

Supplementary Material

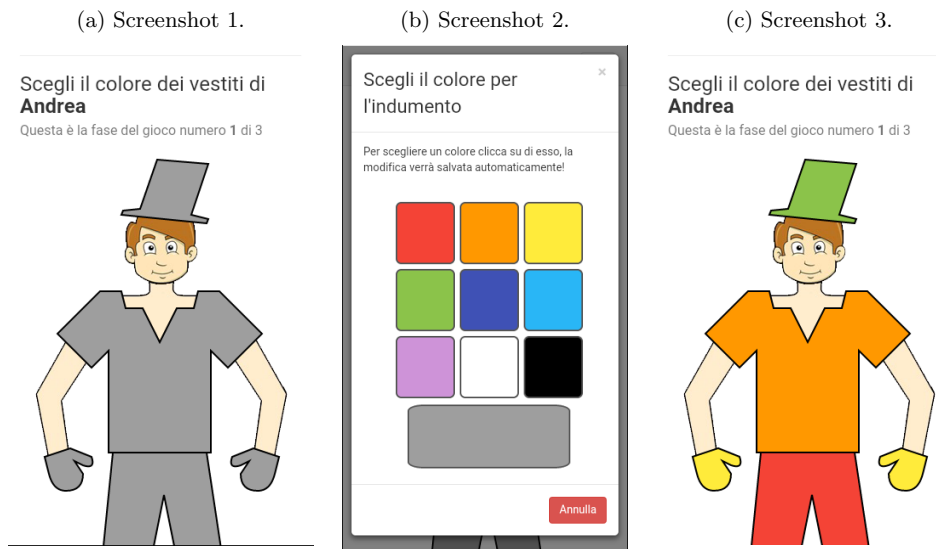
Information Transmission in a Social Network: A Field Experiment

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Appendix A The Game: Additional Details

The main goal of the game was to correctly guess the colors of five pieces of clothing of the assigned character: hat, shirt, gloves, trousers, and shoes. Different groups had to guess colors for different characters, and each character was identified by a name. For example, Figure A1 refers to a group that had to guess the colors of Andrea's clothes. Clothes, as shown in Figure A1 (a), appeared grey at the start of the round. The player could then change colors at any moment in time, with no cost, by choosing one out of nine possible alternatives (Figure A1 (b)). The only combination that was relevant for the payment was the one that was left at the end of the round. To reduce the probability that the students were together at the time of the collection of answers, the round was set to end during the night. Figure A2 provides an example of a hint that players would receive at the beginning of the round. We see that the player is told that they need to guess Andrea's colors (this is the name of the character that identifies this particular group of five players, different groups would be assigned to characters with different names). Moreover, they are told that their position in the network is B, therefore they know A's identity (Mario Rossi from class 5B) and E's identity (Laura Bianchi from class 4C). Finally, by looking at the network, it is possible to know that Player E knows the identity of two other players. Importantly, the hint regarding the color could be seen only once, hence the player had to memorize it. In the app, we also made sure that it was not possible to take screenshots, actions that would have been an easy and fast way to memorize the hint and reproduce it when needed. Also, there was no overlap between the hints given to the players, so information exchange was possible and beneficial among any couple of players. Since all clothes were equivalent in term of points, the hint regarding the color was not introducing any asymmetry among the players. This was done only through the information regarding the other members of the group.

Figure A1: Screenshots from the app.

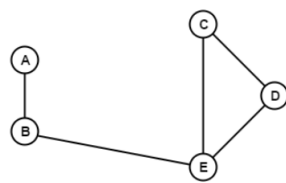


NOTE: The figure reports screenshots for the main interface in the app. (a): Shows the initial configuration of colors, where all five clothes were grey. (b): Shows the screen used to select a color. Together with the nine colors, the player was able to select grey again. (c): Shows a possible configuration of colors. The pages are in Italian as the game was done with students in Italy.

Figure A2: Hint received at the beginning of a round, example

Andrea has a **green hat**.

Moreover you will be playing according to the following layout:



- **A:** Mario Rossi 5B
- **B:** You
- **C:** ?
- **D:** ?
- **E:** Laura Bianchi 4C

NOTE: This figure represents an example of a hint received at the beginning of a round. We see that the player is told that she needs to guess Andrea's colors (Andrea is the name of the character that identifies a group of players, this element is unique for every group). Moreover, she is told that her position in the network is B, therefore she knows A's identity (Mario Rossi 5B) and E's identity (Laura Bianchi 4C) (these are fictitious names). Finally, by looking at the network, it is possible to know that Player E knows the identity of two other players.

Appendix B The Sample: Additional Details

The total number of groups formed during the game was 358. Table A.1 reports the distribution of the number of active players per group, where we define as active a player that logged in during the round and checked the hint she was given.

Table A.1: Number of active players per group.

	Five	Four	Three	Two	One	Zero
All	132	91	36	33	28	38
Network 1	39	31	13	10	11	12
Network 2	41	30	12	10	9	14
Network 3	52	30	11	13	8	12

NOTE: This table reports the number of groups by number of active players and network structure.

Appendix C Centrality Measures: Additional Details

Table A.2 shows the values of degree centrality and betweenness centrality for each node in the three network structures that we consider.

Table A.2: Network Structures - Centrality Measures

	(1)	(2)	(3)	(4)	(5)	(6)
	Network 1		Network 2		Network 3	
	Degree	Betweenness	Degree	Betweenness	Degree	Betweenness
Player A	0.25	0	0.5	0	0.25	0
Player B	0.5	0.5	0.5	0	0.75	0.5
Player C	0.5	0	0.5	0	0.75	0.17
Player D	0.5	0	0.5	0	0.5	0
Player E	0.75	0.67	1	0.67	0.75	0.17

NOTE: The table reports centrality measures for each position in each of the three network structures that we consider. Network structures are depicted in Figure 1. Columns (1,3,5) report degree centrality. Columns (2,4,6) report betweenness centrality. Columns (1,2) refer to Network 1. Columns (3,4) refer to Network 2. Columns (4,5) refer to Network 3.