Supplement

Table S1: Glossary of important terms in Bayesian modelling used in this paper

Term	Description
Parameter	A parameter is a number that defines a model's characteristics. For instance, regression coefficients are parameters that show the strength and direction of a relationship between variables. Models also have other parameters, like sigma (σ), which measures the average prediction error.
Effect size	Effect size is a statistical measure that quantifies the strength of a relationship between variables, in regression modelling typically between predictor and outcome.
Prior distribution	The prior distribution is a probability distribution that represents one's initial belief or existing knowledge about an unknown parameter before considering the current data. The prior is specified as distribution to express the uncertainty about our knowledge – we never know the exact relationship between predictor and outcome.
Location / Scale	A (prior) distribution is defined by certain parameters. For instance, a normal distribution is characterized by its mean (location) and standard deviation (scale). When we incorporate prior knowledge in our models, we make assumptions about the most likely value for the effect size of interest (location) and about the range of still plausible values (scale).
Likelihood function	The likelihood function connects our hypothesis (the prior distribution) to our evidence (the collected data). Its primary job is to update our prior knowledge, based on the data and to transform it into a posterior "belief", the posterior distribution. Very roughly speaking, this is the "estimation procedure for regression coefficients".
Posterior distribution	The posterior distribution represents our updated belief about a model parameter after we have considered the evidence (the data). It is the result of combining our initial belief (prior distribution) with what we learned from our data (likelihood). The posterior distribution is a collection of thousands of parameter estimates generated by a computational sampling process. This distribution represents all plausible values for a parameter based on the model. We can summarize this distribution to make inferences: the mean or median provides the single best estimate (like a regression coefficient), while quantiles create an uncertainty interval showing a range of credible values. Using summary statistics like mean or quantiles is also common in frequentist regression modelling, e.g. after bootstrapping, which produces many "bootstrap samples" for our parameter values.