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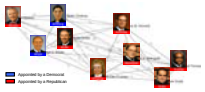
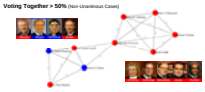
Network Derived Educational Visualizations of the Work of the United States Supreme Court

Ideological Landscape of the Justices (1994 – 2003)

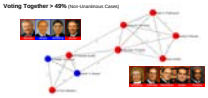


Voting frequencies represented as the edge weight between nodes and presented visually as a graph. Scalia and Thomas vote most frequently together and are joined least frequently by Stevens. O'connor, and to a lesser extent Kennedy, are the judges most likely to join the liberal members of the Court. (Rendered with Pajek using a stochastic, spring force algorithm.)

Voting Together > 50% (Non-Unanimous Cases)

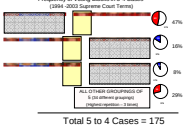


Voting Together > 45% (Non-Unanimous Cases)



Swing Vote Status of O'Connor and Kennedy

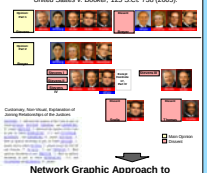
Frequency of Voting Blocks in 5-4 Cases
(1994 -2003 Supreme Court Terms)



Total 5 to 4 Cases = 175

Visualizing Complex Joining Patterns

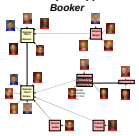
United States v. Booker, 125 S.Ct. 738 (2005).



Cumbersome, Non-Visual, Explanation of Joining Relationships of the Justices

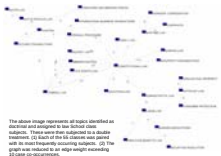
Majority Opinion Excerpt

Network Graphic Approach to *Booker*



Base Map Creation

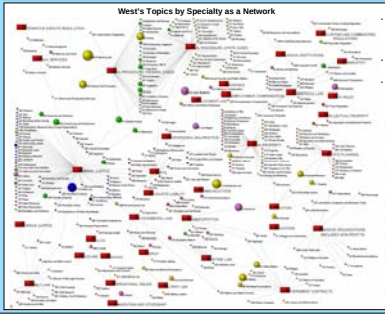
- **GOAL**: Create a topical Base Map to serve as a common reference point on which to layer additional information
- **Technique 1** – Use the co-occurrence of top level West topics (Key Numbers) to render the topical adjacencies of American case law.
- There are three types of West top level topics:
  - Doctrinal (blue – Torts, Contracts)
  - Factual (red – Automobiles, Aviation)
  - Procedural (Federal Civil Procedure, Courts)
- **PROBLEM** – The three types can co-occur in a wide variety of cases. For instance, procedural topics may co-occur with just about any factual or substantive topic.
- This creates an interconnected mess when visualized with spring force algorithms.



- **DATASET** - The dataset consists of:
- All top level West topics assigned to United States Supreme Court cases from the 1944 term through the end of the 2004 term and their co-occurrence.
- 7,948 unique cases to which 19,789 topic assignments have been made.
- Of the 405 topics in the West taxonomy, 291 appear in opinions issued by the Supreme Court for this time period.
- This results in 22,345 edges with 3742 unique topic pairings.

The above image represents all topics identified as doctrinal and assigned to law school class subjects. These were then subjected to a double treatment. (1) Each of the 55 classes was paired with its most frequently occurring subjects. (2) The graph was reduced to an edge weight exceeding 10 case co-occurrences.

West's Topics by Specialty as a Network



- The domain map to the left is the network relationship of all West Topics by Specialty minus the 20% most tenuous topics that pulled everything to the center.
- The topic assignments are more from the perspective of a practitioner than a law student.
- Note the lack of treatment of Constitutional Law.

2004 Supreme Court Term West Topic Space (Procedural Topics Removed)