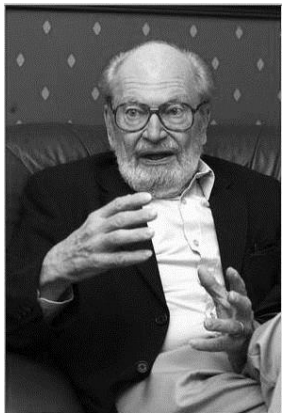
Day 4: Elementary Reactions I

TODAY'S TOPICS

- *trans* effect/influence
- ligand exchange
- oxidative addition

CHEMIST OF THE DAY



name?
known for?

QUOTE OF THE DAY

"Ever tried. Ever failed. No matter. Try again. Fail again. Fail better."

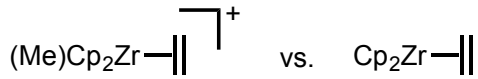
- Samuel Beckett

READING

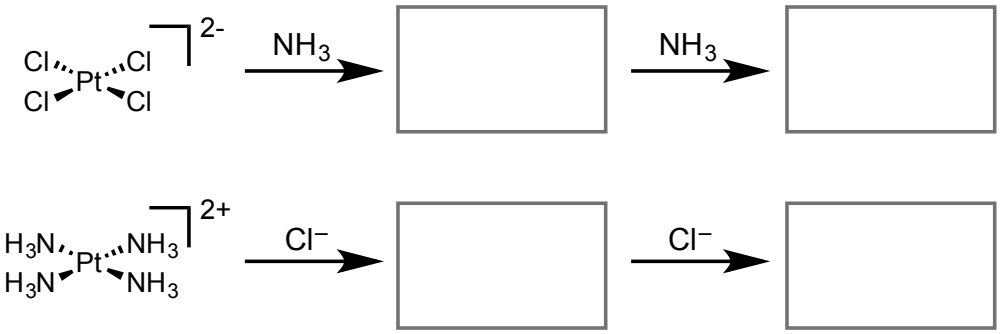
Hartwig: Ch. 5–7
Crabtree: Ch. 1.4, 4.4–4.7, 6.1–6.5

PROBLEMS OF THE DAY

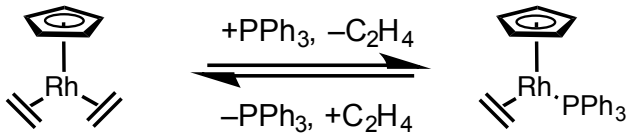
#1 Consider the following two complexes and the ability of the metal in both cases to participate in back-bonding. **Provide an explanation for why one of the species results in a more stable complex than the other.**



#2 One the basis of the *trans* effect, **predict the products in the following reaction sequences:**



#3 Consider the following ligand exchange process:



A. Give the coordination number, oxidation state, and total electron count for both complexes.

B. Design one or more experiments to determine the mechanism of ligand exchange (associative vs. dissociative).