Readme file to document the replication files for the paper "*Deception communication: Direct Lies vs. Ignorance, Selective Truth and Silence*" by Despoina Alempaki, Valeria Burdea and Daniel Read.

We conducted all studies using Qualtrics.

We provide the qsf code which includes the instructions and survey flow of our studies in the folder "Qualtrics". It contains the following files

- **E1_Sender.qsf**: qsf used for eliciting the (main) sender data in Experiment 1.
- **E1_Receiver.qsf**: qsf used for eliciting the receiver data in Experiment 1.
- **E2_Sender.qsf**: qsf used for eliciting the (main) sender data in Experiment 2.
- **E2_Receiver.qsf**: qsf used for eliciting the receiver data in Experiment 2.
- **E3_Sender.qsf**: qsf used for eliciting the sender data in Experiment 3.
- **E3_Receiver.qsf**: qsf used for eliciting the (main) receiver data in Experiment 3.

In the folder "Data_and_Analysis" we provide:

1. The "RawData" folder including the original data output files generated by Qualtrics for all three studies and used for the data analysis in the paper (NOTE: The columns "IPAddress", "LocationLatitude" and "LocationLongitude" have been manually deleted from these files for data protection):
   - **Evasion study Sender Final_September 17, 2019_14.42.csv:** Sender data generated in Experiment 1.
   - **Evasion study Sender Final - Experiment 2_November 5, 2019_10.33.csv:** Sender data generated in Experiment 2.
   - **Evasion study Receiver Final - Experiment 3_May 4, 2022_07.17.csv:** Receiver data generated in Experiment 3.
2. Data cleaning and analysis scripts – we analyzed the data using the software R version 4.1.0.
   - Data cleaning scripts: **Data_cleaning-script-S1.R**; **Data_cleaning-script-S2.R**; **Data_cleaning-script-S3.R**
     - Each of these scripts cleans and prepares the data for each of the three experiments (Experiment 1 = S1, Experiment 2 = S2, Experiment 3 = S3)
       - First, the corresponding raw data is read from the RawData folder
         - The data is then cleaned from potential duplicates, variables are renamed and new variables with formats suitable for the analysis are created.
           - The script for Experiment 3 also reads in the "**Experiment3_participated_twice.csv**" file which includes a list of Prolific IDs that were flagged by Qualtrics as duplicates. These are then excluded from the final dataset.
       - Lastly, the script generates the following .Rdata and .csv files: Data-Evasion-SNumber.Rdata and Data-Evasion-SNumber.csv (where Number (1-3) corresponds to the Experiment number) which contain the data used

for the analysis. We describe the variables in these files in the tables below.

- **Data_analysis_script.Rmd**: Uses the Data-Evasion-SNumber.Rdata files and produces the analyses reported in the paper and the online appendix.
    - This is a Markdown file which can be knitted to reproduce all the analyses included in the script.

Description of variables contained in Data-Evasion-S1.Rdata and Data-Evasion-S1.csv as well as in Data-Evasion-S2.Rdata and Data-Evasion-S2.csv:

Variable name	**Description**
Duration	Study duration in seconds
ResponseId	Unique participant identifier
Control_q1	Answer to the first control question for the comprehension of the instructions
errors_q1	Answer to the first control question; NA if Control_q1 correct
Control_q2	Answer to the second control question for the comprehension of the instructions
errors_q2	Answer to the second control question; NA if Control_q2 correct
Control_q3	Answer to the third control question for the comprehension of the instructions
errors_q3	Answer to the third control question; NA if Control_q3 correct
Control_q4	Answer to the fourth control question for the comprehension of the instructions
errors_q4	Answer to the fourth control question; NA if Control_q4 correct
Control_q5	Answer to the fifth control question for the comprehension of the instructions
errors_q5	Answer to the fifth control question; NA if Control_q5 correct
decision	Choice of message if the segment is visibly BLUE; Values: 1 = “The segment is BLUE”; 2 = “The segment is RED”
b_red_after_X	Belief about the percentage of receivers who guessed Red after the potentially deceptive message
b_red_after_BLUE	Belief about the percentage of receivers who guessed Red after the always truthful “The segment is BLUE” message
b_liars	Belief about the percentage of senders who chose the deceptive message when the segment was visibly Blue.
Gender	Gender (1 = “Female”; 2 = “Male”; 3 = “Other (Please describe if you wish)”; 4 = “I would prefer not to answer”)
gender_other	Open text field participant filled in if gender=3
Age	Age in years (character format; -99 = “I would prefer not to answer”)
education	Highest level of education completed (1=“Less than secondary”; 9=“Secondary school”; 10=“College or 6th form”; 11=“Undergraduate University degree”; 12=“Masters degree”; 13=“Doctoral or professional degree (JD, MD, PhD)”; 7=“Other (Please specify)”; 8=“I would prefer not to answer”)
education_other	Character variable with text filled in by participant if education=7

condition	Experimental treatment condition that differentiates between the 3 versions of DIRECT (labels for DIRECT and it's three sub-components: "Control Half-truth"; "Control I don't know"; "Control silence"; label for SELECTIVE: "Treatment Half-truth"; label for IGNORANCE: "Treatment I don't know"; label for SILENCE: "Treatment silence")
Prolific_id	Unique participant identifier on Prolific
Spinner_Outcome	Number from 1 to 20 determining the colour of the wheel's segment in the game. If (Spinner_Outcome>6 & Spinner_Outcome<15) or Spinner_Outcome=20, the colour of the segment is Blue, otherwise it is Red.
X	Value of the high payoff in the game (2=£2)
Z	Value of the low payoff in the game (1=£1)
sub_id	Unique participant identifier
Treat	Re-coded version of "condition" variable (c_ht = "Control Half-truth"; c_idk= "Control I don't know"; c_s = "Control silence"; t_ht = "Treatment Half-truth"; t_idk = "Treatment I don't know"; t_s = "Treatment silence")
decision_code	Re-coded version of "decision" variable (truth = "The segment is BLUE"; lie = "The segment is RED")
treat_pool	Experimental treatment condition that pools the three versions of DIRECT (control = DIRECT; t_ht = SELECTIVE; t_idk = IGNORANCE; t_s = SILENCE)
Lie	Re-coded version of "decision_code" variable (0=truth; 1=lie)
age_clean	Numeric version of "age" variable (in years)
Female	Re-coded version of "gender" variable (1 if gender = 1; 0 if gender = 2 or gender = 3; NA if gender = 4)
educ_recode	Re-coded version of "education" variable ("high" if education>=10; "medium_low" if education=9 or education=1; "other" if education=7; NA if education=8)
educ_high	Binary version of "educ_recode" variable (1 if educ_recode="high"; 0 otherwise)
treat_pool_bin	Binary version of "treat_pool" variable ("direct_lie" if treat_pool="control"; "evasion" otherwise)
experiment	Identifies the data as being from Experiment 1 or 2 ("hidden" = Experiment 1; "open" = Experiment 2

Additional variables contained in Data-Evasion-S2.Rdata and Data-Evasion-S2.csv:

Variable name	**Description**
Control_q6	Answer to the sixth control question for the comprehension of the instructions
errors_q6	Answer to the sixth control question; NA if Control_q6 correct

The following table contains the description of variables in Data-Evasion-S3.Rdata and Data-Evasion-S3.csv. Note that many variables are the same but their values are different because the data was exported from Qualtrics using the option "use choice text" rather than "use numeric values" (which was the option used for the data in Experiment 1 and Experiment 2). For completeness, we describe all variables.

Variable name	**Description**
Duration	Study duration in seconds
ResponseId	Unique participant identifier
Control_q1	Answer to the first control question for the comprehension of the instructions
errors_q1	Answer to the first control question; NA if Control_q1 correct
Control_q2	Answer to the second control question for the comprehension of the instructions
errors_q2	Answer to the second control question; NA if Control_q2 correct
Control_q3	Answer to the third control question for the comprehension of the instructions
errors_q3	Answer to the third control question; NA if Control_q3 correct
Control_q4	Answer to the fourth control question for the comprehension of the instructions
errors_q4	Answer to the fourth control question; NA if Control_q4 correct
Control_q5	Answer to the fifth control question for the comprehension of the instructions
errors_q5	Answer to the fifth control question; NA if Control_q5 correct
decision_deceptive_m	Receiver's guess of the colour of the segment when observing a potentially deceptive message (Values: "RED" if the receiver guessed Red, "BLUE" if the receiver guessed Blue)
decision_nondeceptive_m	Receiver's guess of the colour of the segment when observing a non-deceptive, non-blue message, which would be "The segment is RED" in the evasion treatments and an evasion in the DIRECT one (Values: "RED" if the receiver guessed Red, "BLUE" if the receiver guessed Blue)
decision_blue_m	Receiver's guess of the colour of the segment when observing the truthful message "The segment is BLUE" (values: "RED" if the receiver guessed Red, "BLUE" if the receiver guessed Blue)
b_S_deceptive	Belief about the percentage of senders who chose the deceptive message when the segment was visibly Blue
b_R_guess_red_after_deceptive	Belief about the percentage of receivers who guessed Red after the potentially deceptive message

gender	Gender (Values: “Female”; “Male”; “Other (Please describe if you wish)”; “I would prefer not to answer”)
gender_other	Open text field participant filled in if gender=“Other (Please describe if you wish)”
age	Age in years (character format; NA = “I would prefer not to answer”)
education	Highest level of education completed (Values: “Less than secondary”; “Secondary school”; “College or 6th form”; “Undergraduate University degree”; “Masters degree”; “Doctoral or professional degree (JD, MD, PhD)”; “Other (Please specify)”; “I would prefer not to answer”)
education_other	Character variable with text filled in by participant if education=“Other (Please specify)”
explanation_guess	Character variable with text filled in by participant regarding their reasoning underlying their guess of colour if the message was potentially deceptive.
condition	Experimental treatment condition that differentiates between the 3 versions of DIRECT (labels for DIRECT and it’s three sub-components: “Control Half-truth”; “Control I don’t know”; “Control silence”; label for SELECTIVE: “Treatment Half-truth”; label for IGNORANCE: “Treatment I don’t know”; label for SILENCE: “Treatment silence”)
Prolific_id	Unique participant identifier on Prolific
X	Value of the high payoff in the game (2=£2)
Z	Value of the low payoff in the game (1=£1)
sub_id	Unique participant identifier
treat	Re-coded version of “condition” variable (c_ht = “Control Half-truth”; c_idk= “Control I don’t know”; c_s = “Control silence”; t_ht = “Treatment Half-truth”; t_idk = “Treatment I don’t know”; t_s = “Treatment silence”)
treat_pool	Experimental treatment condition that pools the three versions of DIRECT (control = DIRECT; t_ht = SELECTIVE; t_idk = IGNORANCE; t_s = SILENCE)
age_clean	Numeric version of “age” variable (in years)
female	Re-coded version of “gender” variable (1 if gender = “Female”; 0 if gender = “Male” or gender = “Other (Please describe if you wish)”; NA if gender = “I would prefer not to answer”)
educ_recode	Re-coded version of “education” variable (“high” if education takes one of the following values: "Undergraduate University degree", "Masters degree", "Doctoral or professional degree (JD, MD, PhD)", "College or 6th form"; “medium_low” if education takes one of the following values: "Less than secondary school", "Secondary school"; “other” if

	education="Other (Please specify)"; NA if education="I would prefer not to answer")
educ_high	Binary version of "educ_recode" variable (1 if educ_recode="high"; 0 otherwise)
treat_pool_bin	Binary version of "treat_pool" variable ("direct_lie" if treat_pool="control"; "evasion" otherwise)
choose_red_deceptive_m	Recoded version of "decision_deceptive_m" variable (1 if "decision_deceptive_m"= "RED"; 0 otherwise)
choose_red_nondeceptive_m	Recoded version of "decision_nondeceptive_m" variable (1 if "decision_nondeceptive_m"= "RED"; 0 otherwise
choose_red_blue_m	Recoded version of "decision_blue_m" variable (1 if "decision_blue_m"= "RED"; 0 otherwise