

The United States Supreme Court: Visualizations and Metrics (60 Years of Data)



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September 18, 2004

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SLIS Research Forum



Overall Goals

- Gain insight into the work of the Supreme Court.
- Implement visualization tools for legal scholars to evaluate the work of the Court.
- Create visually rich teaching aids for legal instruction. (Concept Maps)



Origin of the Data

- All Supreme Court Opinions with West Topic headings
- 1944 term through the 2003 term
- Harvested and cleaned by hand
- From the Westlaw proprietary database

WEST Topics

410 U.S. 113

ROE v. WADE

705

Cite as 98 S.Ct. 705 (1973)

410 U.S. 113, 35 L.Ed.2d 147

Jane ROE, et al., Appellants,

v.

Henry WADE.

No. 70-18.

Argued Dec. 13, 1971.

Reargued Oct. 11, 1972.

Decided Jan. 22, 1973.

Rehearing Denied Feb. 26, 1973.

See 410 U.S. 959, 93 S.Ct. 1409.

Action was brought for a declaratory and injunctive relief respecting criminal abortion laws which claimed to be unconstituti

declaratory aspects of case attacking constitutionality of Texas criminal abortion statutes where case was properly before Supreme Court on direct appeal from decision of three-judge district court specifically denying injunctive relief and the arguments as to both aspects were necessarily identical. 28 U.S.C.A. § 1253.

2. Constitutional Law ⇨42.1(3), 46(1)

With respect to single, pregnant female who alleged that she was unable to

[16] KeyCite Notes

⇨4 Abortion and Birth Control

⇨4k1.20 Constitutional and Statutory Provisions

⇨4k1.30 k. Validity of Statute. Most Cited Cases (Formerly 4k1)



Data Elements

- Case Name
- Date of Issue
- Chief Justice at Date of Issuance
- Topics Assigned by West Publishing
- Categories of topics (from West)
- Sub-Categories of Topics (from West)

92	Constitutional Law	Adderley v. State of Fla.,	11/14/1966	Warren	7. GOVERNMENT	B. Systems and Sources of Law
386	Trespass	Adderley v. State of Fla.,	11/14/1966	Warren	4. TORTS	4. TORTS
170B	Federal Courts	Adderley v. State of Fla.,	11/14/1966	Warren	7. GOVERNMENT	D. Judicial Powers and Functions,
360	States	Adderley v. State of Fla.,	11/14/1966	Warren	7. GOVERNMENT	A. Political Bodies and Divisions
110	Criminal Law	Adderley v. State of Fla.,	11/14/1966	Warren	5. CRIMES	5. CRIMES



TEMPORAL INSIGHTS

TIMESEARCHER SOFTWARE: Human Computer Interaction
Laboratory at the University of Maryland.

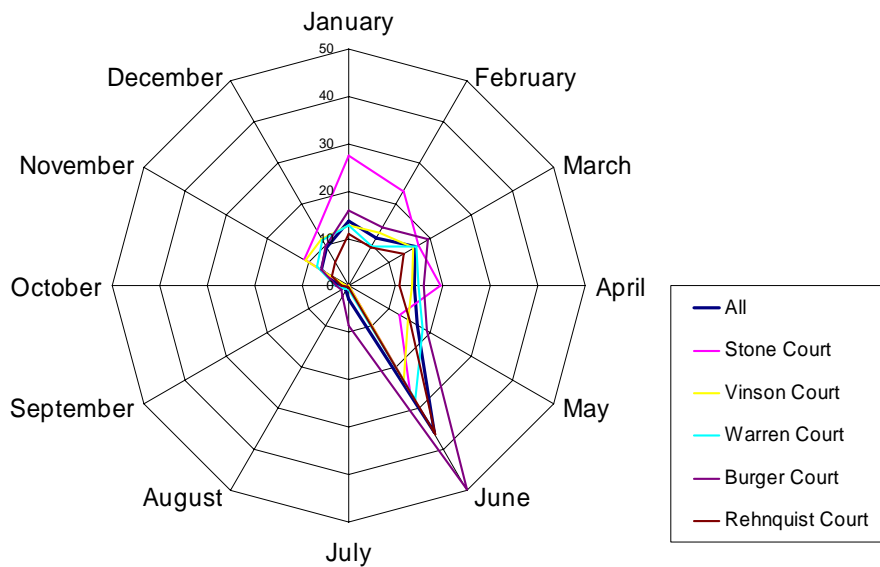
Hochheiser, H., Shneiderman, B. *Visual Specification of Queries for Finding Patterns in Time-Series Data* Proceedings *Discovery Science 2001*. Available at:
<http://www.cs.umd.edu/hcil/timesearcher/>.

Cases With West Topics Per Month Per Court (of the United States Supreme Court)

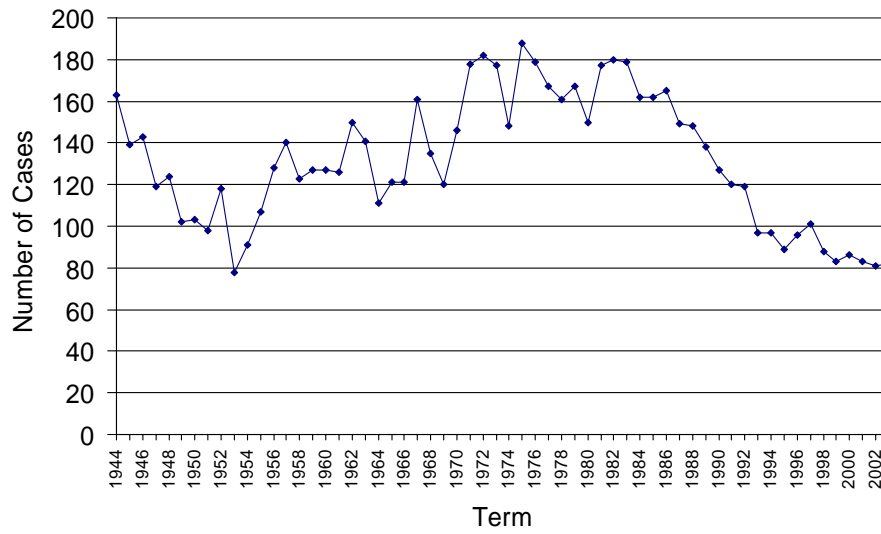


	ALL YEARS Nov. 1944 to Aug. 2004			STONE COURT July 1941 to June 1946			VINSON COURT July 1946 to Sept. 1953			WARREN COURT Oct. 1953 to June 1969			BURGER COURT July 1969 to Sept. 1986			REHNQUIST COURT Oct. 1986 to Aug. 2004		
	Total Cases	Number of Months	Cases Per Month	Total Cases	Number of Months	Cases Per Month	Total Cases	Number of Months	Cases Per Month	Total Cases	Number of Months	Cases Per Month	Total Cases	Number of Months	Cases Per Month	Total Cases	Number of Months	Cases Per Month
JAN.	812	60	14	55	2	28	89	7	13	202	16	13	270	17	16	196	18	11
FEB.	695	60	12	46	2	23	91	7	13	152	16	10	236	17	14	168	18	9
MAR.	980	60	16	34	2	17	111	7	16	263	16	16	329	17	19	243	18	14
APR.	833	60	14	39	2	20	94	7	13	237	16	15	269	17	16	194	18	11
MAY	1008	60	17	25	2	13	102	7	15	289	16	18	322	17	19	270	18	15
JUN.	2162	60	36	52	2	26	162	7	23	446	16	28	846	17	50	656	18	36
JUL.	173	60	3	0	1	0	0	8	0	12	15	1	151	18	8	10	18	1
AUG.	68	60	1	0	1	0	2	8	0	15	15	1	43	18	2	8	18	0
SEP.	55	59	1	0	1	0	1	8	0	17	15	1	34	18	2	3	17	0
OCT.	125	59	2	1	1	1	4	7	1	47	16	3	45	17	3	28	18	2
NOV.	404	60	7	22	2	11	73	7	10	124	16	8	114	17	7	71	18	4
DEC.	553	60	9	27	2	14	79	7	11	180	16	11	165	17	10	102	18	6
	7868	718	11	301	20	15	808	87	9	1984	189	10	2626	207	14	1949	215	9

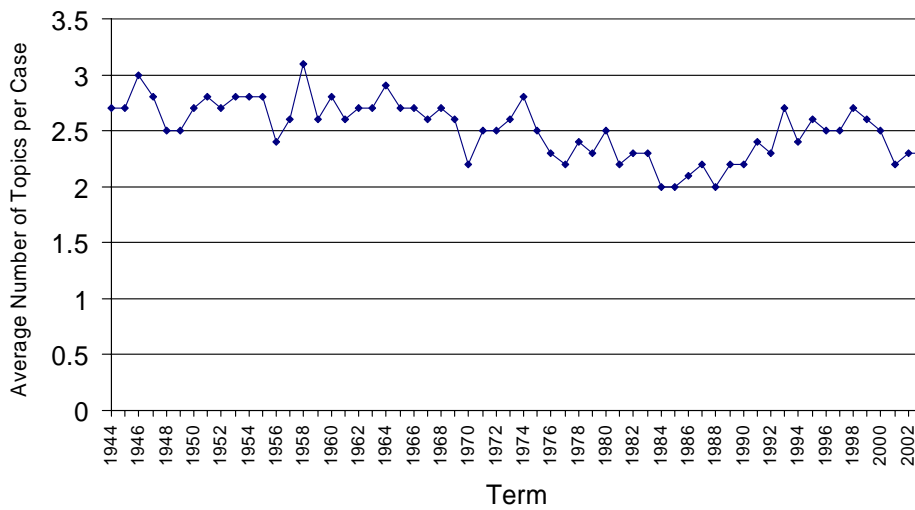
Average Number of Opinions Issued per Month per Court



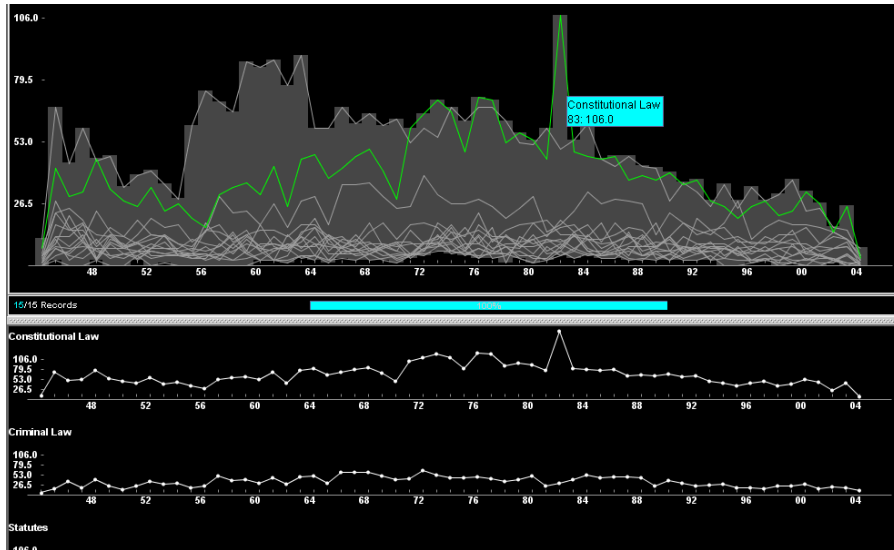
Cases per Term (Oct. through Sept.)



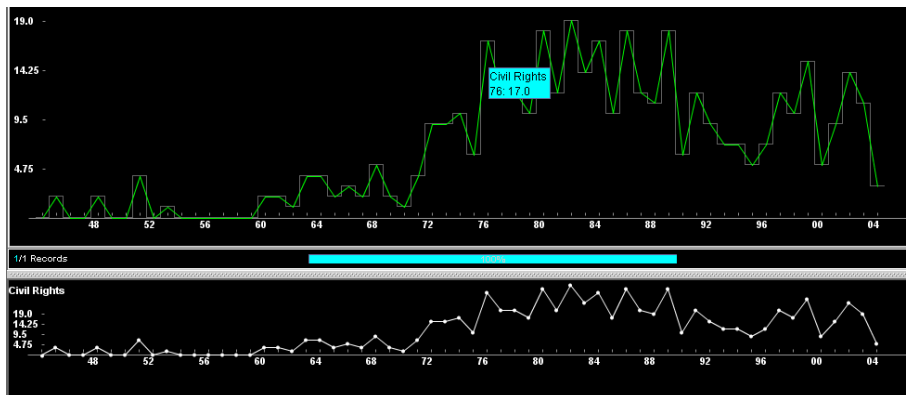
Average Topics per Case per Term
(Oct. through Sept.)



TimeSearcher Reveals a Spike



The Explosion of Civil Rights Litigation

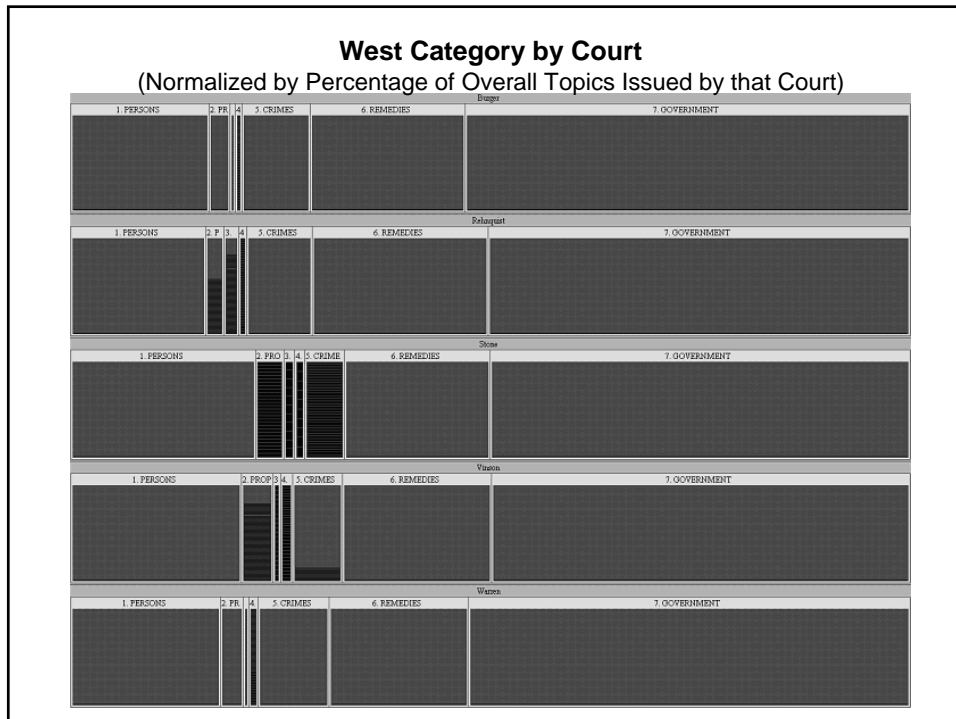




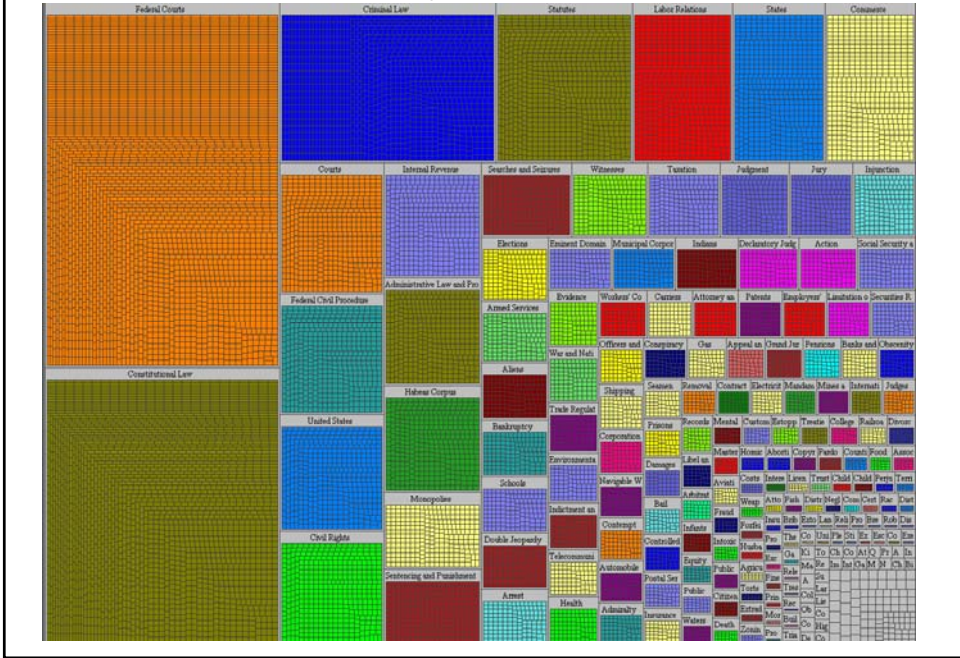
COMPARATIVE AREA INSIGHTS

TREEMAP SOFTWARE: Human Computer Interaction Laboratory at the University of Maryland.

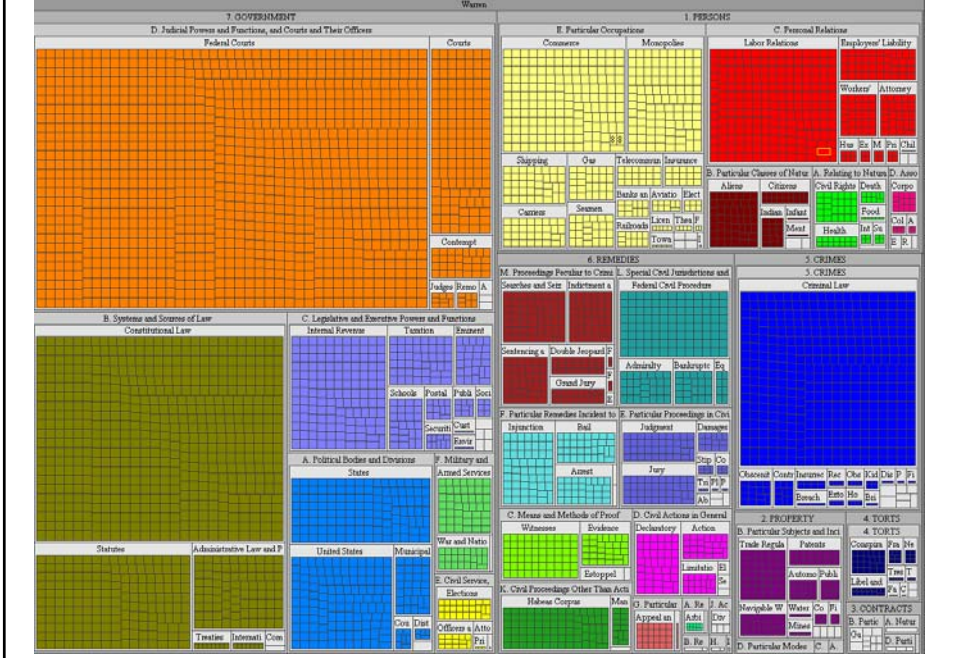
Shneiderman, B. *Tree visualization with treemaps: a 2-d space-filling approach*, *ACM Transactions on Graphics*, vol. 11, 1 (Jan. 1992) 92-99.



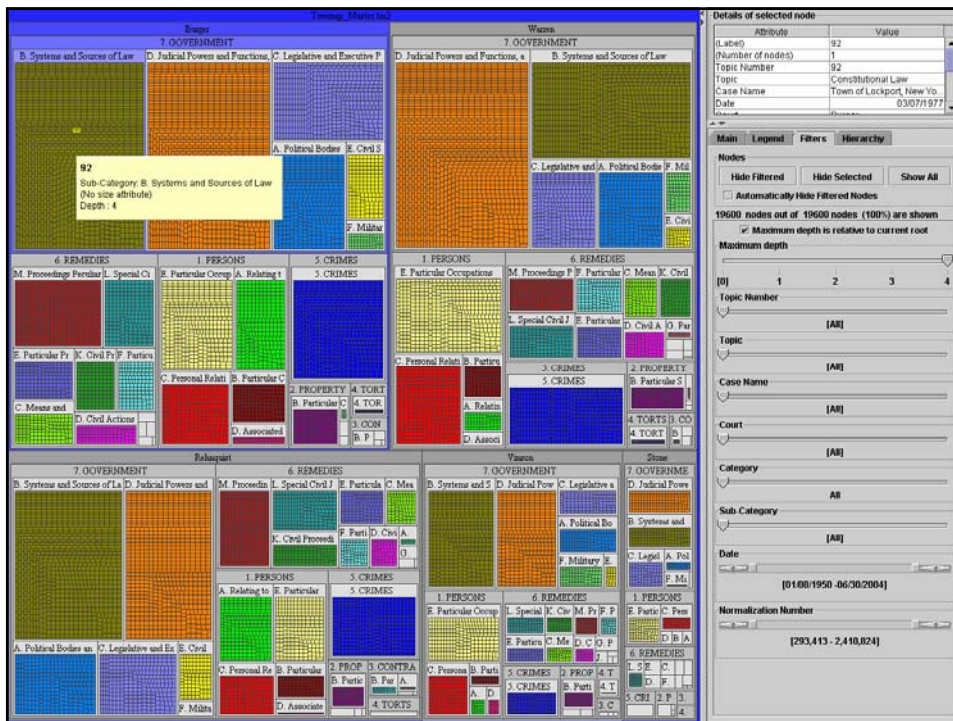
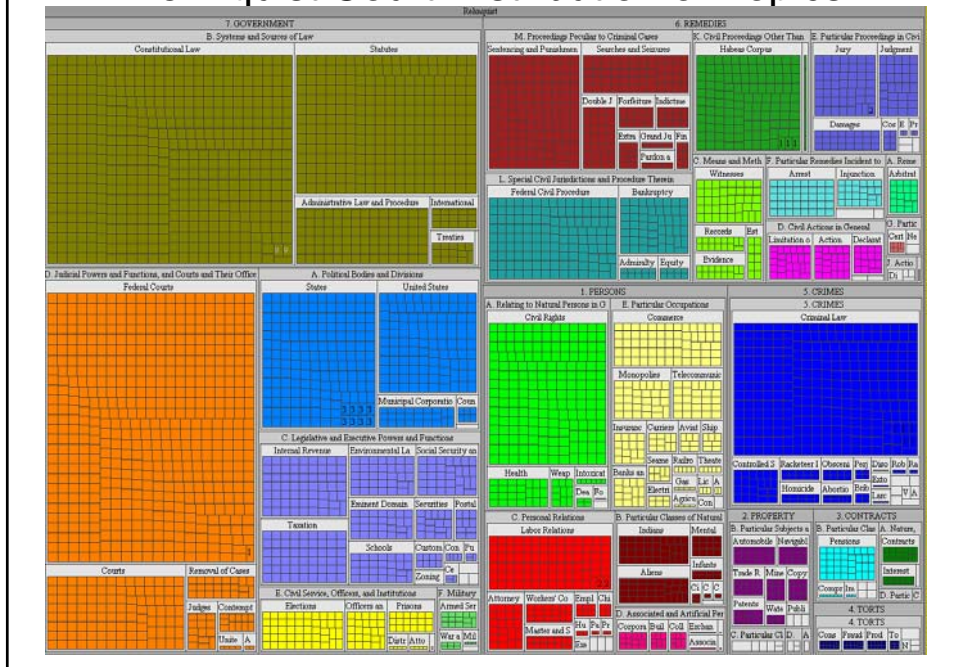
Topic Frequency Over Entire Dataset



Warren Court Distribution of Topics



Rehnquist Court Distribution of Topics





INSIGHTS FROM NETWORK GRAPHING TECHNIQUES

PAJEK SOFTWARE: University of Ljubljana, Slovenia.

Batagelj, V., & Mrvar, A. *Pajek: Program Package for Large Network Analysis*, University of Ljubljana, Slovenia. 1997.



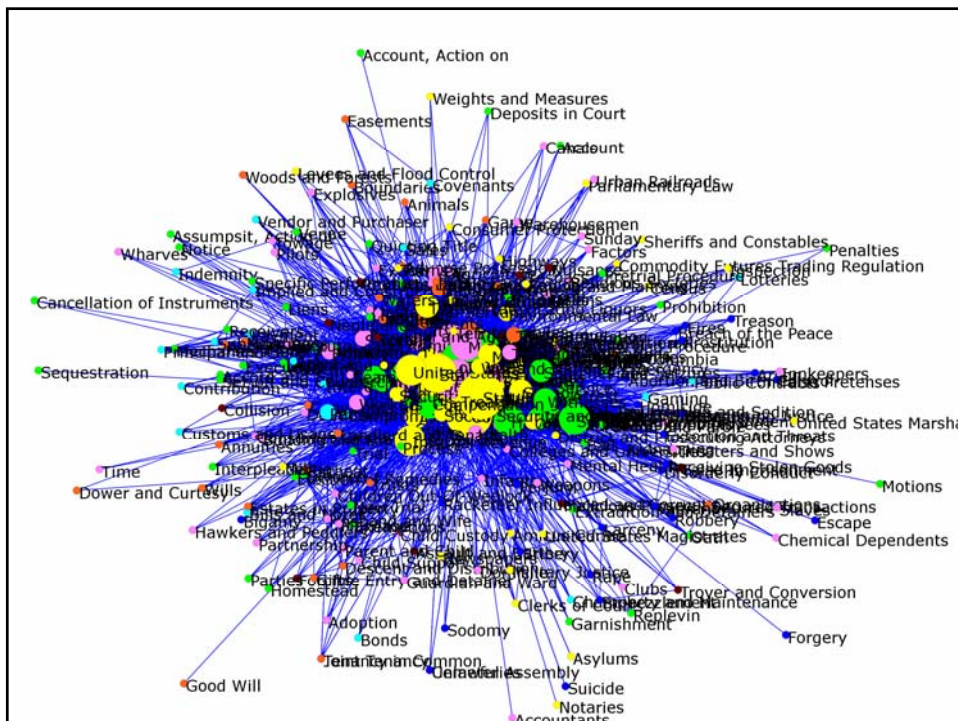
Co-Occurrence Objectives

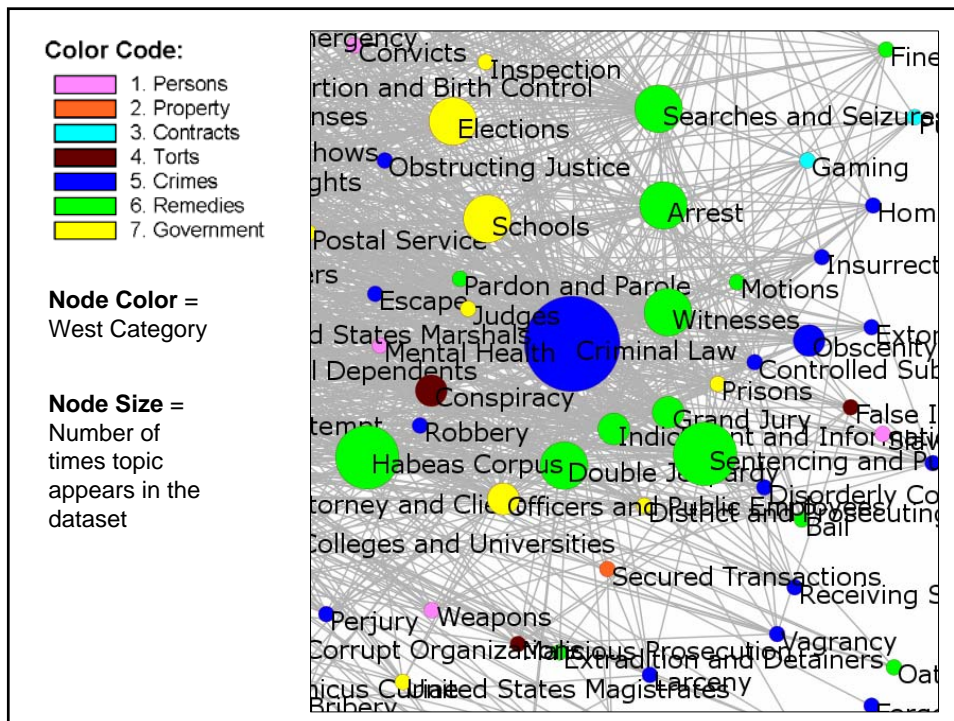
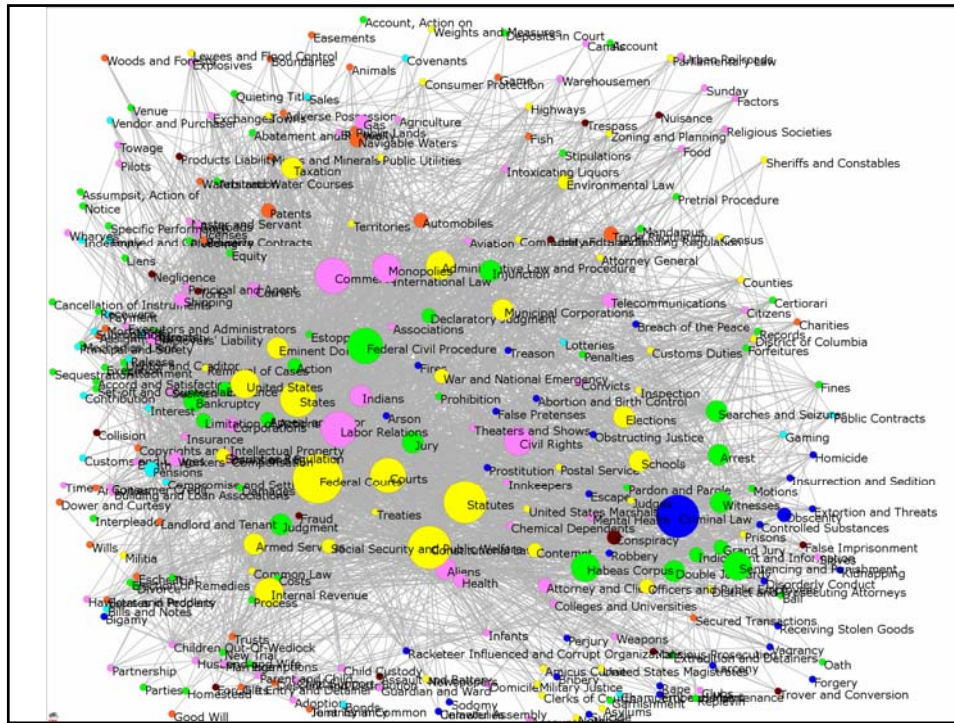
- To map the work of the Supreme Court based on the co-occurrence of West, top-level topics.
- To evaluate whether the categories and sub-categories of West's *Outline of the Law* suggest the manner in which topics co-occur in cases.

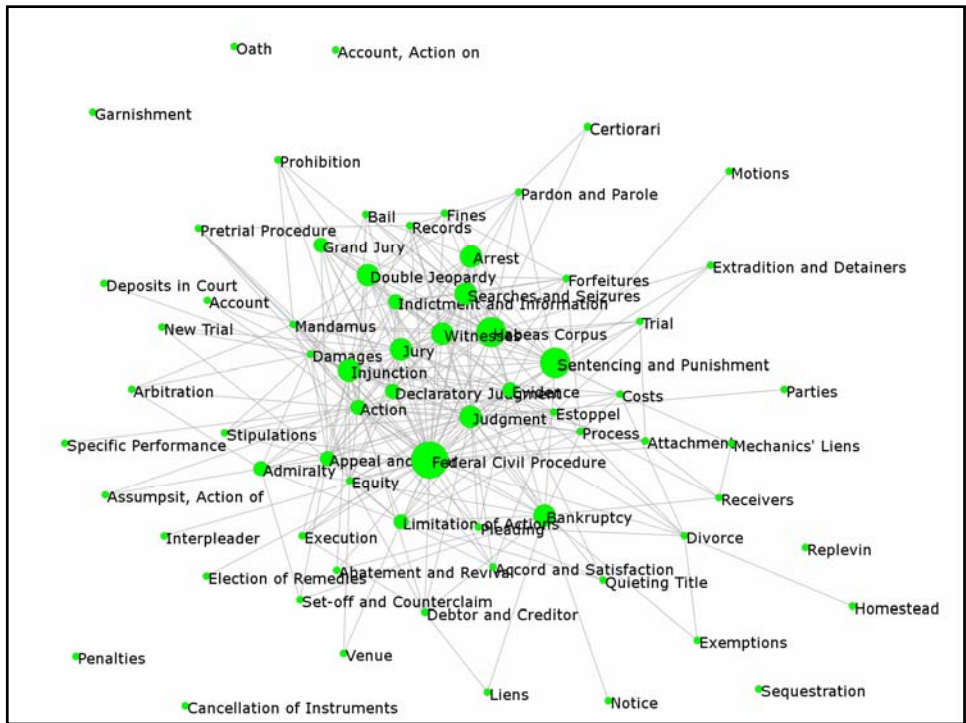
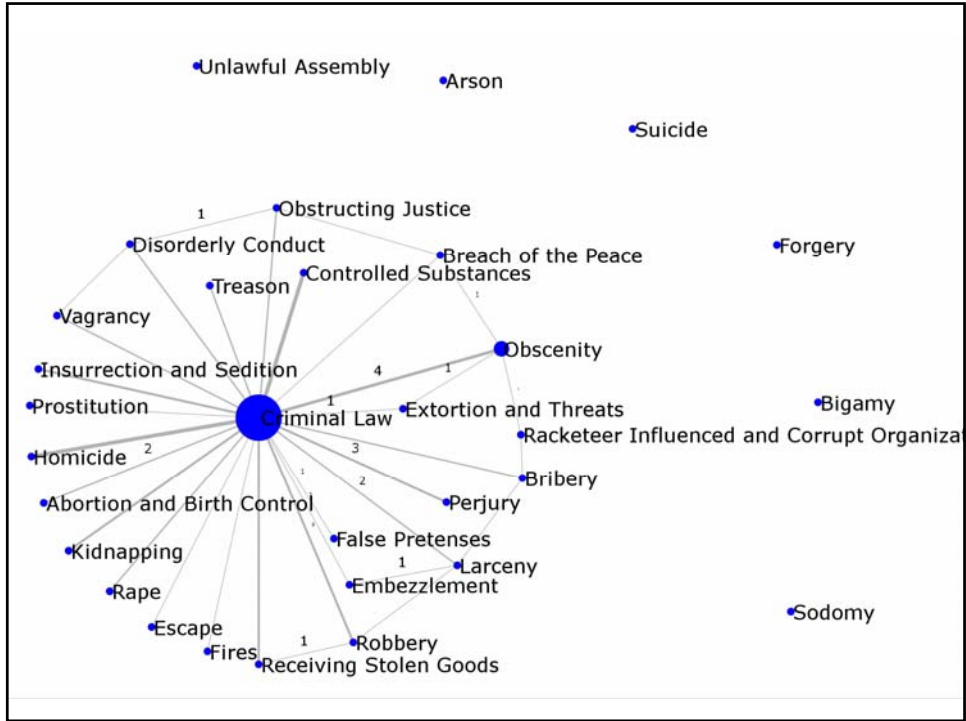


Degree of Connectivity

- Total Nodes -- 289
- Range (Degree of Connectivity) – 1 to 250
- Mean (Degree of Connectivity) -- 26
- Median (Degree of Connectivity) -- 14
- Mode (Degree of Connectivity) -- 13
- Total Connections between Nodes - 3717









Conceptual Schemas

CRIMINAL PROCEDURE

AN ANALYSIS OF CONSTITUTIONAL CASES AND CONCEPTS

By
CHARLES H. WHITEBREAD
Professor of Law, University of Virginia

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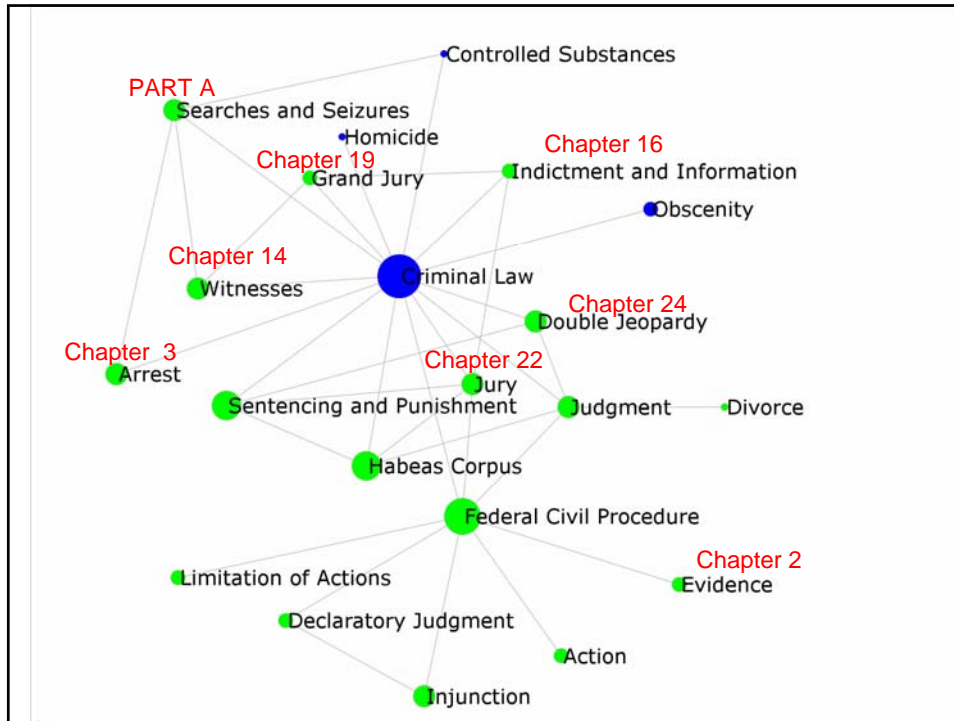
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