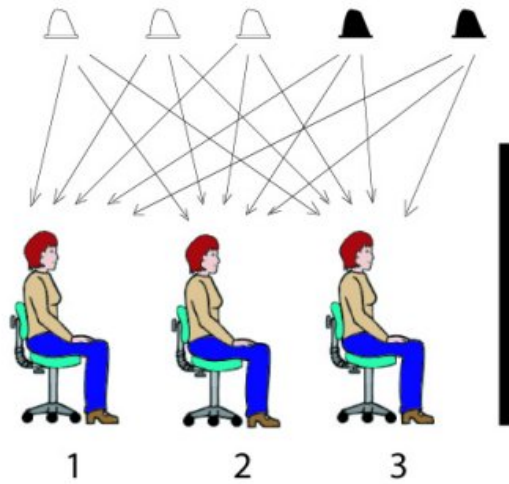


The 5 hats to 3 men problem

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The problem

There are 3 white hats and 2 black hats and 3 hats are chosen randomly and a hat is put on the heads of each of three men, standing in a line facing the wall. So, that person #1 can see #2 and #3, #2 can see #3 only, and #3 can't see anyone.



#1 is asked what color his hat is. I don't know. #2 is asked what color his hat is. I don't know. #3 is asked what color his hat is. He knows. What color is it and how does he know?

The solution

There are 4 arrangements which avoid repetitions or two different colors in different orders, they are:

W W W
W B W
W B B
B W B

If no. 1 knew the answer he would have to be seeing BB in front of him. This is the only possibility for no.1 to know the answer and this would make him W. No. 2, clever man (women), realizes no. 1 who has the most information does not know the answer which tells him that he and No. 3 cannot be BB, they can be WW, BW or WB. For him to know which color he is no. 3 would have to be B and this would make him W, if no. 3 is W he can either be W or B.

No. 3, even more clever man (women), realizes that no. 2 doesn't know so that must mean that he is W.