

Trabajo de Educación Química

"A Mnemonics for Baldwin's Rules for Ring Closure"

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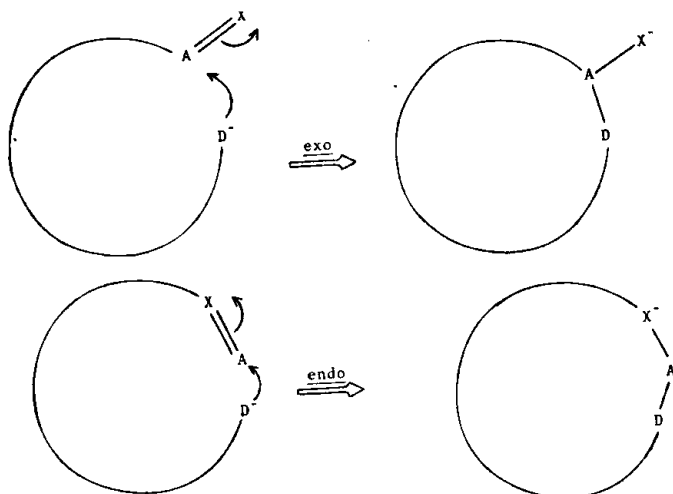
INTRODUCTION

Several years ago, J.E. Baldwin suggested a set of rules to be used in predicting the relative facility of different ring closures¹. In order to discuss the several possibilities, a numerical prefix denotes the ring size; i.e., the number of atoms constituting the skeleton of the cycle. In addition, the ring-forming process is distinguished as **exo** or **endo** depending on whether the breaking bond is exocyclic or endocyclic to the formed ring (Scheme 1), and the suffixes **dig**, **trig** and **tet** indicate the geometry of the atom giving rise to the new bond (A in scheme 1).

The proposed rules¹ are as follows:

A. Tetrahedral systems

- 3- to 7-**exo** are all favoured
- 5- to 6-**endo** are disfavoured



Scheme 1

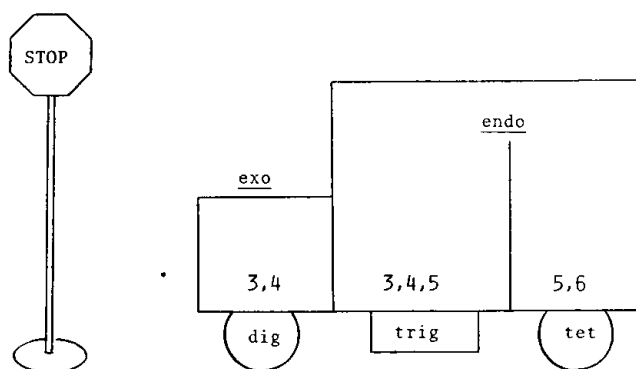
B. Trigonal systems

- 3- to 7-**exo** and 6- to 7-**endo** are all favoured
- 3- to 5-**endo** are disfavoured

C. Diagonal systems

- 3- to 7-**endo** and 5- to 7-**exo** are favoured
- 3- to 4-**exo** are disfavoured

These rules have found widespread acceptance²; nevertheless, with the impression that in spite of their simplicity they are easily forgotten, we would like to propose the mnemonics depicted in Scheme 2 to facilitate their use. The engine compartment and the passenger cabin are easily associated with the **exo** and **endo** modes, ring size increases from the front to the rear of the truck, and the terms **dig**, **trig** and **tet** are accommodated sequentially in the front wheel, footboard and back wheel, respectively. Of course, the stop sign reminds us that all these ring closures are disfavoured.



Scheme 2

REFERENCES

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- Primo, J.; Miranda, M.A. *J. Org. Chem.* 1986, 51, 4432. (d) Williams, R.M.; Maruyama, L.K. *J. Org. Chem.* 1987, 52, 4044. (e) Clive, D.L.J.; Cheshire, D.R. *J. Chem. Soc., Chem. Commun.* 1987, 1520. (f) Brennan, C.M.; Johnson, C.D.; McDonnell, P.D. *J. Chem. Soc., Perkin Trans. II* 1989, 957.