

Massachusetts Institute of Technology  
Organic Chemistry 5.511

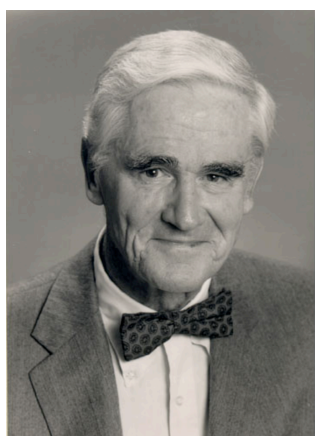
November 9, 2007  
Prof. Rick L. Danheiser

Lecture 12  
Unit 4  
Stereocontrolled 1,2-Addition to Carbonyl Groups

- ★ Substrate Control: 1,2-Induction by Molecular Framework
  - ★ Substrate Control: 1,3-Induction by Molecular Framework
  - ★ Reagent Control: Reduction of Ketones
  - ★ Reagent Control: Organozinc and Related Addition Reactions
- Addition of Alkyl, Aryl, Alkenyl, and Alkynyl Metal Compounds*

Asymmetric Induction by the Molecular Framework

Reviews: "Around and Beyond Cram's Rule" Mengel, A.; Reiser, O. *Chem. Rev.* **1999**, 99, 1191



Donald J. Cram  
1919-2001

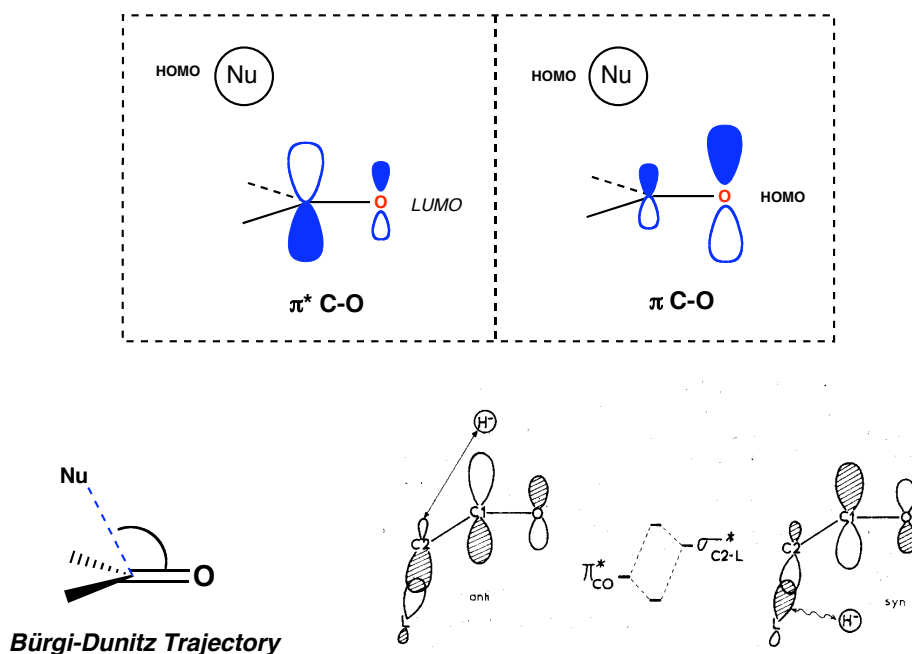


Figure 8. — Secondary interactions for anti- and syn-periplanar attacks.