text{C}=\text{O}$ groups to increase carbon chain lengths, add a β - $\text{C}=\text{O}$ group, like in the Claisen condensatⁿ rxn.

Chemist ultimately found a method to convert a



{ NOTE THE INVERSION
OF THE DIPOLE VECTOR }



why stable?

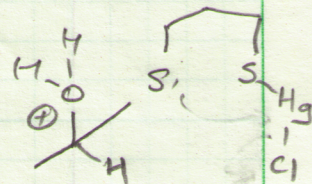
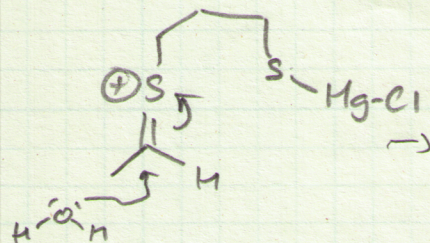
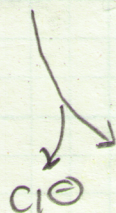
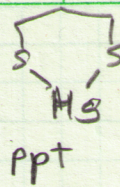
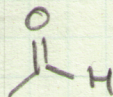
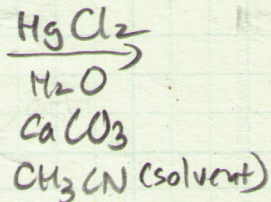
1,3-dithiahexane anion



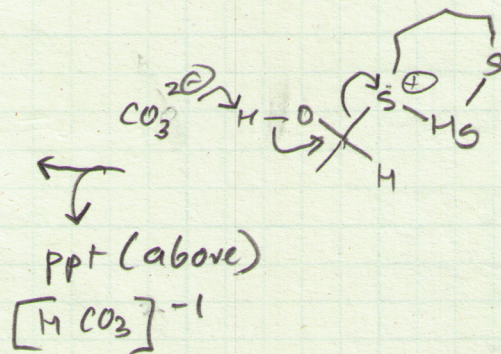
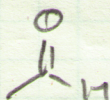
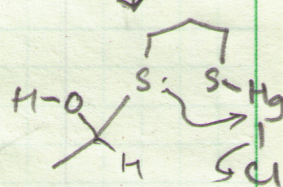
large, polarizable orbitals



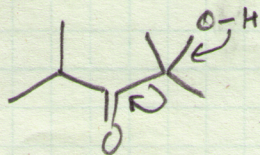
momentary



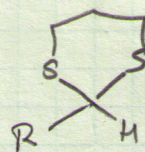
H-trans



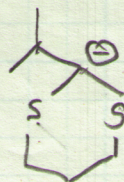
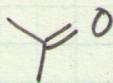
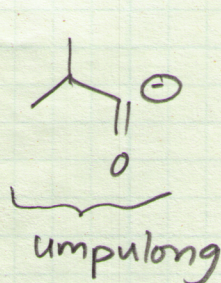
Synthesize from an aldehyde
a ketone



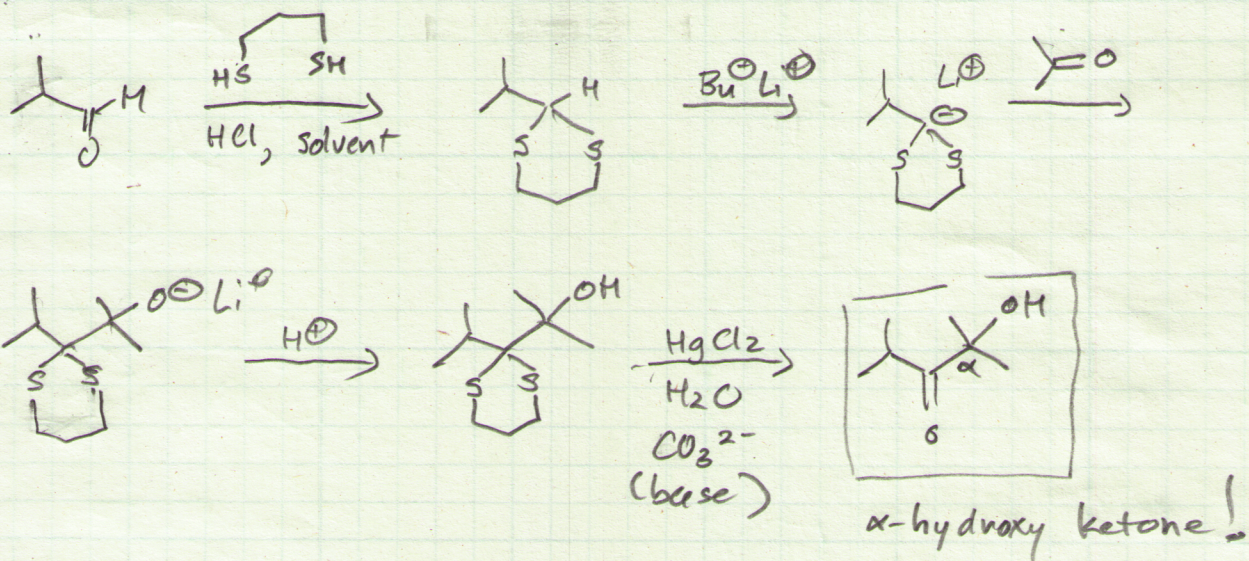
use some type of



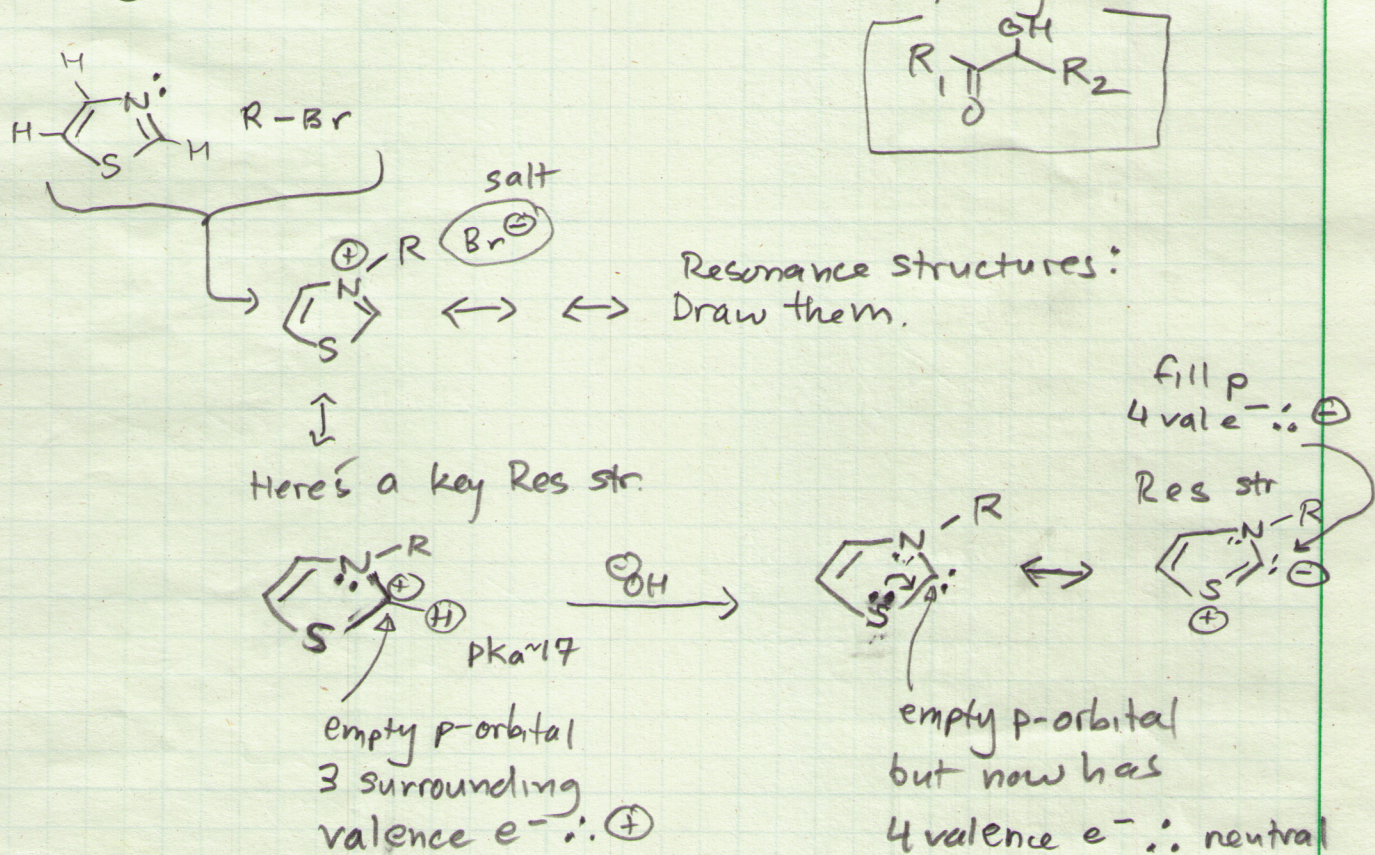
intermediate



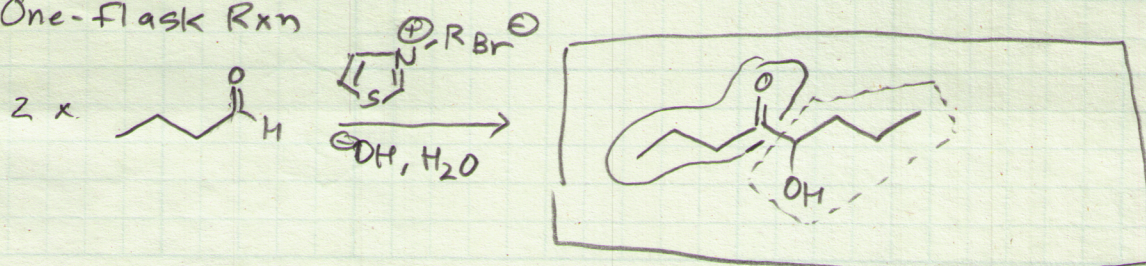
Once these are figured out
the forward rxn is
straightforward.



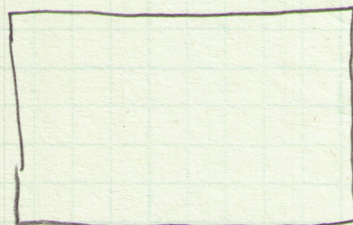
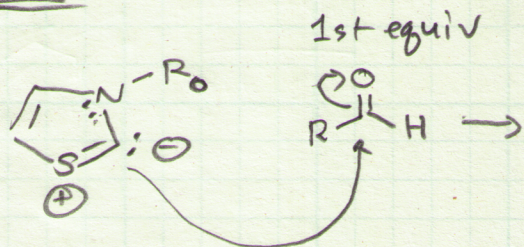
Using THIAZOLIUM SALTS TO MAKE α -hydroxy ketones!



One-Flask Rxn

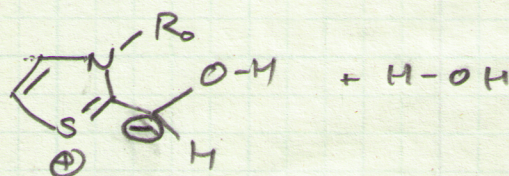
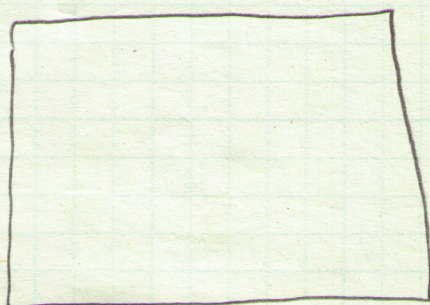


YOU DEVELOP THE MECHANISM FROM THE THIAZOLIUM ANION



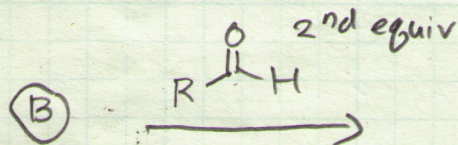
$\xrightarrow[\text{neutralizer}]{\text{H-O-H}}$

(A)
is a
cation
though

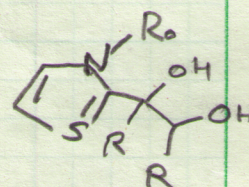


(B)

(A)
cation

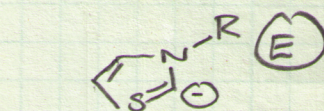
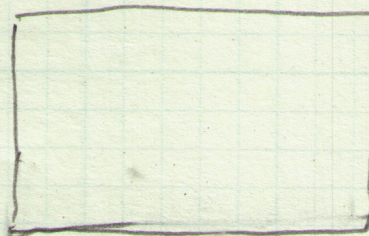
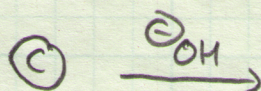


$\xrightarrow[\text{neutralizer}]{\text{H-OH}}$

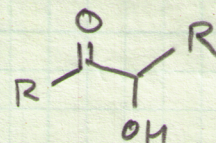


(C)

anion / cation
"Zwitterion"
(Google me)



(E)



(D)

+ H-OH

an oxyanion
Draw 2 curved
mechanism arrow
to show how (D) and (E)
are made.