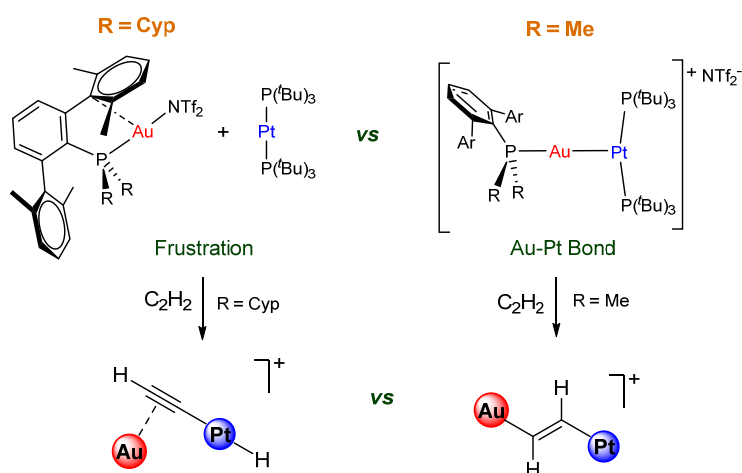


INTERACTION VS. FRUSTRATION IN BIMETALLIC COOPERATIVE SYSTEMS

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In the early 80s Chisholm proposed that “all the types of reactions which have been studied for mononuclear transition metal complexes will also occur for dinuclear transition metal complexes”.^[1] Almost 40 years later, continued research on the area of bimetallic systems has proven that claimed and gone beyond. Regarding catalytic applications, there are many important transformations that require the concerted action of pairs of active metal sites, paralleling what is often found in metalloenzymes. We recently started to investigate late-transition bimetallic systems characterized by the use of novel sterically hindered phosphine ligands, which has allowed us to kinetically stabilize many uncommon low-coordinated structures.^[2] In the last two years, we have focused on the competition between the formation of M-M bonds versus M...M frustration and investigated the reactivity derived from a variety of bimetallic systems, an example of which is depicted in the Figure below.^[3] Our results pertaining their reactivity and potential in catalysis will be discussed.



[1] Chisholm, M. H. Chapter 2, Reactivity of Metal-Metal Bonds, *ACS Symposium Series*, **1981**, 155.

[2] (a) Espada, M. F.; Campos, J.; López-Serrano, J.; Poveda, M. L.; Carmona, E. *Angew. Chem., Int. Ed.* **2015**, *54*, 15379; (b) Moreno, J. J.; Espada, M. F.; Krüger, E.; López-Serrano, J.; Campos, J.; Carmona, E. *Eur. J. Inorg. Chem.* **2018**, 2309; (c) Moreno, J. J.; Espada, M. F.; Campos, J.; López-Serrano, J.; Macgregor, S. A.; Carmona, E. *J. Am. Chem. Soc.* **2019**, *141*, 2205.

[3] Campos, J. *J. Am. Chem. Soc.* **2017**, *139*, 2944.