Canteen dilemma @ DIS, 12 Dec 2023

INTERVIEW QUESTIONS:

1. Did you believe that your co-player received the same rules as you?
   1. yes
2. Were you uncertain about the rules and whether your co-player had understood the rules?
3. Do you think it was your fault the game is over so quickly, your partner’s fault, or do you think it was because of some other reason?
4. What strategy did you use while playing this game? (ask specifically about possible mixed strategies and about whether they tried to guess/use probabilities for the co-players choice).
5. When playing, did you always try to find the single most optimal choice, or did you sometimes make a probabilistic choice (for instance making a random choice between white and black).
6. Imagine you could have agreed beforehand with your colleague about a number where it is safe to choose a white stone. What number would that be? Does such a number even exist? SAFE MEANS: NO RISK OF MISCOORDINATION.
7. Imagine you get a 3. Is it common knowledge between you and your partner that it is safe to choose white, that is, you both have a number strictly below 9?
8. Did you ever choose white at larger number than what was safe according to your answer (5)? Why or why not?
9. Did you ever choose differently after seeing the same number again at a later point in the game? Why or why not?
10. Imagine you get a number [7/9] and you have been secretly informed that your colleague's number is 8. What color do you think your colleague will choose?
11. Did you learn that choosing white with the number 8 was dangerous? If yes, why was choosing white with the number 7 then not dangerous?

NUMBERS

THOMAS NICOLET:

ROBIN:

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1. Imagine you get a number [7/9] and you have been secretly informed that your colleague's number is 8. What color do you think your colleague will choose?

1. Did you learn that choosing white with the number 8 was dangerous? If yes, why was choosing white with the number 7 then not dangerous?

THOMAS BOLANDER:

“Very few on the boundary”.

“Until I get 8, I’ll play white.”

Safe value: “6”, “7”.

“If you’re confident.. If it feels right…”

Common knowledge: YES!!!

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**NUMBER PAIRS**

(door side, picture frame side)

Use strikethrough. On Mac: cmd-shift-x. Win: Alt+Shift+5

~~(4, 5)~~

~~(6, 7)~~

~~(8, 7)~~

~~(6, 7)~~

~~(5, 4)~~

~~(6, 5)~~

~~(10, 9)~~

~~(3, 2)~~

(5, 4)

(4, 5)

(5, 4)

(4, 3)

(8, 7)

(7, 8)

(3, 4)

(3, 2)

(8, 7)

(4, 3)

(8, 7)

(7, 8)

(4, 3)

(8, 7)

(10, 9)

(8, 9)

(7, 8)

(2, 3)

(8, 7)

(10, 9)

(5, 6)

(10, 9)

(3, 2)

(9, 10)

(5, 4)

(6, 7)

(9, 8)

(5, 6)

(8, 7)

(8, 9)

(10, 9)

(8, 7)

(5, 6)

(4, 3)

(4, 3)

(2, 3)

(4, 3)

(8, 7)

(6, 7)

(8, 7)

(3, 4)

(9, 8)

(10, 9)

(5, 4)

(4, 5)

(10, 9)

(10, 9)

(5, 4)

(8, 9)

(5, 6)

(8, 7)

(9, 8)

(10, 9)

(6, 7)

(5, 4)

(6, 5)

(6, 7)

(6, 5)

(4, 3)

(3, 4)

(4, 3)

(7, 8)

(3, 4)

(3, 2)

(7, 8)

(8, 7)

(8, 7)

(8, 7)

(8, 9)

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GAME DESCRIPTION

This game is a 2-player cooperative coordination game with 15 rounds. The 2 players have to try to coordinate their actions, and if they are successful, they will both achieve the same positive reward (so it’s **not** a zero-sum game). The positive reward can either be $1 or $2. If you’re miscoordinated, you lose all the money you earned so far in the game. After the 15 rounds, you get to keep the rewards you have accumulated. Well, actually, in this version of the game, you will not be paid actual money, but you should try to behave as if you did, i.e., try to maximize the reward.

In each round, each player is dealt a face down card. On the face of the card there is a number in the interval 2-10 (it’s a card from a deck of standard playing cards). The numbers on the two dealt cards are always exactly 1 apart, so if for instance one of the players gets a 3, then the other will either be getting a 2 or a 4. And since 10 is the maximum, if one player gets a 10, necessarily the other player is getting a 9. And similarly, if one gets a 2, necessarily the other gets a 3.

When the cards are dealt, each player looks at the number on their own card without showing it to the other. The two players are not allowed to communicate or exchange any kind of information during the game. After each player has inspected their own card, they should hide either a white or a black marble stone in their hand and put the hand on the table. Each player has to make an individual choice without communicating with or revealing it to the other player.

When both players have their closed hands with the hidden stones on the table, they wait for the facilitator to tell them that now they can open their hands to reveal the two stones, and they can also turn their cards to reveal their numbers.

Both players then receive rewards depending on the colors of their stones and the numbers on their cards. The white marble stone is worth $2, and the black marble stone is worth $1, but you only get to keep your stones (money) if you choose the same stone as the opponent, and additionally, if you both choose the white stones, you only get to keep them if both card numbers are strictly below 9. In more details:

a) If one player chose a white stone and the other a black stone, then they both lose all the stones (money) they have received in the game so far.   
b) If both players chose a black stone, they both receive $1 (i.e., a black stone).   
c) If both players chose a white stone, then they both receive $2 (i.e., a white stone), but **only** if both numbers are strictly below 9, meaning they are both in the interval 2-8. If not, the players lose all the money (stones) they have received in the game so far.

Table legend:

**Table n: Table 1 is the closest to the door, Table 8 is the closest to the window**

A **card pair** (x,y) means door side got x, while picture side got y.

**Door side choice** is the stone colour chosen by participant closest to door.

**Picture side choice** is the stone colour chosen by participant closest to wall with framed paintings. Total score is the score, per player, after the round has ended.

**Total score:** Score (per player) after the given round (in $).

Example data-point:

| **Table 123** |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Round** | **Card pair** | **Door side choice** | **Picture side choice** | **Total score** |
| **123** | **(8,9)** | **W** | **B** | **0** |

| Table 1 |  |  |  |  |
| --- | --- | --- | --- | --- |
| Round | Card pair | Door side  choice | Picture side  choice | Total score |
| 1 | (4, 5) | W | W | 2 |
| 2 | (5, 6) | w | w | 4 |
| 3 | (5, 4) | w | W | 6 |
| 4 | (7, 6) | W | W | 8 |
| 5 | (4, 5) | W | w | 10 |
| 6 | (5, 4) | w | W | 12 |
| 7 | (3, 2) | w | w | 14 |
| 8 | (5, 4) | w | w | 16 |
| 9 | (8, 7) | b | w | 0 |
| 10 | (6, 5) | w | w | 2 |
| 11 | (6, 5) | w | w | 4 |
| 12 | (6, 7) | w | b | 0 |
| 13 | (10, 9) | b | b | 1 |
| 14 | (9, 8) | b | b | 2 |
| 15 | (8, 7) | b | b | 3 |

| Table 2 |  |  |  |  |
| --- | --- | --- | --- | --- |
| Round | Card pair | Door side  choice | Picture side  choice | Total score |
| 1 | (6, 7) | w | w | 2 |
| 2 | (9, 10) | b | b | 3 |
| 3 | (6, 7) | W | B | 0 |
| 4 | (10, 9) | B | B | 1 |
| 5 | (5, 4) | W | w | 3 |
| 6 | (4, 5) | W | w | 5 |
| 7 | (5, 4) | w | w | 7 |
| 8 | (3, 4) | w | w | 9 |
| 9 | (8, 7) | b | b | 10 |
| 10 | (5, 6) | w | w | 12 |
| 11 | (8, 9) | b | b | 13 |
| 12 | (5, 4) | w | w | 15 |
| 13 | (10, 9) | b | b | 16 |
| 14 | (10, 9) | b | b | 17 |
| 15 | (4, 5) | w | w | 19 |

| Table 3 |  |  |  |  |
| --- | --- | --- | --- | --- |
| Round | Card pair | Door side  choice | Picture side  choice | Total score |
| 1 | (8, 7) | b | w | 0 |
| 2 | (7, 8) | w | w | 2 |
| 3 | (8, 9) | b | b | 3 |
| 4 | (4, 3) | W | W | 5 |
| 5 | (4, 5) | w | W | 7 |
| 6 | (2, 3) | w | w | 9 |
| 7 | (3, 2) | w | w | 12 |
| 8 | (5, 4) | w | w | 14 |
| 9 | (8, 7) | b | w | 0 |
| 10 | (5, 4) | w | w | 2 |
| 11 | (10, 9) | b | b | 3 |
| 12 | (9, 8) | b | b | 4 |
| 13 | (3, 4) | w | w | 6 |
| 14 | (8, 7) | b | w | 0 |
| 15 | (6, 7) | w | w | 1 |

| Table 4 |  |  |  |  |
| --- | --- | --- | --- | --- |
| Round | Card pair | Door side  choice | Picture side  choice | Total score |
| 1 | (6, 7) | w | w | 2 |
| 2 | (8, 7) | b | w | 0 |
| 3 | (6, 7) | w | w | 2 |
| 4 | (2, 3) | W | W | 4 |
| 5 | (7, 6) | W | W | 6 |
| 6 | (3, 4) | W | W | 8 |
| 7 | (2, 3) | W | W | 10 |
| 8 | (2, 3) | W | W | 12 |
| 9 | (7, 8) | B | B | 13 |
| 10 | (8, 7) | B | B | 14 |
| 11 | (4, 3) | W | W | 16 |
| 12 | (2, 3) | W | W | 18 |
| 13 | (4, 3) | W | W | 20 |
| 14 | (4, 3) | W | W | 22 |
| 15 | (5, 6) | W | W | 24 |

| Table 5 |  |  |  |  |
| --- | --- | --- | --- | --- |
| Round | Card pair | Door side  choice | Picture side  choice | Total score |
| 1 | (6,5) | w | w | 2 |
| 2 | (4, 5) | w | w | 4 |
| 3 | (9, 10) | b | b | 5 |
| 4 | (2, 3) | W | W | 7 |
| 5 | (6, 5) | W | W | 9 |
| 6 | (6, 7) | W | W | 11 |
| 7 | (4, 5) | W | W | 13 |
| 8 | (3, 4) | W | W | 15 |
| 9 | (3, 2) | W | W | 17 |
| 10 | (8, 7) | B | W | 0 |
| 11 | (10, 9) | B | B | 1 |
| 12 | (8, 9) | W | B | 0 |
| 13 | (8, 7) | W | W | 2 |
| 14 | (5, 6) | W | W | 4 |
| 15 | (9, 8) | W | B | 0 |

| Table 6 |  |  |  |  |
| --- | --- | --- | --- | --- |
| Round | Card pair | Door side  choice | Picture side  choice | Total score |
| 1 | (10,9) | b | b | 1 |
| 2 | (8, 9) | w | b | 0 |
| 3 | (6, 7) | w | w | 2 |
| 4 | (4, 5) | W | W | 4 |
| 5 | (3, 2) | w | w | 6 |
| 6 | (9, 10) | b | b | 7 |
| 7 | (5, 4) | w | w | 9 |
| 8 | (6, 5) | w | w | 11 |
| 9 | (3, 4) | w | w | 13 |
| 10 | (7, 8) | w | b | 0 |
| 11 | (4, 3) | w | w | 2 |
| 12 | (3, 4) | w | w | 4 |
| 13 | (4, 3) | w | w | 6 |
| 14 | (6, 5) | w | w | 8 |
| 15 | (6, 7) | w | w | 10 |

| Table 7 |  |  |  |  |
| --- | --- | --- | --- | --- |
| Round | Card pair | Door side  choice | Picture side  choice | Total score |
| 1 | (3, 2) | w | w | 2 |
| 2 | (9, 10) | b | b | 3 |
| 3 | (10, 9) | b | b | 4 |
| 4 | (7, 6) | W | B | 0 |
| 5 | (2, 3) | w | w |  |
| 6 | (4, 3) | w | w |  |
| 7 | (4, 3) | w | w |  |
| 8 | (8, 9) | b | b |  |
| 9 | (6, 7) | w | w |  |
| 10 | (5, 4) | w | w |  |
| 11 | (9, 10) | b | b |  |
| 12 | (3, 2) | w | w |  |
| 13 | (10, 9) | b | b |  |
| 14 | (5, 6) | w | w |  |
| 15 | (10, 9) | b | b |  |

—---------------------------------------------------------------------------------------------------------------------THOMAS: