Everything on Fuzzy Logic

Another approach to reasoning about uncertainty is fuzzy logic.

Fuzzy logic avoids having to choose a random changeover point by allowing a whole spectrum of values

A fuzzy set is represented by a graph

The opposite of fuzzy is crisp. Crisp values are exact measurements

The graph of a fuzzy set shows how the crisp values (of the x-axis) are assigned fuzzy measure (on the y-axis)

The values attached to properties in fuzzy logic are not probabilities

Benefits:

1. Rules in fuzzy logic are clearer, and simpler to understand
2. Successful in automatic control systems
3. Fuzzy logic controllers are more efficient and give smoother operation

Logical Combinations same as RBS:

value(P AND Q) = min(value(P), value(Q))
value(P OR Q) = max(value(P), value(Q))

Defuzzification

The process of extracting crisp values from fuzzy values, by calculating the centre of gravity

The centre of gravity is the point on the x-axis at which the vertical line can be drawn, that slices the shaded area into equal parts

Hedges

Qualifying words such as very, slightly, somewhat.