

Judicial decision-making

Based on scientific evidence

A mixed methods approach

A study based on interviews with criminal court judges.

Criminal courts are increasingly called to deal with and understand scientific evidence relating to defendants' biology and behavior.

The present study represents a comprehensive approach to understanding how bio-behavioral scientific evidence influences judicial decision-making.

We interviewed 34 U.S. judges, collecting data from a survey experiment, quantitative measures, and open-ended questions.

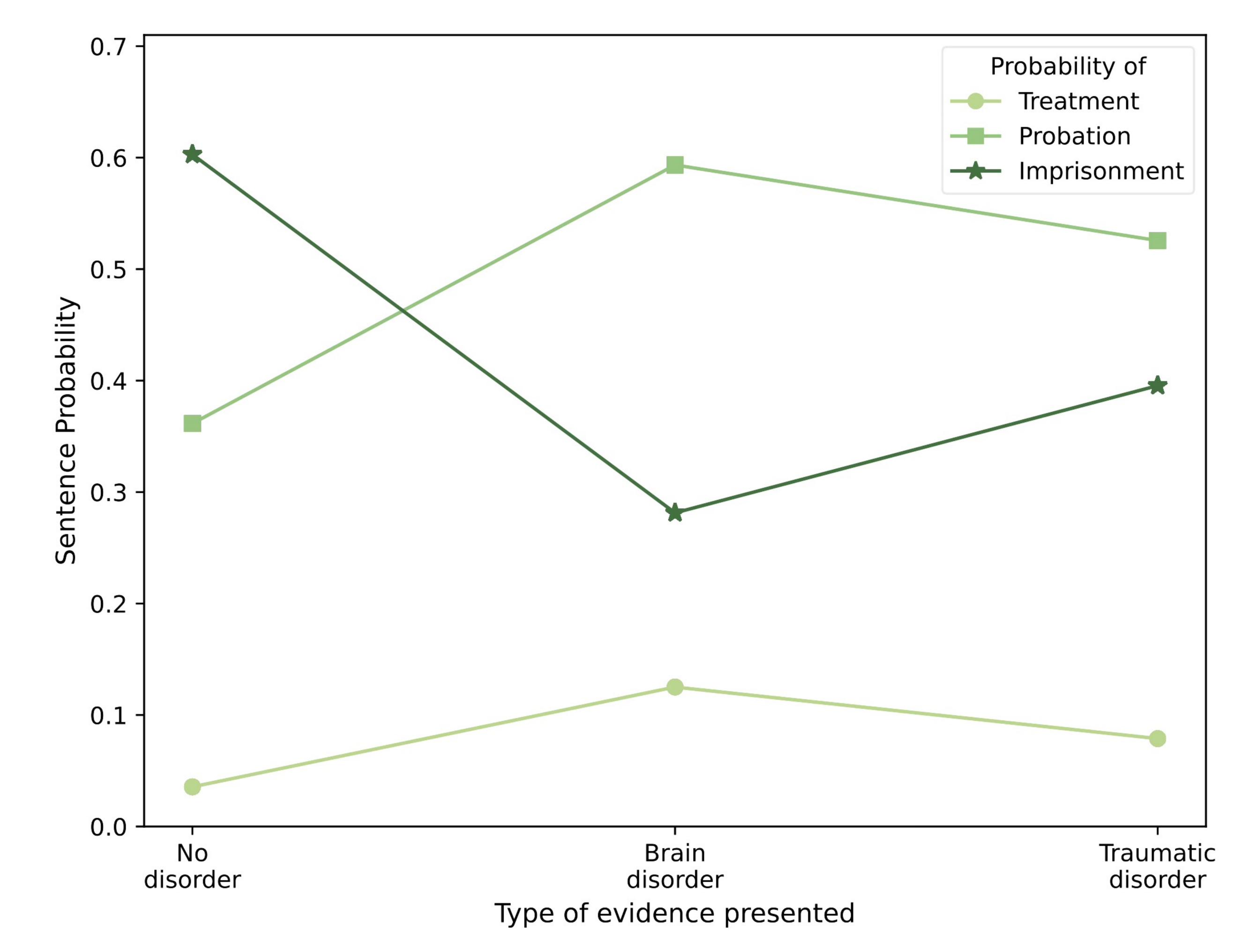
We analyzed this extensive dataset using quantitative statistics (regressions), Natural Language Processing (sentiment analysis and structural topic models), as well as qualitative analysis (thematic coding).

We illuminated judges' decision-making process when faced with scientific explanations of behavior and uncovered important group differences.

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← Figure 1. Judge demographics

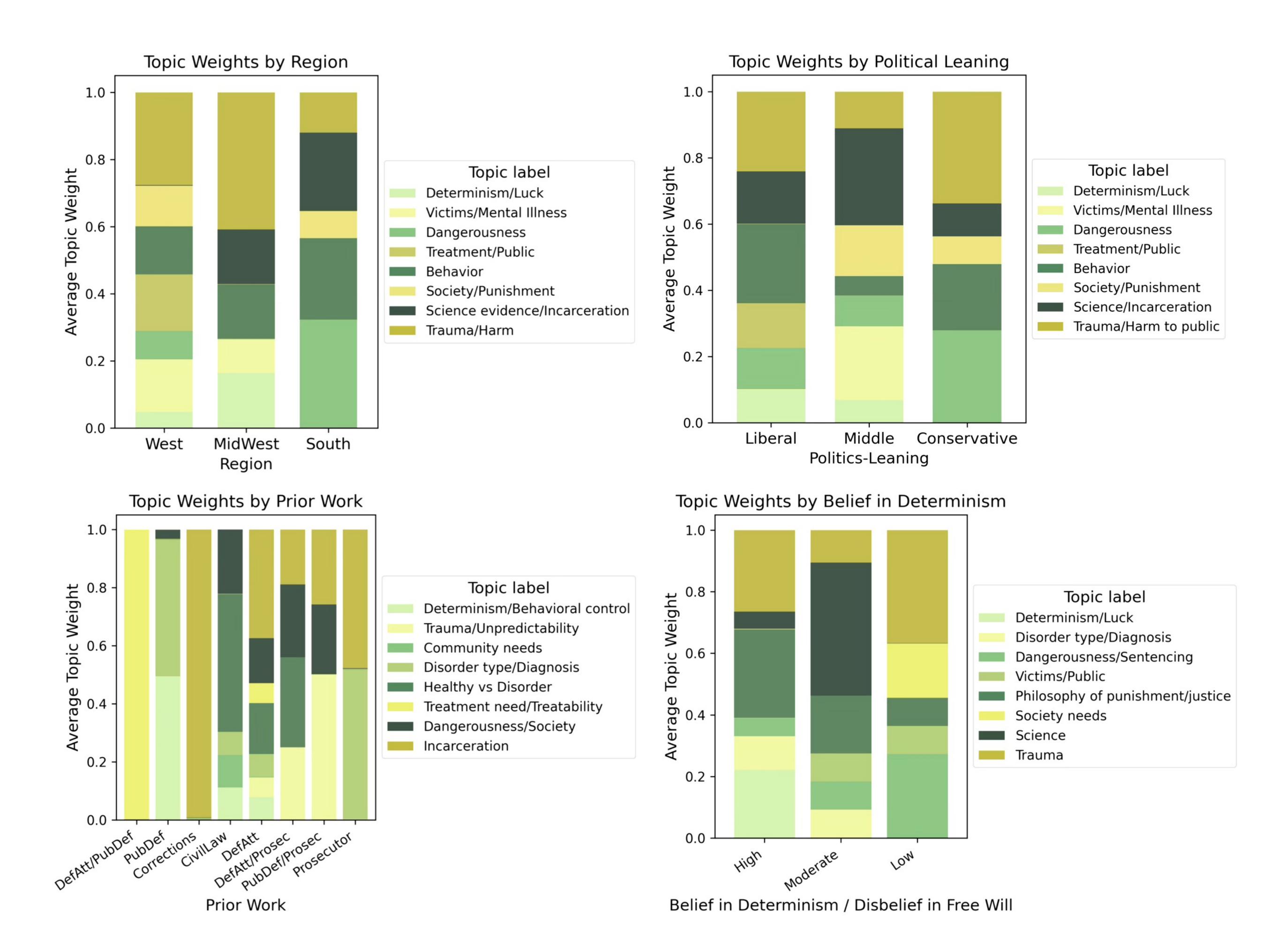
Analysis



Quantitative

A logistic regression revealed differences in judges' hypothetical sentencing decisions when mental disorder evidence was presented.

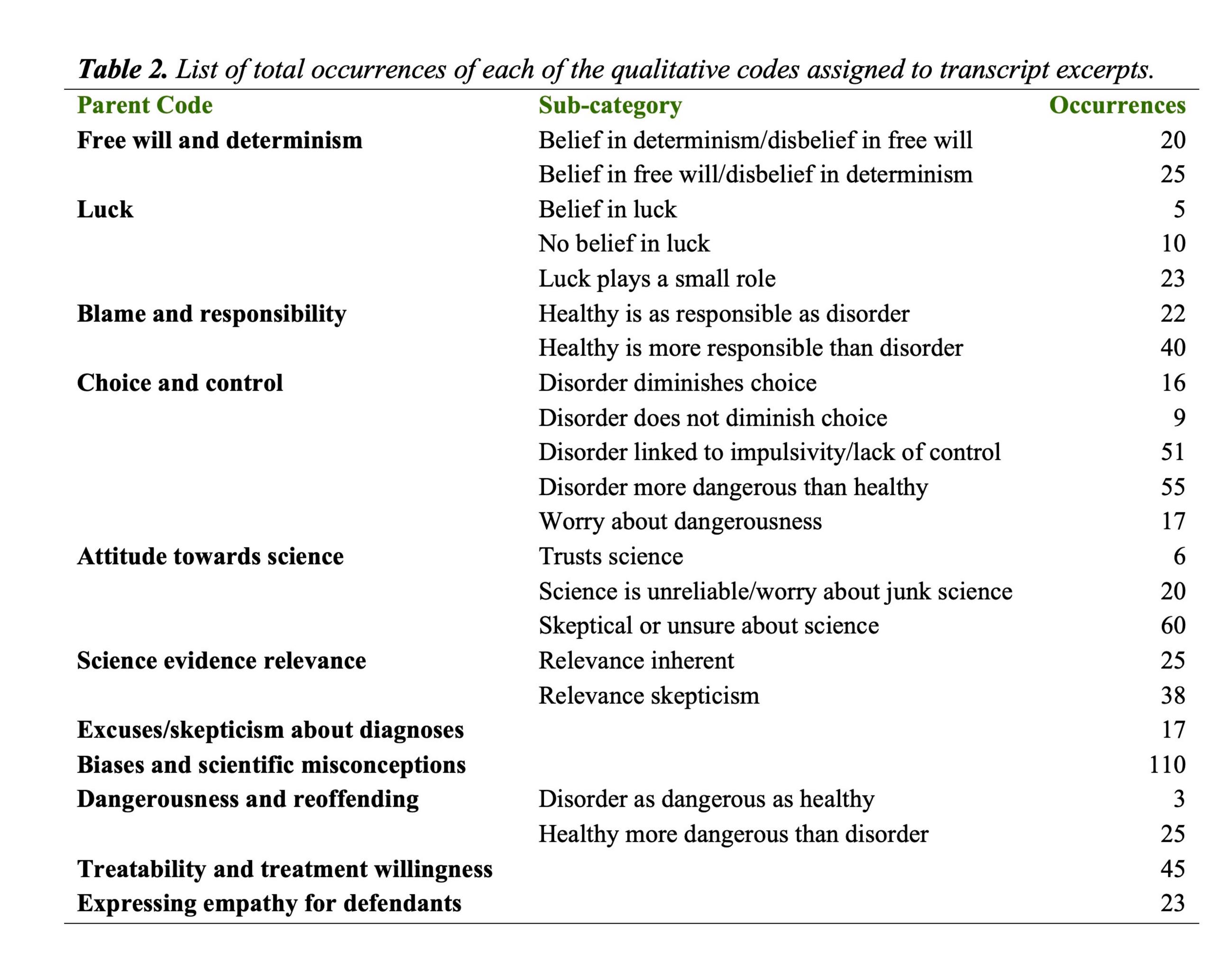
Pairwise p < 0.05



Natural Language Processing (NLP)

Judges focused on different influences on their decision-making depending on location, prior work, political leaning, and belief in free will.

Structural Topic Model with Metadata



Qualitative

We identified over a dozen themes in judges' interview transcripts and further categorized them into contrasting opinions.

Identified 3 Axial Coding Categories