

Massachusetts Institute of Technology
Organic Chemistry 5.512

April 2, 2007
Prof. Rick L. Danheiser

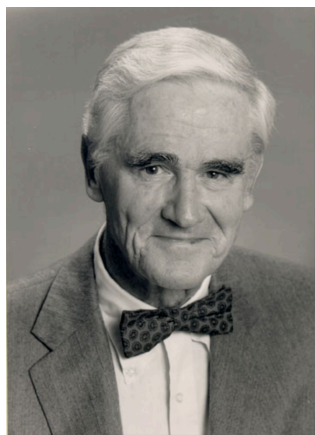
Unit 4
Stereocontrolled 1,2-Addition to Carbonyl Groups

★ General Principles

- ★ Substrate Control: 1,2-Induction by Molecular Framework
- ★ Substrate Control: 1,3-Induction by Molecular Framework
- ★ 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

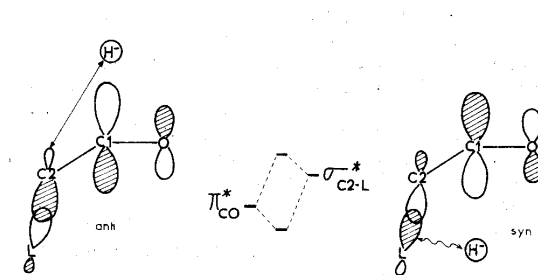
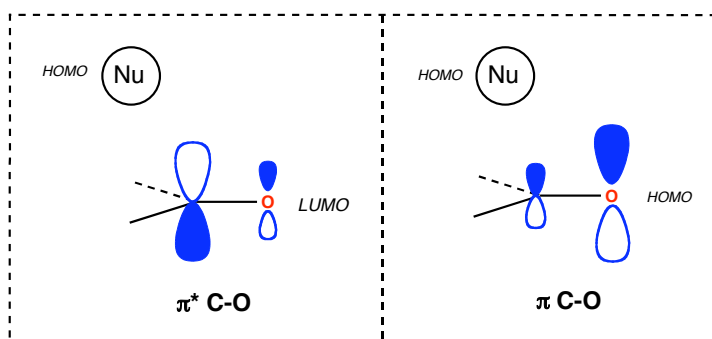
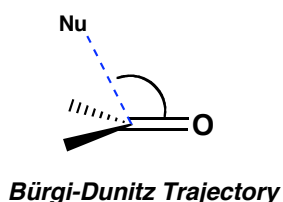


Figure 8. — Secondary interactions for anti- and syn-periplanar attacks.