# 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).

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

### Excluding dependent condition (independent v contested)

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

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.

# post hoc comparisons

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