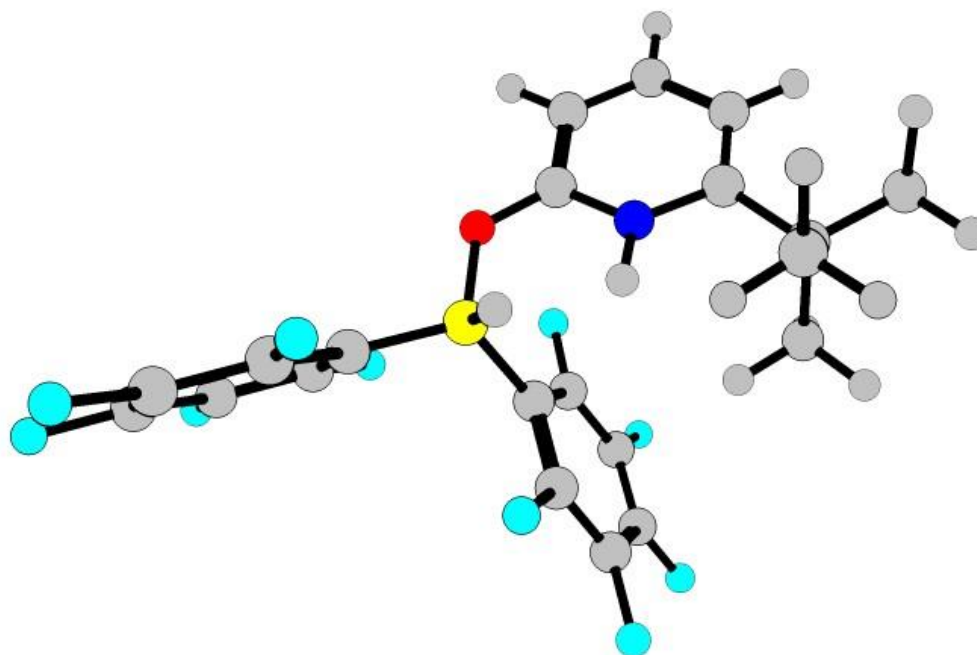


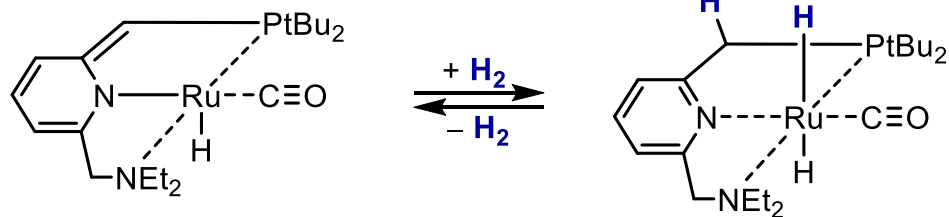
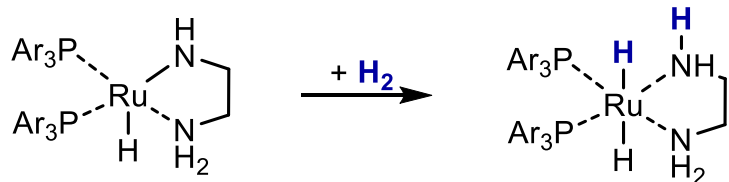
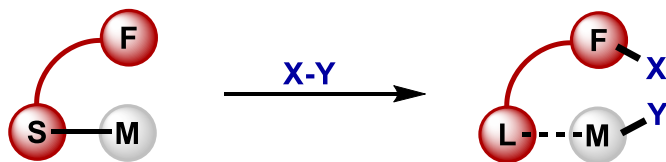
Boron-Ligand-Cooperation – Carboboration, Hydrogenation and Beyond

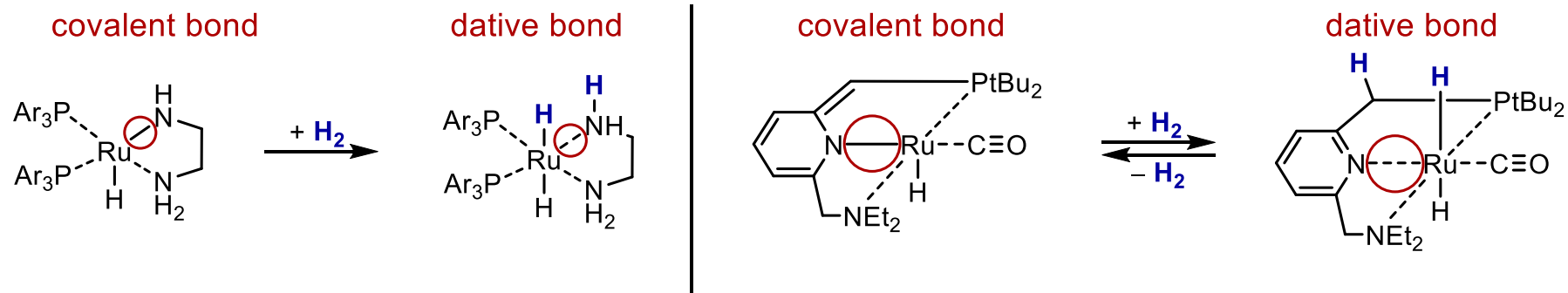
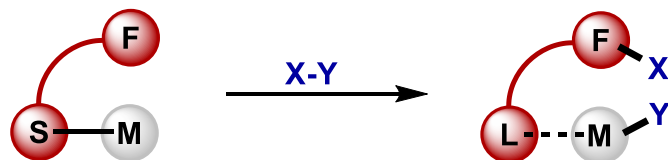
Max Hasenbeck

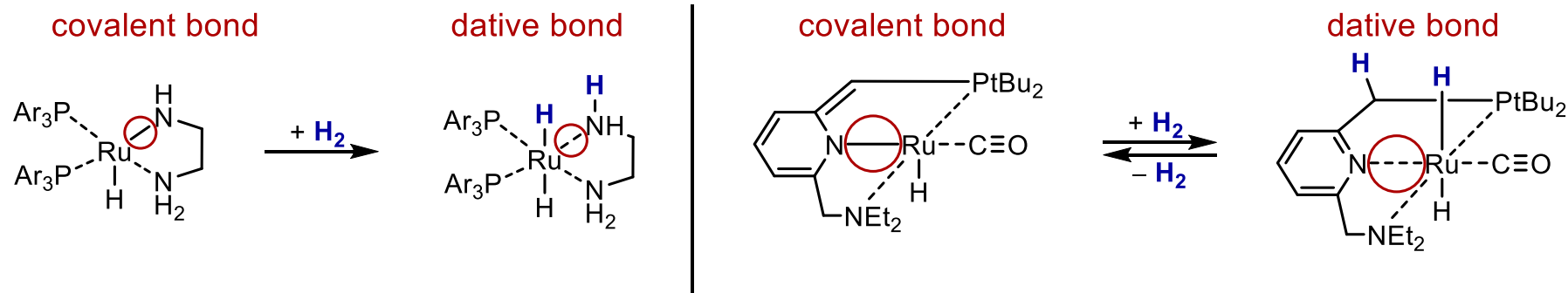
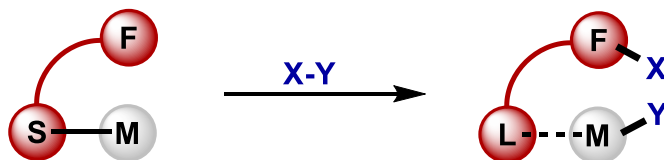
AG Gellrich

*Institute for Organic Chemistry
Justus-Liebig University, Giessen*

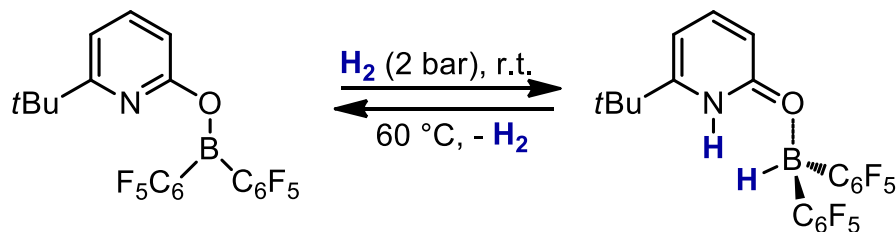




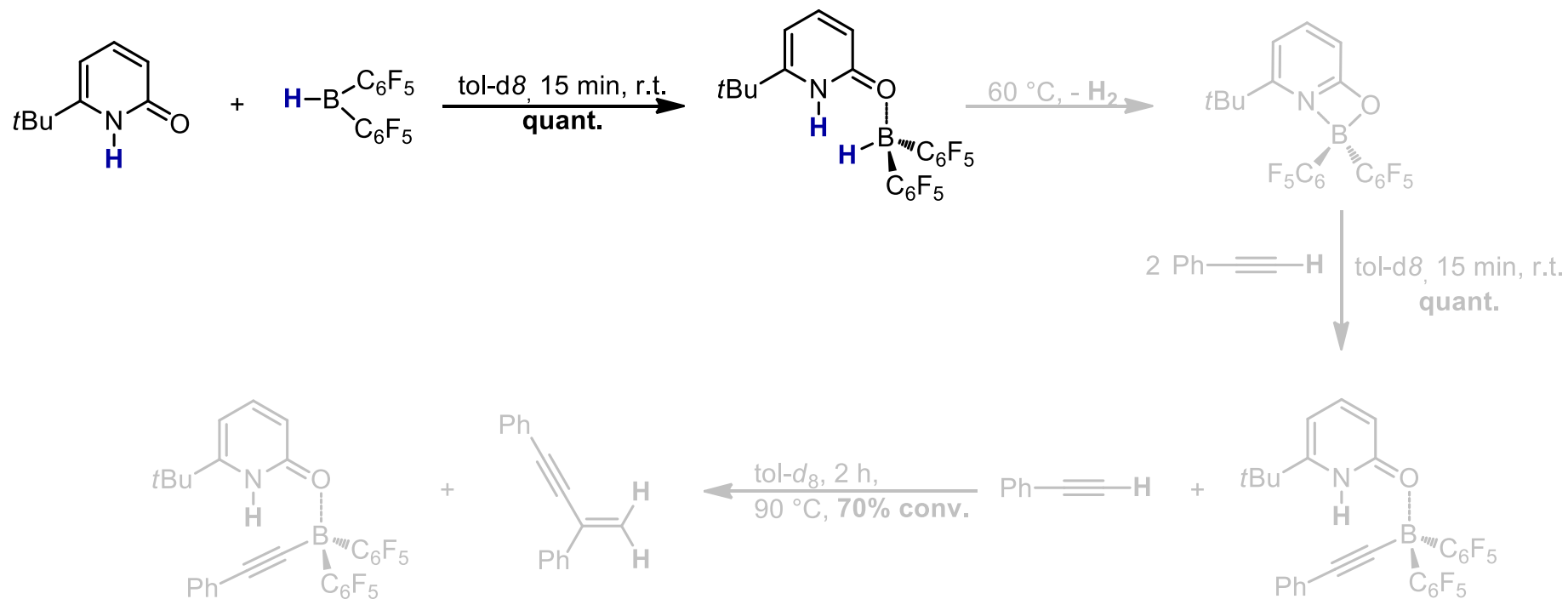




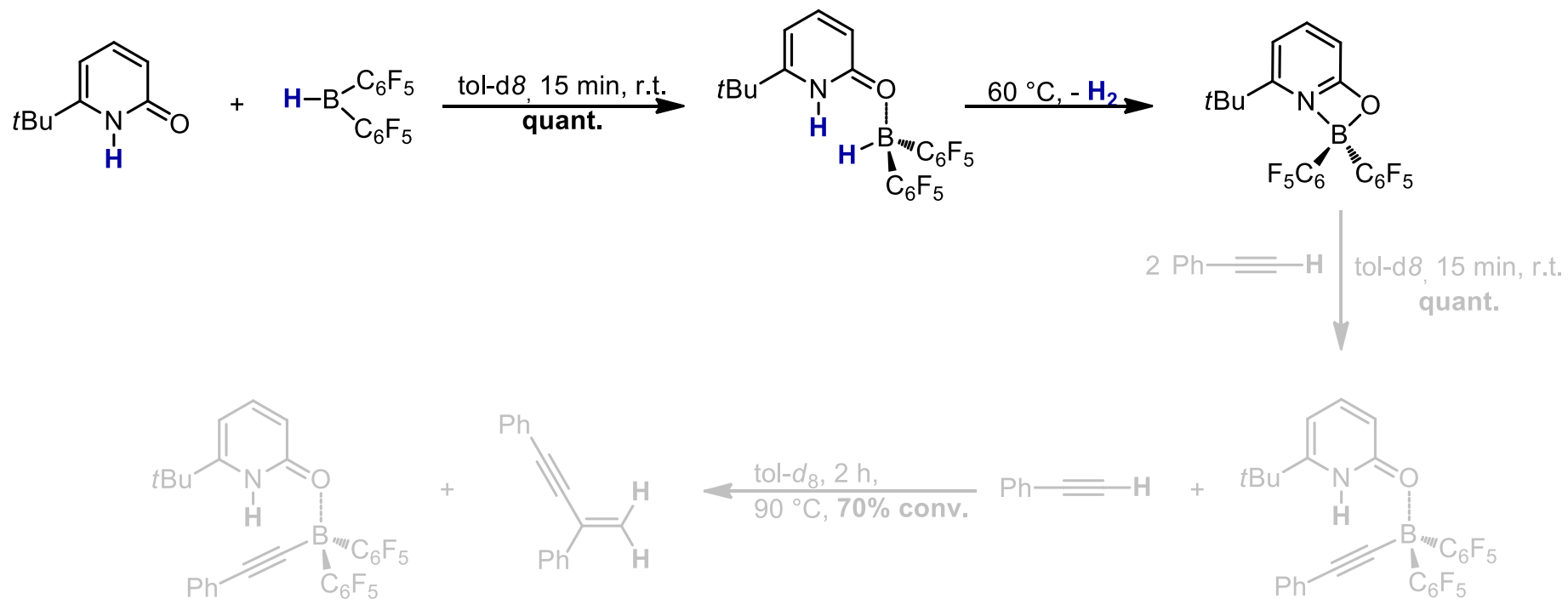
Boron-Ligand Cooperation



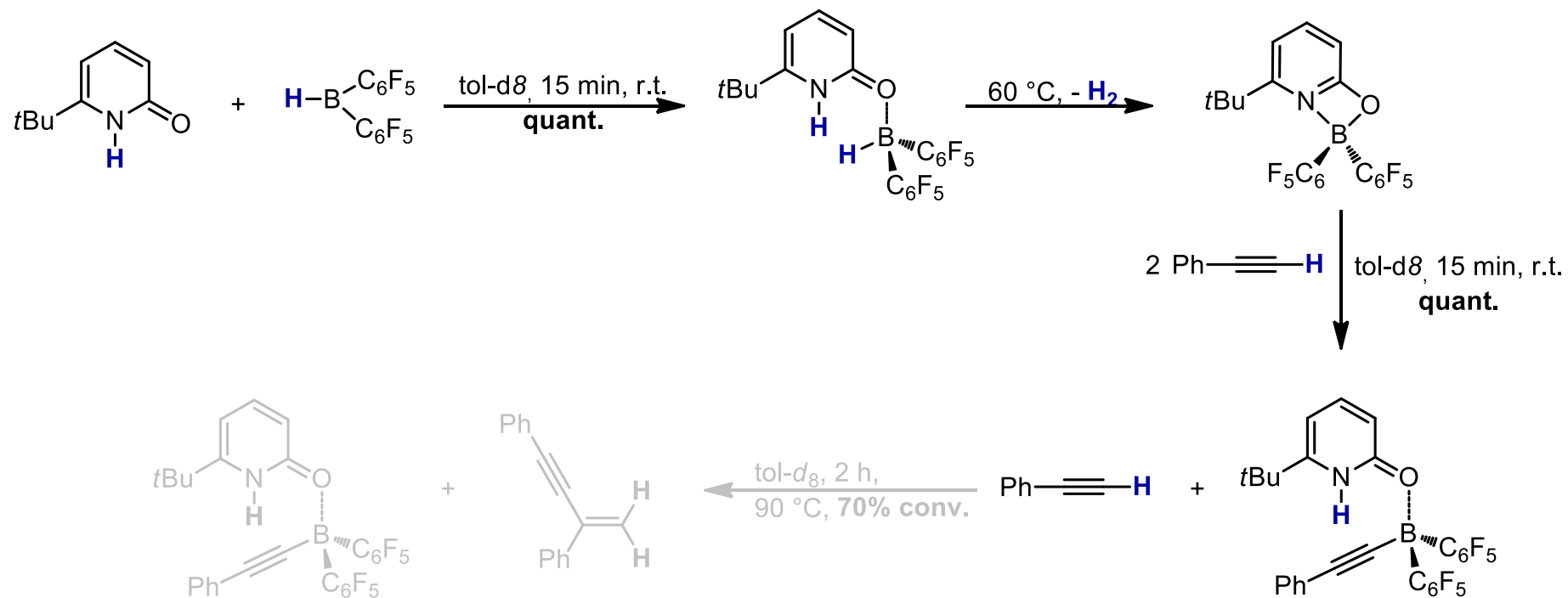
Boron-Ligand Cooperation: *gem* Dimerization of Alkynes



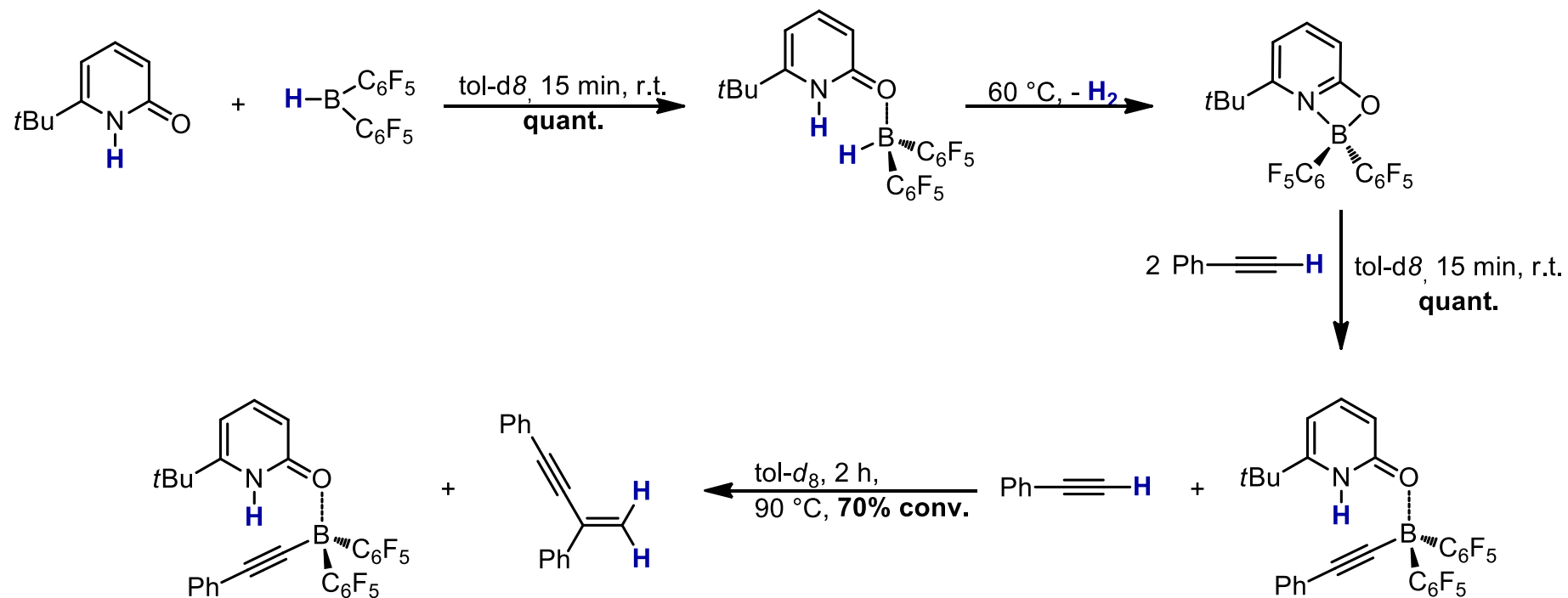
Boron-Ligand Cooperation: *gem* Dimerization of Alkynes



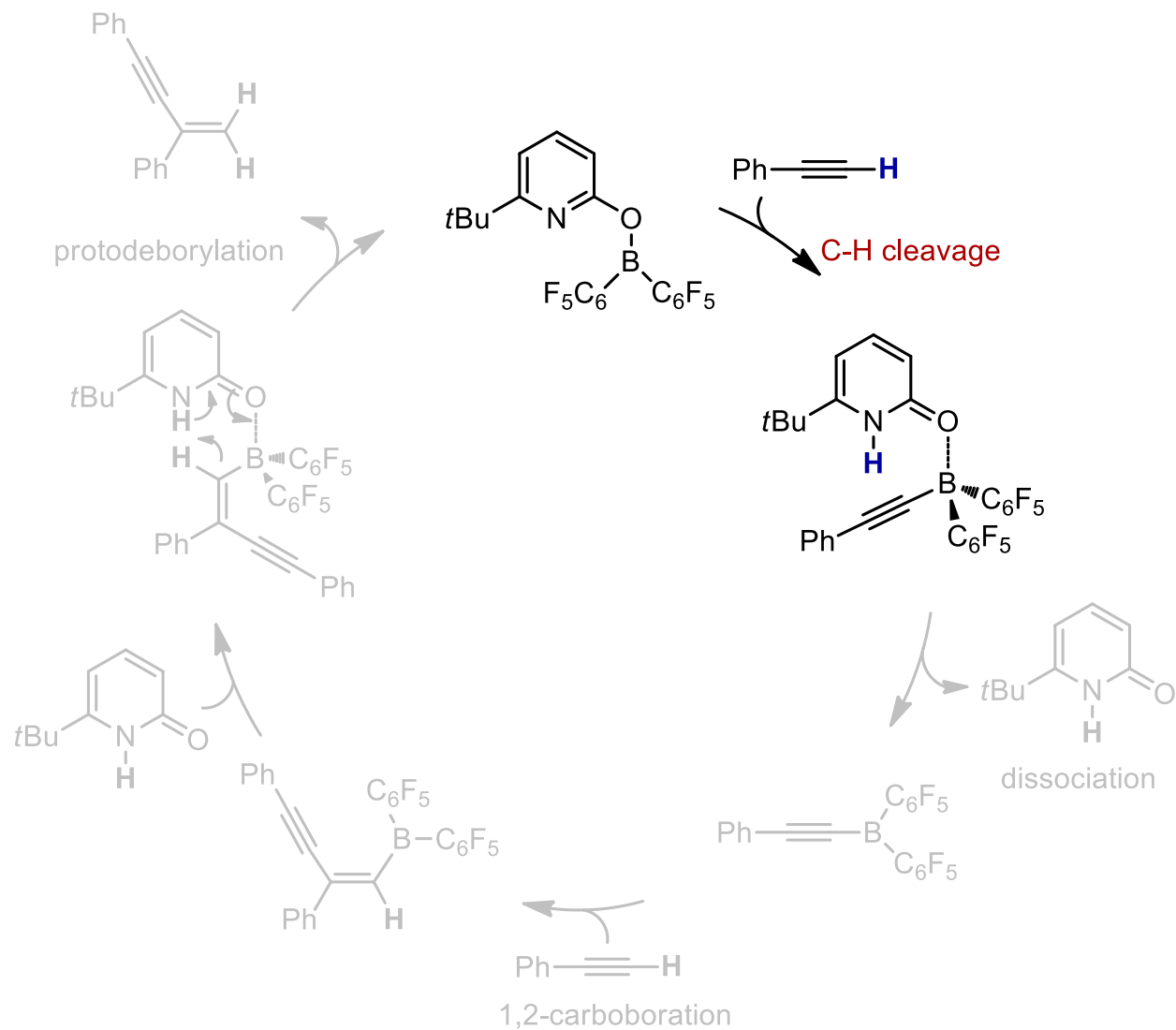
Boron-Ligand Cooperation: *gem* Dimerization of Alkynes



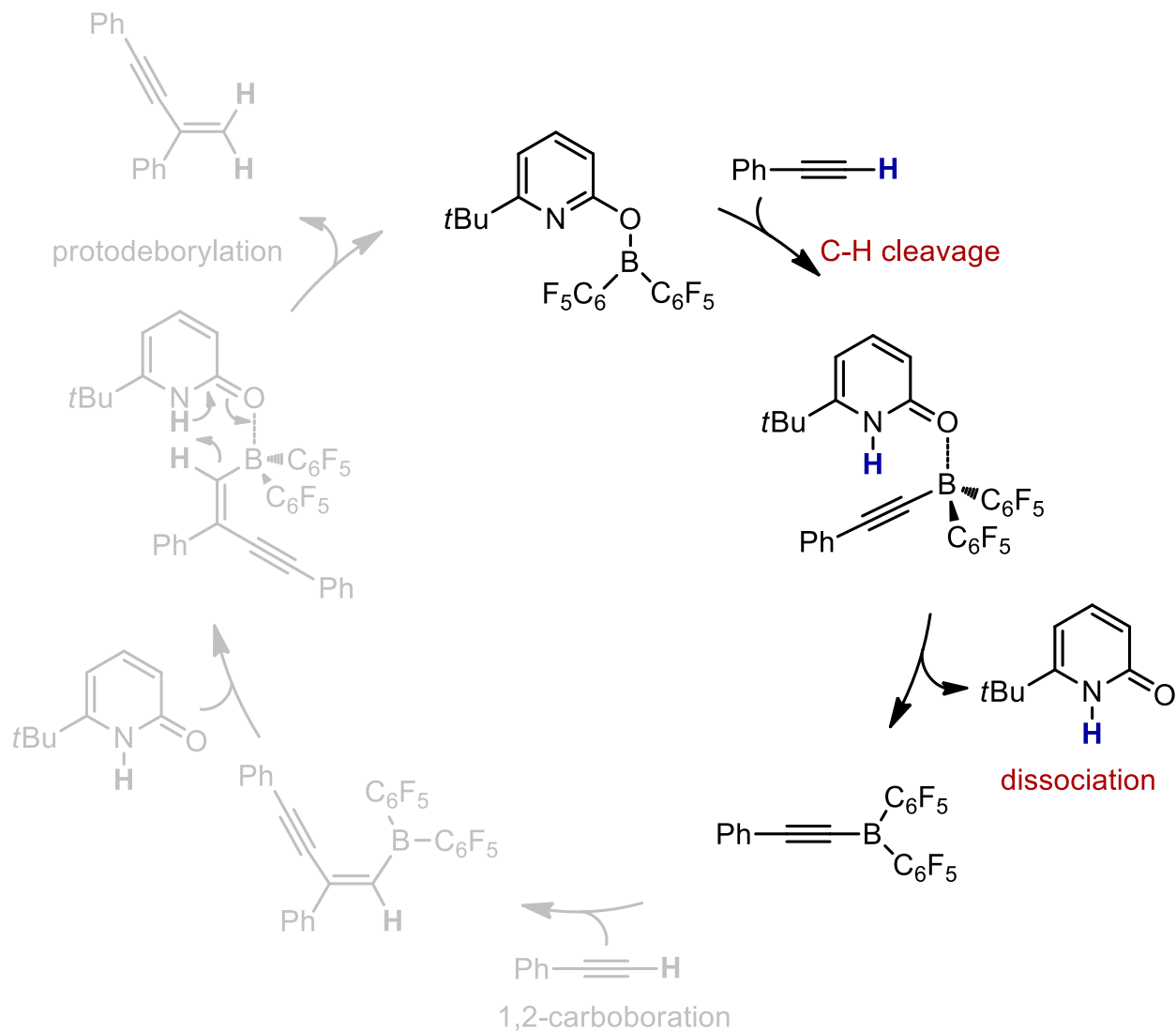
Boron-Ligand Cooperation: *gem* Dimerization of Alkynes



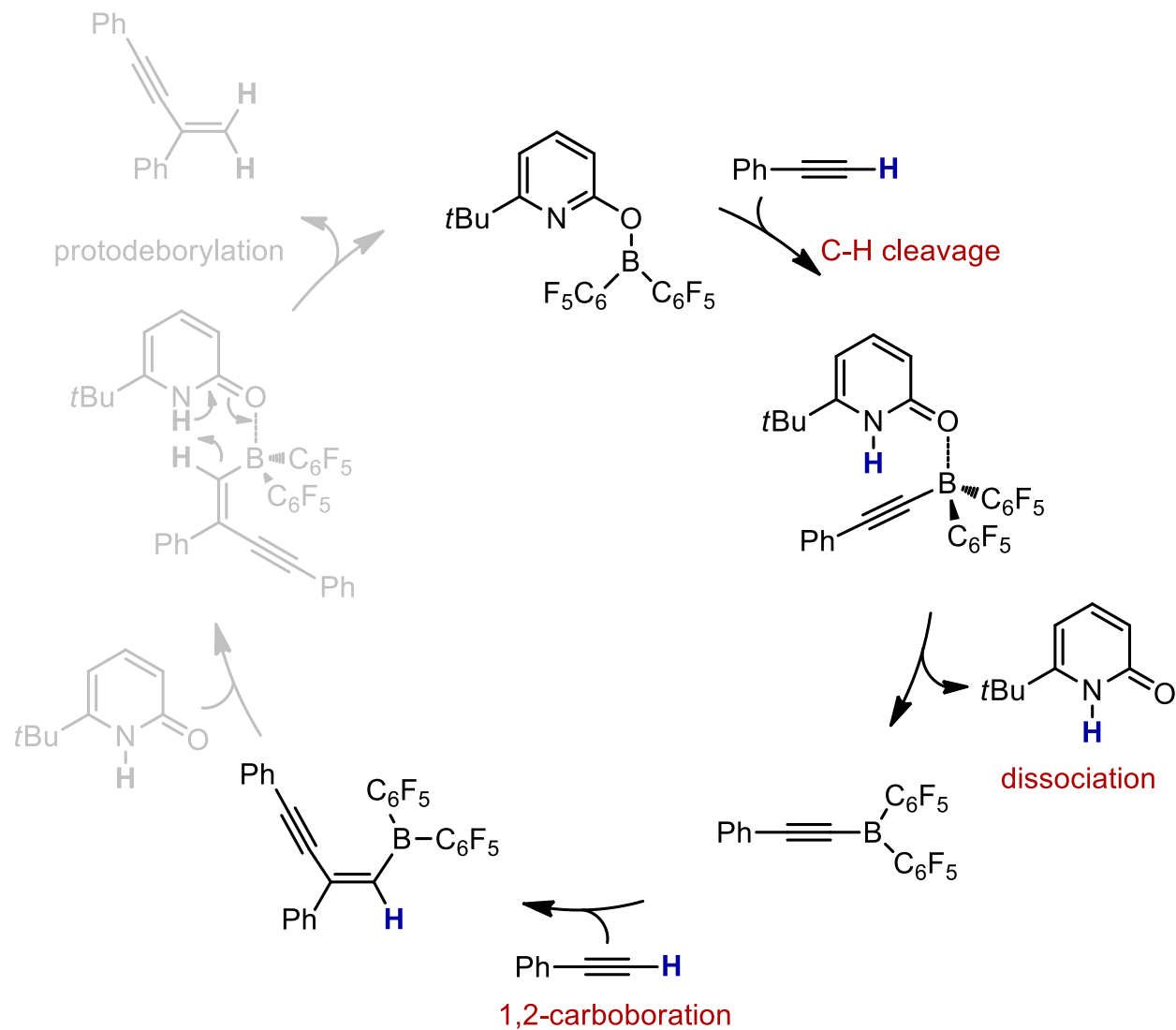
Boron-Ligand Cooperation: *gem* Dimerization of Alkynes



Boron-Ligand Cooperation: *gem* Dimerization of Alkynes

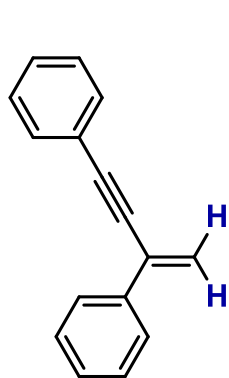
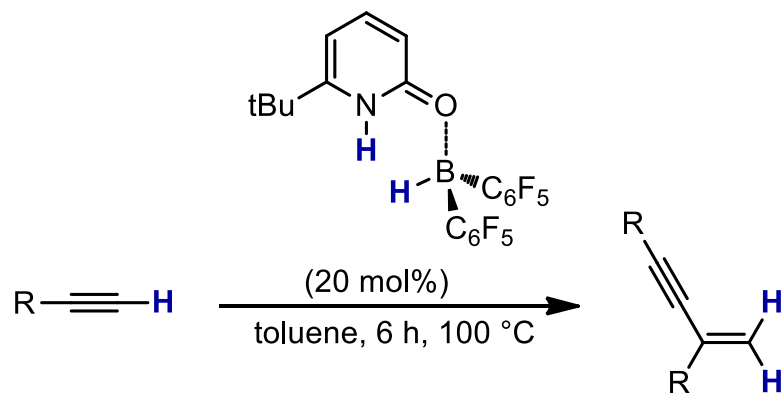


Boron-Ligand Cooperation: *gem* Dimerization of Alkynes

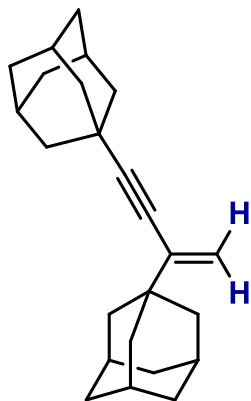




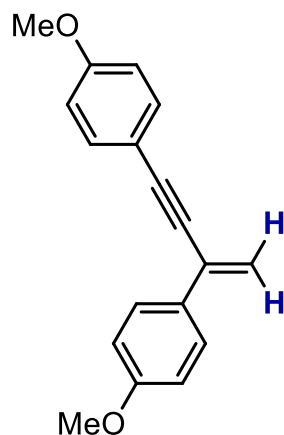
Boron-Ligand Cooperation: *gem* Dimerization of Alkynes



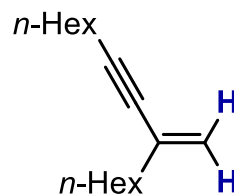
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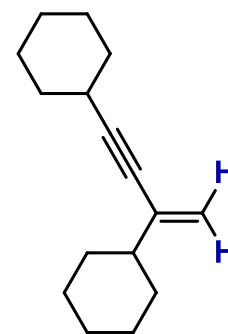
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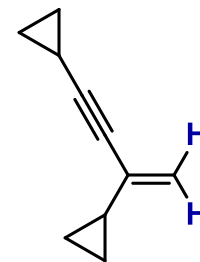
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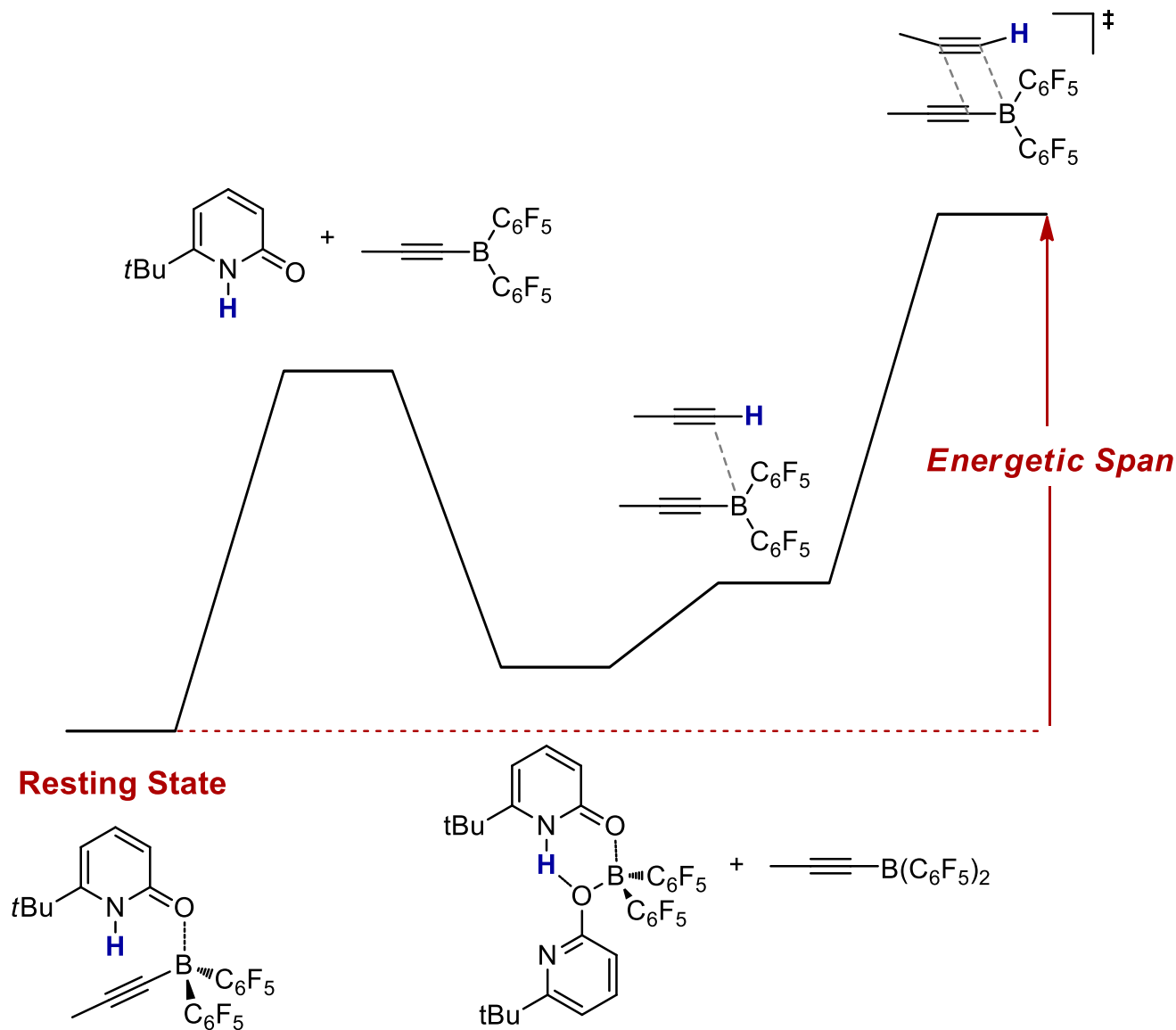


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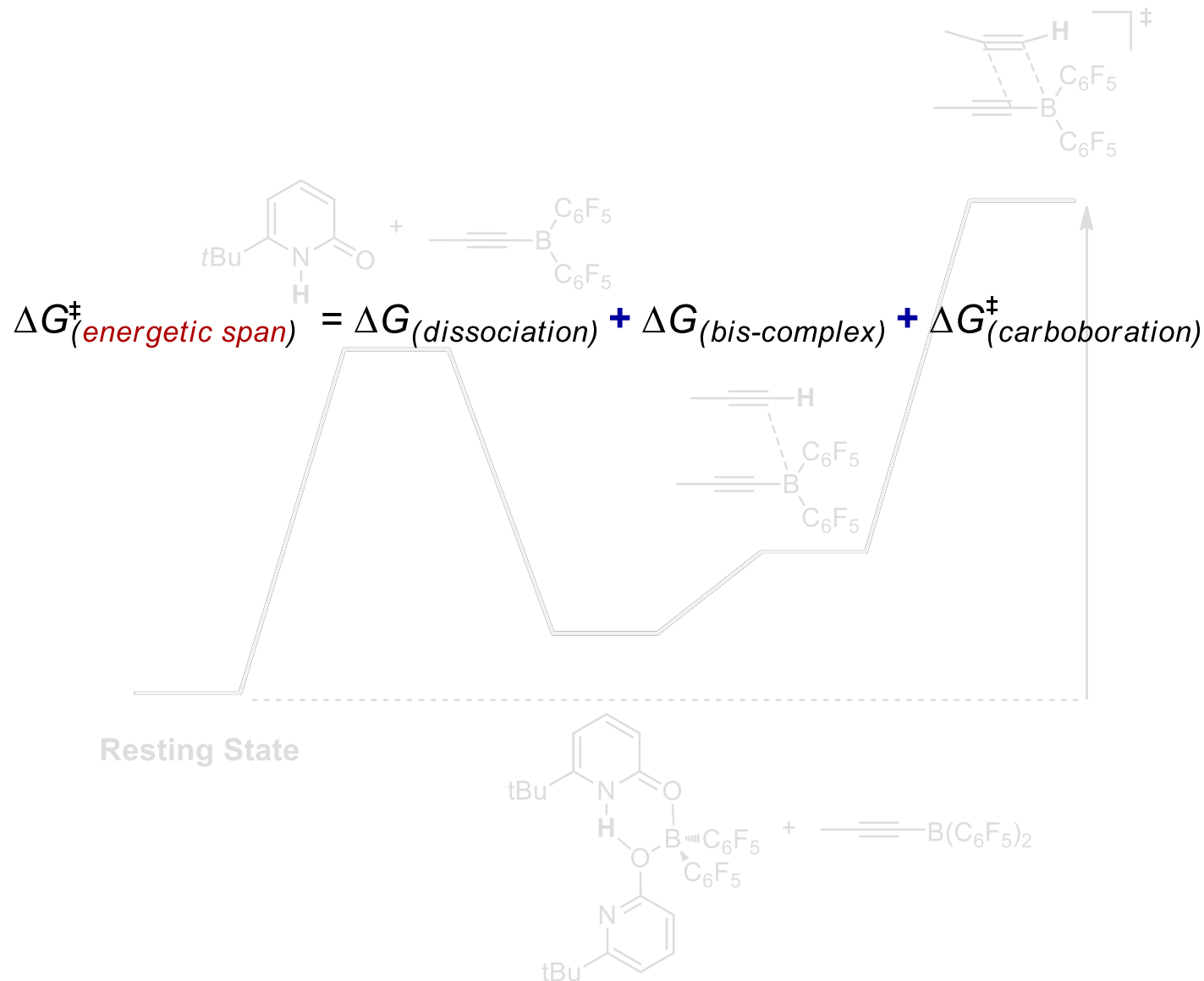


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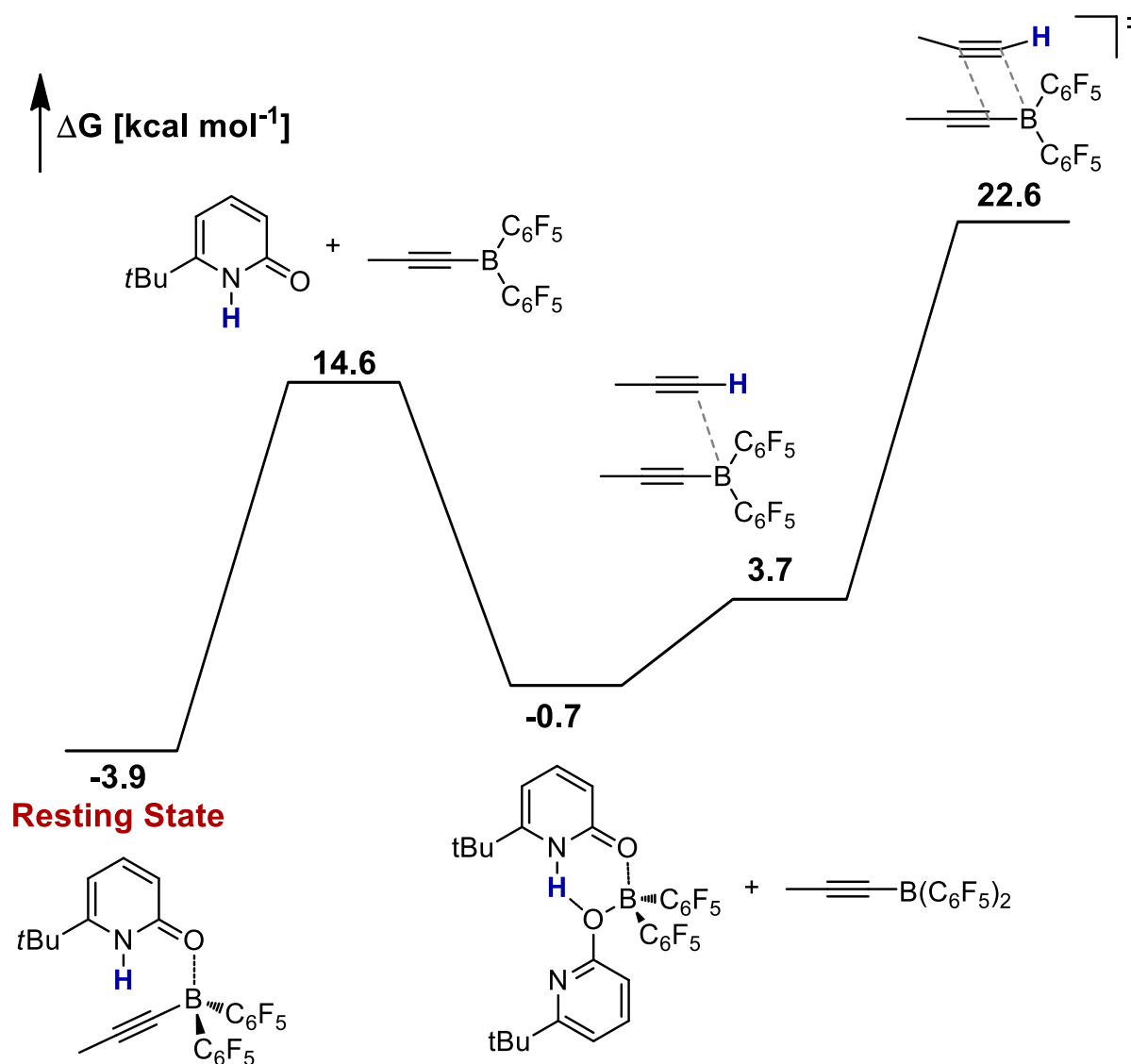
Boron-Ligand Cooperation: *gem* Dimerization of Alkynes



Boron-Ligand Cooperation: *gem* Dimerization of Alkynes

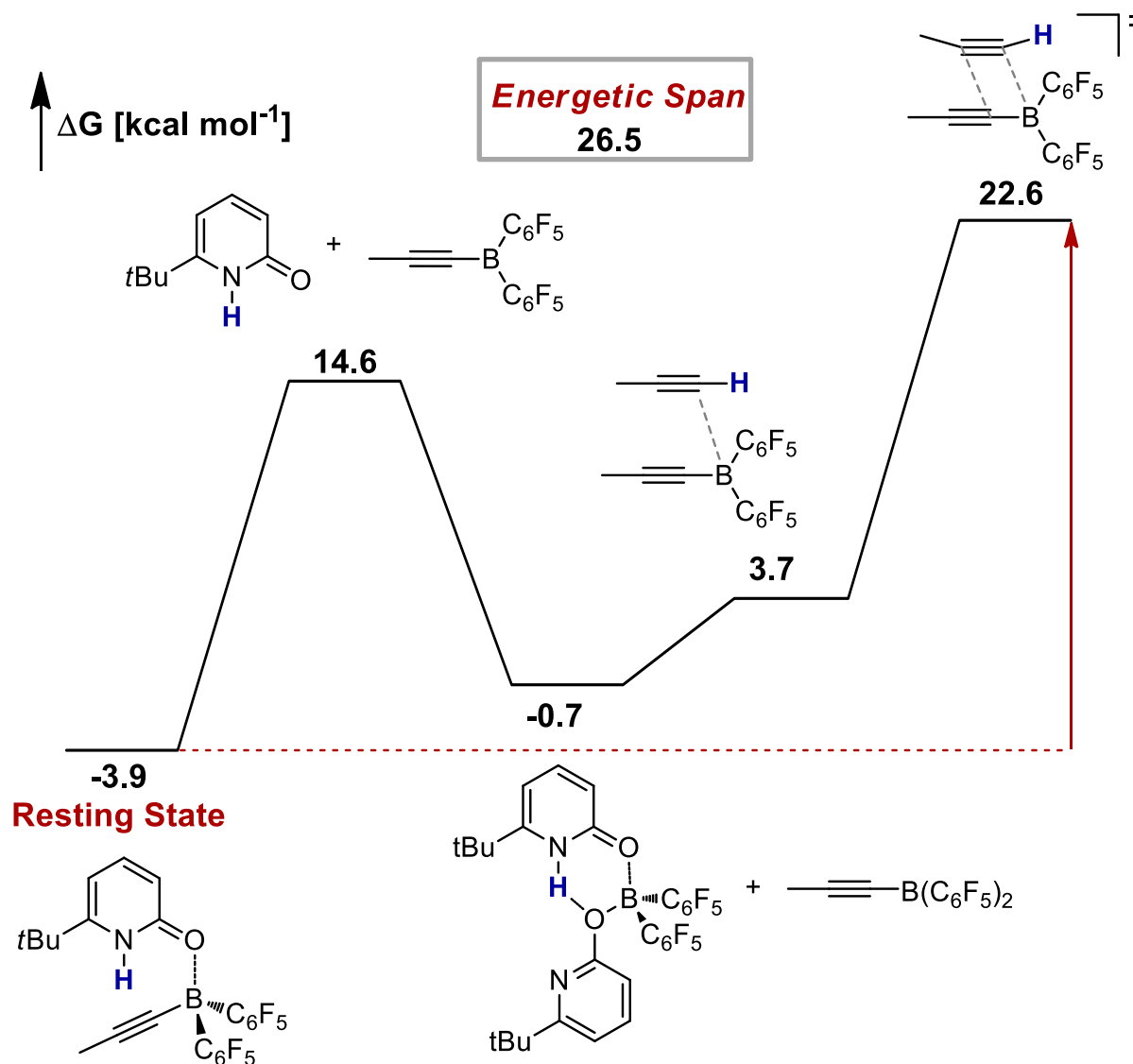


Boron-Ligand Cooperation: *gem* Dimerization of Alkynes



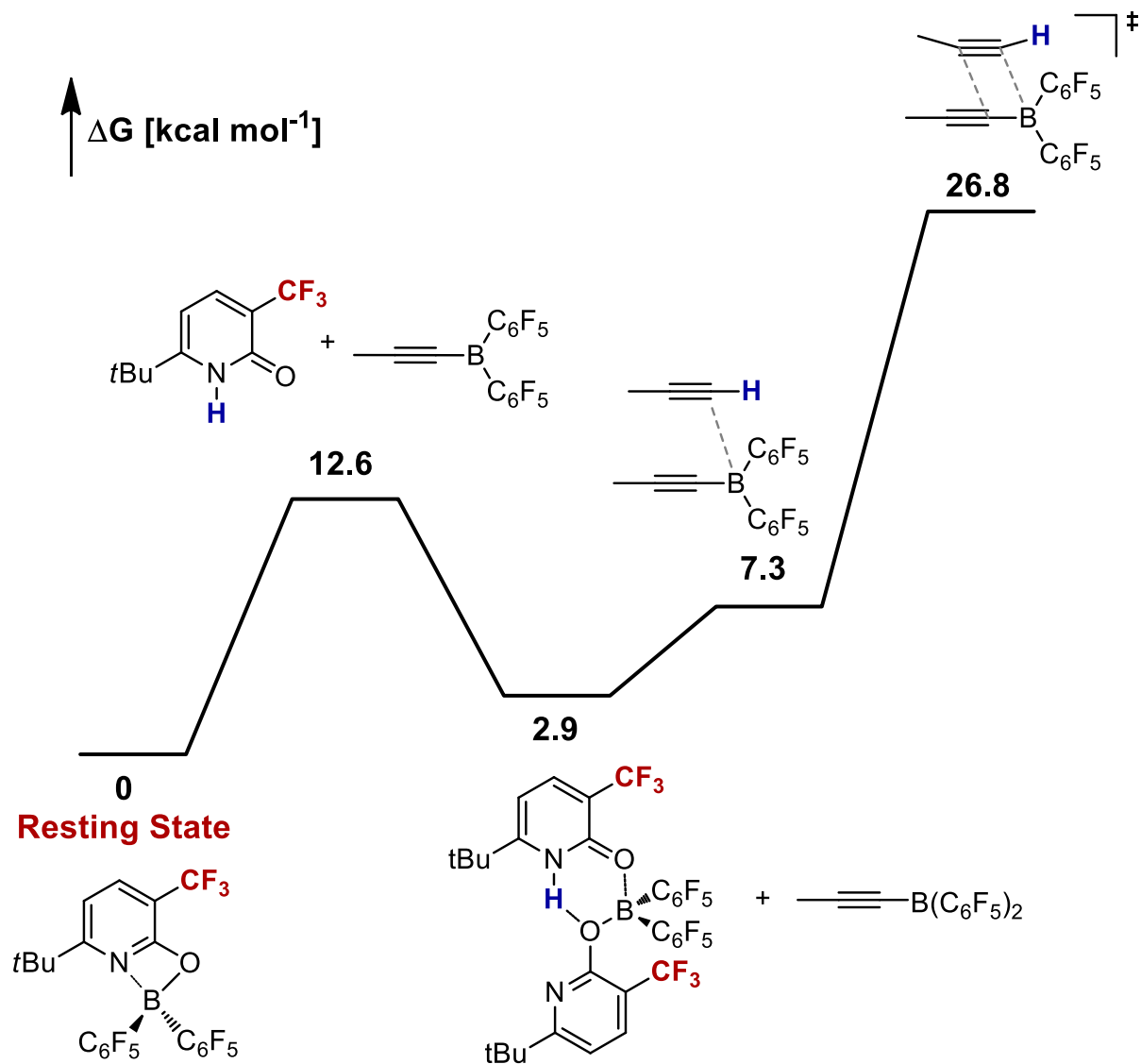
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Boron-Ligand Cooperation: *gem* Dimerization of Alkynes



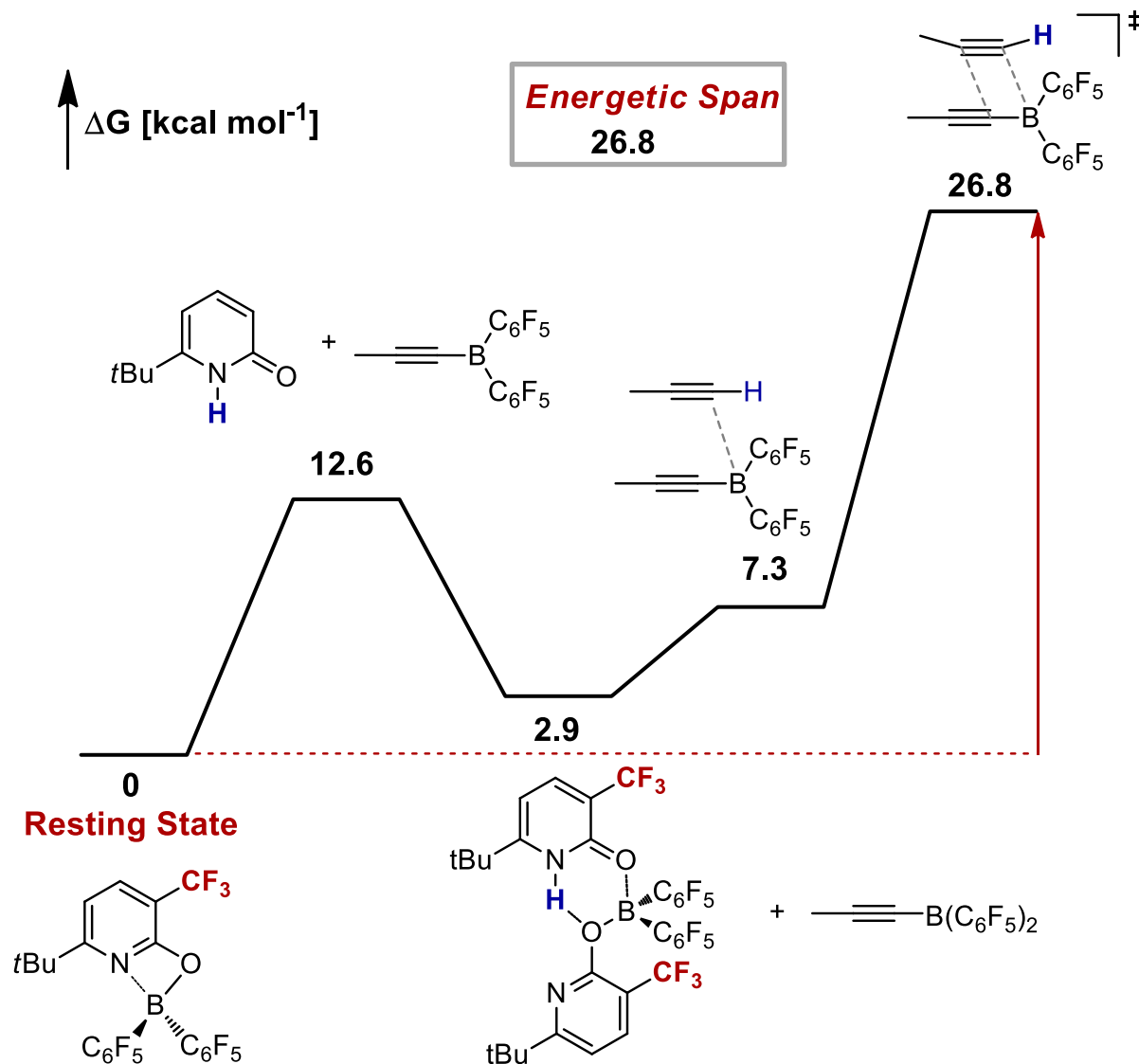
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Boron-Ligand Cooperation: *gem* Dimerization of Alkynes



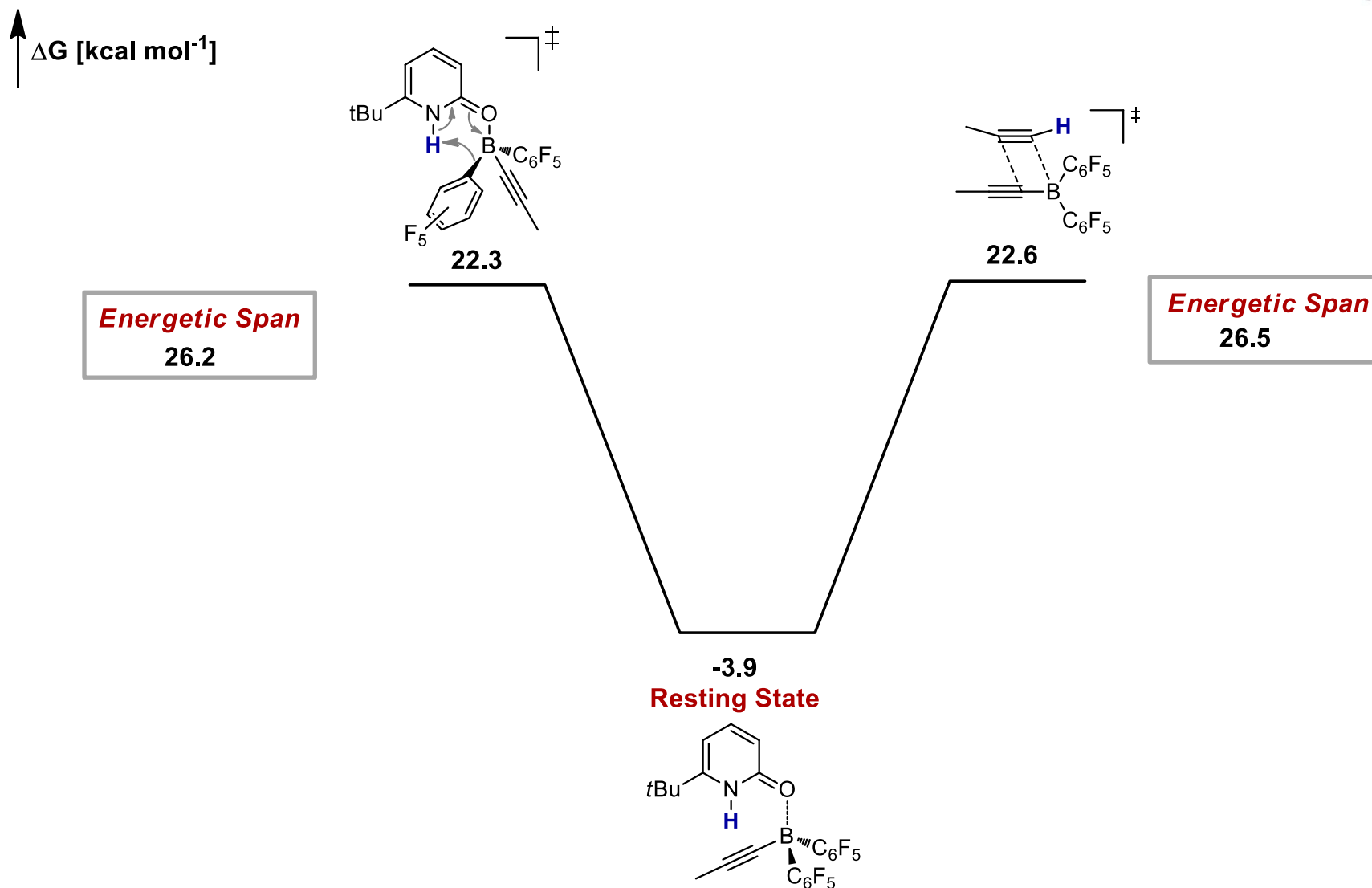
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Boron-Ligand Cooperation: *gem* Dimerization of Alkynes

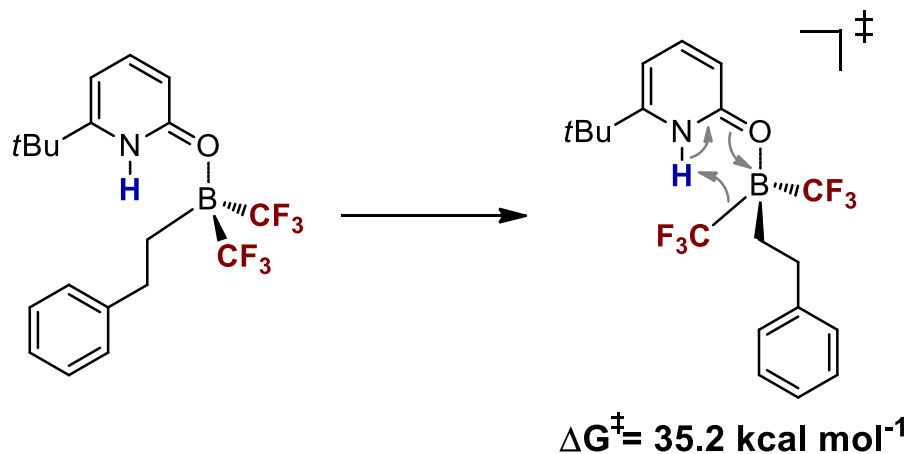


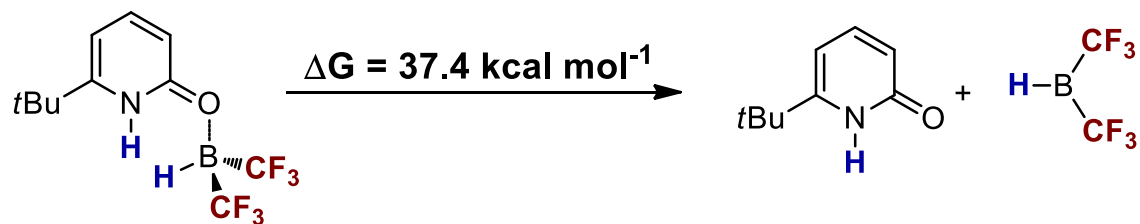
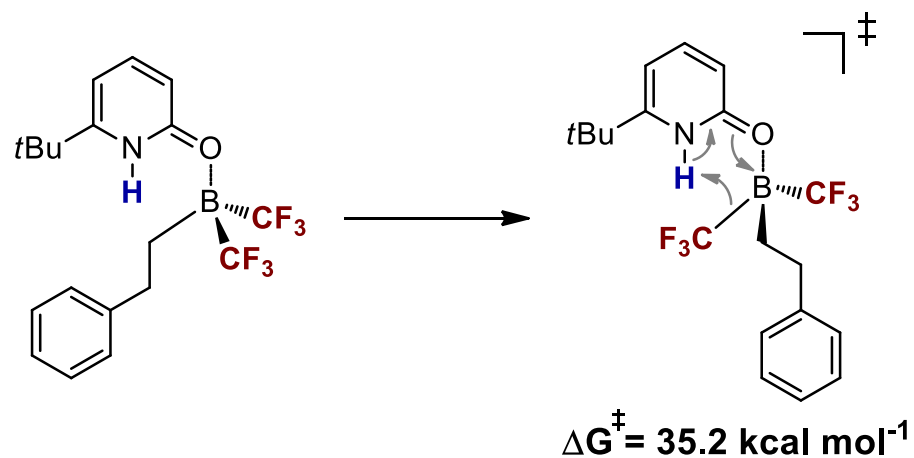
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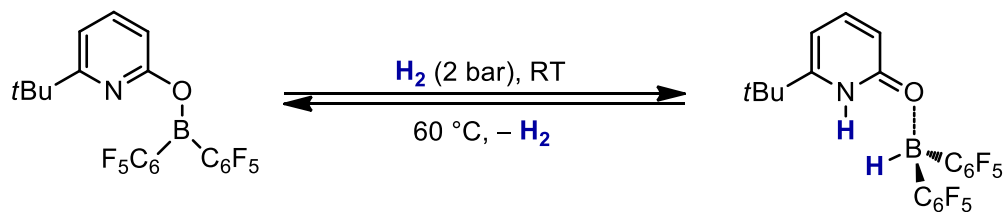
Boron-Ligand Cooperation: *gem* Dimerization of Alkynes



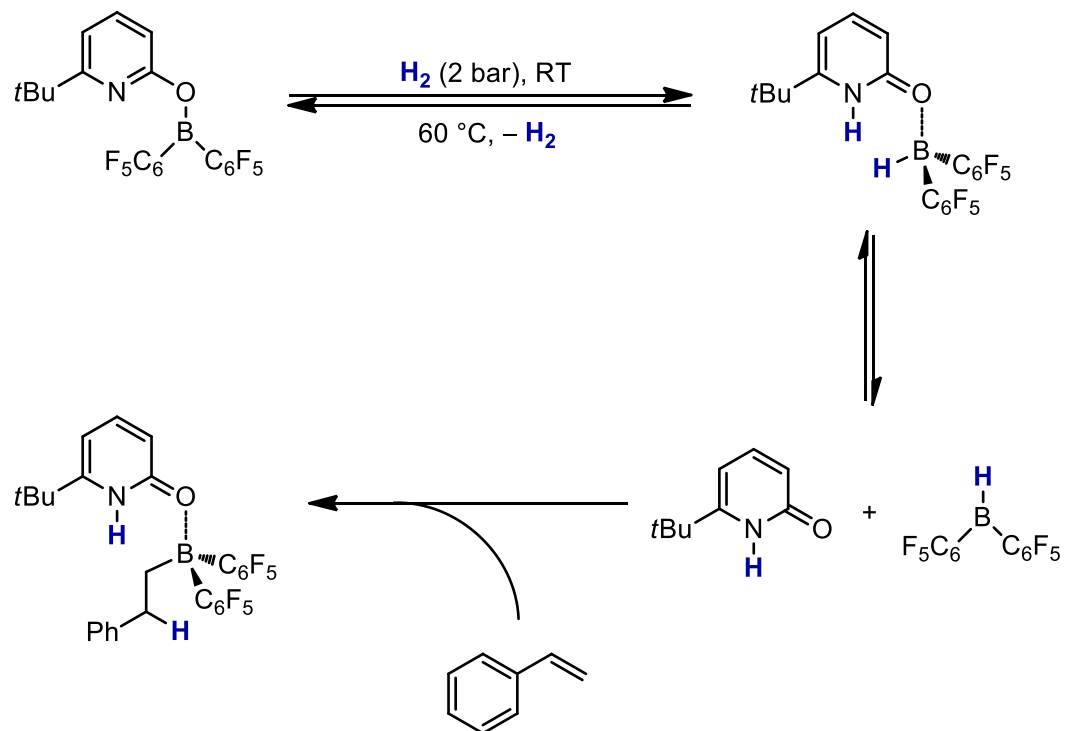
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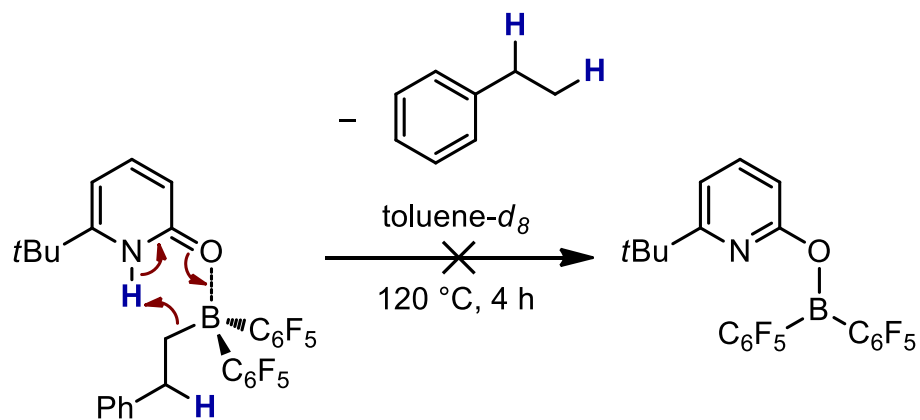




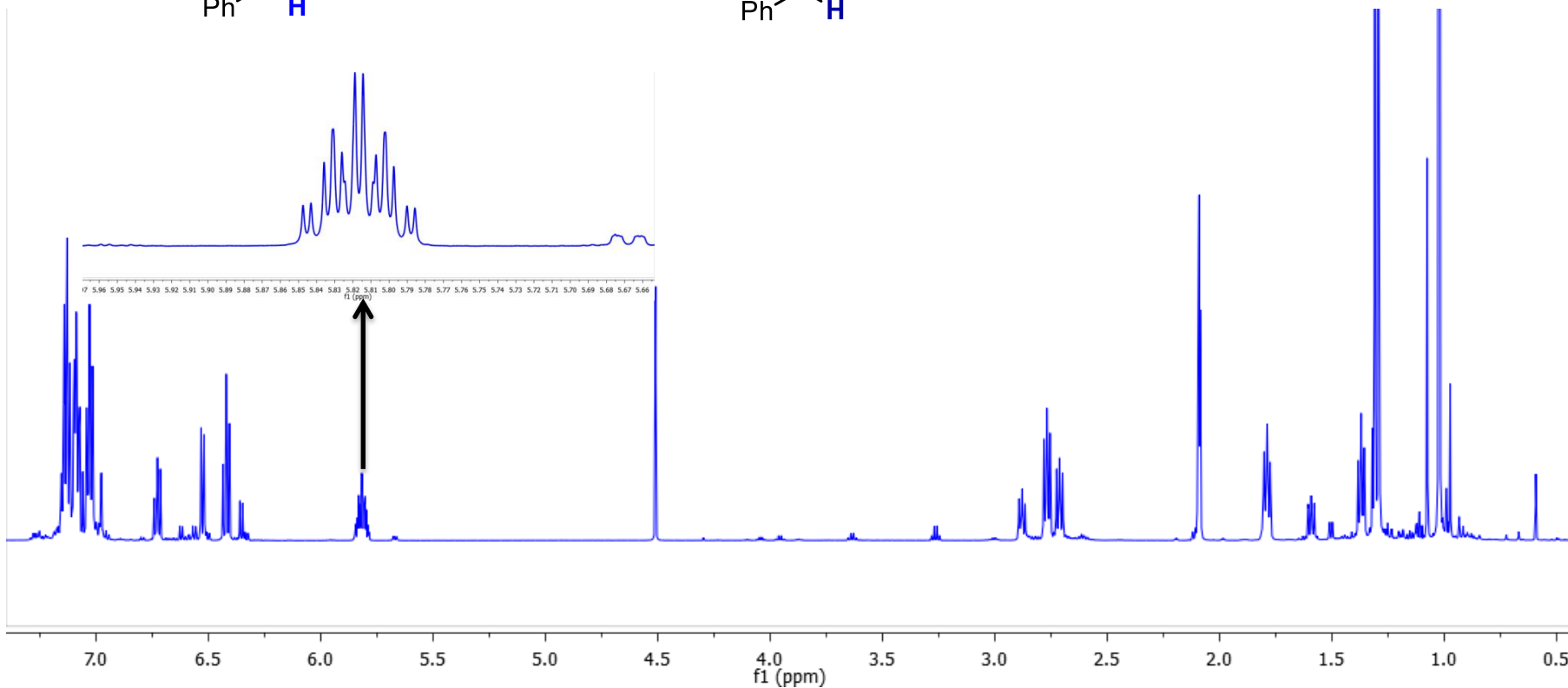
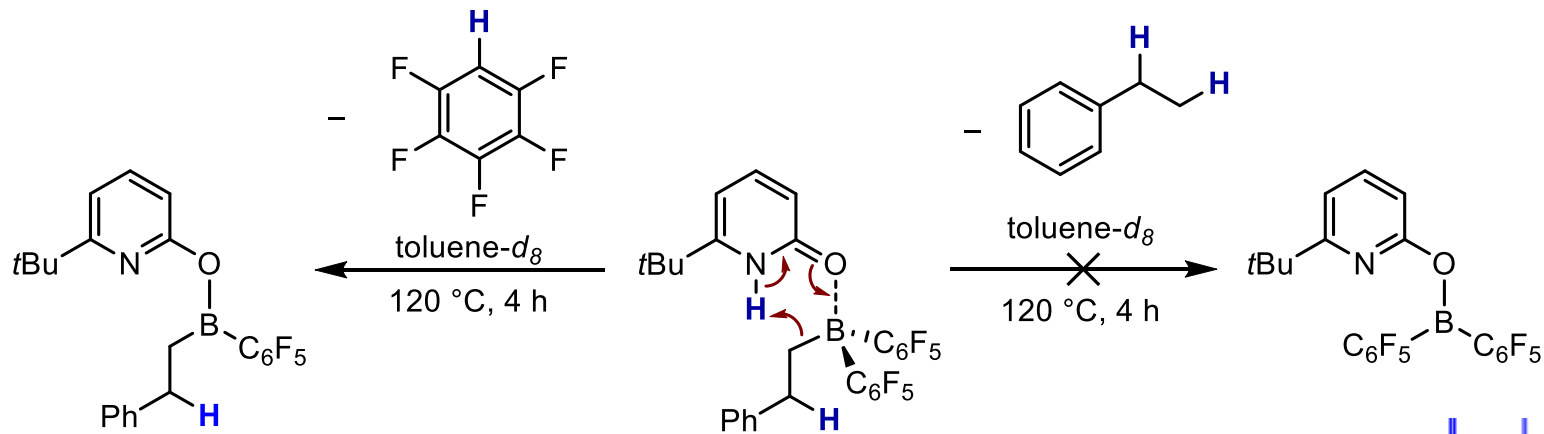


Boron-Ligand Cooperation: Hydrogenation of internal alkynes

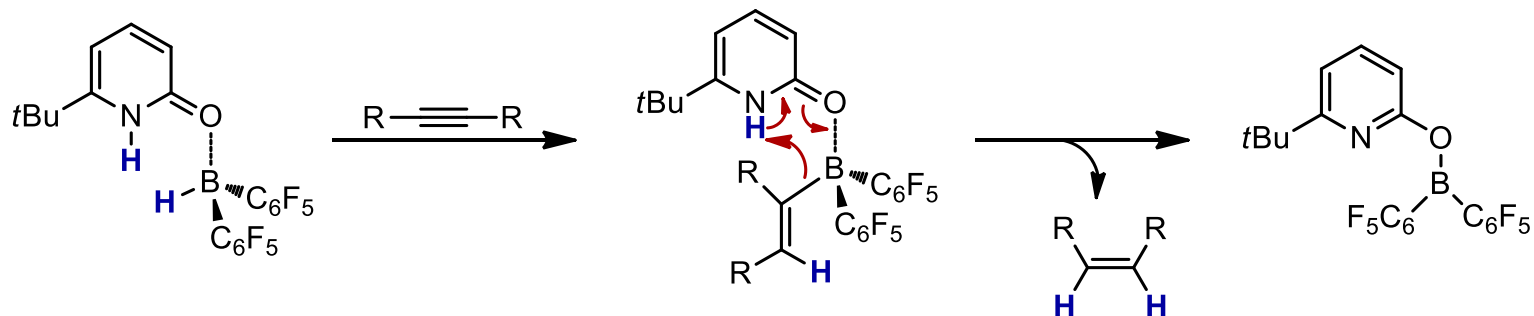




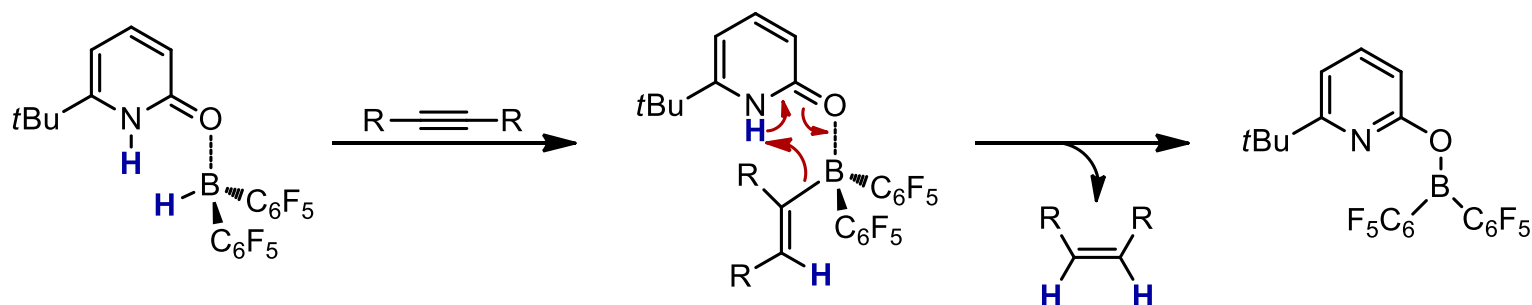
Boron-Ligand Cooperation: Hydrogenation of internal alkynes



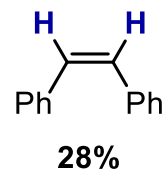
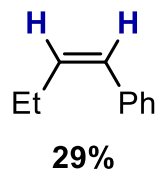
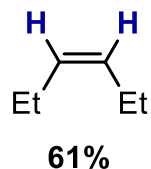
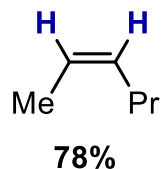
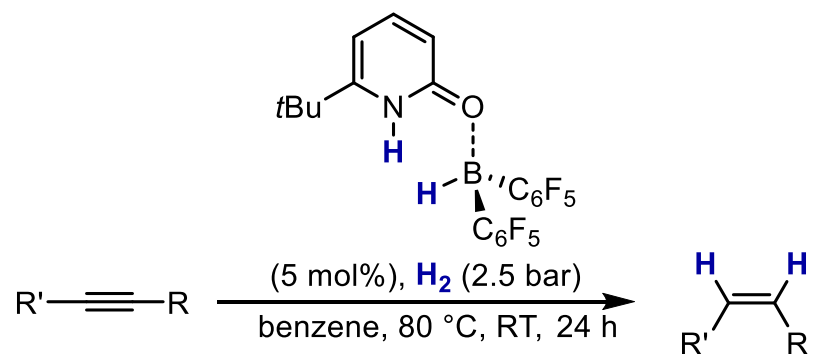
Boron-Ligand Cooperation: Hydrogenation of internal alkynes

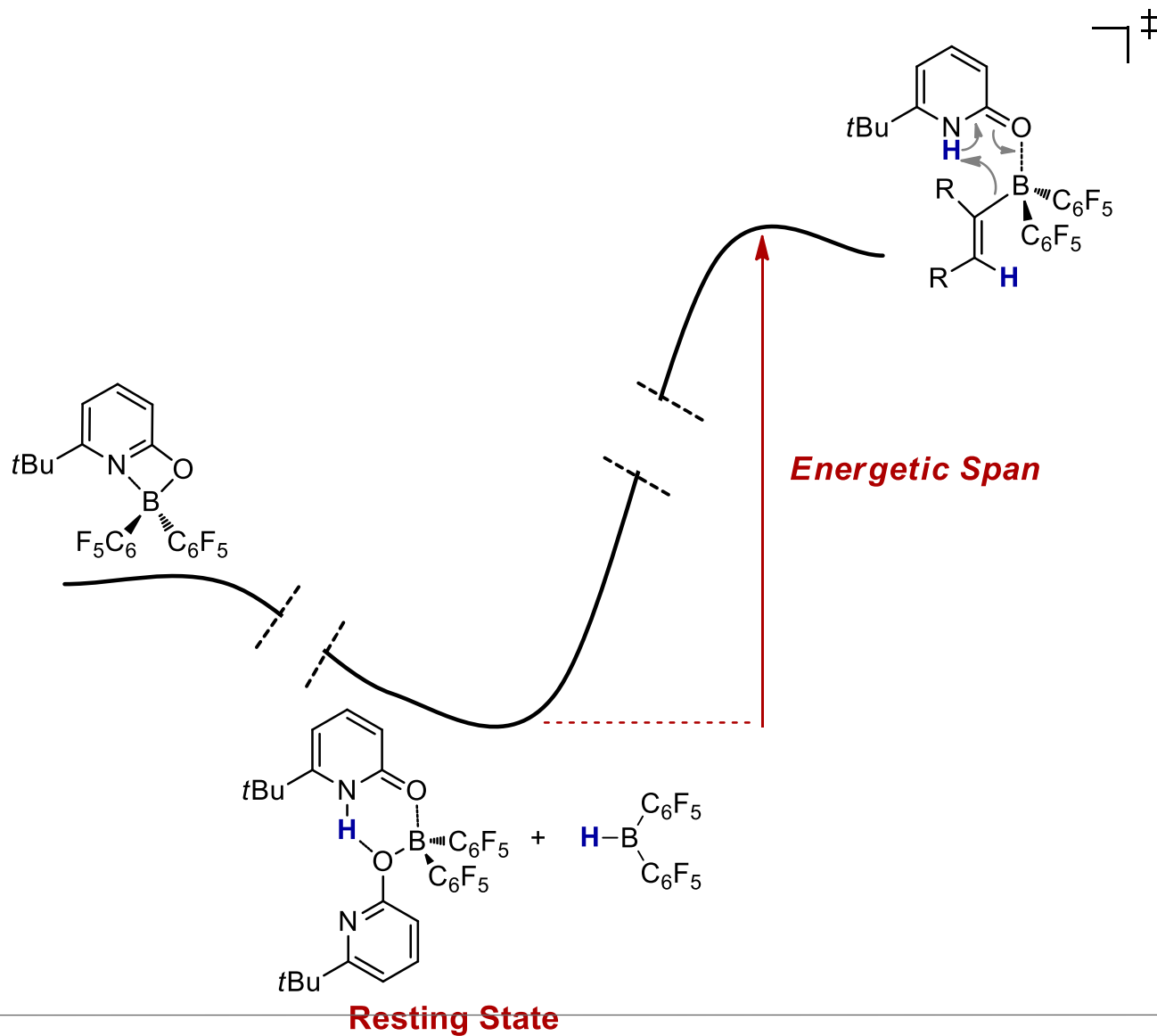


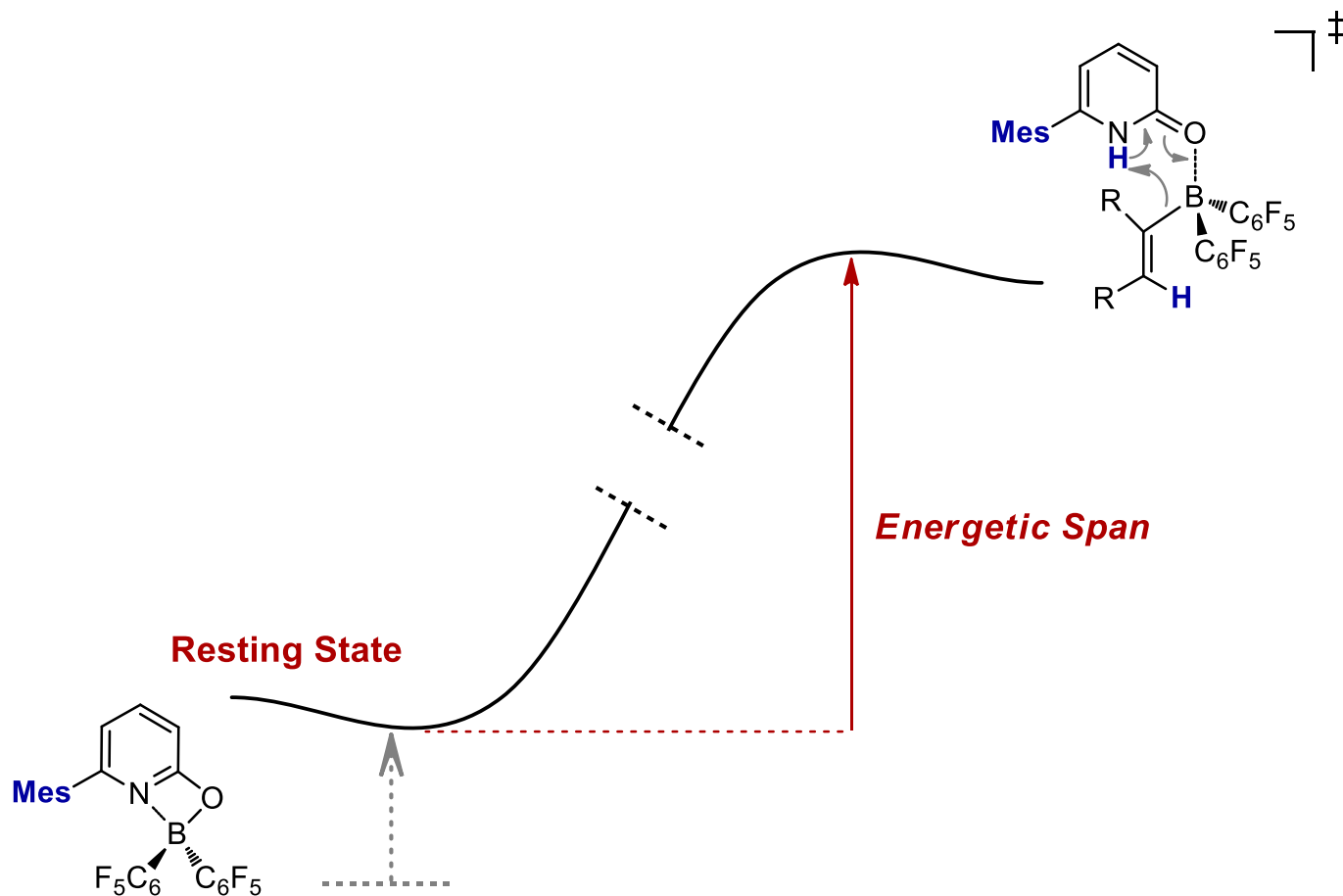
Boron-Ligand Cooperation: Hydrogenation of internal alkynes

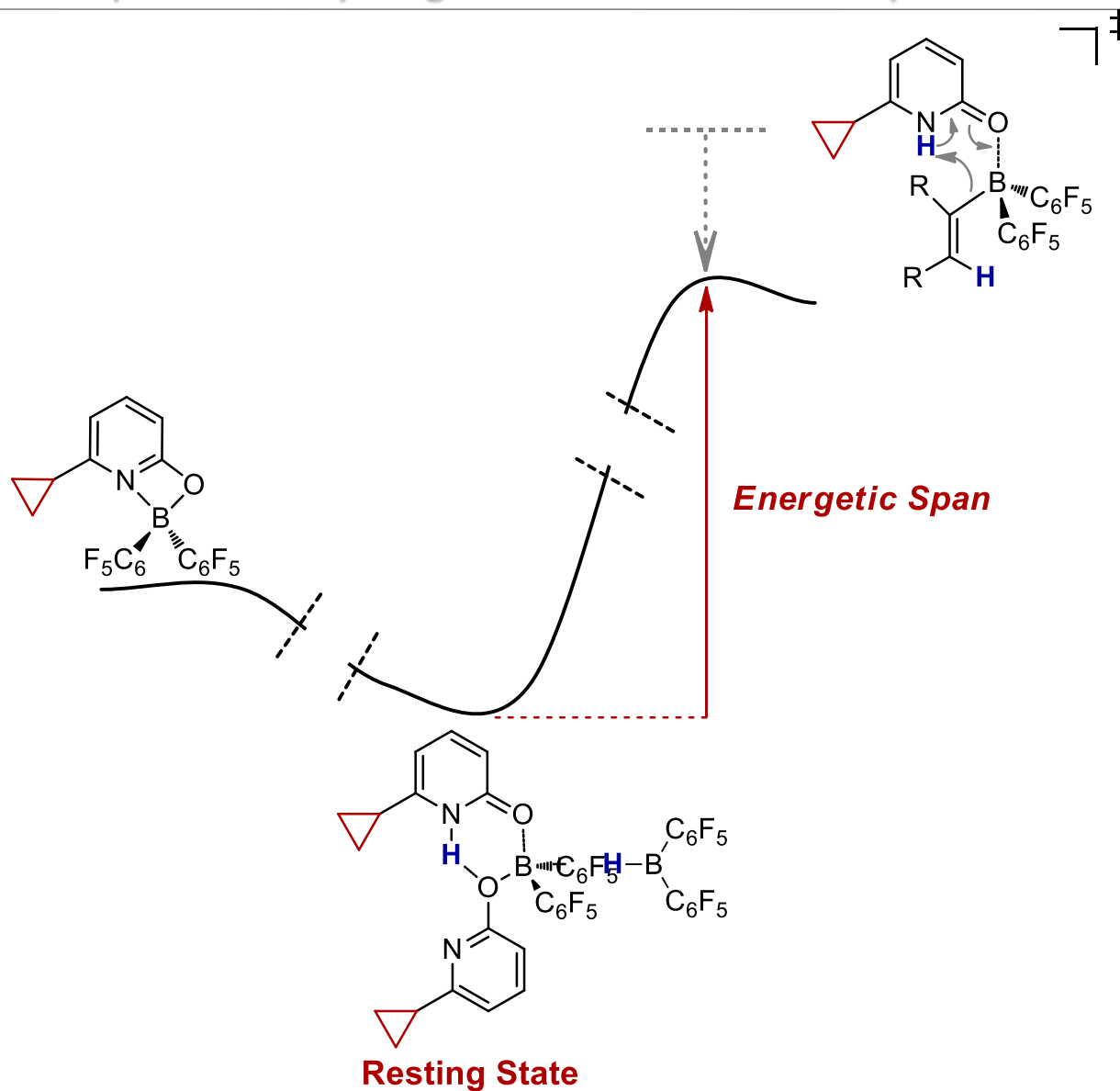


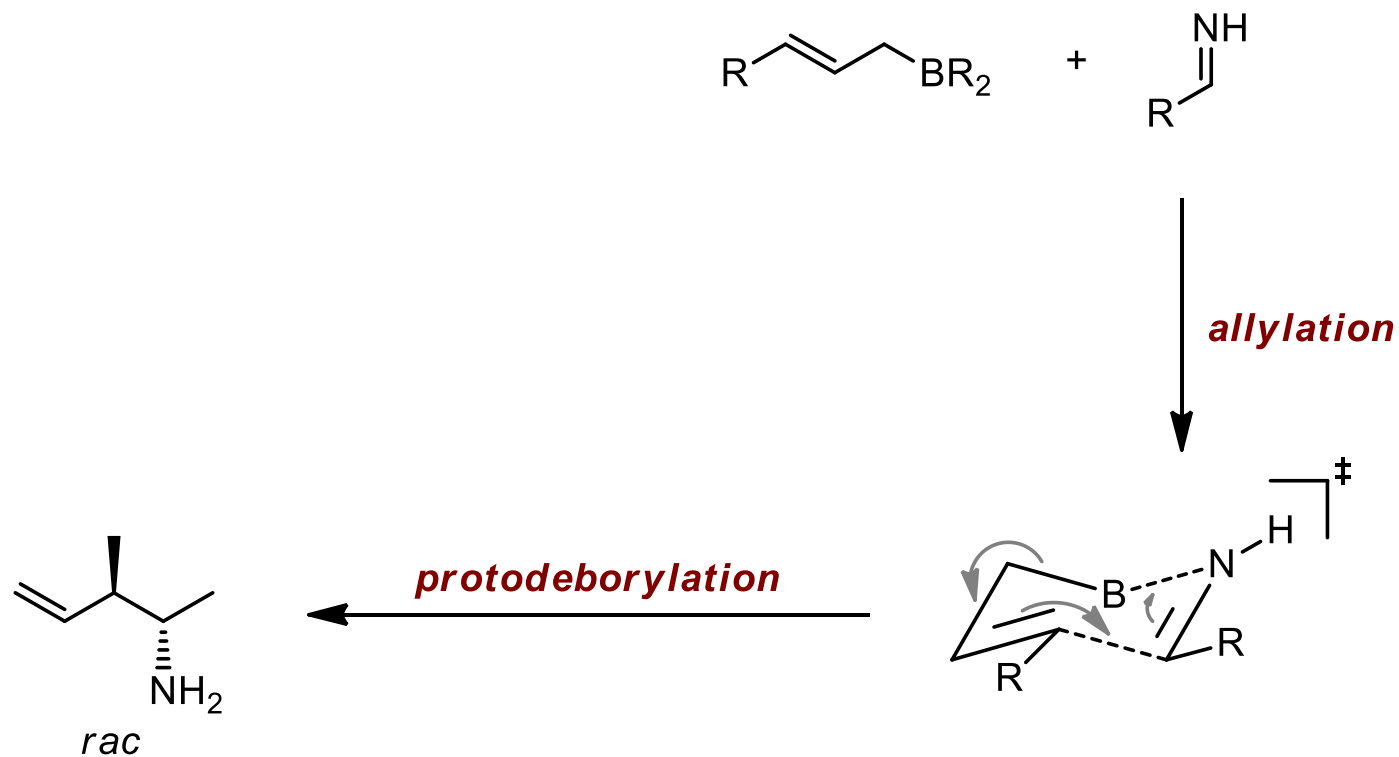
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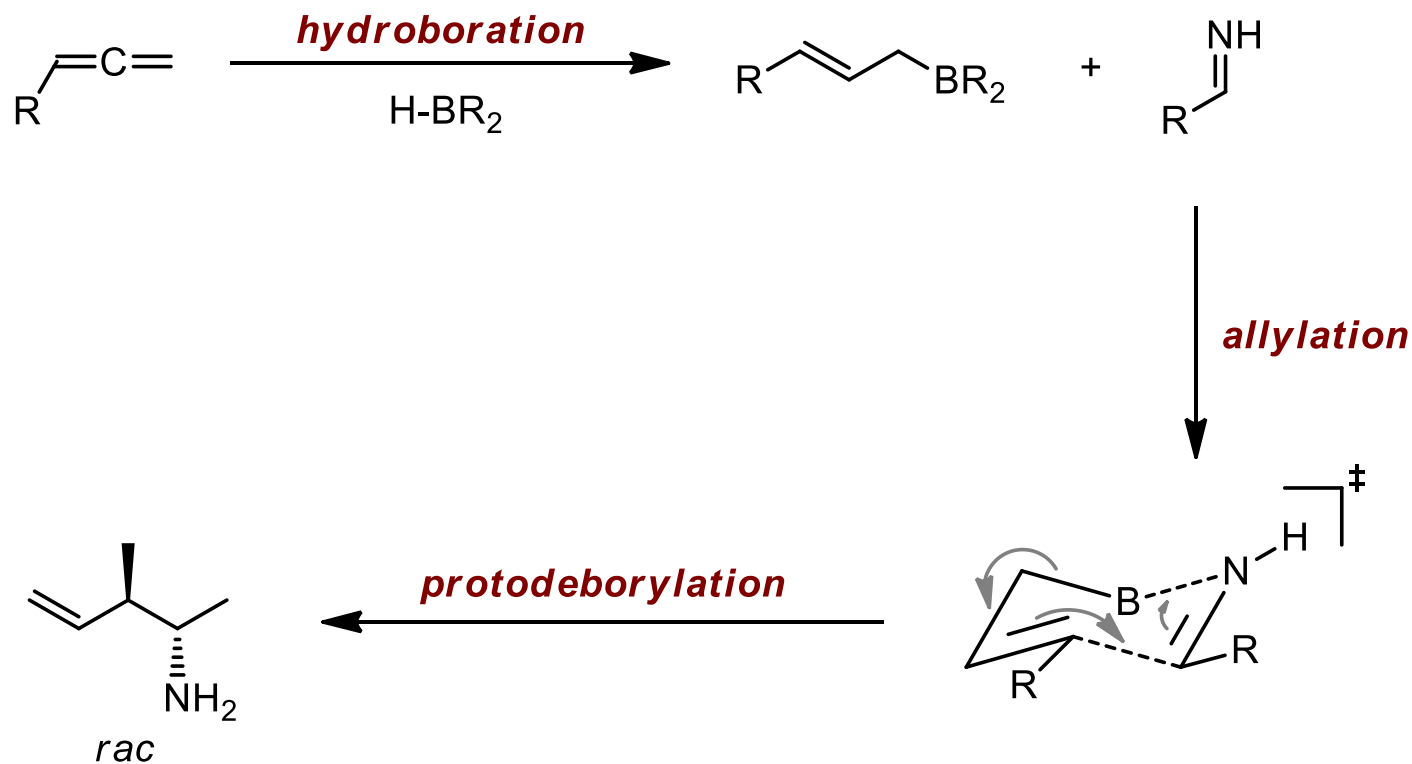


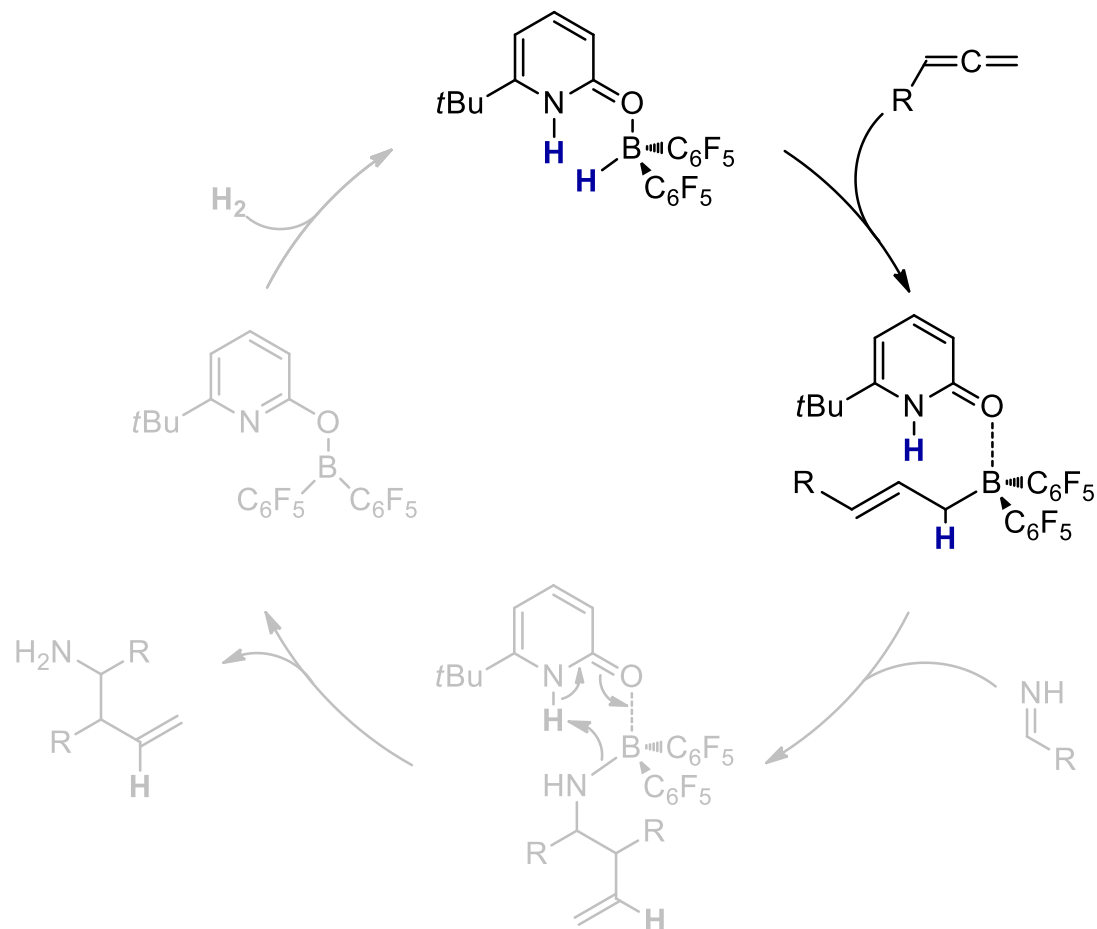


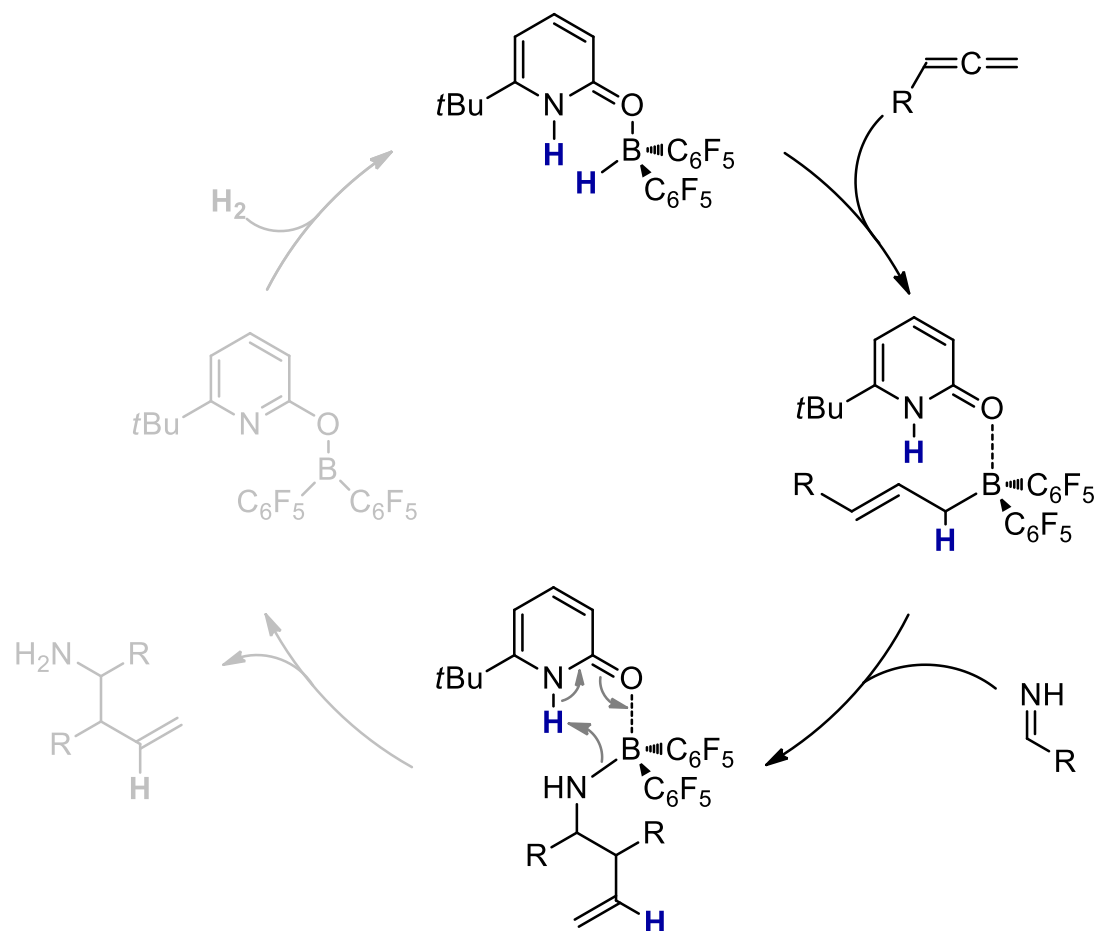


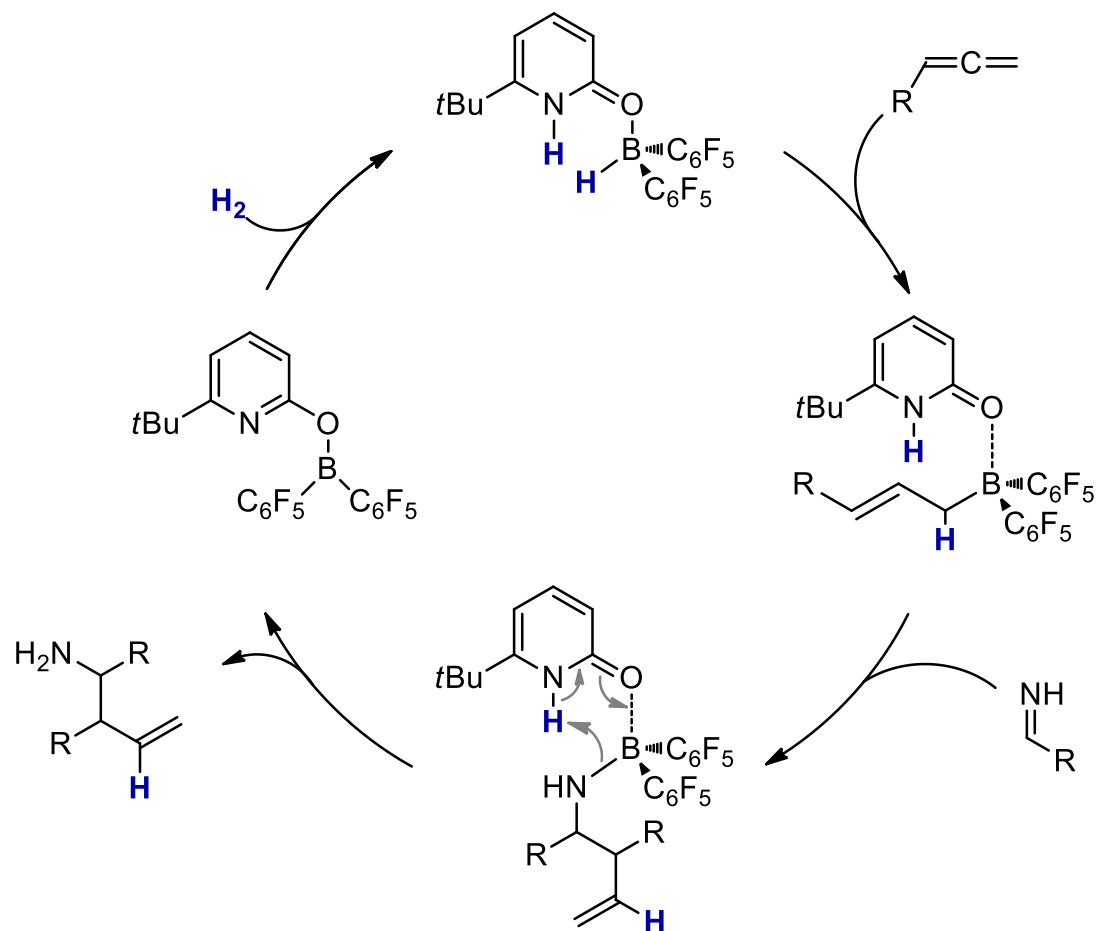








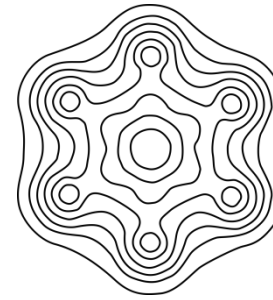




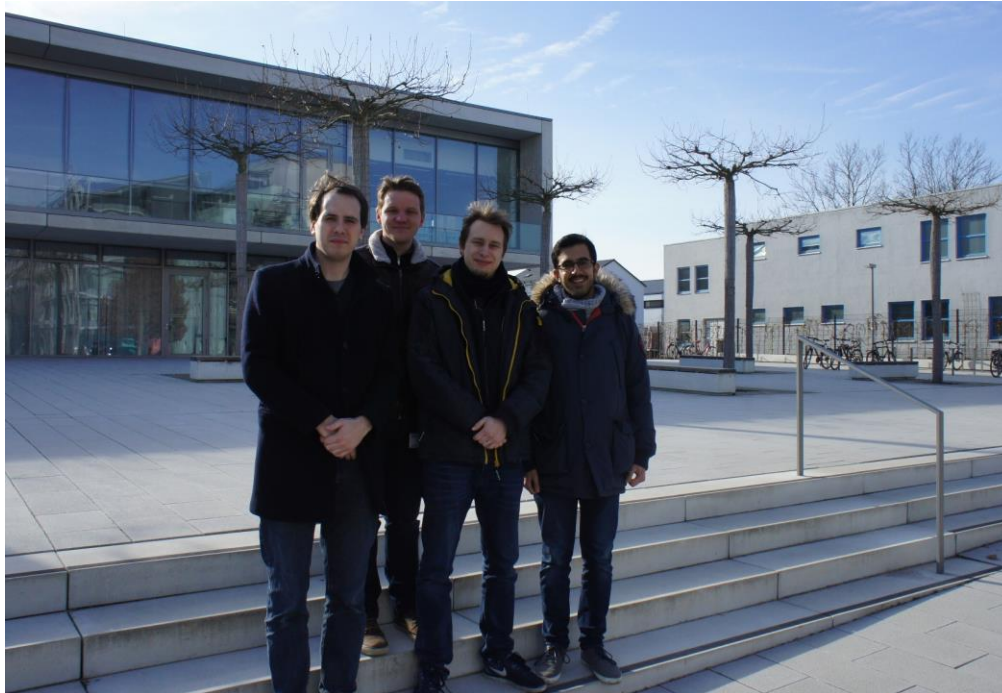
Acknowledgement



- Dr. Urs Gellrich
- Prof. Dr. Schreiner
- Dr. Hausmann, Dr. Gerbig
- Tizian, Jama, Arthur
- AK Wegner, AK Göttlich, AK Schreiner



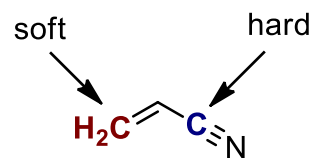
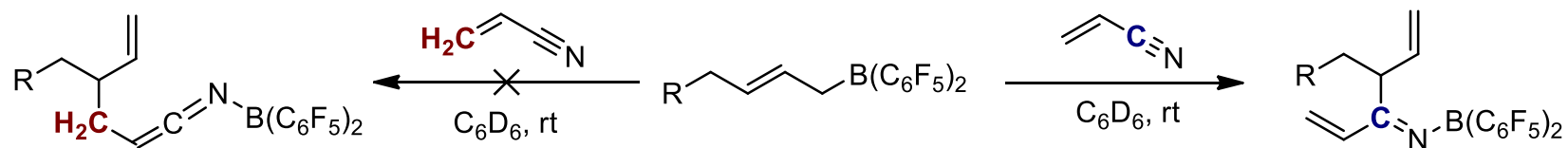
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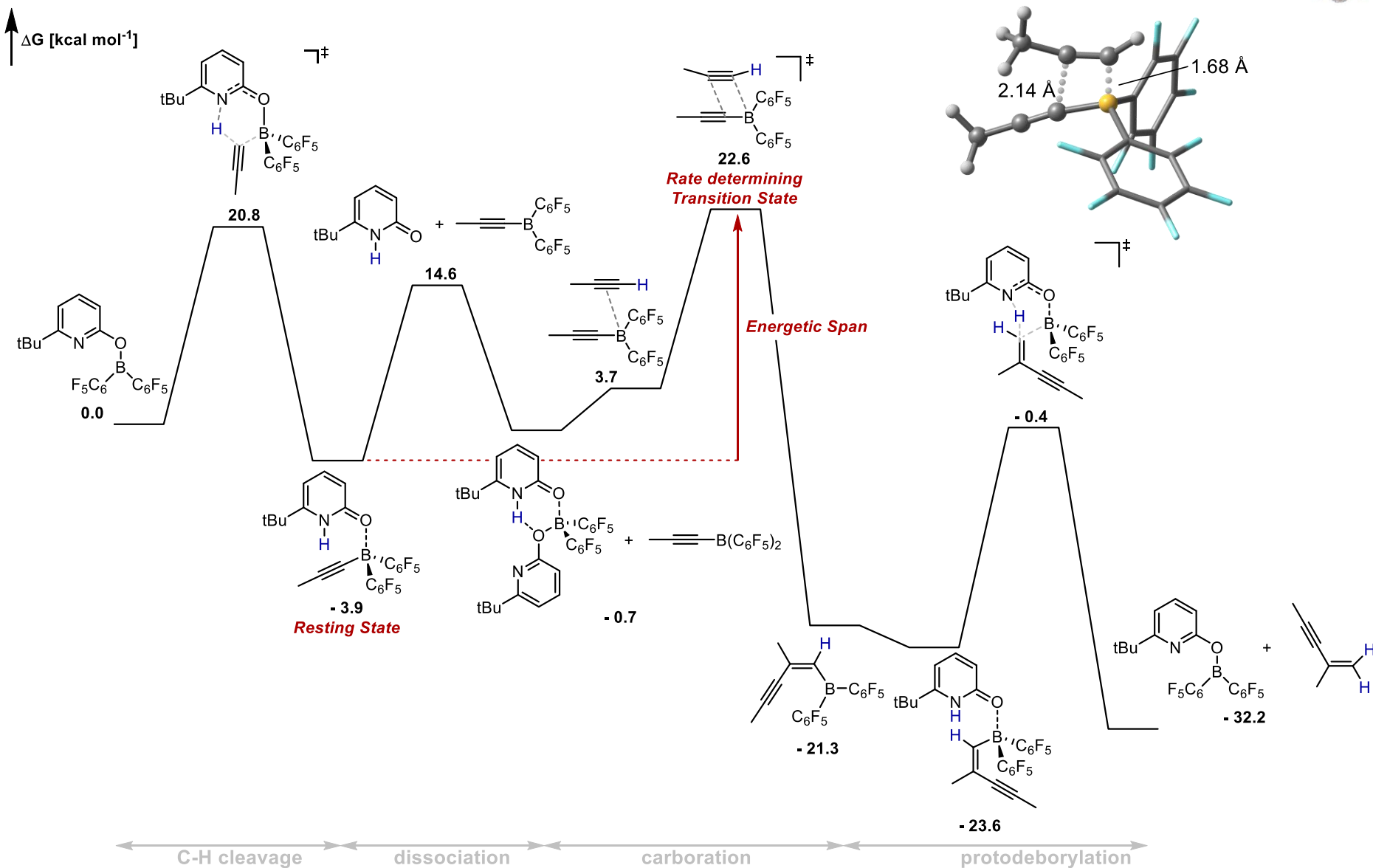
**Emmy
Noether-
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Boron-Ligand Cooperation: *gem* Dimerization of Alkynes



S. Kozuch, S. Shaik, *Acc. Chem. Res.* **2011**, 44, 101; S. Kozuch, J. M. L. Martin, *ChemPhysChem.*, **2011**, 12, 1413.