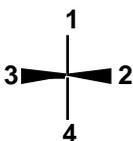
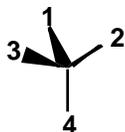


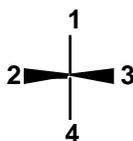
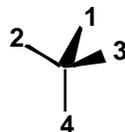
Text Related to Segment 4.02 ©2002 Claude E. Wintner

Simply for purposes of communication, one wishes to be able to refer unambiguously to one or the other member of an enantiomeric pair, using a *name* rather than a picture. A system — the Cahn-Ingold-Prelog (C-I-P) system — has been devised to enable us to do just this; a brief introduction to this system serves our present needs. The system is based on the idea that, (A) given an unambiguous method for ordering of the four different ligands of a stereogenic tetrahedral carbon atom in a molecule, (B) knowing the absolute configuration of the molecule, and, finally, (C) using an established rule governed by a straightforward convention, one can transform the three-dimensionally chiral arrangement of the tetrahedral molecule into a name based on two-dimensional chirality — clockwise or counterclockwise, but having *no* necessary relationship to the clockwise or counterclockwise rotation, discussed above, which is a result of irradiation with plane polarized light! Suppose that one can assign unambiguously a sequence to ligands, as 1, 2, 3, 4. Then there can be a convention, as illustrated below, in which ligand 4 is held, so to speak, as the steering column of a steering wheel, and ligands 1, 2, and 3, in that order, are observed from the top of the steering wheel as three spokes of the wheel, having a clockwise or counterclockwise relationship. If the relationship is clockwise, the descriptor R (*Latin: rectus*) is used in the name; if the relationship is counterclockwise, then the descriptor S (*Latin: sinistra*) is used.

With 4 down,
1, 2, 3 are
clockwise
Rectus
R.



With 4 down,
1, 2, 3 are
counterclockwise
Sinistra
S.



mirror

mapping a sequence of ligands on a tetrahedron
according to the Cahn-Ingold-Prelog system

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