

1. General description of datasets

1.1 Study datasets description: The datasets for study 1 (communicators, speaker2.RData) and study 2 (listeners, listener2.RData) excludes a number of participants according to the selection procedures described in the paper "Framing Climate Uncertainty: Frame Choices Reveal and Influence Climate Change Beliefs". The raw data exported from the survey software Unipark as well as the codefile where participants were selected, and variables recorded for the analysis, can be obtained from the authors upon request (contact a.kause@leeds.ac.uk). See file abstract_Study1Study2_UncertaintyFraming.docx for more detailed study description.

1.2 Research question: 1) How does a verbal summary chosen by communicators for summarising a climate projection depend on their underlying beliefs, namely a) perceived severity climate consequences b) environmental values c) political affiliation and d) various demographic variables? (Study 1, communicators) 2. How do different verbal frames for a climate projection presented to listeners affect their underlying beliefs about the event and climate change more generally? (Study 2, listeners)

1.3 Sample: N = 512 participants in study 1 and N = 385 participants in study 2, recruited in spring 2017 via Amazon Mechanical Turk

1.4 Analysis: The data was analysed by using logistic regression (study 1), saved in Codefile models_speakers_replicationApril2017.R and linear regression (study 2), saved in codefile models_listeners_replicationApril2017.R.

1.5 Pilot studies: The current studies are a replication of pilots, conducted in 2013 at the Max Planck Institute for Human Development in Berlin.

1.6 Study materials, power analyses for both studies can be found at the Open Science Framework via osf.io/3tr4h

2. Variable descriptions for study 1 (communicators) in dataset speaker2.RData

Raw variables

lfdn: Unipark admin variable

external_lfdn: Unipark admin variable

tester: Unipark admin variable

dispcode: Unipark admin variable

lastpage: Unipark admin variable

quality: Unipark admin variable

duration: study duration in seconds

c_0001-c_0004: filter variables (not used in this study)

consent: Agreement to participate in study

statement: Verbal frame chosen for summarising the climate projection

sev.general: „How severe do you think an increase in precipitation will be by the 2050s in London?“ (‘No severity at all’ (1) - ‘Extreme severity’ (7))
sev.income: „Loss of income and delayed economic development“ (‘No severity at all’ (1) - ‘Extreme severity’ (7))
sev.contamination: „Contamination and disease from flood and sewer water“ (‘No severity at all’ (1) - ‘Extreme severity’ (7))
sev.property: „Direct damage to property, infrastructure and utilities“ (‘No severity at all’ (1) - ‘Extreme severity’ (7))
sev.life: „Loss of life and personal injury“ (‘No severity at all’ (1) - ‘Extreme severity’ (7))

NEP.limit - NEP.catastrophe: items measuring environmental values adopted from the New Ecological Paradigm Scale (NEP), by Dunlap et al., (2000)
BNT.choir-BNT.dieodd: Items measuring numeracy, adaptive version of the Berlin Numeracy Test, Cokely et al., 2012
BNT.puzzles: Manipulation check

age: Age of participants in years (in 2016)
male: Gender
female: Gender
other: Not female or male
education from 1 (less than high school) to 5 (college)
polaffiliation. Political affiliation, from 1 (strong democrat) to 7 (strong republican)
polaffiliation.other: did they indicate another political affiliation than measured via polaffiliation? (Open question)

feedback: Feedback for the study

data-rts2080745: Admin variables from Unipark

Recoded variables

statement2: statement recoded into verbal labels („concerned“/ „unconcerned“)
Mean_Severity: Average answer across sev.general, sev.income, sev.contamination, sev.property, sev.life
Mean_Severity4: Average answer across sev.income, sev.contamination, sev.property, sev.life
Mean_NEP: Average NEP value, as average answer on variables NEP.limit - NEP.catastrophe
Numeracy: Level of Numeracy, calculated from BNT.choir-BNT.dieodd (1: very low - 4: very high)
manipulation check: 3 is correct answer. If other number: Did not answer manipulation check correctly
polaffiliation.recoded: All participants who gave open answers on polaffiliation.other, were recoded so that they fit into the scale described for variable polaffiliation
duration.min: duration/60
Exclusion: Not used

Z-standardized variables for analysis

ZMean_Severity: Z-standardised Mean_Severity

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# ZMean_Severity4: Z-standardised ZMean_Severity4
# ZSeverity2: Z-standardised sev.general
# ZMean_NEP: Z-standardised Mean_NEP
# Zpolaffiliation: Z-standardised polaffiliation
# Zpolaffiliation.recoded: Z-standardised polaffiliation.recoded
# ZNumeracy: Z-standardised Numeracy
# ZAge: Z-standardised age
# ZEducation: Z-standardised Education
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3. Variable description for study 2 (listeners) in dataset listeners2.RData

Raw variables

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# lfdn: Unipark admin variable
# external_lfdn: Unipark admin variable
# tester: Unipark admin variable
# dispcode: Unipark admin variable
# lastpage: Unipark admin variable
# quality: Unipark admin variable
# duration: study duration in seconds
# c_0001-c_0004: filter variables (for experimental condition)
# consent: Agreement to participate in study

# percent.concerned: Percentage estimate of listeners who received the concerned statement

# sev.general: „How severe do you think an increase in precipitation will be by the 2050s in London?“ (‘No severity at all’ (1) - ‘Extreme severity’ (7)) - concerned group
# sev.income: „Loss of income and delayed economic development“ (‘No severity at all’ (1) - ‘Extreme severity’ (7)) - concerned group
# sev.contamination: „Contamination and disease from flood and sewer water“ (‘No severity at all’ (1) - ‘Extreme severity’ (7)) - concerned group
# sev.property: „Direct damage to property, infrastructure and utilities“ (‘No severity at all’ (1) - ‘Extreme severity’ (7)) - concerned group
# sev.life: „Loss of life and personal injury“ (‘No severity at all’ (1) - ‘Extreme severity’ (7))- concerned group

# percent.unconcerned: Percentage estimate of listeners who received the unconcerned statement
# sev.general.unc: „How severe do you think an increase in precipitation will be by the 2050s in London?“ (‘No severity at all’ (1) - ‘Extreme severity’ (7)) - unconcerned group
# sev.income.unc: „Loss of income and delayed economic development“ (‘No severity at all’ (1) - ‘Extreme severity’ (7)) - unconcerned group
# sev.contamination.unc: „Contamination and disease from flood and sewer water“ (‘No severity at all’ (1) - ‘Extreme severity’ (7)) - unconcerned group
# sev.property.unc: „Direct damage to property, infrastructure and utilities“ (‘No severity at all’ (1) - ‘Extreme severity’ (7)) - unconcerned group
# sev.life.unc: „Loss of life and personal injury“ (‘No severity at all’ (1) - ‘Extreme severity’ (7))- unconcerned group
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NEP.limit - NEP.catastrophe: items measuring environmental values adopted from the New Ecological Paradigm Scale (NEP), by Dunlap et al., (2000)
BNT.choir-BNT.dieodd: Items measuring numeracy, adaptive version of the Berlin Numeracy Test, Cokely et al., 2012
BNT.puzzles: Manipulation check

age: Age of participants in years (in 2016)
male: Gender
female: Gender
other: Not female or male
education from 1 (less than high school) to 5 (college)
polaffiliation. Political affiliation, from 1 (strong democrat) to 7 (strong republican)
polaffiliation.other: did they indicate another political affiliation than measured via polaffiliation? (Open question)

feedback: Feedback for the study

browser-rts2097120: Admin variables from Unipark

Recoded variables

condition2: experimental condition („concerned“/ „unconcerned“ verbal statement received)

sev.general.all: Responses from sev.general and sev.general.unc

sev.income.all: Responses from sev.income and ev.income.unc

sev.contamination.all: Responses from sev.contamination and sev.contamination.unc

sev.property.all: Responses from sev.property and sev.property.unc

sev.life.all: Responses from sev.life and sev.life.unc

percent.all: Responses from percent and percent.unc

Mean_Severity: Average answer across sev.general.all, sev.income.all, sev.contamination.all, sev.property.all, sev.life.all

Mean_Severity4: Average answer across sev.income.all, sev.contamination.all, sev.property.all, sev.life.all

condition: Experimental condition. 1 = concerned, 0 = unconcerned

Mean_NEP: Average NEP value, as average answer on variables NEP.limit - NEP.catastrophe

Numeracy: Level of Numeracy, calculated from BNT.choir - BNT.dieodd (1: very low - 4: very high)

manipulation check: 3 is correct answer. If other number: Did not answer manipulation check correctly

polaffiliation.recoded: All participants who gave open answers on polaffiliation.other, were recoded so that they fit into the scale described for variable polaffiliation

duration.min: duration/60

Exclusion: Not used

Z-standardized variables for analysis

ZMean_Severity.all: Z-standardised Mean_Severity.all

ZMean_Severity.all4: Z-standardised ZMean_Severity.all4
ZSeverity2: Z-standardised sev.general
Zpercent.all: Z-standardised Percent.all
ZMean_NEP: Z-standardised Mean_NEP
Zpolaffiliation.recoded: Z-standardised polaffiliation.recoded
ZNumeracy: Z-standardised Numeracy
ZAge: Z-standardised age
ZEducation: Z-standardised Education

4. Description of Codefile models_speakers_replicationApril2017

Logistic regression analysis for dataset speaker2.RData: Modeling speakers choices of verbal frames for summarising climate projection; using variables from speaker2.RData

5. Description of Codefile models_speakers_replicationApril2017

Linear regression analysis for dataset listener2.RData: Modeling listeners Mean perceived severity of consequences of climate change choices, dependent on verbal statement received, using variables from speaker2.RData