Modelling

Model Comparison

Below are the results of the group-level model comparisons as reported in the paper. The main interpretations are described there, but here we have included the model coefficients and post hoc comparisons for the best model for each of group level analyses to support those interpretations.

Excluding contested condition (independent v dependent)

	model	excluded_condition	all_looic	all_se	model_rank
1	group-prior	contested	26952	103	4
2	group-prior-consensus	contested	26946	103	3
3	group-prior-consensus-claim	contested	26493	111	1
4	group-prior-consensusXclaim	contested	26496	111	2

Excluding dependent condition (independent v contested)

	model	excluded_condition	all_looic	all_se	model_rank
1	group-prior	dependent	27693	100	4
2	group-prior-consensus	dependent	26633	116	3
3	group-prior-consensus-claim	dependent	26565	117	2
4	group-prior-consensusXclaim	dependent	26335	121	1

Estimates

Note that "pre" responds to participants' prior beliefs. The response outcome is belief after reading the tweets, which was a scale from 1-100 (same as the prior scale, see Method section of paper). "Adjusted" corresponds for the fact that we reverse scored prior and post beliefs on trials where the consensus was arguing against the claim (see manuscript).

Since these are unstandardized coefficients, the prior coefficient needs to be interpreted slightly differently compared to the others. The prior coefficient indicates how much of an increase in the "post" belief was associated with a single unit increase in the prior. So, because both the prior and post are on scales from 1-100, in the first model comparison, the prior coefficient can be interpreted as for every unit increase in peoples' prior belief, their post belief updated by .666. The other predictor variables were categorical, so the coefficients are generally much larger. For example, b_consensusindependent below can be interpreted as post scores being larger by 1.678 in independent consensus trials compared to dependent consensus trials.

As shown below, none of the 89% credible intervals for the post hoc comparisons of main effects and interactions intersected with zero, suggesting that they were all reasonably reliable.

Excluding contested condition (independent v dependent)

Note that the reference level for each categorical variable is the one that is not listed (e.g., for claim_type it is knowableEyewitness).

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# Coefficient estimates of the best model (m3) and the lower and upper 89% credible inter
vals of the estimates.

                                Estimate   Lower   Upper
b_Intercept                       42.896  40.789  44.977
b_pre_adjusted                     0.666   0.648   0.684
b_consensusindependent             1.678   0.725   2.620
b_claim_typeKnowableFacts         -2.706  -4.055  -1.329
b_claim_typeUnknowableExpert     -12.420 -13.816 -11.054
b_claim_typeUnknowablePreference -15.898 -17.271 -14.512

# post hoc comparisons of the best model

 contrast                                      estimate lower.HPD upper.HPD
 Knowable Eye witness - Knowable Facts             2.71      1.33      4.03
 Knowable Eye witness - Unknowable Expert         12.42     11.02     13.77
 Knowable Eye witness - Unknowable Preference     15.90     14.47     17.21
 Knowable Facts - Unknowable Expert                9.71      8.29     11.06
 Knowable Facts - Unknowable Preference           13.19     11.80     14.48
 Unknowable Expert - Unknowable Preference         3.48      2.12      4.85

Results are averaged over the levels of: consensus
Point estimate displayed: mean
HPD interval probability: 0.89
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Excluding dependent condition (independent v contested)

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                                                  Estimate   Lower   Upper
b_Intercept                                          9.541   7.817  11.263
b_pre_adjusted                                       0.716   0.698   0.733
b_consensusindependent                              32.895  31.117  34.678
b_claim_typeKnowableFacts                            1.904   0.034   3.759
b_claim_typeUnknowableExpert                         6.404   4.585   8.206
b_claim_typeUnknowablePreference                     4.206   2.330   6.020
b_consensusindependent:claim_typeKnowableFacts      -4.648  -7.203  -2.058
b_consensusindependent:claim_typeUnknowableExpert  -18.784 -21.359 -16.173
b_consensusindependent:claim_typeUnknowablePreference -21.488 -24.128 -18.802
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You may have noticed that the main effects reported above seem to suggest that people found knowable eyewitness claims *less* convincing compared to all the other claim types, which is at odds with what we reported in the manuscript. However, the estimates above are misleading because in an interaction model, the main effects become conditional on the interacting variable being at its reference level. In the above case, the reference level of the consensus variable is "contested", and scores tended to follow the reverse trend in that condition. When we instead look at the scores of each claim_type level while *averaging across* the consensus conditions, (i.e., by inspecting the coefficients of the model that does not include the interaction) we observed the trend reported in the paper. See below for post hoc comparisons for the interaction model.

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# post hoc comparisons
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contrast	estimate	lower.HPD	upper.HPD
Knowable Eye witness contested - Knowable Facts contested	-1.90	-3.71	-0.0143
Knowable Eye witness contested - Unknowable Expert contested	-6.40	-8.10	-4.5202
Knowable Eye witness contested - Unknowable Preference contested	-4.21	-6.03	-2.3498
Knowable Eye witness contested - Knowable Eye witness independent	-32.90	-34.63	-31.0764
Knowable Eye witness contested - Knowable Facts independent	-30.15	-31.93	-28.2900
Knowable Eye witness contested - Unknowable Expert independent	-20.51	-22.40	-18.6755
Knowable Eye witness contested - Unknowable Preference independent	-15.61	-17.38	-13.7160
Knowable Facts contested - Unknowable Expert contested	-4.50	-6.41	-2.7632
Knowable Facts contested - Unknowable Preference contested	-2.30	-4.10	-0.3702
Knowable Facts contested - Knowable Eye witness independent	-30.99	-32.82	-29.1070
Knowable Facts contested - Knowable Facts independent	-28.25	-30.08	-26.3915
Knowable Facts contested - Unknowable Expert independent	-18.61	-20.46	-16.6782
Knowable Facts contested - Unknowable Preference independent	-13.71	-15.68	-11.9267
Unknowable Expert contested - Unknowable Preference contested	2.20	0.33	4.0595
Unknowable Expert contested - Knowable Eye witness independent	-26.49	-28.42	-24.7904
Unknowable Expert contested - Knowable Facts independent	-23.75	-25.65	-21.8483
Unknowable Expert contested - Unknowable Expert independent	-14.11	-16.04	-12.2953
Unknowable Expert contested - Unknowable Preference independent	-9.21	-11.09	-7.4396
Unknowable Preference contested - Knowable Eye witness independent	-28.69	-30.48	-26.9966
Unknowable Preference contested - Knowable Facts independent	-25.95	-27.79	-24.0970
Unknowable Preference contested - Unknowable Expert independent	-16.31	-18.07	-14.2726
Unknowable Preference contested - Unknowable Preference independent	-11.41	-13.32	-9.5231
Knowable Eye witness independent - Knowable Facts independent	2.74	0.93	4.5304
Knowable Eye witness independent - Unknowable Expert independent	12.38	10.52	14.1399
Knowable Eye witness independent - Unknowable Preference independent	17.28	15.46	19.1727
Knowable Facts independent - Unknowable Expert independent	9.64	7.91	11.6290
Knowable Facts independent - Unknowable Preference independent	14.54	12.73	16.4984
Unknowable Expert independent - Unknowable Preference independent	4.90	3.01	6.8053

Point estimate displayed: mean

HPD interval probability: 0.89