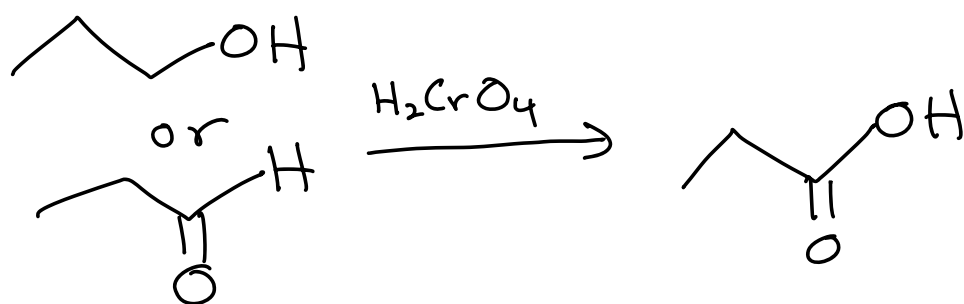
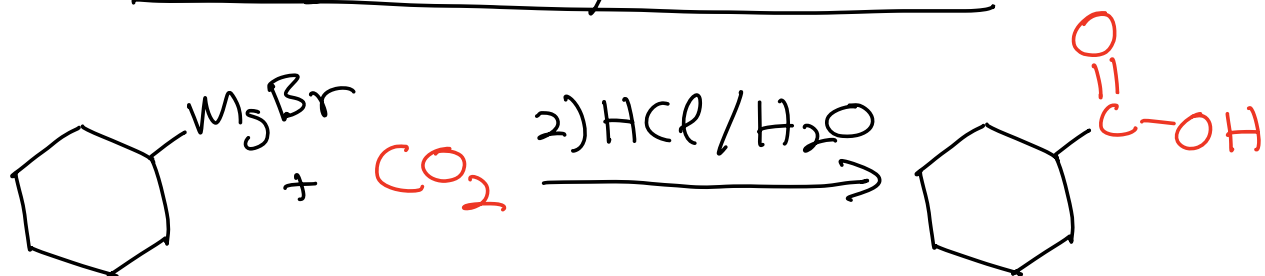


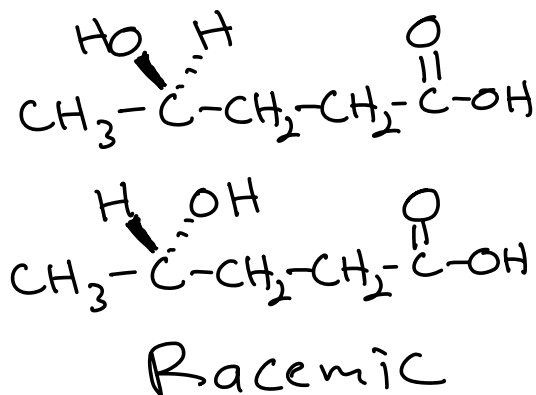
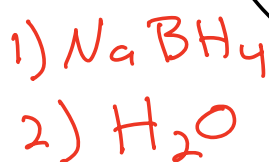
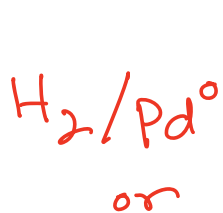
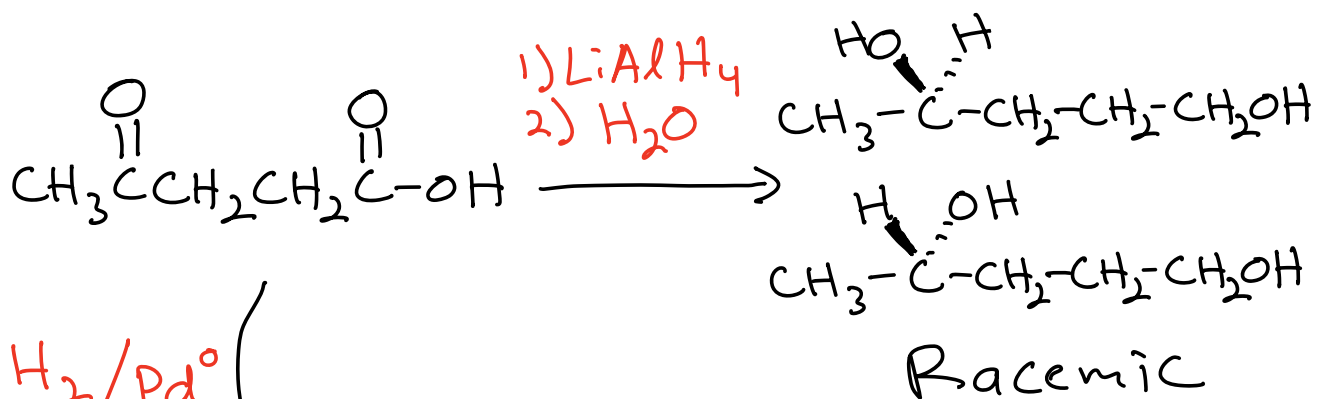
Phosgene

Making Carboxylic Acids



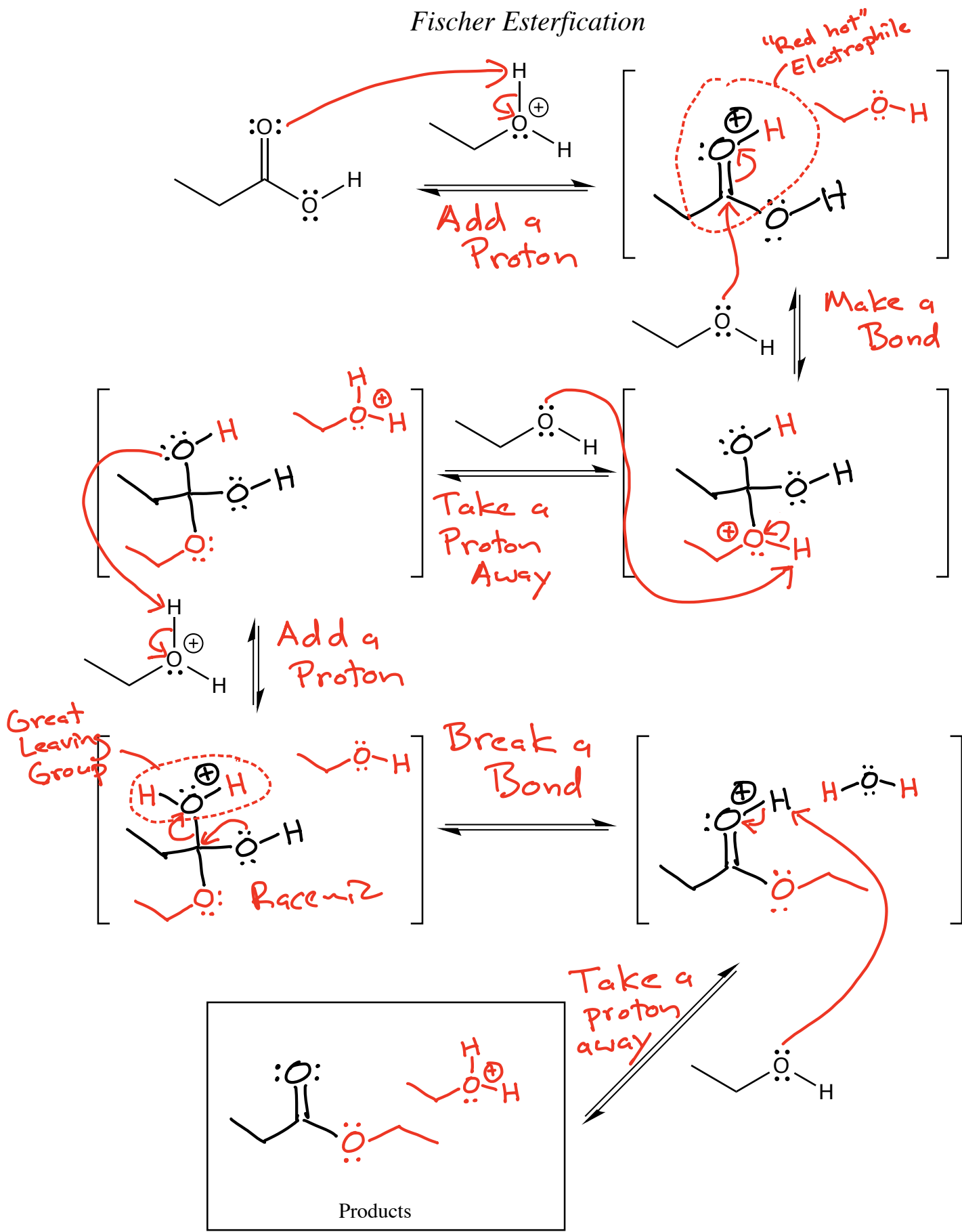
Reactions of Carboxylic Acids

Reduction $\rightarrow H_2/Pd^0$ or
1) $NaBH_4$ 2) H_2O
will NOT reduce
a carboxylic acid or
1) $LiAlH_4$ 2) H_2O

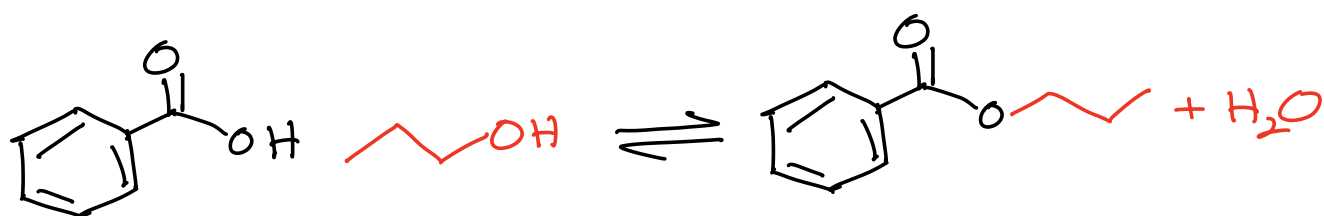
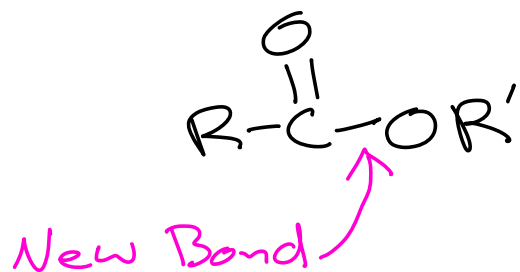


Time Capsule → This is Reversible

Fischer Esterification



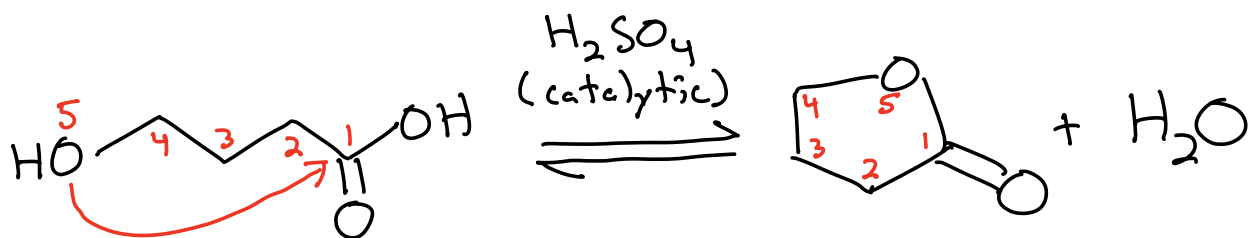
KRE \rightarrow An ester is formed



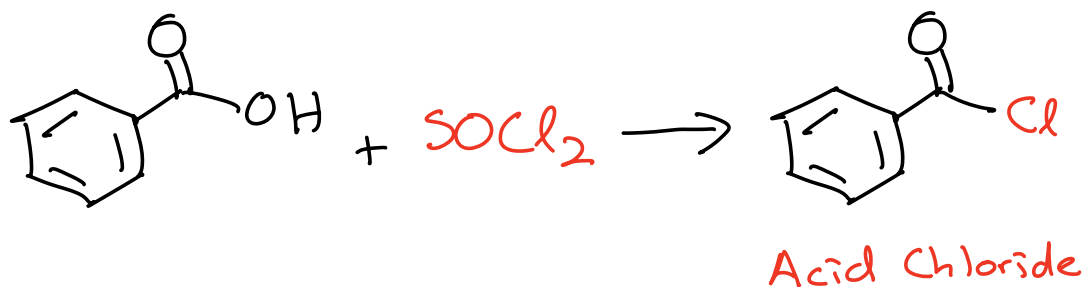
Time Capsule \rightarrow This is reversible
 \rightarrow The position of equilibrium depends on the ratio of alcohol to water



You can make
cyclic esters
called Lactones

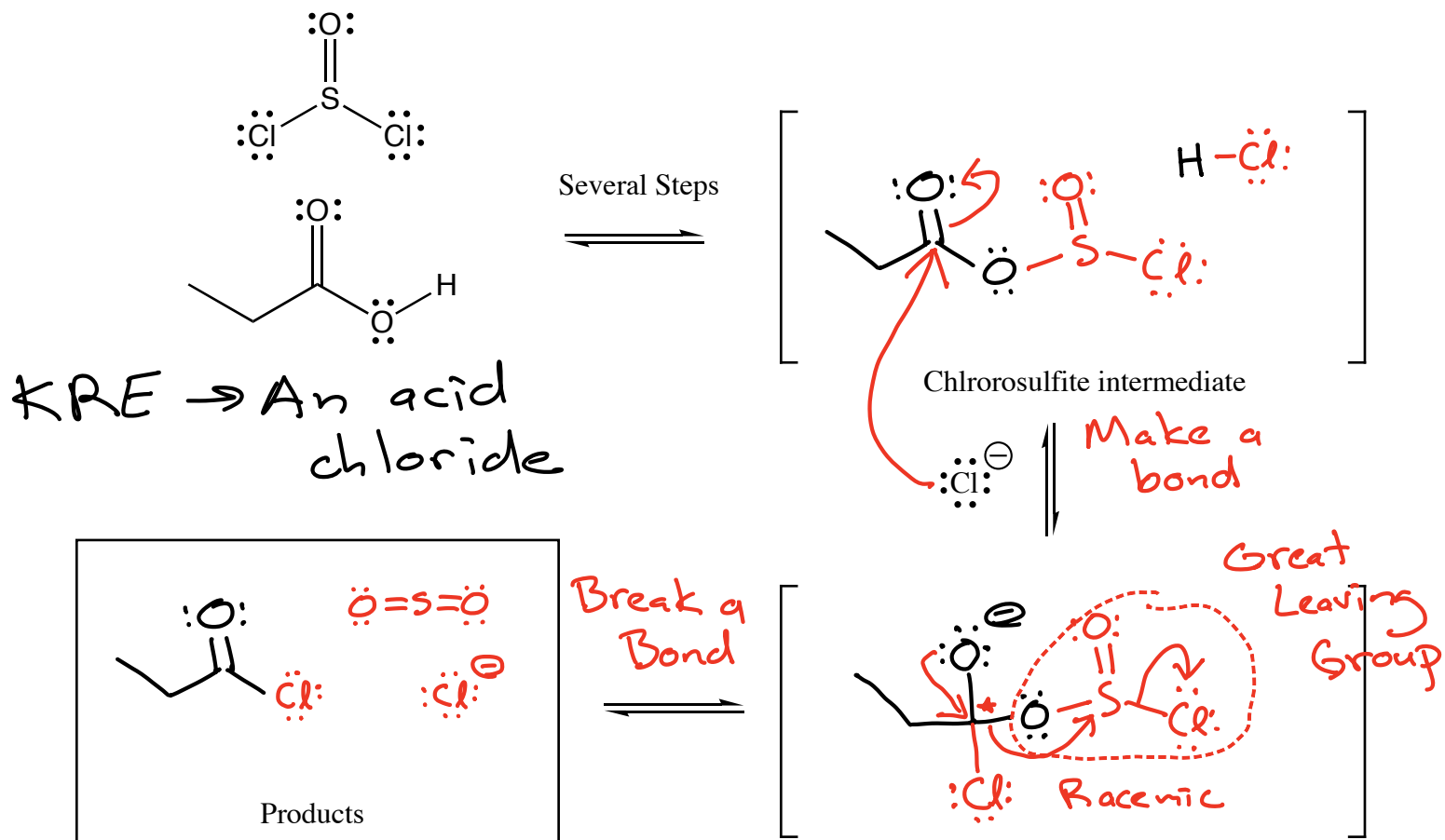


Carboxylic Acid and SOCl_2
Thionyl chloride



Time capsule \rightarrow you can make
all of the other
carboxylic acid
derivatives from
acid chlorides

Reaction with Thionyl Chloride



Decarboxylation of a β -Keto Acid

