Kirsty was been asked to pick two people to serve on an unpleasant committee, chosen from the set {*Gary, Kevin, Richard*}.

Kevin has no idea yet as to her decision, but he does not believe any of the three people would be more likely to be chosen than any other.

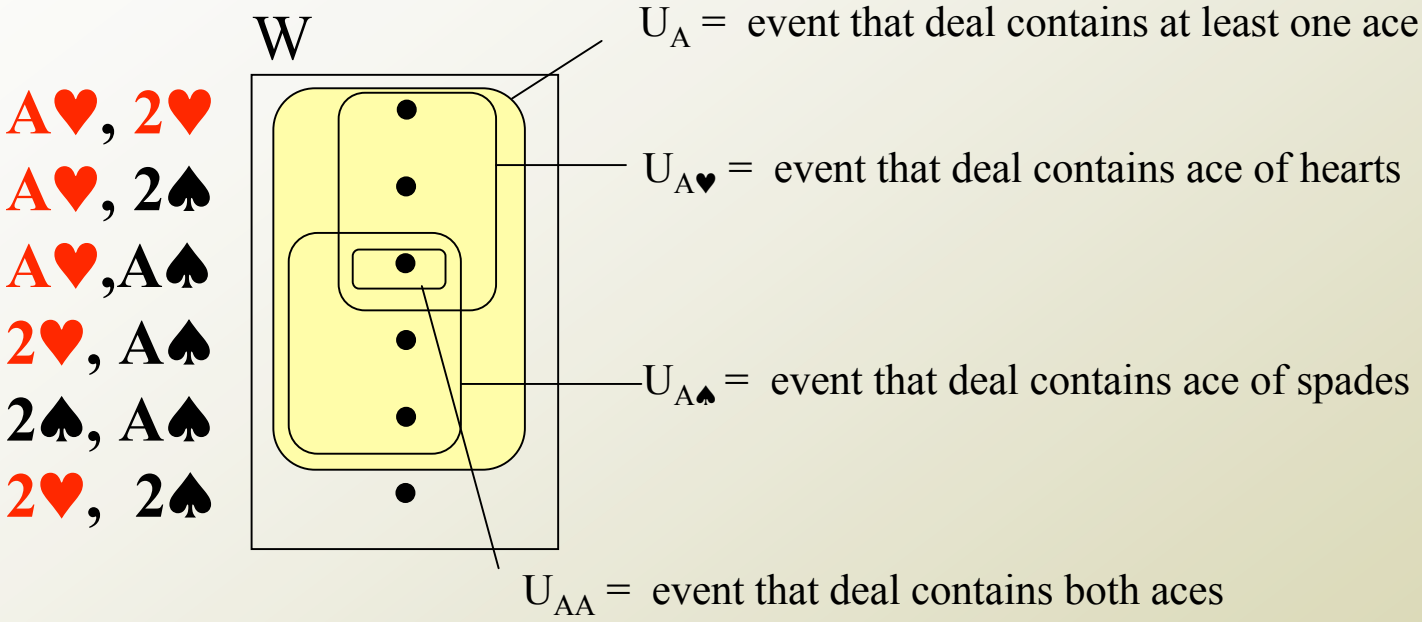
Thus he assumes he has a 67% chance of being put on the committee, since out of the 3 equally likely outcomes (possible worlds), in 2 of them he is on the committee. [ W= { G&K, K&R, G&R} ].

***The next day:***
Kevin comes into his office and listens to a voicemail message from Kirsty.
She says, "I've decided that your colleague Dr. [*inaudible*] will be on the committee."
Kevin thinks:

> If she said *Gary*, I have a 50% chance of being the other guy chosen.
> If she said *Richard*, I have a 50% chance of being the other guy chosen.
> So no matter what, there's a 50% chance I will have to serve.

So Kevin's happier than yesterday, when he believed there was a 67% chance he would have to serve on the unpleasant committee.
**But the message seemed to contain no information!** What changed?

# W = All deals of 2 cards from {A♥, 2♥, 2♠, A♠ }




**Alice is dealt a random hand of 2 cards as above.**

**Bob thinks:** "What's the chance that Alice holds both aces? 1/6." [= $P(U_{AA})$]

**Alice says:** "Hey, I'm holding an ace of [*inaudible*]."

**?Should Bob reason this way:**

"Ah, now I see the chance is actually 1/5" [= $P(U_{AA} \mid U_A)$].

**?or should he reason this way:**

"She said either or A♥ or A♠.
If she said A♥, then the chance is 1/3. [ = $P(U_{AA} \mid U_{A♥})$ ]
If she said A♠, then the chance is 1/3. [ = $P(U_{AA} \mid U_{A♠})$ ]
In either case the chance is 1/3."