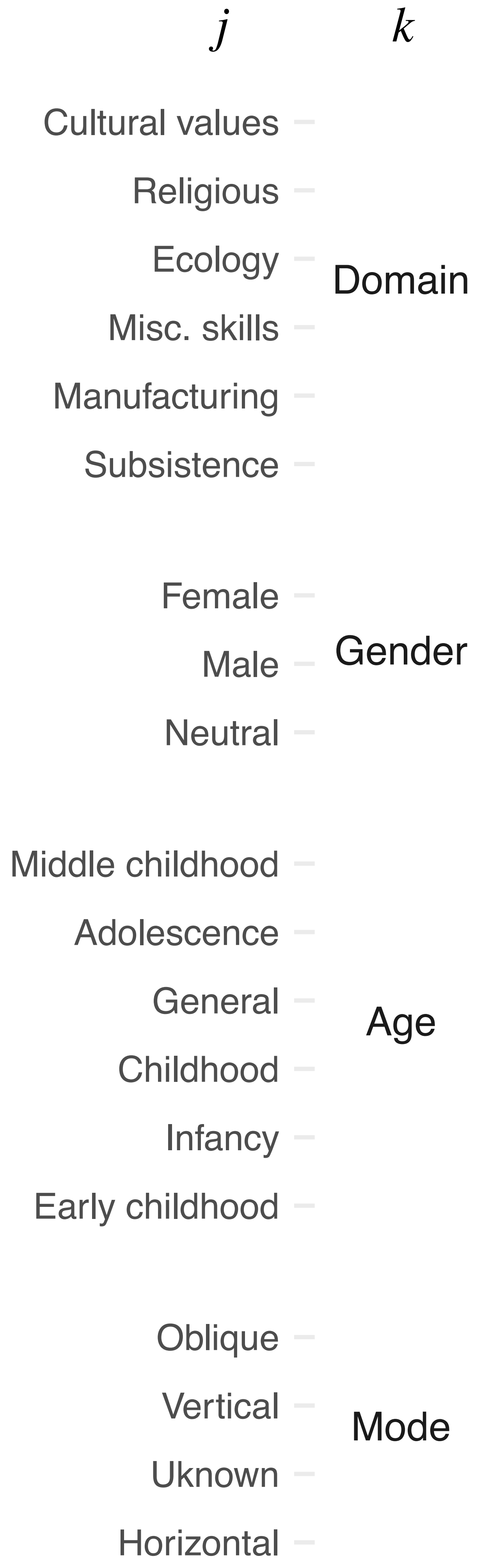
Predictors of evidence for teaching

Teaching vs. other processes



Using other coded variables to predict teaching vs. non-teaching social learning at the instance level

Multi-level logistic regression, index variable approach

Random effects for paragraph, document

Model

$$E(logit[P(y_i = 1)]) = \alpha_{j[i]} + \epsilon_i, for\ i = 1, \ldots, n,$$

Where $y_i = 1$ is evidence for teaching in a given instance i and $\alpha_j = \alpha + \sum_1^k r_{k,j} \sim N(\alpha, \sigma^2_{\alpha_j})$ is an "adjusted" mean for group j of categorical predictor k. Here, $r_{k,j}$ is a group-level effect of the k predictor.

The random effect for each index variable k is, $\alpha_j = \alpha + r_j \sim N(\alpha, \sigma^2_{\alpha_j})$ is interpreted as an "adjusted" mean for group j. Here, r_j is an group-level effect.

Priors

$$\alpha \sim Student - T(3, 0, 2.5)$$
$$sd_k \sim Student - T(3, 0, 2.5)$$
$$z_k \sim Normal(0, 1)$$

This model involves the use of non-centered parameterization for group-level coefficients, i.e., it defines the independent standard normal coefficient z_k as parameters and then scales them according to the standard deviations sd_k.

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