**Supplementary Analyses**

The following analyses explore whether the Face-Hand Congruency effects on Accuracy and RT in Study 1 were moderated by the specific facial expression, hand gesture, or actor identity of the stimuli. The addition of these categorical predictor variables with 6, 4, and 4 levels, respectively, led us to treat them as dummy variables in our linear mixed-effects models. Below, we interpret any significant interactions between a dummy variable and the Face Hand Congruency effect. Because the multiple comparisons made in each set of analyses inflates the family-wise error rate, we provide Bonferroni adjusted p values. Due to repeated convergence failures (with many random effects resulting from the many dummy variable terms and their interactions with other variables), the mixed-effects models are specified differently from the key models reported in the main text.

**Study 1: Supplementary Accuracy Analyses**

**Comparing congruency effects across facial expressions.** To investigate the possibility that the hypothesized Congruency effect would be moderated by the specific facial expression, we ran additional linear mixed-effects models with Accuracy regressed on dummy variables for Facial Expression (6 levels) interacting with Congruency. We specified random slopes for the interaction terms, Facial Expression variables, and Congruency. To allow for model convergence, we constrained the correlations between random effects to 0. We repeated this 5 times, releveling the reference level for the dummy-coded Facial Expression variable to generate all between-emotion comparisons. Here we report only the significant Facial Expression dummy variable \* Congruency estimates, as these indicate whether the Congruency effect was greater for one emotion versus another. We report Bonferroni adjusted p values. In several cases where models failed to converge, we removed the random slopes for Congruency since we were primarily interested in the effects of Facial Expression.

The Congruency effect was stronger for Happiness than all the negative facial expressions: compared to Anger, *b* = 0.155, *SE* = 0.025, *t*(74.80) = 6.31, adj. *p* < .001; Disgust, *b* = 0.150, *SE* = 0.025, *t*(73.00) = 5.92, adj. *p* < .001; Fearful Surprise, *b* = 0.152, *SE* = 0.026, *t*(71.40) = 5.97, adj. *p* < .001; and Sadness, *b* = 0.160, *SE* = 0.025, *t*(75.40) = 6.54, adj. *p* < .001.

The Congruency effect was also stronger for Positive Surprise than all the negative facial expressions: compared to Anger, *b* = 0.106, *SE* = 0.026, *t*(71.20) = 6.31, adj. *p* = .002; Disgust, *b* = 0.101, *SE* = 0.027, *t*(69.60) = 3.77, adj. *p* = .005; Fearful Surprise, *b* = 0.104, *SE* = 0.027, *t*(68.20) = 3.83, adj. *p* = .004; and Sadness, *b* = 0.111, *SE* = 0.026, *t*(71.50) = 4.29, adj. *p* < .001.

**Comparing congruency effects across gestures.** We repeated the same procedure as above, but this time comparing the relative Congruency effects for each gesture category. The Fist gesture exhibited a stronger congruency effect than all other stimuli: compared to Thumbs-Up, *b* = 0.088, *SE* = 0.013, *t*(61.00) = 6.89, adj. *p* < .001; A-OK, *b* = 0.099, *SE* = 0.010, *t*(366.00) = 9.79, adj. *p* < .001; and *b* = 0.065, *SE* = 0.010, *t*(366.00) = 6.46, adj. *p* < .001. The Congruency effect was stronger for trials involving the Thumbs-Down gesture compared to both the Thumbs-Up gesture, *b* = 0.023, *SE* = 0.007, *t*(61.00) = 3.48, adj. *p* = .006 and the A-OK gesture, *b* = 0.034, *SE* = 0.010, *t*(366.00) = 3.33, adj. *p* = .006.

To summarize the gesture- and facial expression-specific effects reported here is that, for the expressive categories used in the current study, positive faces with negative gestures are the most ambiguous type of stimulus, compared to congruent hand-face pairs or negative faces with positive gestures.

**Comparing congruency effects across actors.** We then repeated the same procedure as above, but this time treated actor identity as a variable with both fixed and random effects and allowed this dummy-coded variable (with 4 levels) to interact with Congruency. The only significant interaction with Congruency was for the parameter comparing Actors #2 and #7, with a stronger Congruency effect for Actor #7, *b* = 0.035, *SE* = 0.013, *t*(678.00) = 2.77, adj *p* = .035.

**Study 1: Supplementary Reaction Time Analyses**

**Comparing congruency effects across facial expressions.** We regressed adjusted RTs on the Congruency \* Attention Instructions \* Facial Expression (dummy coded) 3-way interaction, plus all 2-way interactions and main effects. In order to achieve model convergence, we eliminated the by-item random effects structure and included as by-subject random slopes the 2-way interactions involving Congruency, and all 3 main effects. Since there are 6 facial expression categories to be compared, we re-leveled the Facial Expression categorical predictor and 5 times, rerunning the model with different facial expressions as the reference level. Here we report the significant differences in Congruency effects between facial expression categories, but see the R Markdown output file for all model estimates.

The Congruency effect (the slower RTs on incongruent compared to congruent trials) was weaker for Happiness compared to Anger *b* = 0.080, *SE* = 0.020, *t*(278.38) = 3.99, adj. *p* = .001. The Congruency effect was also weaker for Positive Surprise compared to: Anger, *b* = 0.119, *SE* = 0.022, *t*(169.15) = 5.44, adj. *p* < .001; Fearful Surprise, *b* = 0.107, *SE* = 0.032, *t*(66.59) = 3.41, adj. *p* = .017; and Sadness, *b* = 0.090, *SE* = 0.029, *t*(69.05) = 3.08, adj. *p* = .044. These results suggest, again, that mismatches between positively valenced facial expressions and negatively valenced gestures do not produce as much interference in categorization compared to negative facial expressions with positive gestures.

**Comparing congruency effects across gestures.** We repeated the same procedure as for Facial Expression, using dummy-coded Gesture as the added variable in the model and re-leveling it for 3 separate analyses, allowing for all pairwise comparisons between the 4 gestures. After applying Bonferroni correction for multiple comparisons, the only significant Congruency \* Gesture model estimate to emerge indicated that the Congruency effect was weaker for the A-OK gesture compared to the Thumbs-Down gesture, *b* = -0.075, *SE* = 0.026, *t*(66.80) = -2.86, adj. *p* = .034.

**Comparing congruency effects across actors.** Using the same procedure as above for Facial Expression and Gesture, but substituting fixed and random effects for Actor, we did not find any significant differences in Congruency effects between actors (adj. *p* values >= .900). This suggests the effect of incongruent face-hand pairs on categorization reaction times did not depend on actor identity.

**Are congruency effects the result of carry-over effects from one block to the next?** A final post hoc analysis explored whether the effect of Face-Hand Congruency was moderated by the trial number within a given block. The reasoning behind asking this question is that interference effects on RT from incongruent face-hand stimuli may result primarily from the fact that participants had to switch their attentional task between blocks. Their responses on a face-attend trial may have been slowed not because they could not ignore the task-irrelevant gesture, but because in the previous block they were supposed to attend to the block and were experiencing carry-over effects or confusion about the task. We therefore re-ran the model reported in the main text with the Face-Hand Congruency \* Attentional Instructions \* Participant Gender interaction and all by-subject and by-item random effects, and added a separate 2-way interaction between Face-Hand Congruency and a unit-weighted, centered variable representing the Within-Block Trial Number. This interaction term was not significant, suggesting the carry-over explanation cannot account for the Face-Hand Congruency effect observed in the present study, *b* = 0.009, *SE* = 0.015, *t*(114.10) = 0.618, *p* = .538.