

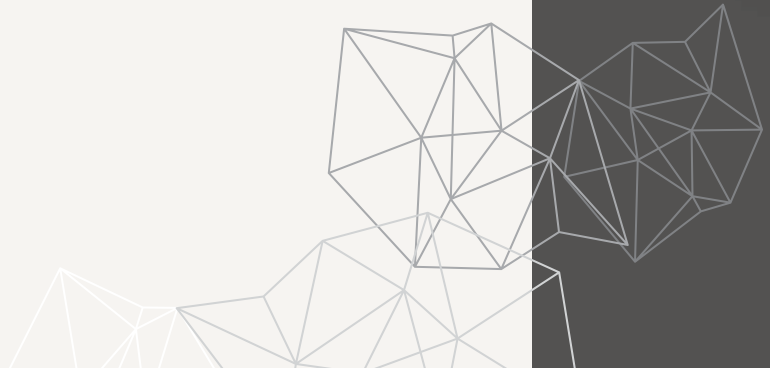
Toulouse, June 2025

Rethinking Sentencing Research

Scoping Literature Review, Upgraded

ESELS Conference

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WISHING FOR A DIFFERENT REVIEW

A literature review, but also setting the foundation for modelling sentencing as a structured decision-making environment.

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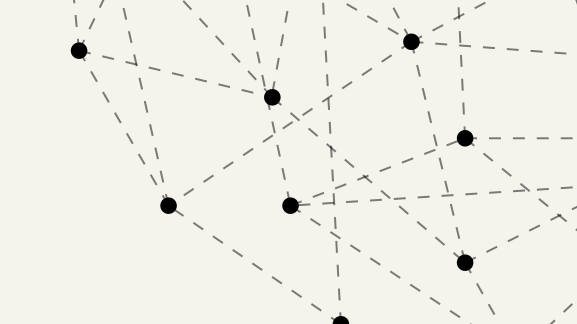
WHAT DOES SENTENCING SCHOLARSHIP SAY?

→ Identify key themes, methods, jurisdictions, gaps

2

WHAT IS SENTENCING AS AN ENVIRONMENT?

→ Longer-term aim: define actors, tools, processes



Why is this hard?

SENTENCING SCHOLARSHIP

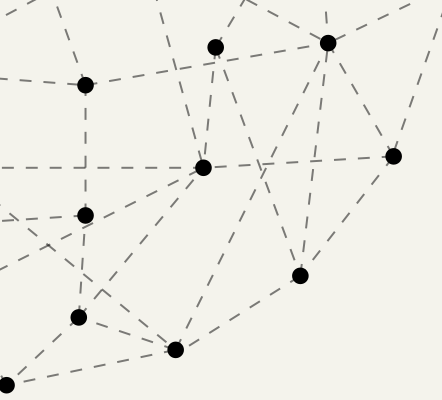
- Interdisciplinary
- Methodologically diverse
- Nationally grounded and shaped by legal traditions
- Views sentencing as shaped by law, but also by institutional, individual, and cultural factors, but varied viewpoints are not always in dialogue with one another

CHOICE ARCHITECTURE

- Rooted in behavioural economics and cognitive psychology
- Focused on how contextual design influences decisions
- Experimental, often abstracted from institutional specifics
- Views decision-making as bounded, biased, and modifiable through design

They differ in vocabulary, methodologies and assumptions about how decisions are made.

The challenge: how to bring them together without overlooking their differences.



Why not a traditional review?

LIMITS OF MANUAL REVIEWS

- Small-scale
- Language-limited
- Highly time-consuming and labour-intensive
- Prone to selection bias
- Lacking in transparency (implicit criteria)
- Ill-suited for cross-jurisdictional or interdisciplinary synthesis

WHAT WE WANT?

- To capture the widest possible range of sources (disciplines, languages, jurisdictions)
- To build the foundation for a sentencing architecture
- Most importantly, an approach that is:
 - Large-scale
 - Uniform
 - Efficient
 - Structured and reviewable

A review process that is scalable, transparent, and open: capable of mapping the full landscape of sentencing research.

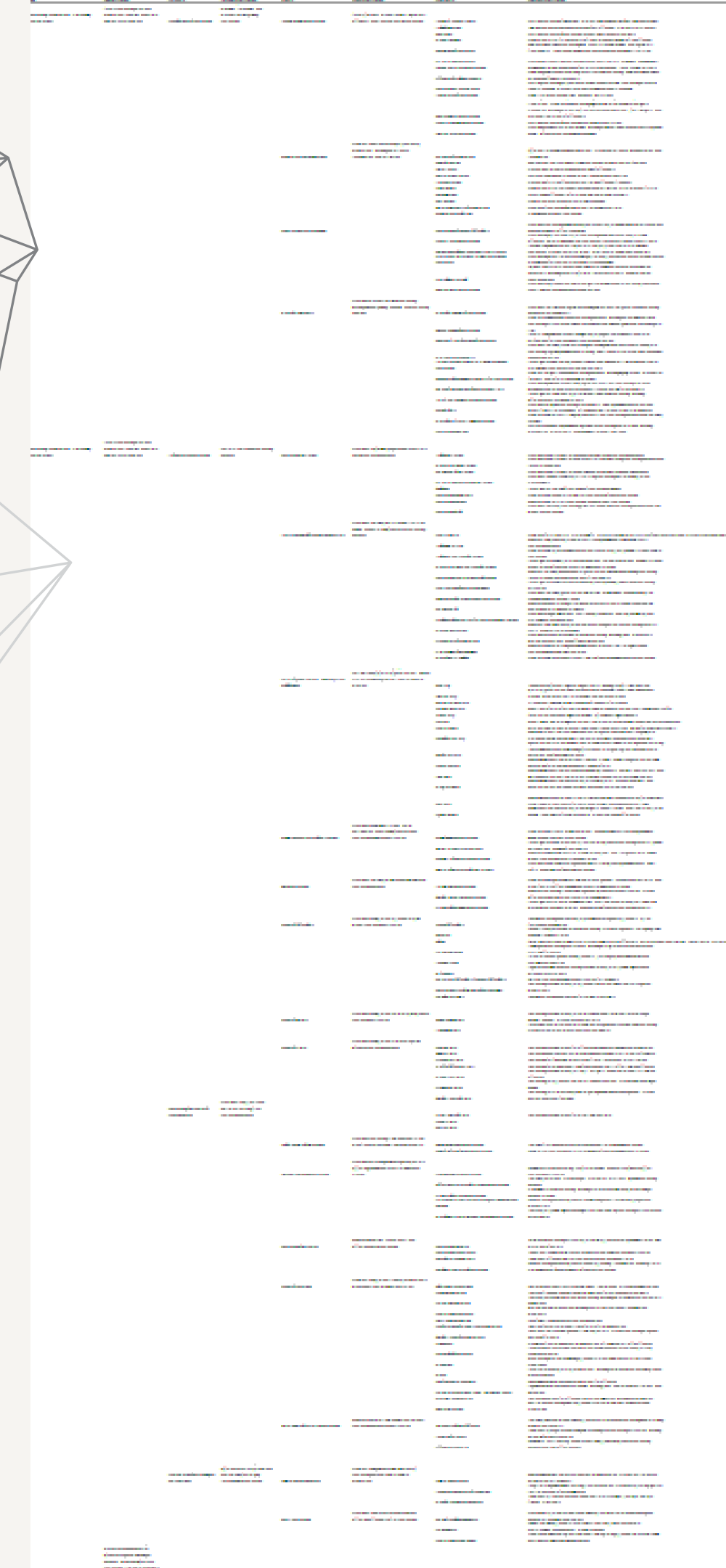
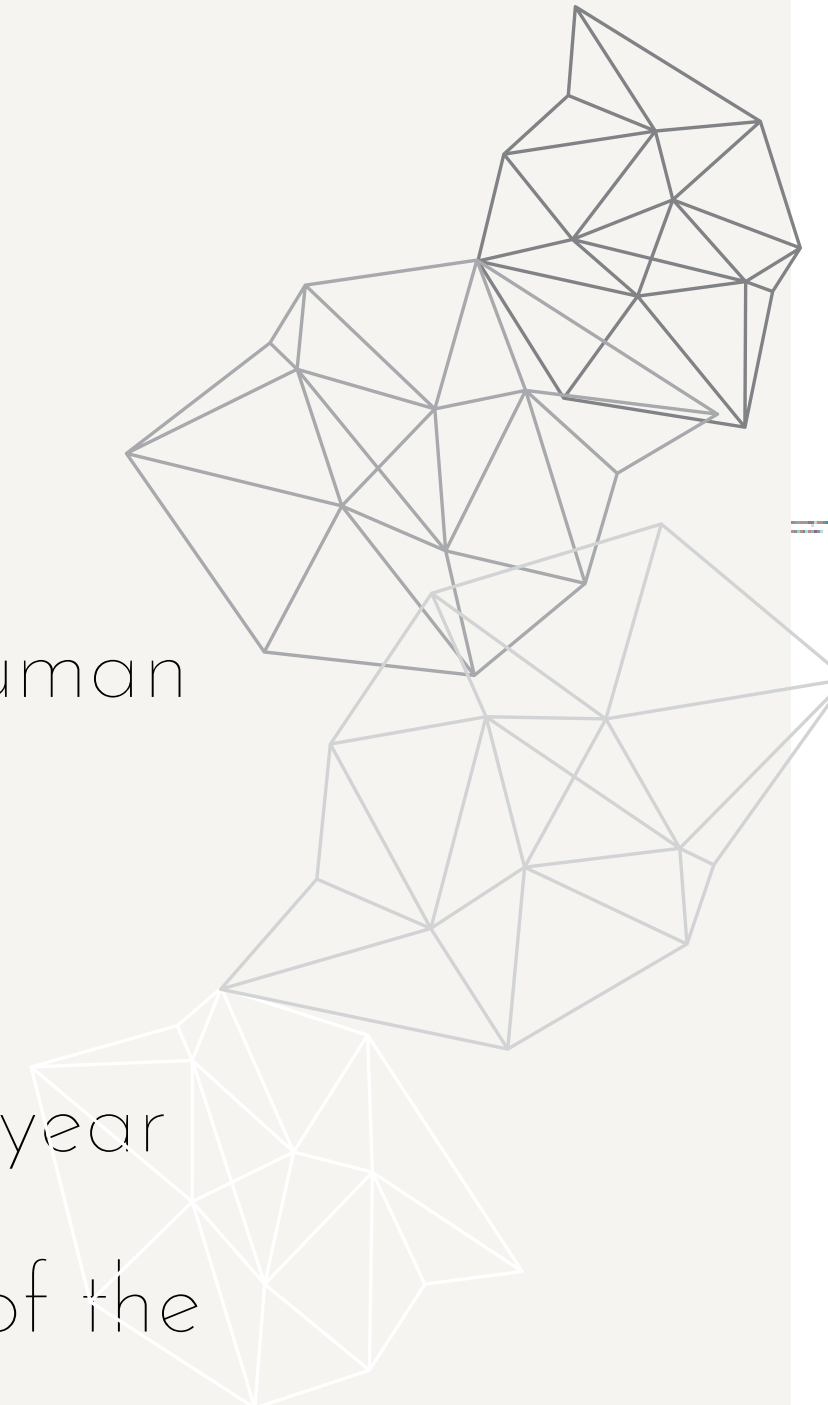


Our starting point

WHAT WE STARTED TO DO

- Build a taxonomy of >280 themes (e.g., human rights in sentencing)
- Use ChatGPT to read papers and ...
 - assign themes
 - prepare structured abstracts
 - extract additional information (authors, year of publication ...)
- Create a searchable, mappable structure of the literature

We thought this would be straightforward – and that scale could be managed by rules.



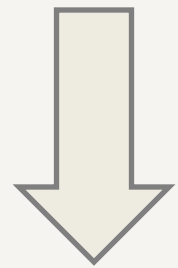
What happened instead?

- Weekly team meetings turned into **continuous iteration**
- Our spreadsheet grew exponentially in **complexity**: the more detailed we got, the harder it became to agree

THE PROBLEMS

- Loads of **variation**
 - Human-human (Inter-rater variation)
 - Human-AI („Extra-rater“ variation)
 - AI-AI (Cross-model variation)
- Themes began to **pre-shape findings** instead of letting findings emerge

Started of as a
way of classifying
papers



A shift from
classifying papers
to understanding
the space
between them.

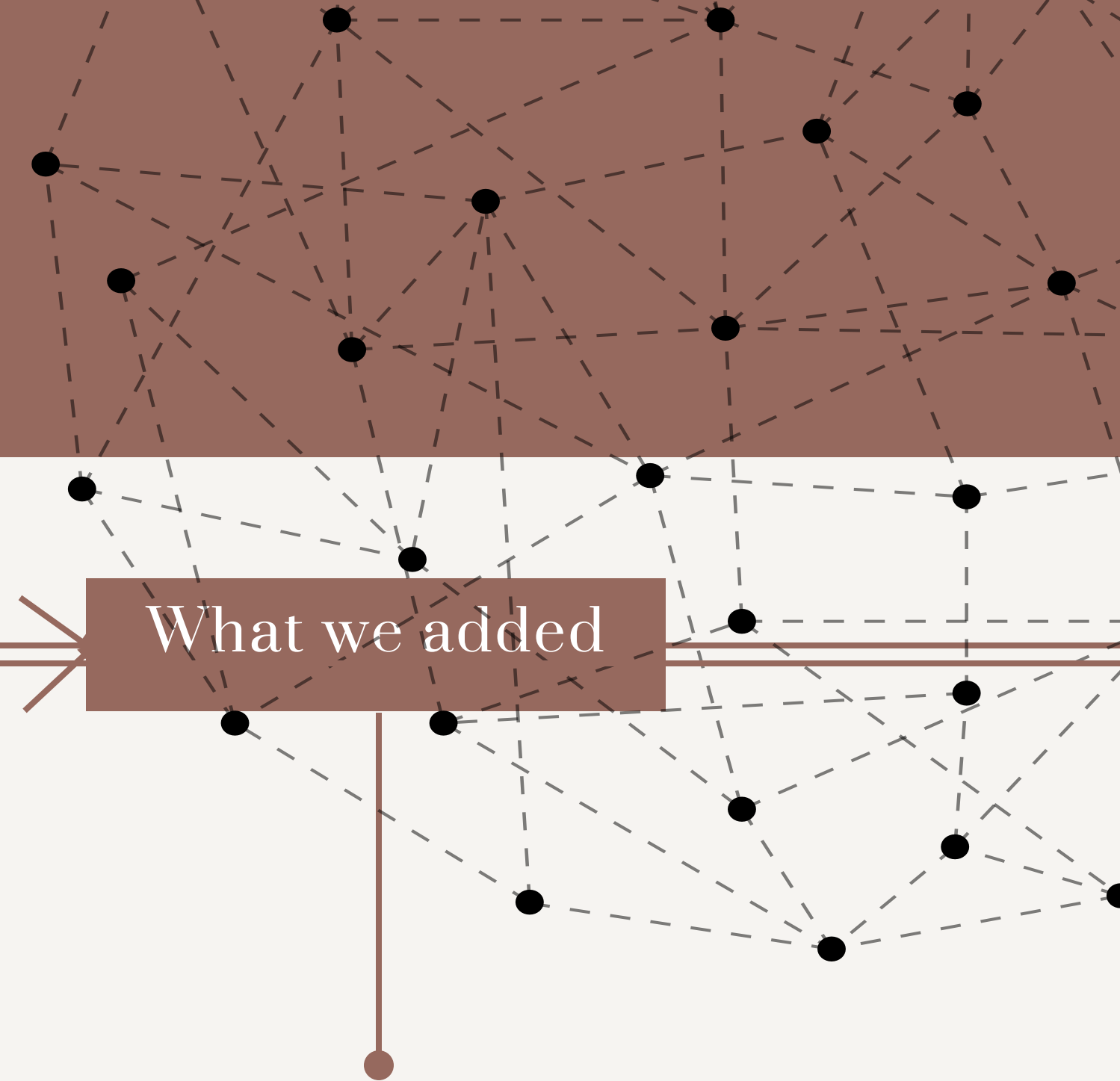
What we're actually doing?

What we kept

- Structured abstracts (ChatGPT-generated)
- A lot of other information about the papers
- Themes & subthemes
- Methodology
- Relevance of papers for the Sentrrix project

What we added

- **Embeddings** to compare papers semantically, not just by assigned themes
- A shift from “categorising papers” to understanding their relationships



Structured abstracts

Building comparable narratives

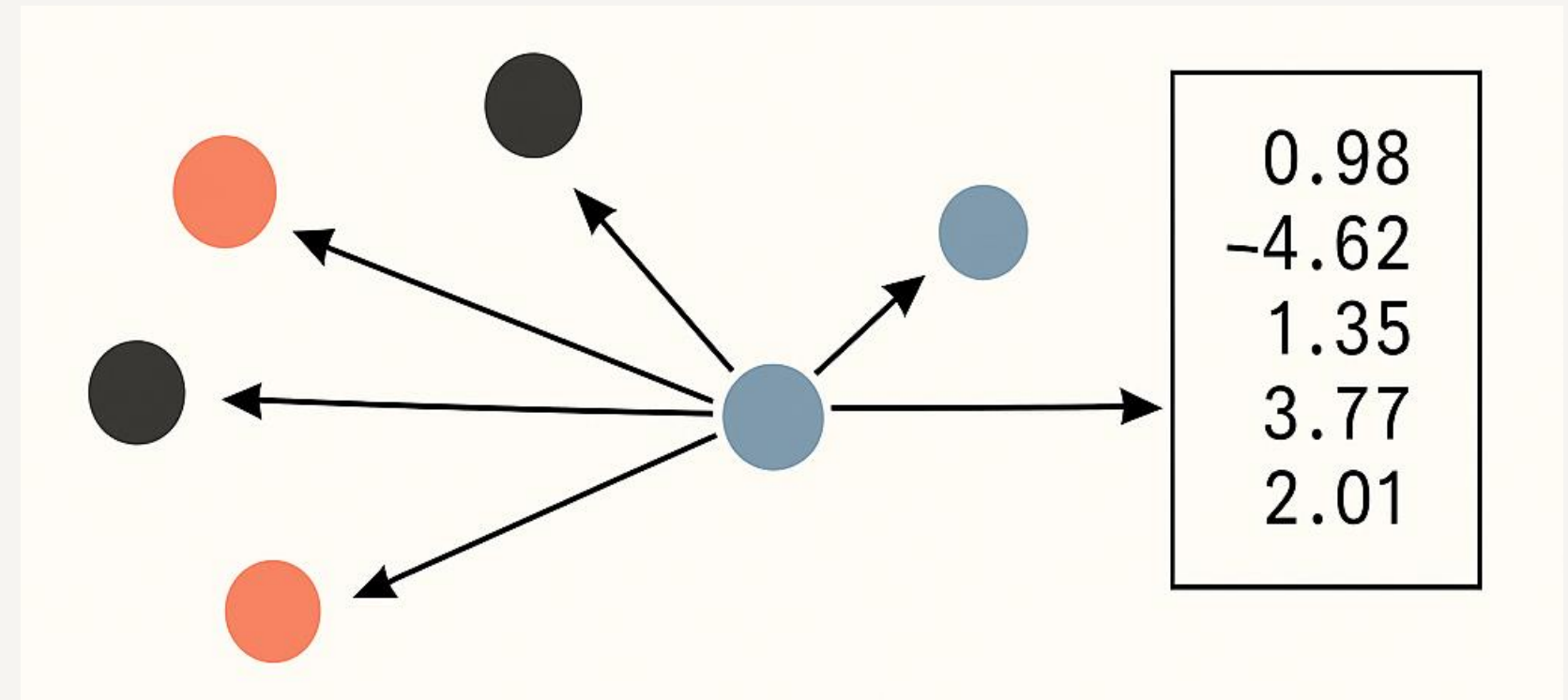
What they are?

- Each paper summarised using a ~400-word structured abstract, generated by ChatGPT
- Based on a detailed prompt with four consistent sections:
 - Background / Context
 - Objectives / Focus
 - Methods / Approach
 - Findings / Insights

Why they matter?

- Make papers comparable across disciplines, jurisdictions, and methods

Embeddings



1

WHAT ARE THEY?

= a way of converting text (a paper, theme, or sentence) into a numeric vector – a list of numbers that captures its meaning.

2

HOW WE USE THEM?

Texts similar in meaning end up close together in a mathematical space – even if they don't use the same words.

Embeddings as method

From labels to relationships

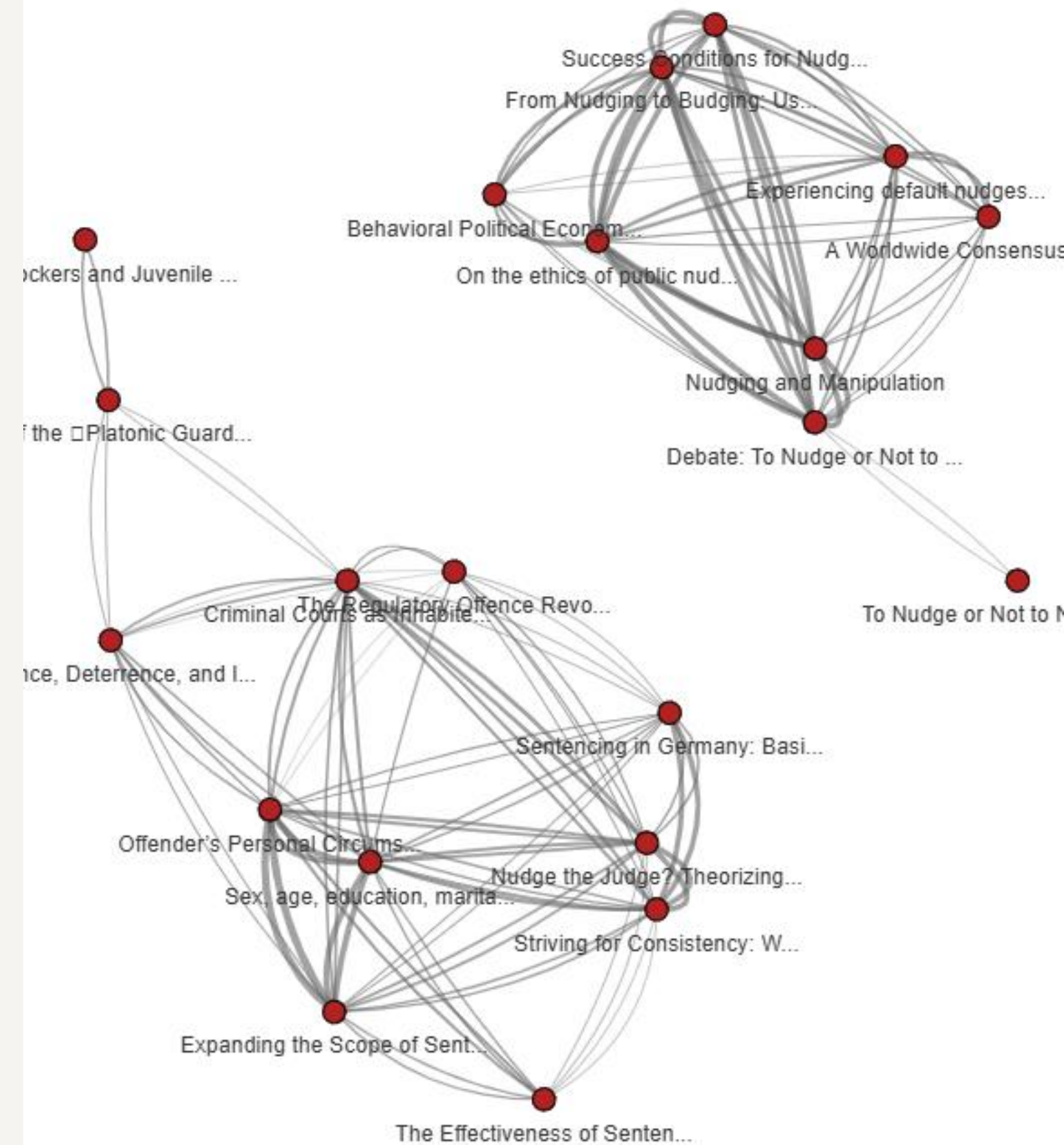
USE OPEN.AI EMBEDDINGS TO:

Represent papers, themes, methods and project documents as vectors
Compare them semantically

hopefully THIS ENABLES

Discovery of hidden structure
Theme-agnostic similarity
Mapping of new conceptual spaces

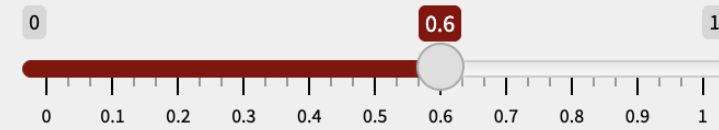
Moves beyond surface labels → captures
deep conceptual proximity





Similarity between papers

Similarity threshold:

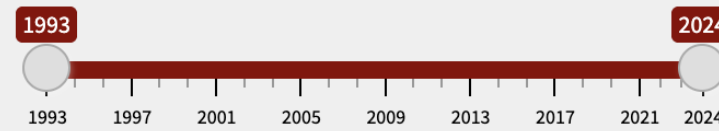


Similarity based on:

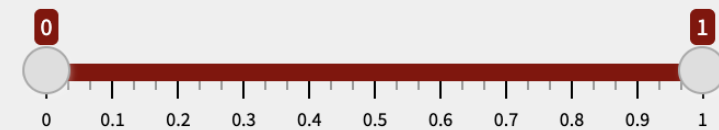
Full-text chunks

Paper characteristics

Publication year:



Relevance for SENTRIX:



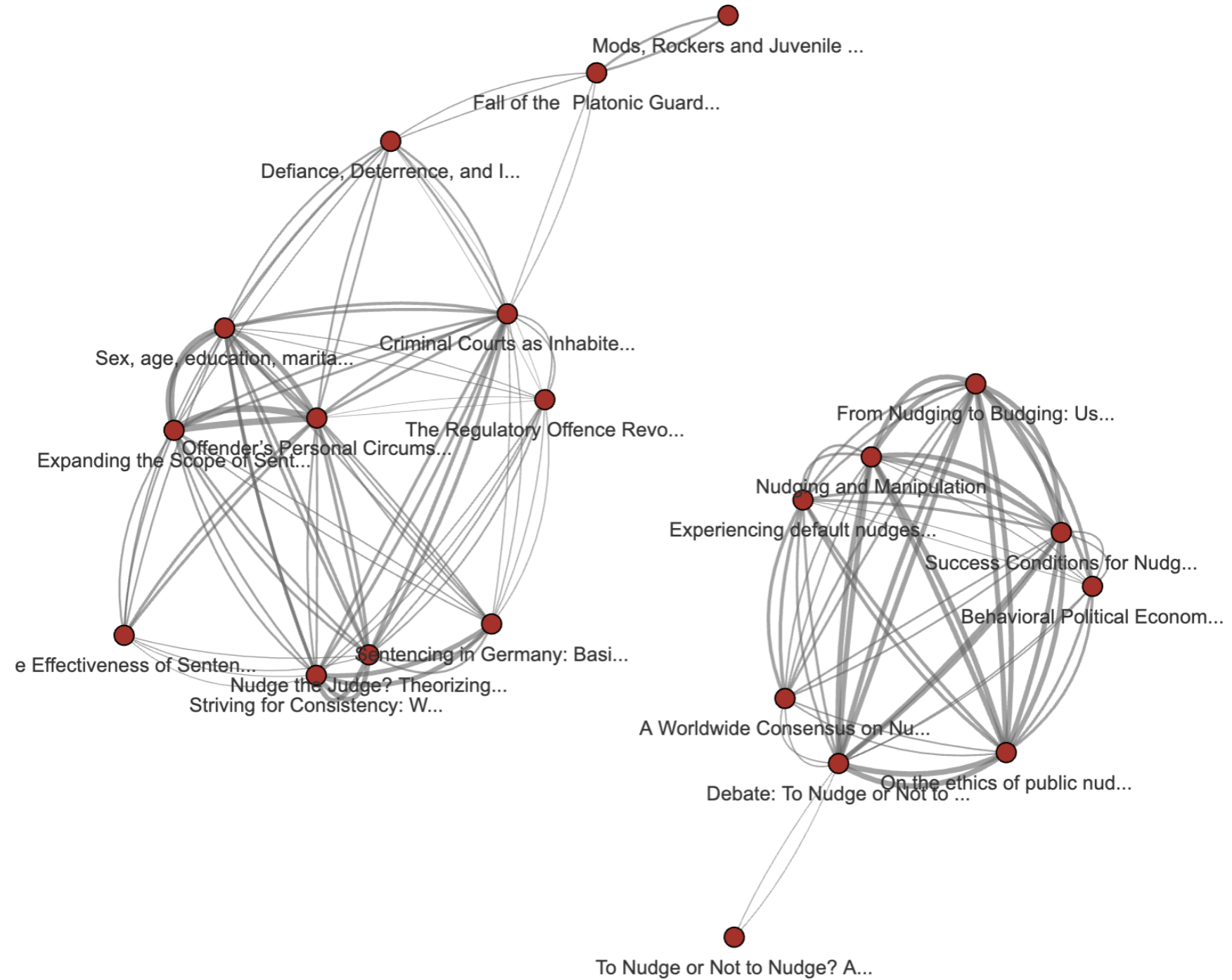
Focus:

Sentencing Decision-making

Main field:

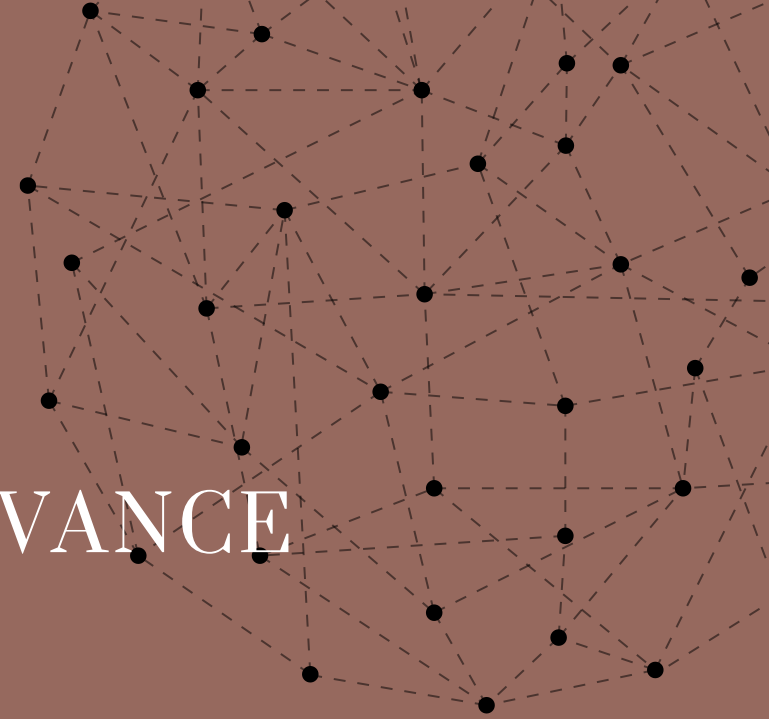
Law Criminology Sociology
Political science History Philosophy
Psychology Economics

Select a paper



The analytical engine behind the map

COMPARING PAPERS, THEMES, METHODS, AND ASSESSING RELEVANCE



Paper - Paper

Discovering
clusters, bridges,
and blind spots

Paper - Theme

Learning which
topics are (not)
popular

Paper - Method

Seeing the field
through the
methodology lens

Paper - Project

Bringing the most
relevant papers to
the foreground



Looking ahead

Modelling the sentencing environment

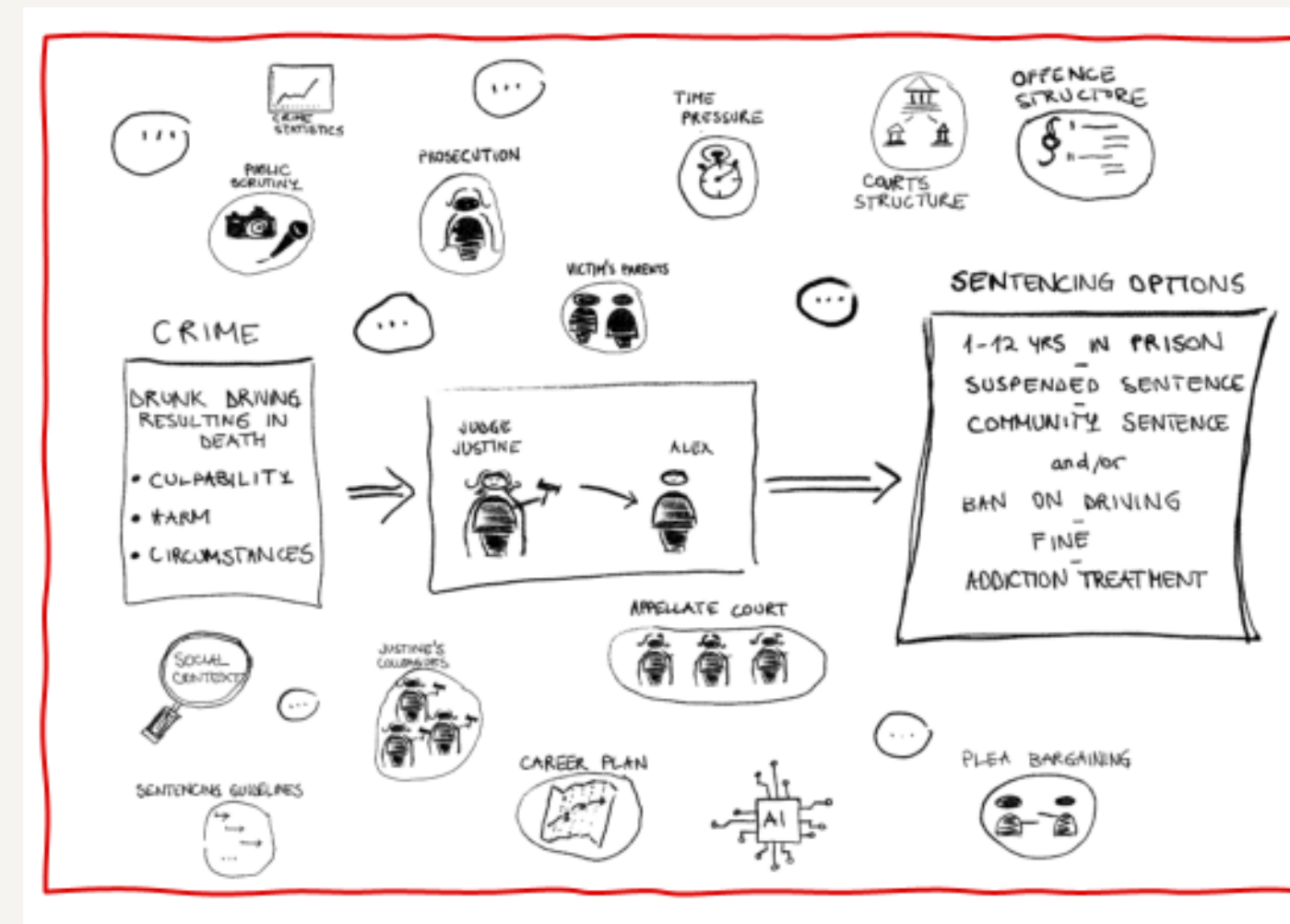
WHAT ARE WE ASKING?

What are the latent elements that structure sentencing as a decision-making environment?

What parts of this environment are well-represented in the literature—and what's missing?

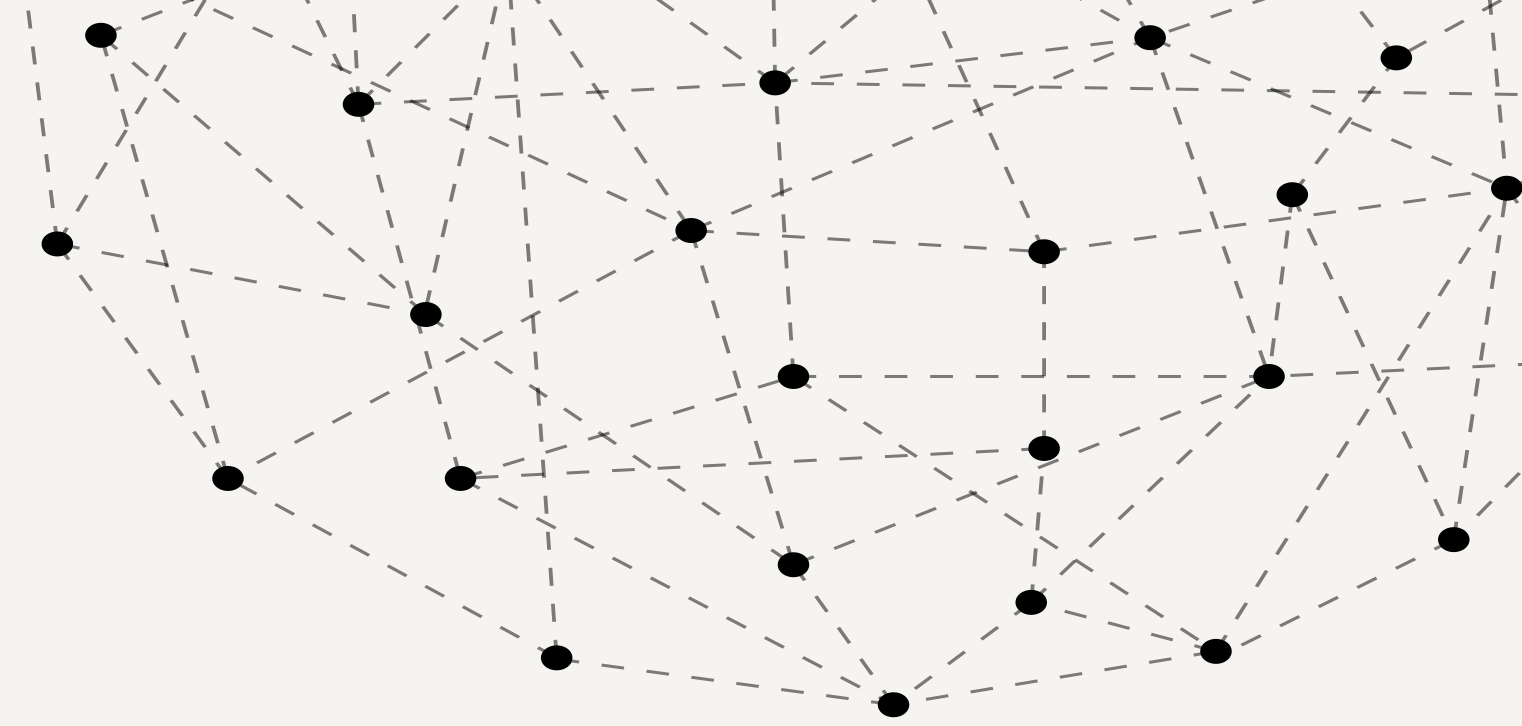
HOW ARE WE DOING IT?

- Create a rich network of papers that can be searched, filtered, and visualized based on a large set of their properties



Broader value?

A replicable way of doing literature review



Our approach is ...

- Replicable
- Transparent
- Flexible
- Scalable

Useful beyond
sentencing?

- Other legal domains
- Other interdisciplinary spaces



Thank you.

We welcome all and any
feedback!

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