

# A re-characterization of the Kemeny distance

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## **Abstract**

The well-known swap distance (Kemeny (1959); Kendall (1938); Hamming (1950)) is analyzed. On weak preferences, this function was characterized by Kemeny (1959) with five conditions; metric, betweenness, neutrality, reducibility, and normalization. We show that the same result can be achieved without the reducibility condition, therefore, the original five conditions are not logically independent. We provide a new and logically independent characterization of the Kemeny distance and provide some insight to further analyze distance functions on preferences.