**Key Terms:**

Pairwise comparison

Judgement Matrices

Consistency and Inconsistency

The geometric mean method (GMM) and the eigenvector method (EM) are well-known approaches to deriving information from pairwise comparison matrices in decision making processes.

Triad-based algorithms for improving consistency in decision making

A pairwise comparisons matrix M is called consistent (or transitive) if mij · mjk = mik

While every consistent matrix is reciprocal, the converse is false in general.

<http://home.sandiego.edu/~dhelmich/hwahpstepslink.htm>

The analytic hierarchy process (AHP) has advantages that the whole number of comparisons can be reduced via a hierarchy structure and the consistency of responses verified via a consistency ratio. However, at the same time, the AHP has disadvantages that values vary according to the form of hierarchy structure and it is difficult to maintain consistency itself among responses.

<https://en.wikipedia.org/wiki/Analytic_hierarchy_process>

<https://www.math.upenn.edu/~kazdan/210/LectureNotes/Saaty/Monthm1-JLK.pdf>