# Instructional Visualizations of the Work of the United States Supreme Court

2005 SLIS Doctoral Student Research Forum

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http://ella.slis.indiana.edu/~pahook/product/2005-09-24_sct.ppt

# Research Questions

1. How can network graphing and information visualization techniques improve the understanding of the work of the United States Supreme Court?
2. What visualizations make the knowledge of experts quickly available to novices?

# Research Threads

1. Ideological Landscape of the Justices
2. Visual Explanations of Individual Cases
3. Topic Space of the 2004 Term
4. A Comparison of Lexis and Westlaw Headnotes

# Part I: Ideological Landscape of the Justices

**Learning Objective:** Students will understand the voting associations of the Justices of the Supreme Court and the ideological divide suggested by these associations.

**Audience**: (1) Law Students, (2) Political Science Students, (3) All Non-Experts of the work of the Supreme Court.

# 9 Justices of the Supreme Court 1993-2004 Terms

| 1972 | 1975 | 1981 | 1986 | 1988 | 1990 | 1991 | 1993 | 1994 |
|---|---|---|---|---|---|---|---|---|
| William H. Rehnquist | John Paul Stevens | Sandra Day O'Connor | Antonin Scalia | Anthony Kennedy | David Souter | Clarence Thomas | Ruth Bader Ginsburg | Stephen Breyer |
| 47 | 55 | 51 | 50 | 51 | 51 | 43 | 60 | 55 |
| 80 | 85 | 75 | 69 | 69 | 65 | 57 | 72 | 67 |

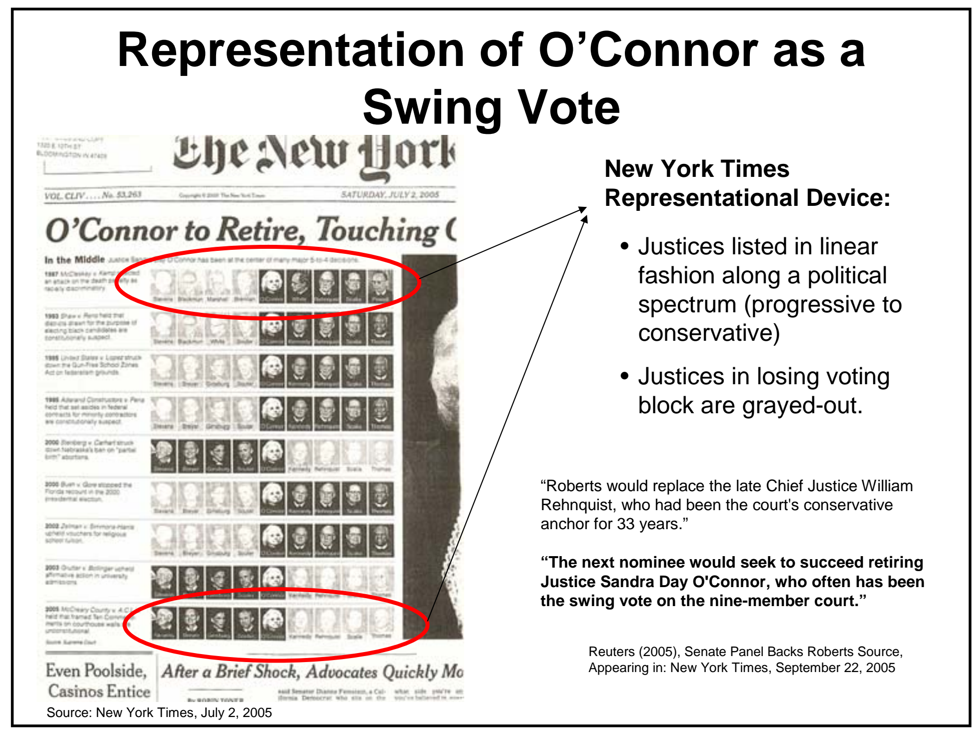
1972 = Year Appointed
47 = Age On Start Date
80 = Age On Sept. 3, 2005
Mean Age On Sept. 3, 2005 = 71

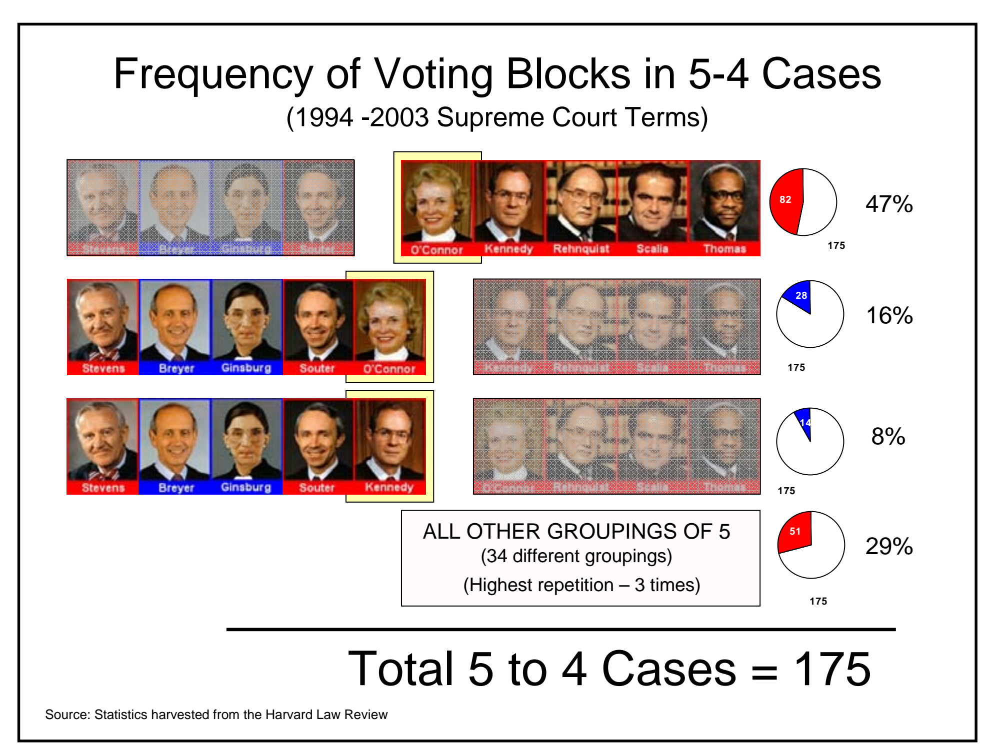
# By Whom Appointed

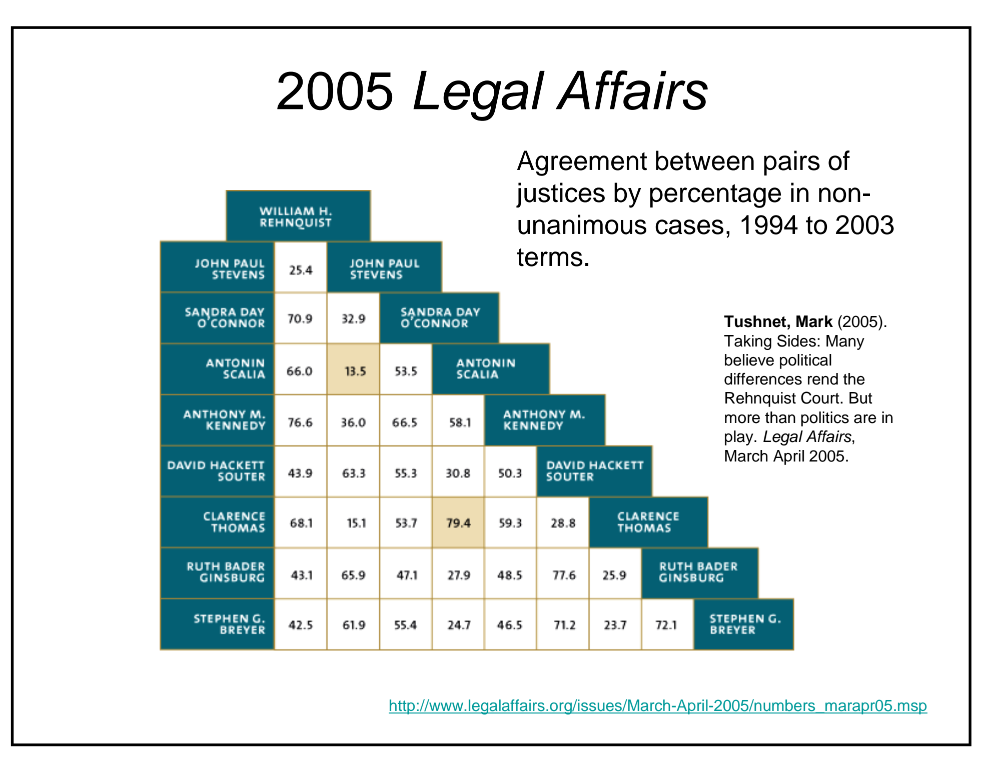
| Richard M. Nixon | Gerald R. Ford | James E. Carter | Ronald Reagan | George H.W. Bush | William J. Clinton |
|---|---|---|---|---|---|
| 1969-1974 | 1974-1977 | 1977-1981 | 1981-1989 | 1989-1993 | 1993-2001 |
| Republican | Republican | Democrat | Republican | Republican | Democrat |

| 1972 | 1975 | 1981 | 1986 | 1988 | 1990 | 1991 | 1993 | 1994 |
|---|---|---|---|---|---|---|---|---|
| Rehnquist | Stevens | O'Connor | Scalia | Kennedy | Souter | Thomas | Ginsburg | Breyer |
| NIXON | FORD | REAGAN | REAGAN | REAGAN | H.W. BUSH | H.W. BUSH | CLINTON | CLINTON |

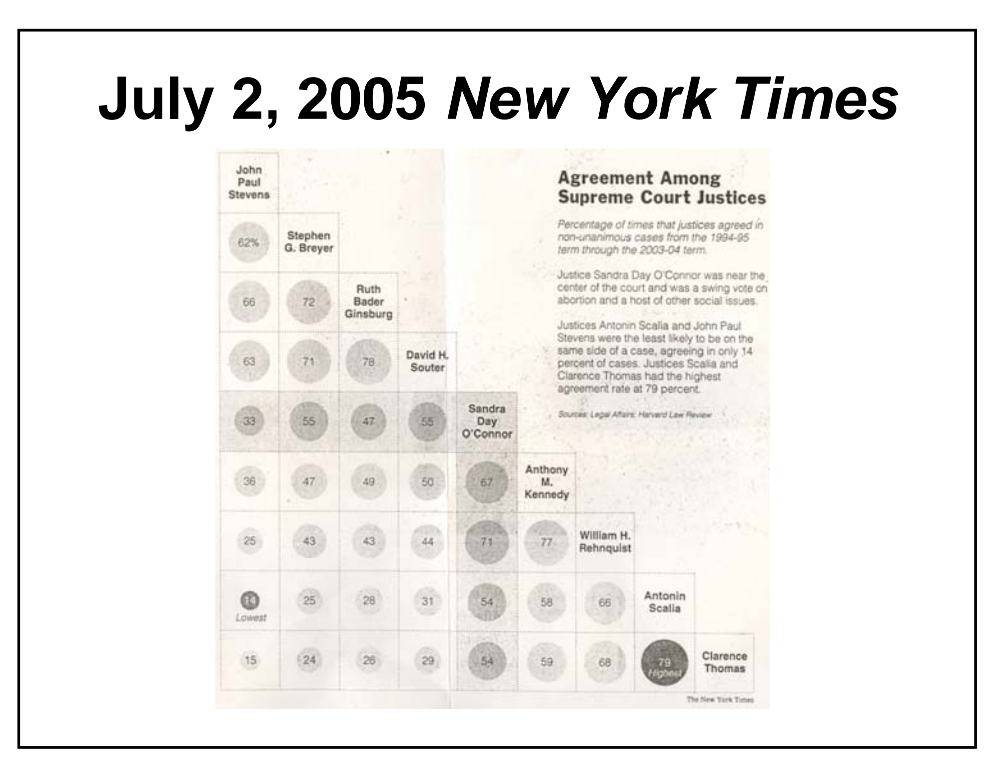
Appointed by a Republican
Appointed by a Democrat


Representation of O'Connor as a Swing Vote
The New York
O'Connor to Retire, Touching
Even Poolside, Casinos Entice
After a Brief Shock, Advocates Quickly Mo
Source: New York Times, July 2, 2005
New York Times Representational Device:
• Justices listed in linear fashion along a political spectrum (progressive to conservative)
• Justices in losing voting block are grayed-out.
"Roberts would replace the late Chief Justice William Rehnquist, who had been the court's conservative anchor for 33 years."
"The next nominee would seek to succeed retiring Justice Sandra Day O'Connor, who often has been the swing vote on the nine-member court."
Reuters (2005), Senate Panel Backs Roberts Source, Appearing in: New York Times, September 22, 2005

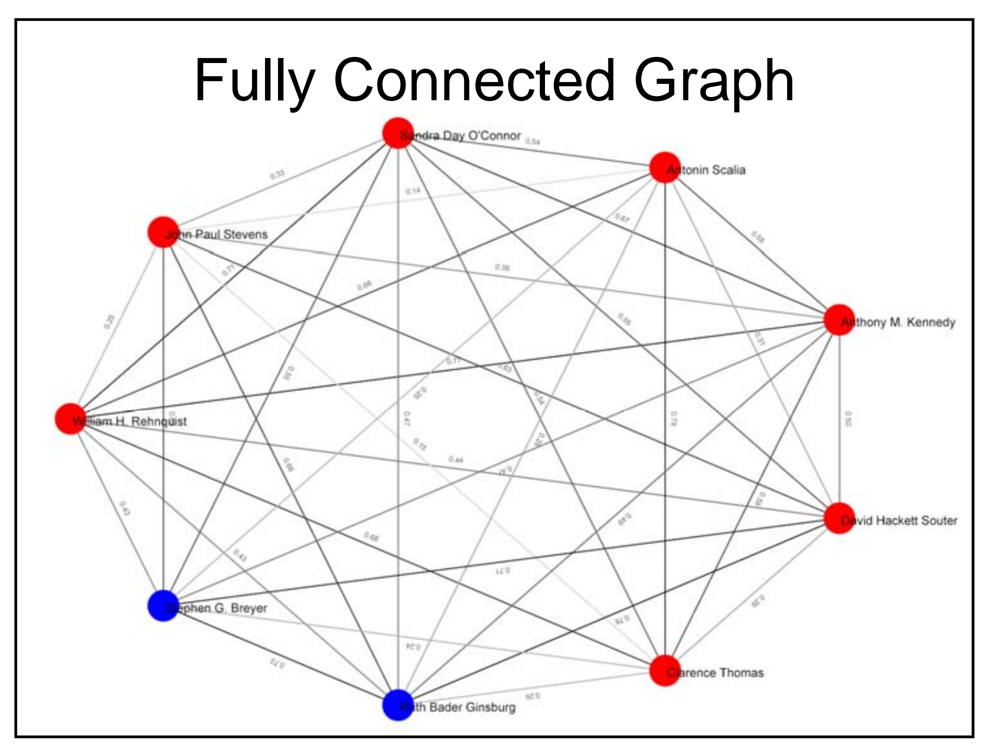

Frequency of Voting Blocks in 5-4 Cases
(1994 -2003 Supreme Court Terms)
Stevens Breyer Ginsburg Souter
O'Connor Kennedy Rehnquist Scalia Thomas
82
175
47%
Stevens Breyer Ginsburg Souter O'Connor
Kennedy Rehnquist Scalia Thomas
28
175
16%
Stevens Breyer Ginsburg Souter Kennedy
O'Connor Rehnquist Scalia Thomas
14
175
8%
ALL OTHER GROUPINGS OF 5
(34 different groupings)
(Highest repetition – 3 times)
51
175
29%
Total 5 to 4 Cases = 175
Source: Statistics harvested from the Harvard Law Review

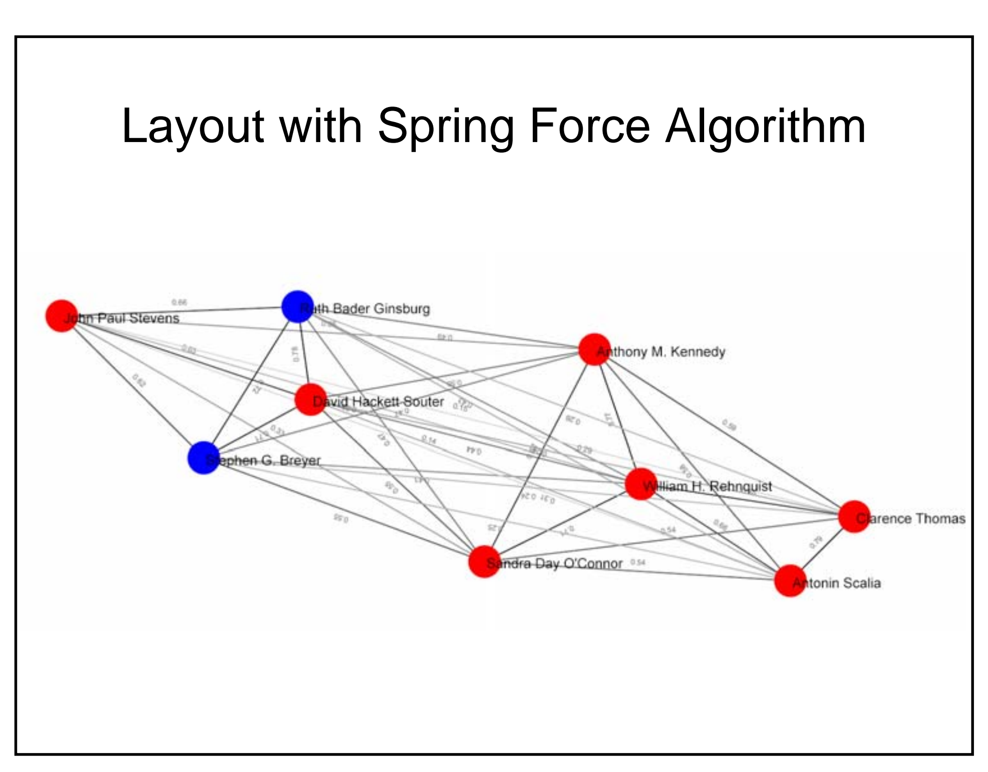


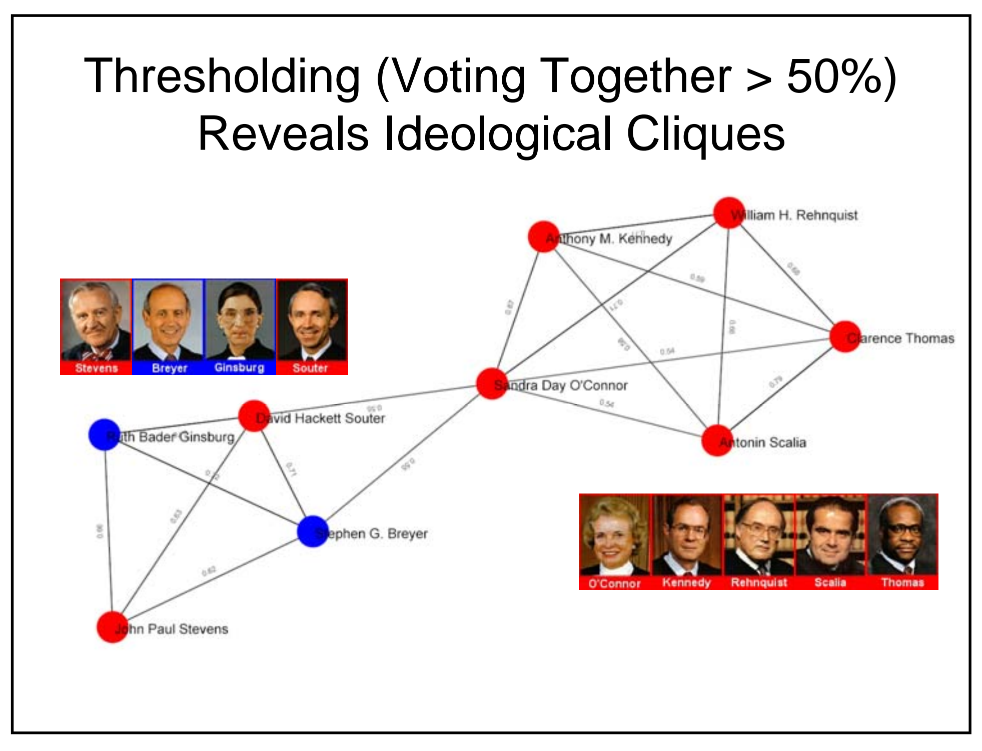

| | William H. Rehnquist | John Paul Stevens | Sandra Day O'Connor | Antonin Scalia | Anthony M. Kennedy | David Hackett Souter | Clarence Thomas | Ruth Bader Ginsburg |
|---|---|---|---|---|---|---|---|---|
| John Paul Stevens | 25.4 | | | | | | | |
| Sandra Day O'Connor | 70.9 | 32.9 | | | | | | |
| Antonin Scalia | 66.0 | 13.5 | 53.5 | | | | | |
| Anthony M. Kennedy | 76.6 | 36.0 | 66.5 | 58.1 | | | | |
| David Hackett Souter | 43.9 | 63.3 | 55.3 | 30.8 | 50.3 | | | |
| Clarence Thomas | 68.1 | 15.1 | 53.7 | 79.4 | 59.3 | 28.8 | | |
| Ruth Bader Ginsburg | 43.1 | 65.9 | 47.1 | 27.9 | 48.5 | 77.6 | 25.9 | |
| Stephen G. Breyer | 42.5 | 61.9 | 55.4 | 24.7 | 46.5 | 71.2 | 23.7 | 72.1 |

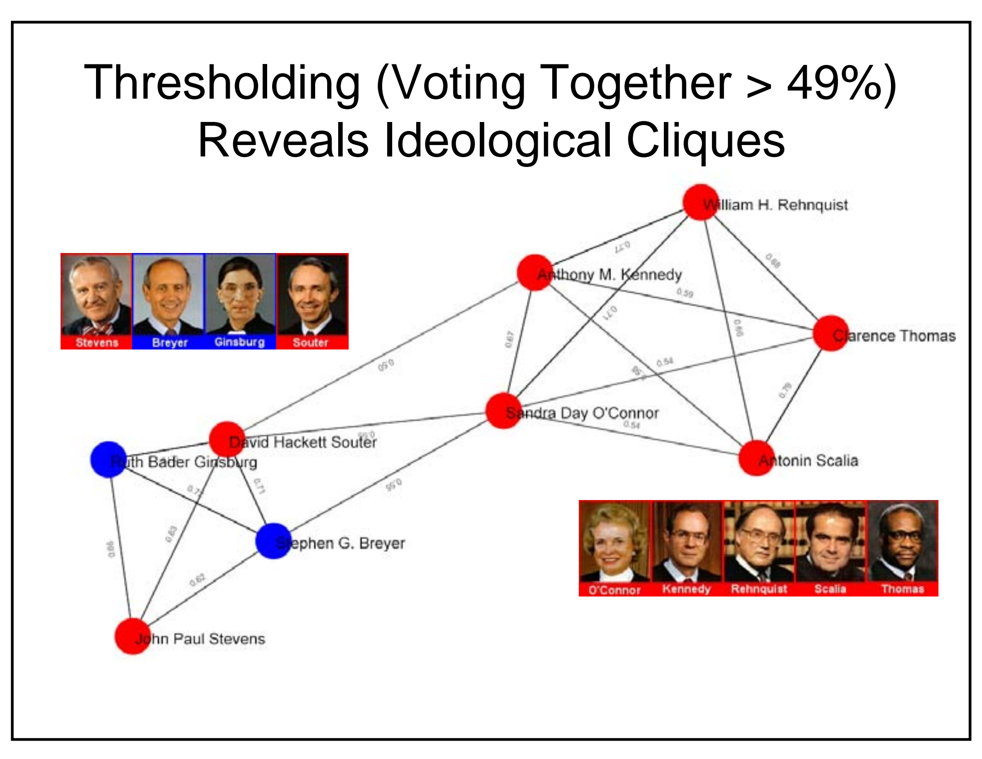



| | John Paul Stevens | Stephen G. Breyer | Ruth Bader Ginsburg | David H. Souter | Sandra Day O'Connor | Anthony M. Kennedy | William H. Rehnquist | Antonin Scalia |
|---|---|---|---|---|---|---|---|---|
| Stephen G. Breyer | 62% | | | | | | | |
| Ruth Bader Ginsburg | 66 | 72 | | | | | | |
| David H. Souter | 63 | 71 | 78 | | | | | |
| Sandra Day O'Connor | 33 | 55 | 47 | 55 | | | | |
| Anthony M. Kennedy | 36 | 47 | 49 | 50 | 67 | | | |
| William H. Rehnquist | 25 | 43 | 43 | 44 | 71 | 77 | | |
| Antonin Scalia | 14 Lowest | 25 | 28 | 31 | 54 | 58 | 66 | |
| Clarence Thomas | 15 | 24 | 26 | 29 | 54 | 59 | 68 | 79 Highest |

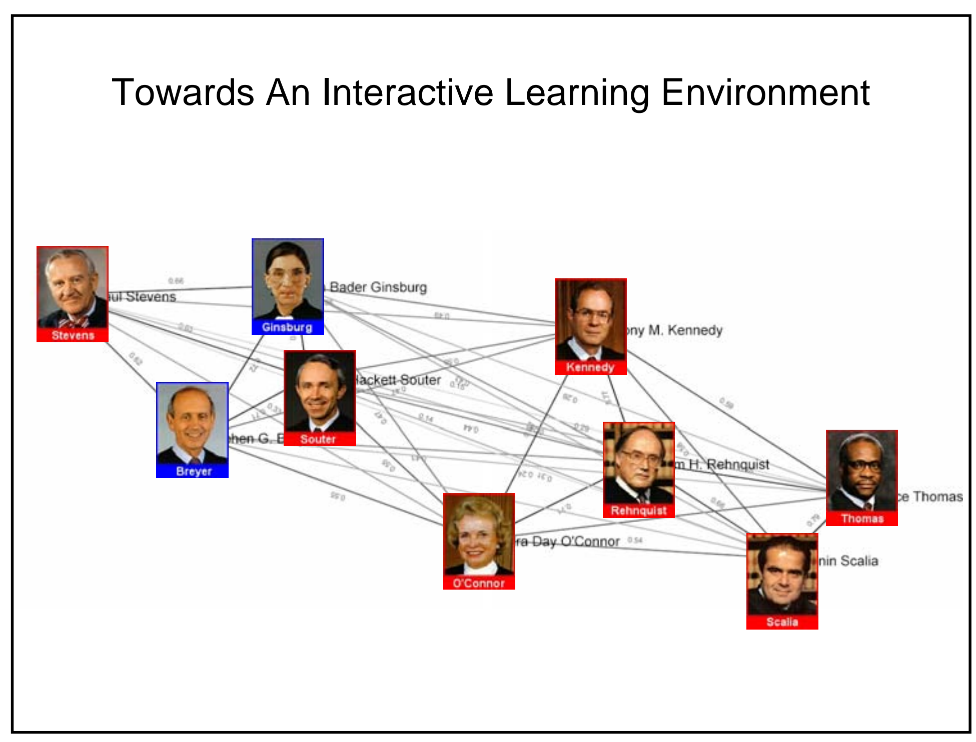

Fully Connected Graph
Sandra Day O'Connor
Antonin Scalia
John Paul Stevens
Anthony M. Kennedy
William H. Rehnquist
David Hackett Souter
Stephen G. Breyer
Clarence Thomas
Ruth Bader Ginsburg


Layout with Spring Force Algorithm
John Paul Stevens
Ruth Bader Ginsburg
Anthony M. Kennedy
David Hackett Souter
Stephen G. Breyer
William H. Rehnquist
Clarence Thomas
Sandra Day O'Connor
Antonin Scalia


Thresholding (Voting Together > 50%)
Reveals Ideological Cliques
William H. Rehnquist
Anthony M. Kennedy
Clarence Thomas
Sandra Day O'Connor
Antonin Scalia
David Hackett Souter
Ruth Bader Ginsburg
Stephen G. Breyer
John Paul Stevens
Stevens
Breyer
Ginsburg
Souter
O'Connor
Kennedy
Rehnquist
Scalia
Thomas


Thresholding (Voting Together > 49%)
Reveals Ideological Cliques
William H. Rehnquist
Anthony M. Kennedy
Clarence Thomas
Sandra Day O'Connor
Antonin Scalia
David Hackett Souter
Ruth Bader Ginsburg
Stephen G. Breyer
John Paul Stevens
Stevens
Breyer
Ginsburg
Souter
O'Connor
Kennedy
Rehnquist
Scalia
Thomas

## Towards An Interactive Learning Environment




## Visualization Tools Applied Towards Pedagogy

# Part II: Visual Explanations of Individual Cases

**Learning Objective:** Students will quickly understand the facts, legal issues, voting, topic assignments, and procedural history for each case.

**Audience**: (1) Law Students, (2) Political Science Students, (3) All Non-Experts of the work of the Supreme Court.

**Holdings:** The Supreme Court, Justice Stevens, delivering the opinion of the court in part, held that:

(1) federal sentencing guidelines are subject to jury trial requirements of the Sixth Amendment; and

(2) in an opinion by Justice Breyer, delivering the opinion of the court in part, held further that Sixth Amendment requirement that jury find certain sentencing facts was incompatible with Federal Sentencing Act, thus requiring severance of Act's provisions making guidelines mandatory and setting forth standard of review on appeal;

(3) proper standard of appellate review for sentencing decisions was review for unreasonableness; and

(4) holdings as to Sixth Amendment applicability and remedial interpretation of the Sentencing Act were applicable to all cases on direct review.

Judgment of the Court of Appeals affirmed and remanded; judgment of the District Court vacated and remanded.

Justice Stevens dissented in part and filed opinion in which Justice Souter joined and Justice Scalia joined in part.

Justice Scalia dissented in part and filed opinion.

Justice Thomas dissented in part and filed opinion.

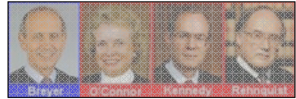
Justice Breyer dissented in part and filed opinion in which Chief Justice Rehnquist , Justice O'Connor , and Justice Kennedy joined.

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

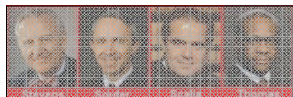
- Most complex case of the 2004 term
- 5 – 4, 5 – 4 Decision (Two Main Opinions)
- Numerous Dissents
- Need a Map of these Joining Relationships

STEVENS , J., delivered the opinion of the Court in part, in which SCALIA , SOUTER , THOMAS , and GINSBURG, JJ., joined. BREYER , J., delivered the opinion of the Court in part, in which REHNQUIST , C.J., and O'CONNOR , KENNEDY , and GINSBURG, JJ., joined. STEVENS , J., filed an opinion dissenting in part, in which SOUTER , J., joined, and in which SCALIA, J., joined except for Part III and footnote 17. SCALIA , J., and THOMAS, J., filed opinions dissenting in part. BREYER , J., filed an opinion dissenting in part, in which REHNQUIST , C.J., and O'CONNOR and KENNEDY, JJ., joined.

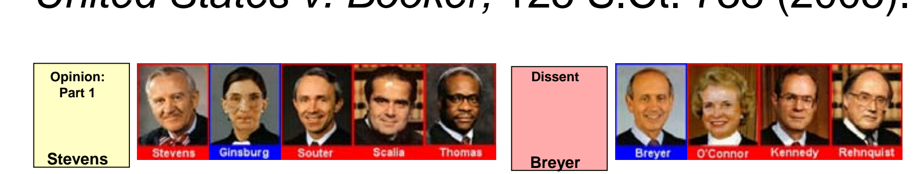
# *United States v. Booker,* Voting Blocks

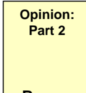


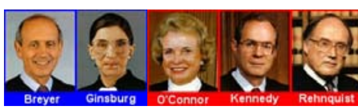

Opinion: Part 2

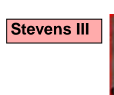


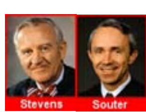

# *United States v. Booker,* 125 S.Ct. 738 (2005).

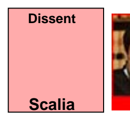


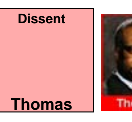



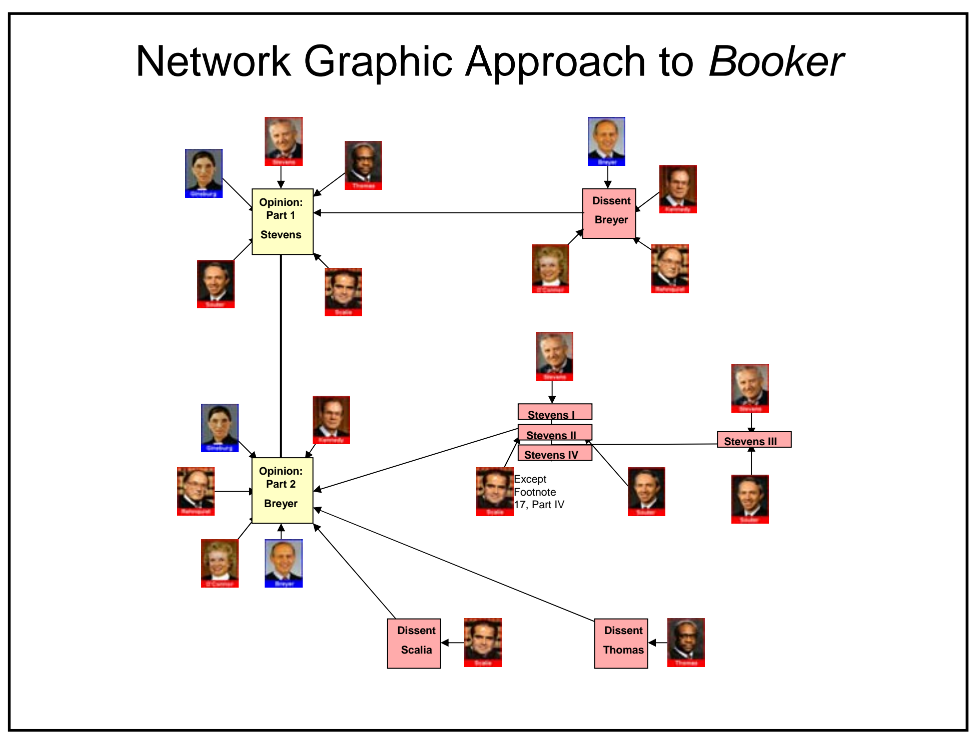




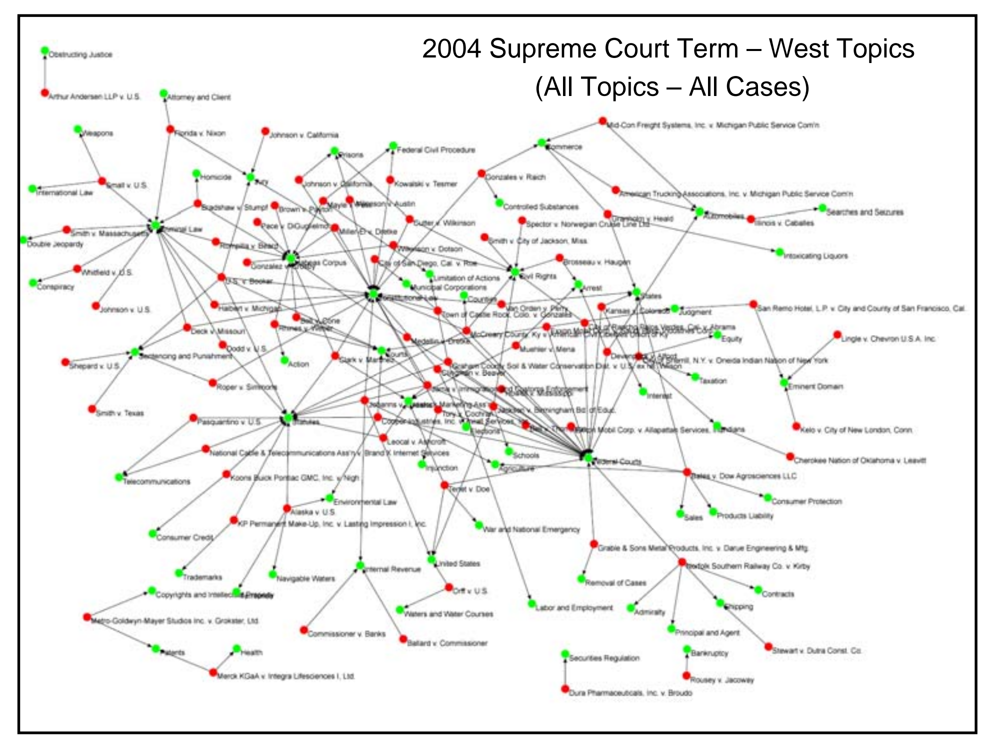

Thomas

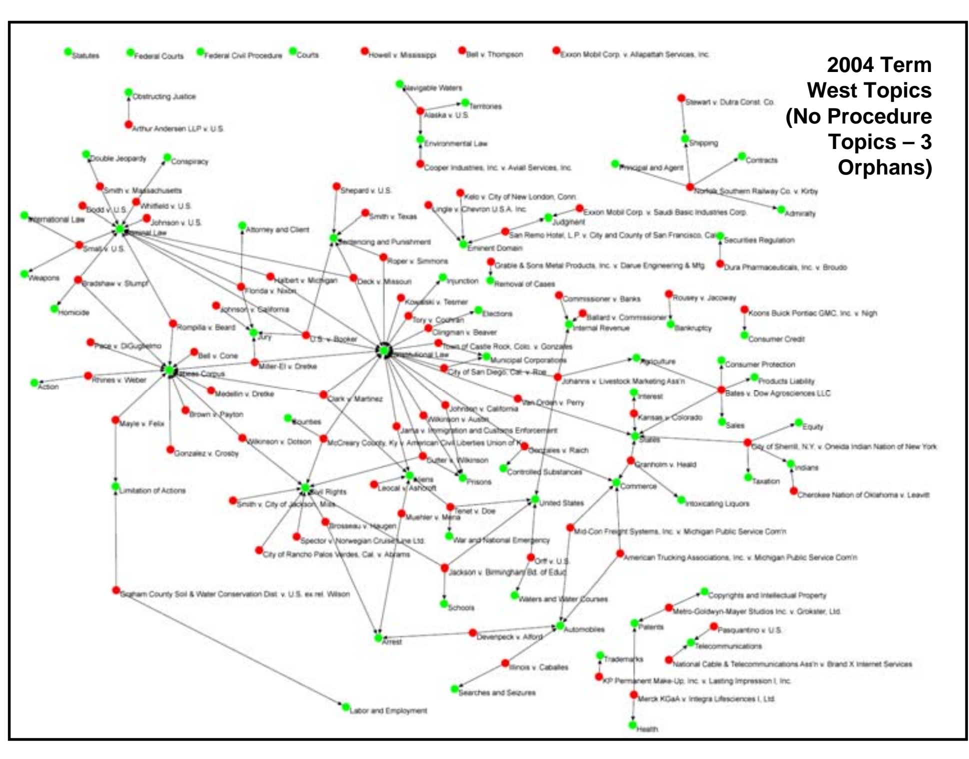



# Part III: Topic Space of the 2004 Term

**Learning Objective:** Students will understand what topics were considered for any particular term, how those topics relate to each other, and how the current term fits the overall trend in topics covered by the Supreme Court from 1944 to the present.

**Audience**: (1) Law Students, (2) Political Science Students, (3) All Non-Experts of the work of the Supreme Court.


2004 Supreme Court Term – West Topics
(All Topics – All Cases)

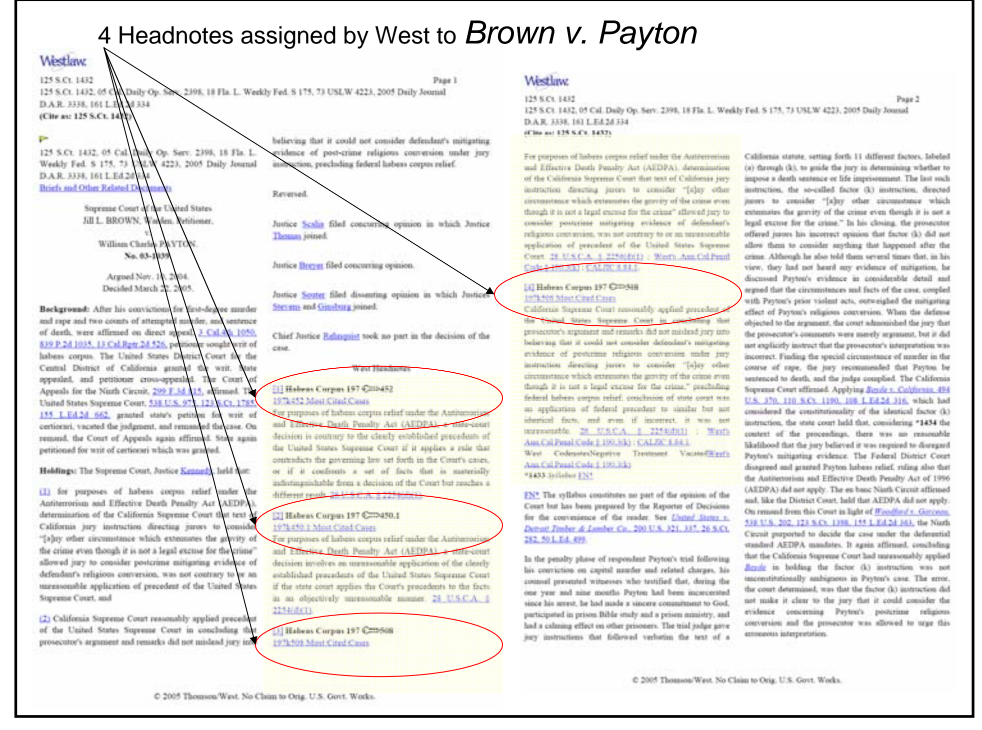

2004 Term
West Topics
(No Procedure
Topics – 3
Orphans)

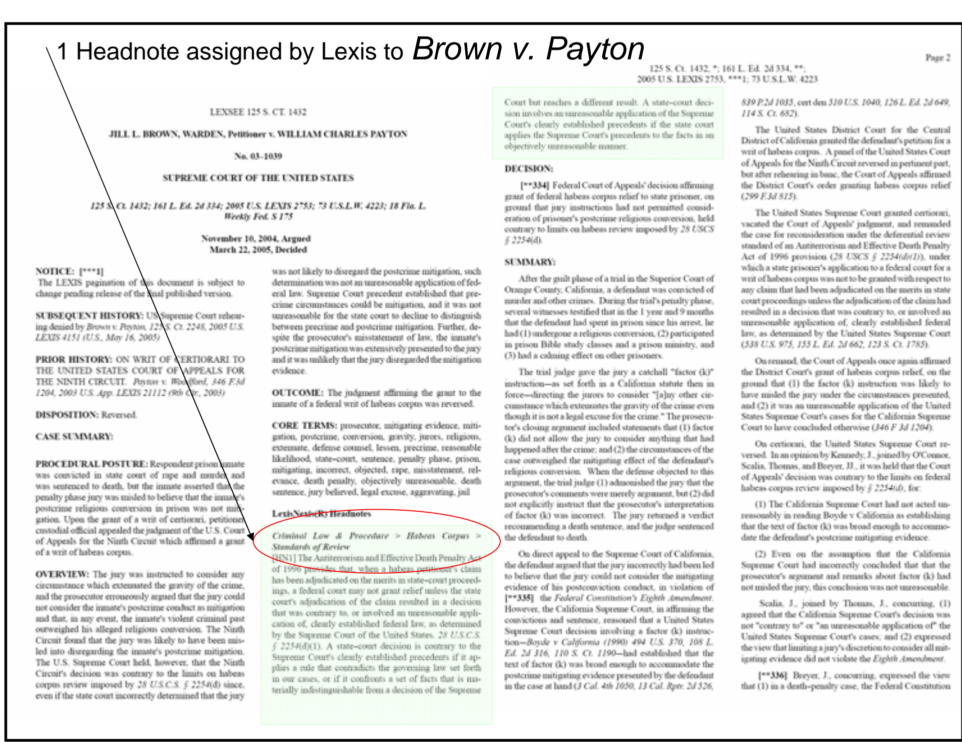
# Part IV: Lexis and Westlaw Headnote Comparison

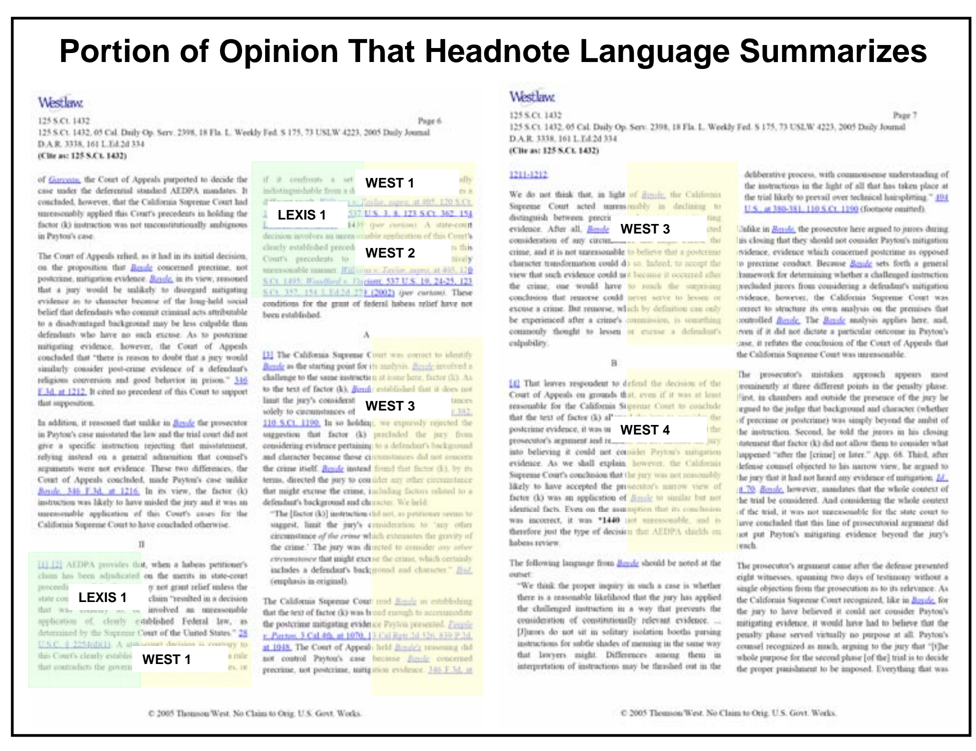
**Learning Objective:** Students and practitioners will become aware of the large difference in the amount of headnotes assigned by each publisher and the difference in language deemed worthy of a headnote.

**Audience**: (1) Law Students, (2) Lawyers

4 Headnotes assigned by West to *Brown v. Payton*

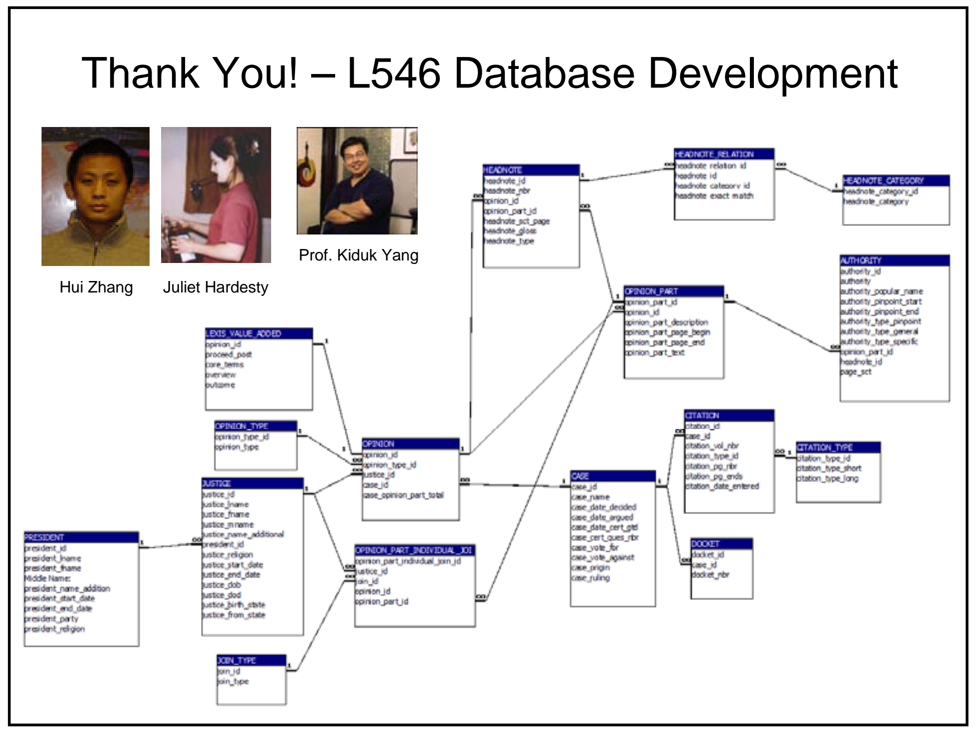



1 Headnote assigned by Lexis to *Brown v. Payton*


Portion of Opinion That Headnote Language Summarizes
WEST 1
LEXIS 1
WEST 2
WEST 3
WEST 3
WEST 4
LEXIS 1
WEST 1

# Methodology

1. Database is populated with all Lexis and West Headnotes.
2. Two human coders educated in the law determine the degree of overlap and which Lexis headnote equals which West headnote.
3. All headnotes are machine processed to determine the degree of semantic overlap between any two headnotes (percentage and uniqueness of words in common).
4. Results are compared with that of human coders to determine if some threshold semantic similarity indicates that two headnotes gloss the same legal principle and may be considered equivalent.
5. Comparisons are published as to the co-extensiveness of Lexis and West headnotes.
6. Preliminary findings indicate a surprising lack of overlap and co-extensiveness of the opinion language covered.



# Other Acknowledgements:

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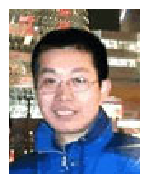
Weimao Ke

- Slides Available:

  http://ella.slis.indiana.edu/~pahook/product/2005-09-24_sct.ppt