

**Only Words, or Data? Assessing the Relative Policy Positions in Supreme Court
Briefs and Opinions**

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Much contemporary judicial analysis assumes that case outcomes reflect the underlying ideological and/or policy preferences of judges. Beginning with that supposition, then, votes can be taken as a straight-up indication of a judge's ideological leanings, or as a series of strategic choices designed to maximize her/his policy preferences. Although several political factors are known to influence opinion writing (Rohde 1972; Maltzman and Wahlbeck 1996; Maltzman, Spriggs, and Wahlbeck 2000, Ch. 4; Epstein and Knight 2000, 95-112), opinions, like votes, can also offer philosophical and policy clues. To that end, opinions may be used to rationalize and legitimize votes, to win over colleagues, to pack a particularly strong precedential punch, to influence implementation, and so forth (Spriggs 1996; Spriggs, Maltzman, and Wahlbeck 1999). Moreover, a number of scholars have studied the roles of particularly prominent litigants (e.g., the Solicitor General, the NAACP-LDEF) and of amici curiae in moving cases through the judicial system, shaping questions placed before the Court, providing information on issues, and even offering legal solutions (e.g., Caplan 1987; Segal 1988; Segal and Reedy 1988; Segal 1990; Deen 2001; Johnson 2003)..

Judicial scholars have long known that attempts to infer ideological and policy preferences from votes¹ and opinions present tricky analytical problems. Writing thirty six years ago, Howard (1968) stated the problem in this way:

To put the matter simply, if a vote or an opinion has changed in response to a multiplicity of intra-court influences before its public exposure, how reliable is that vote or opinion as an indicator of attitude, ideology, or, if one pleases, predilection? . . . In the official

¹ Such inferences typically utilize a method known as “cumulative scaling”, which involves extracting issue dimensions from justices’ past votes and ranking the justices along those dimensions according to their cumulative vote history. Examples of studies utilizing this method include Schubert (1965), Rohde and Spaeth (1976), and Hagle and Spaeth (1992).

theory of judging as a process of discovery, to be sure, this problem is irrelevant; a judge may freely change his mind up to the point of revealing his discovery without straining the analytical system. Once the analyst seeks to pierce the mystery, however, the issue of flux is inescapable. Quantifiers . . . cannot duck the problem, for they purport to measure the most subjective of quantities, psychological attitudes, including latent ones. Qualitative methods of doctrinal analysis and biographical study, though they may raise illuminating examples of changing options, seldom do so systematically or with contemporary data. Obvious difficulties of observation under conditions of secrecy prevailing in American courts explain the scant attention to the issue. Difficulties of analysis cannot explain away the problem of reliability, however, nor its implications for development of theory about judicial behavior. (p. 44)

Acknowledging the persistence of this problem (“one cannot demonstrate that attitudes affect votes when the attitudes are operationalized from those same votes,” (Segal and Cover (1989, 558) offer an alternative *a priori* measure, using pre-confirmation newspaper editorials characterizing individual justices as a proxy.² The Segal-Cover index has proven to be a fairly useful predictor of votes in civil rights and liberties cases (e.g., Segal and Cover 1989; Segal, Epstein, Cameron, and Spaeth 1995), but less satisfactory beyond those issues (Epstein and Mershon 1996).³ This may be due in part to the fact that justices’ preferences can change significantly over time (Epstein, Hoekstra, Segal, and Spaeth 1998).

Moreover, the spreading occurrence of splintered outcomes, with one or more concurrence, separate dissents and partial concurrence and dissent further devalues the usefulness of vote tally as a meaningful indicator to differentiate policy preferences among justices. The norm of consensus showed signs of breaking down during the Hughes Court, and the growing expectation is to see a multiplicity of opinions in response to any given case (e.g., Walker, Epstein, and Dixon 1988; Caldeira and Zorn

² Cf., Danelski 1966 (using past speeches of justices as an indicator); Tate and Handberg 1991; Ulmer 1986 (correlating background characteristics with policy and ideological preferences); Brace, Langer, and Hall 2000 (estimating state supreme court justices’ ideologies by considering party affiliations, ideologies of their States at time of their accession, and each State’s method of judicial selection).

³ Epstein’s and Mershon’s analysis also suggests that the index may have better predictive value during the Burger Court than for earlier or later Courts.

1998; O'Brien 1999; Epstein, Segal, and Spaeth 2001; Post 2001). Indeed, O'Brien observes that during the Burger Court era, in both *Furman v. Georgia* (408 US 238, 1972) (death penalty) and *U.S. v. New York Times* (403 US 713, 1971) (Pentagon Papers), "the justices produced ten opinions—a *per curiam* opinion, announcing the Court's decision, six concurrences, and three dissents" (1999, 108). The Court has certainly not moved back toward consensus during more recent terms.

At the same time, third party participation in Supreme Court litigation has been moving upward since the early 1950s. Some cases draw more *amicus curiae* briefs than others, but better than 90% of all cases heard by the Court now attract at least one third party participant (Epstein and Knight 1999). The reasons for engagement are varied, but we can probably assume that an *amicus* hopes to influence the outcome in some way and takes the opportunity to advocate a preferred policy direction (e.g., Caldeira and Wright 1990; Koshner 1998; Epstein and Knight 1999; Hansford 2004; McGuire 1994; Spriggs and Wahlbeck 1997; Graham 2002). Although we have reason to believe that their presence can be influential (e.g., Caldeira and Wright 1988; Caldeira and Wright 1990; Segal 1991), uncovering evidence that their arguments have an impact has proven to be a challenge (see e.g., Songer and Sheehan 1993; Spriggs and Wahlbeck 1997; Epstein and Knight 1999).

The immediate bottom line for parties to a legal conflict, of course, is who wins. But there is much more to a judicial outcome. We begin with the assumption that language, choice of words, matters. As Shapiro (1968, 39) asserts "[T]he opinions themselves, not who won or lost, are the crucial form of political behavior by the appellate courts, since it is the opinions which provide the constraining directions to the

public and private decision makers who determine the 99 percent of conduct that never reaches the courts.” While the votes of Supreme Court justices do determine, in an important sense, which side prevails, it is the language articulated in opinions that lives on, becoming important to those charged with implementation, to subsequent judges and justices who face interpretation, and to advocates who craft arguments in response. Moreover, as we indicated above, justices can (and do so with increasing frequency) vote together but offer different rationales for doing so.

In this paper we assess the arguments and opinions associated with two cases heard and decided together during the 2002 term of the U.S. Supreme Court, *Gratz v. Bollinger*, 539 U.S. 244 (2003), challenging the University of Michigan undergraduate affirmative action admissions policy, and *Grutter v. Bollinger*, 539 U.S. 982 (2003), challenging the University of Michigan Law School admissions policy. The two cases attracted 104 amicus curiae briefs and yielded 13 opinions from the Court, with one majority (6-3) finding in favor of Gratz and thus invalidating the undergraduate admissions system, and another majority (5-4) finding against Grutter to uphold the law school admissions process. While the numbers here are quite large, and there are plenty of votes to count, the multiplicity of briefs and opinions offer a potentially rich textual database that we exploit with the use of analytical techniques associated with quantitative linguistics.

To take the measure of opinion expressed in a document requires reading it and parsing meaning from it. This, too, is a time-honored tradition among legal scholars; however it has obvious limitations. Legal texts tend to be lengthy and dense, representing a serious challenge to the best doctrinal specialists and historians. To

content analyze texts involves inevitable subjectivity. A single reader can quickly face consistency problems when trying to code a complex text, particularly when the objective is comparison across documents, and a multiple-reader model must address serious intercoder reliability issues (e.g., Carmines and Zeller 1979).⁴ In addition, hand-coding of texts for content comparison is highly labor-intensive, although it is the traditional method of choice. More recently, computerized coding schemes have improved reliability of the process. The method utilizes a computer algorithm to duplicate a hand-coded regime, thus rendering consistent results across all documents included in the analysis. However, it depends upon the availability of a rich and useful pre-coded dictionary, consisting of words and phrases theoretically linked to some analytical dimension(s) of the coder's choosing, the creation of which is itself a labor-intensive process.

A variety of quantitative linguistics techniques have been used by scholars in other disciplines for some time. For example, Mosteller and Wallace (1964) utilized their knowledge of theoretical mathematics to assess twelve of the *Federalist* papers, whose authorship had been considered ambiguous. Applying Bayesian inferential statistics and treating words as data sequences, they developed two lists of “function words” based upon patterns in texts known to have been written by Hamilton and Madison which could then be used to assess the contested documents. Their work is considered definitive, and authorship of the twelve papers is now attributed to Madison (see, e.g., Martindale and McKenzie 1995, utilizing content analysis and function word techniques).

⁴ Also see the reliability analysis James Gibson conducted as part of the Supreme Court Database Project (Gibson 1997).

Laver, Benoit, and Garry (2003), a team of European social scientists, have experimented with several quantitative linguistics techniques and have developed an apparently successful “wordscoring” method for identifying ideological differences expressed in the political tracts of the three major political parties in the UK.⁵ Their technique analyzes and compares word usage across texts. Beginning with documents whose differences along a dimension of choice (e.g., liberal versus conservative) are known, the researcher can assess unread documents and compare them with the original known ones, according to frequency of particular words used by the authors to express their positions. By comparing computerized reading of two opposing documents, wordscores can be calculated to associate individual words with texts—conceptually, if you see word “w10” what is the likelihood that you are reading text “t1” as opposed to “t2”? Similarly, textscores can be computed to compare proximity to the reference texts, whose perspective is known, among one or more unread, uncharacterized “virgin” text(s). This is precisely what they did to extract the policy positions expressed in the political position texts of several leading political parties. Indeed, their quantitative analytics consistently confirm previously completed standard, and far more labor-intensive, qualitative rendering of those texts (also see Laver and Garry 2000; Benoit and Laver 2003).

Legal briefs and judicial opinions are excellent candidates for this kind of analysis. Petitioners and respondents, by definition, represent opposing positions, and, once a set of questions is presented for decision by the U.S. Supreme Court, all

⁵ The *Wordscores* software is written to work within *STATA* (version 7 or 8). The authors have established a webpage (<http://www.politics.tcd.ie/wordscores/>) that includes a free download of the *Wordscores* software, miscellaneous tips and information about the method, links to articles they have published about the method, and copies of the text files used in their *APSR* article (to use as samples for learning how to use the program). We would like to thank Kenneth Benoit in particular for his technical assistance.

documents associated with a case focus on the issues that have been joined. Indeed, political parties (even European parties) can take common or similar positions on a range of problems, and their platform documents are not necessarily responsive to their political adversaries. In addition, legal documents follow a common format, a useful characteristic for computerized coding and conversion of the texts to data, and they tend to draw upon a common set of historical references. We also believe that *Grutter* and *Gratz* present a good opportunity to test the value and promise of quantitative linguistics in the field of law and politics. The large number of amici representing the respective sides of the affirmative action debate (and several that are supposedly neutral) bring a broad range of perspectives to the controversy and the Court, itself, was badly splintered, producing different outcomes in the two cases.

We begin with a brief overview of the *Grutter* and *Gratz* litigation and the opinions expressed by the justices in response. We then discuss the “wordscoring” quantitative linguistic technique in more detail and suggest the sorts of substantive questions it may help us to answer. Finally, we present the results of our preliminary analysis of the documents. Our findings are quite promising and suggest that this approach opens a range of research possibilities that warrant further development.

Affirmative Action, 2003

The Supreme Court’s 2002-03 Term featured a number of high profile cases. Much anticipated were rulings on gay rights (*Lawrence v. Texas*, 539 U.S. 558), three strikes laws (*Lockyear v. Andrade*, 538 U.S. 63 and *Ewing v. California*, 538 U.S. 11), internet indecency (*U.S. v. American Library Association*, 539 U.S. 194), cross burning (*Virginia v. Black*, 538 U.S. 343), racial gerrymandering (*Georgia v. Ashcroft*, 39 U.S.

461), and states' rights (*Nevada Department of Human Resources v. Hibbs*, 538 U.S. 721). But, the most awaited decisions of the Term – those widely believed to have the greatest potential impact – were two affirmative action cases, *Gratz v. Bollinger* (539 U.S. 244) and *Grutter v. Bollinger* (539 U.S. 306).

Gratz and *Grutter* were challenges to the use of race in admissions at the University of Michigan and the University of Michigan Law School, respectively, during the 1990s. The progenitor, of course, was *Regents of the University of California v. Bakke* (438 U.S. 265, 1978) (*Bakke*), decided a quarter century before by a divided Court. Indeed, *Bakke* generated three major opinions. Justice Brennan, joined by Justices White, Marshall, and Blackmun, concluded that neither Title VI of the Civil Rights Act nor the 14th Amendment “bar the preferential treatment of racial minorities as a means of remedying past societal discrimination to the extent that such action is consistent with the . . . amendment” (*Id.*, at 328, Brennan, J., concurring in part and dissenting in part). On the other side, Justice Stevens, with Chief Justice Burger and Justices Stewart and Rehnquist, argued that the case could be settled on the basis of Title VI alone which, they contended, clearly prohibits racial preference in any program receiving federal funds (*Id.* at 408-421, Stevens, J., concurring in part and dissenting in part).

Thus, Justice Powell, straddling the middle, became the voice of the Court, finding that race may be used as one of a number of factors in university admissions programs, but that the UC Davis policy amounted to an unconstitutional racial quota (*Id.* at 297ff).

The decision forced universities throughout the country to rethink affirmative action programs, many attempting to model the Harvard program cited approvingly by

Justice Powell (*Id* at 316). The Court’s fractured mandate, however, meant, inevitably, that more challenges would follow. And, indeed, they did, picking up steam particularly in the 1990s.⁶ The fact that different Circuits were coming to very different conclusions, ultimately forced the High Court’s hand. To address the growing complexity, it chose the University of Michigan, which employed one method of achieving diversity in its undergraduate admissions and another in its law school admissions.

Gratz v. Bollinger

The University’s undergraduate program relied on a point system. Applicants could be awarded a possible 150 points, with plus factors including “high school grades, standardized test scores, high school quality, curriculum strength, geography, alumni relationships, and leadership” (539 U.S. 244, at 253). An additional positive was race, in particular African Americans, Hispanics, and Native Americans, considered “under represented minorities” by the University. Members of these groups received 20 points toward admissions. Gratz, a Caucasian student and Michigan resident denied admission in 1997, filed a class action against the University. The District Court ruled for the defendant, finding “the educational benefits flowing from a racially and ethnically diverse student body [to be] a sufficiently compelling interest to survive strict scrutiny” (*Gratz v. Bollinger*, 122 F. Supp. 2d 811, 824, E.D. MI, 2000). Moreover, it judged the school’s ongoing admissions program to be narrowly tailored, thus meeting “the requirements set forth by Justice Powell in *Bakke*” (*Id* at 831). While the *Gratz* appeal to

⁶ See e.g., *Johnson v. Board of Regents of the University of Georgia*, 263 F.3d 1234, U.S. Court of Appeals for the Eleventh Circuit (2001); *Hopwood v. Texas*, 236 F.3d 256, U. S. Court of Appeals for the Fifth Circuit (2000); and *Podberesky v. Kirwan*, 38 F.3d 147, U. S. Court of Appeals for the Fourth Circuit (1994). See also, California Const., art. I, § 31 (Proposition 209) which provides, “The state shall not discriminate against, or grant preferential treatment to, any individual or group on the basis of race, sex, color, ethnicity, or national origin in the operation of public employment, public education, or public contracting.”

the Sixth Circuit was pending, the Supreme Court opted to go ahead and hear the case with another that the Circuit had recently decided in favor of the Michigan Law School.

Grutter v. Bollinger

For its part, the law school, notably, among the nation's elite, employed a less formulaic admissions policy. As with almost every other law school, major determinants were LSAT scores and undergraduate GPA. In addition to these numeric variables, the admissions committee was allowed to entertain certain "soft" variables, "like the enthusiasm of the recommenders, the quality of the undergraduate institution, the quality of the applicant's essay, residency, leadership and work experience, unique talents or interests, and the areas and difficulty of undergraduate course selection" (*Grutter v. Bollinger*, 288 F.3d 732, 736, 6th Cir., 2002). Taking these factors into consideration, the law school would sometimes admit students with *relatively* low scores if it had "good reason to be skeptical of an index score based prediction . . . [or, if the student in question] may help achieve that diversity which has the potential to enrich everyone's education and thus make a law school class stronger than the sum of its parts" (*Id.*). According to the law school, diversity factors might include "an Olympic gold medal, a Ph.D. in physics, the attainment of age 50 in a class that otherwise lacked anyone over 30, or the experience of having been a Vietnamese boat person" (*Id.*). Although attaching no number to it, the school admitted its desire to achieve and maintain a "critical mass" of underrepresented minorities, "a number sufficient to enable underrepresented minority students to contribute to classroom dialogue without feeling isolated" (*id* at 737). The appeals court ruled in favor of the law school plan.

An indication of the perceived importance of any case is the number of amici inspired to join in the fray. On that basis alone, *Gratz* and *Grutter* could be considered unusually consequential. A total of 104 amici briefs were filed with the Supreme Court, 19 in support of the petitioners, 79 backing the respondents, and 6 claiming a neutral stance.⁷ Thus, if amici provide the Court with information, the Justices had data to spare.

The Opinions

Although the two cases were treated as a bundle for doctrinal purposes, the Court ruled on the two separately. Writing for the *Gratz* majority, Chief Justice Rehnquist found the undergraduate program in violation of the Equal Protection Clause and 42 USCS §§ 1981. His opinion followed two clear strands. First, he placed tremendous emphasis on individual assessment in university admissions, the words individual, individuality, and individualism appearing repeatedly in his opinion. A constitutionally sound admissions program must, according to the Chief Justice, provide “individualized consideration” (539 U.S. 244, 269). Second, the Chief Justice relied heavily on affirmative action and employment set-aside precedent,⁸ emphasizing, not surprisingly, Justice Powell’s opinion in *Bakke*, and highlighting particularly his approving reference to the Harvard admissions program.

Two Justices, O’Connor and Thomas, wrote opinions concurring both in the Court’s judgment and its rationale. Like the Chief Justice, Justice O’Connor stressed the

⁷ Briefs in support of respondents clearly outnumbered the rest and included, among others, a variety of civil rights groups, universities and university-based groups, businesses, military leaders, and members of Congress. In support of petitioners were a number of conservative interest groups, some law professors, and the Asian American Legal Foundation. Neutrals included the Equal Employment Advisory Council and the Massachusetts School of Law.

⁸ See especially *Fullilove v. Klutznick*, 448 U.S. 448 (1980), *Richmond v. Croson*, 488 U.S. 469 (1989), *Metro Broadcasting v. FCC*, 497 U.S. 547 (1990), and *Adarand v. Peña*, 515 U.S. 200 (1995) .

constitutional imperative of individual consideration. The Michigan index, she asserted, failed in giving more weight to group characteristics than to personal achievement, leadership, and other individual characteristics (*Id.*, at 279-80, O'Connor, J., concurring). Justice Thomas agreed that the Court had correctly applied precedent, but noted, for the record, that were he able to consider the issue *tabula rasa*, he would decide that a state may never use race in admissions decisions (*Id.*, at 280, Thomas, J., concurring).

Three Justices, Stevens, Souter, and Ginsburg dissented.⁹ Justice Stevens confined his disagreement with the Court to the standing issue, asserting that named plaintiffs had no personal stake in the outcome (*Id.*, at 282-90). This reasoning was echoed by Justice Souter who nevertheless offered a brief discussion of the merits. Michigan's program, according to Souter, did not amount to a quota system, since the selection index took all characteristics into consideration. He went on to note that at least the Michigan program is open and straightforward in its plan. This contrasts with admissions policies in Texas, California, and Florida – programs favored by the U.S. government's brief – which, are exemplary admissions programs. According to Souter, however, these programs deliberately obfuscate.¹⁰

The major substantive dissent was written by Justice Ginsburg, and it stands in clear contrast to the Chief Justice's opinion. First, she employed social statistics to demonstrate that the effects of discrimination remain and large disparities endure (*Id.*, at 298ff, Ginsburg, J., dissenting). Moreover, Ginsburg cited *international* human rights and relied heavily on law reviews, as opposed to precedent (*Id.*, at 302). In sum, while

⁹ Justice Breyer wrote a one paragraph opinion concurring in the Court's judgment, but joining in a portion of Ginsburg's dissenting rationale.

¹⁰ "Equal protection," according to Justice Souter, "cannot become an exercise in which the winners are the ones who hide the ball" (*Id.*, at 297, Souter, J., dissenting).

the *Gratz* Court stressed the individual and relied on its own prior decisions, the dissent stressed bias against groups while relying on international norms and intellectual discussions.

Unlike the undergraduate program, the law school passed constitutional muster, the Court finding it to be narrowly tailored toward a compelling state interest. Writing for the *Grutter* majority, Justice O'Connor emphasized the benefits of diversity in higher education. According to Justice O'Connor, in order for our democracy to maintain legitimacy, civic participants generally, and civic leaders particularly, must be inclusive of all racial and ethnic groups. Law schools are the foremost training ground for civic leaders; therefore, diversity in this realm is critical (539 U.S. 306, 332). Notably, in addition to citing affirmative action precedent, especially *Bakke*, O'Connor openly relied on information provided by amici.¹¹ Her opinion concluded with her now famous admonition that affirmative action must end in 25 years (*Id.*, at 343).

Justice Ginsburg wrote a concurrence that echoed her dissenting themes in *Gratz*, notably, the persistence of racial inequalities with nods to “the international understanding” of affirmative action (*Id.*, at 344, Ginsburg, J., concurring).

The Chief Justice and Justices Scalia, Kennedy, and Thomas all wrote dissents.¹² The lengthiest and most substantive of those disagreements was penned by Justice Thomas. First, he repeatedly referred to the Law School admissions program, not in terms of ethnic balance or diversity goals, but rather in terms of a desired aesthetic (e.g., “their aesthetic demands,” “the racially aesthetic student body,” “classroom aesthetics”). In his view, the program desired little more than a *look* of diversity; program

¹¹ See Brief for Judith Areen, Brief for Amherst College

¹² In fact, Thomas and Scalia both concurred in part and dissented in part. The emphasis for each, however, was decidedly on the dissent.

administrators are, in his words, “aestheticists” (*Id.*, at 372, Thomas J., concurring in part and dissenting in part).

Second, he asserted, the Law School could achieve its goals in a constitutionally sound manner were it willing to sacrifice some of its “exclusivity and elite status” (*Id.* at 356). Indeed, he implied that one reason for the Court’s decision was its bootlicking deference to elite institutions. Public legal education, according to Justice Thomas, may be desirable state policy, but it is hardly a pressing public necessity. Thus, the maintenance of a law school does not constitute a compelling state interest. An even less important state interest then, is maintaining an elite public law school, as only three other states do (California, Texas, and Virginia). The State of Michigan cannot even claim its law school as a benefit to its citizens, since a mere 27% of the Law School’s 2002 entering class are from Michigan; graduates of the University of Michigan Law School made up less than 6% of applicants to the Michigan bar; and only 16% of graduates stayed in Michigan after law school. In other words, if Michigan wishes to make even a minimal claim of state interest, it should lower its standards (*Id.*, at 359-60).

Third, Justice Thomas offered what has become a very familiar refrain in his affirmative action opinions. Such programs hurt and humiliate the very minorities they claim to benefit. Most, he contended, are ill-prepared for the program and thus do not do well once they have graduated. On the other hand, those few who are admitted without preference are stigmatized. In addition, he hypothesized that if blacks know they can be admitted with LSAT scores of 155, they will have no incentive to achieve higher scores (*Id.*, at 377).

Finally, Justice Thomas scoffed at the Court's "deference to the Law School's 'assessment that diversity will, in fact, yield educational benefits'" (*Id.*, at 365). Historically black colleges (HBCs) maintain racial homogeneity because, they claim, the very lack of diversity yields educational benefits. Thus, he asserted, "an HBC's rejection of white applicants in order to maintain racial homogeneity seems permissible . . . under the majority's view of the Equal Protection Clause" (*Id.*).

Though atypically short, Justice Scalia's dissent was typically caustic. Diversity, according to Scalia, has no intrinsic educational benefit.¹³ Moreover, he derided the Court for the "Grutter-Gratz split double header," which he maintained would inevitably lead to legal confusion and much more litigation (*Id.*, at 348, Scalia, J., concurring in part and dissenting in part).

For his part, the Chief Justice objected to the admissions program's differential treatment of minorities. Statistically, African Americans are given much more preference than Hispanics or Native Americans. Moreover, more Hispanics than blacks are excluded (*Id.*, at 381-87, Rehnquist, C.J., dissenting).

Finally, Justice Kennedy dissented based on his understanding of *Bakke*. Justice Powell's rule, according to Justice Kennedy, can be boiled down to two parts: 1) race may be a factor in admissions, but 2) the use of race requires rigorous judicial review. The Court, asserted Kennedy, did not review the current case with any rigor. Rather, he maintained, the Court simply accepted Michigan's assurances that its program meets

¹³ To wit, Justice Scalia maintained that diversity "of course, [is not] an 'educational benefit' on which students will be graded on their Law School transcript (Works and Plays Well with Others: B+) or tested by the bar examiners (Q: Describe in 500 words or less your cross-racial understanding)" (*Id.*, at 347, Scalia J., concurring in part and dissenting in part).

constitutional requirements. On the contrary, however, strict scrutiny would demonstrate that Michigan admissions is a quota in disguise (*Id.*, at 387ff, Kennedy, J., dissenting).

Explanation of the Wordscoring Method:

The primary purpose of this study is to explore potential uses for the study of law in general, and of the U.S. Supreme Court in particular, of the “wordscores” method of semi-automated policy preference identification developed by Laver, Benoit, and Garry (2003). Before discussing the results of our exploratory study, however, we will first discuss the wordscoring method in more detail. We will consider how it compares to other methods of policy position identification and exactly how it is designed to estimate policy positions treating words solely as data.

As mentioned above, scholars of the Supreme Court have developed various techniques for deriving reliable estimates of justice’s sincere policy preferences. Many have used vote history, but that can be problematic if voting is the result of strategic calculations or internal bargaining (i.e. if it is insincere). On the other hand, the Segal-Cover index, based upon editorials written prior to each justice’s confirmation, has proven to be both issue-limited and time-bound, faring much better at predicting votes in civil liberties cases and during the Burger Court than in other issue areas or during other eras. Furthermore, since it is based upon a pre-Court snapshot, the Segal-Cover index has the added weakness of not accounting for preference changes justices may go through during their tenure.

Epstein and Mershon (1996) have noted that this methodological dilemma is not unique to Court scholarship. Political scientists concerned with explaining the behavior (mostly voting) of other political actors (mostly legislators) have sought a reliable method

for identifying the policy positions of those actors without tautological reliance upon the very behavior they are seeking to explain. Unlike judicial behavioralists, however, a number of social scientists (especially in Europe) now generally estimate policy preferences by content analyzing texts written by the actors/parties they are studying. With the exception of Danelski (1966), judicial scholars have not moved in this direction, although Epstein and Mershon note that this might be a useful approach, suggesting that “the coding of justices’ documents may prove the most satisfactory way for judicial scholars to come to grips with the measurement problems that have plagued their work” (1996, 286). As a model to emulate they point to the Comparative Manifesto Project (CMP) developed by European comparativists (e.g. Budge, Robertson, and Hearl 1987).

With the advent of computerized coding methods, the hand coding approach utilized by the CMP is in many ways outdated (Laver and Garry 2000). However, both of these methods of content analysis have substantial shortcomings as well, such as labor intensiveness, over-reliance upon too-easily-biased human judgment (even with computer coding), and insensitivity to changes over time. Laver, et al. (2003), in response to these shortcomings, developed the wordscoring method that, they argue, presents a reliable, more objective, less labor intensive approach to identifying the policy preferences of political actors as expressed in the texts they produce.

As already mentioned, the wordscoring technique derives “textscores” for “virgin texts,” which are documents with unread, uncharacterized policy positions, by comparing the relative word frequencies within them to those of “reference texts” with *a priori* known policy positions. Thus, textscores serve as numerical representations of the respective policy positions of authors who produced the documents.

To achieve this, the most important decision to make is the selection of reference texts, since their “word universe” and the relative frequency of word deployment establish the parameters for scoring the virgin texts. Laver, et al. (2003), suggest four guidelines for choosing reference texts. The first guideline is that one should “have access to confident estimates of, or assumptions about, their positions on the policy dimensions under investigation” (Laver, et al. 2003, 314). Second, “the reference texts should use the same lexicon, in the same context, as the virgin texts being analyzed” (*Ibid*, 315). Third, “policy positions should ‘span’ the dimensions in which we are interested” (*Id.*). Finally, “the set of reference texts should contain as many different words as possible” (*Id.*).¹⁴

After choosing the set of documents¹⁵ to be used as reference points and virgin texts to be analyzed, the next step is to establish a word frequency matrix, with each cell in the matrix representing the frequency of each word for each text. For our set of documents, which included 104 amici, 6 briefs by respondents and petitioners¹⁶, and 13 Justice’s opinions from *Gratz*, and *Grutter*, the resulting word frequency matrix listed 27,625 “words.”¹⁷

¹⁴ A fifth should be added: the texts should have roughly equal word counts, if possible.

¹⁵ Documents must be in plain text (.txt) format. We acquired all of the texts for this study from *LexisNexis*. Using *Notepad*, we saved every Court opinion, litigant brief, and brief amicus curiae as separate files in plain text format. References were included only if they fell within the main body of the text. Consequently, parenthetical citations were included within our text files, while most footnotes and all appendices were excluded. For litigant and amicus briefs, which generally adhere to a standard format, we included all text beginning with the first word below the “Summary of Argument” section (or the “Argument” section if the brief did not contain the summary section) and ending with the last word of the “Conclusion” section (just prior to the standard closing: “Respectfully Submitted”). It would be useful to conduct a study comparing the results based on this criterion of text selection with the results derived when indiscriminately selecting the entire text of each brief.

¹⁶ Two of the petitioners’ briefs were responses to the respondents’ filings, and we did not include those in this analysis.

¹⁷ As the software is currently designed, this includes all character strings that begin with a letter. For comparison, we also took a look at Provalis’ *QDA Miner* qualitative data analysis software. The total word count using *QDA Miner* was 20,945 (20,396 using their “exclusion dictionary,” which removes common

Having created the word frequency matrix for the chosen set of texts, we are able to begin the substantive analysis. Figure 1 illustrates the three-stage procedure for generating textscores, using data from one of our experiments as an example. The first step involves designating appropriate reference texts *and* applying accurate *a priori* scores along the dimension under consideration. In this example, we used two document sets as reference texts: the petitioners' briefs for the *Grutter* and *Gratz* cases combined and the respondents' briefs for those cases combined (PIP2.txt, R1R2.txt). The positions of both texts along the dimension in question (i.e., positions on the constitutionality of the University of Michigan's Affirmative Action policies), of course, are known *a priori*, with petitioners holding that the policies are unconstitutional and the respondents asserting that they are constitutional. For our purposes, this relationship can be scored in an almost infinite number of meaningful ways, so long as the scores are not set equal.¹⁸ Somewhat arbitrarily, we scored the petitioners' position at 1 and the respondents' at 5.¹⁹ These calculations set the parameters for the next two steps by designating the reference texts and establishing numerical representations of their respective positions (1 and 5) along the given dimension (oppose or defend affirmative action).

(Figure 1 about here)

words—known among quantitative linguists as “function words”—such as indefinite articles and prepositions), reflecting the fact that *QDA Miner* uses more demanding criteria for classifying a string as a word. For instance, the Wordscore software includes “n1” as a word, whereas *QDA Miner* does not. Laver, et al., (2003, 315, n5; 319, n11) argue that this broad inclusiveness is not a liability since, among other things, meaningless words can be expected to cancel one another out. Their arguments notwithstanding, we think the method would be much improved if such non-words as well as content-neutral “function words” were excluded. Among other things, quantitative linguistics theory suggests that function word distributions are not random, but rather are indicative of authorship (Mosteller and Wallace, 1964; Farrington, 1996).

¹⁸ The degree of flexibility lessens a bit if more than two positions are set along the dimension. We have not yet attempted a run using more than two positions along a dimension, but it is certainly worth trying in a future study.

¹⁹ For future projects (freed from our present “path dependence”) we intend to set the scale, when relevant, along a left – right ideological continuum (thus, the opposite of what we have done for this study).

The second step constitutes the crucial link between the *a priori* reference text designation (step 1) and the virgin textscore generation (step 3). The link is accomplished by creating a “wordscore” S_w for every word w in the reference texts based upon their relative frequencies (P_{wr}) and their reference text scores (i.e., 1 or 5). Conceptually, “relative frequencies” can be interpreted as meaning the probability that you are reading either the petitioner-position reference text or the respondent-position text given that you are reading word w . For example, the word “preferences” was used 148 times in the petitioner-position reference text and 4 times in the respondent-position text. So, $P_{(\text{“preferences”})(\text{petitioner})} = 148/152 = .9737$, and $P_{(\text{“preferences”})(\text{respondent})} = 4/152 = .0263$.²⁰ The wordscore for “preferences” $S_{(\text{“preferences”})}$ is the sum of the two reference text scores, 1 and 5, weighted by $P_{(\text{“preferences”})r}$. So, $S_{(\text{“preferences”})} = .9737(1) + .0263(5) = 1.10$, as reported in Figure 1. A few other wordscores from our analysis are also listed in Figure 1. For this example, a total of 6,047 wordscores were generated, establishing the basis by which virgin textscores are estimated in the next step.

Third, scores (S_v) are derived for each virgin text v by calculating the mean score of all words that it contains, weighted by the relative frequency F_{wv} of each word. Relative word frequency is computed as a proportion of all words in the virgin text, as follows:

$$S_v = \sum_w (F_{wv} \cdot S_w)$$

This generates what Laver, et al. (2003) refer to as “raw textscores,” which represent estimates of the policy positions expressed in the virgin texts.

²⁰ Differences in text size (in terms of total words) are *not* controlled for in the calculation of relative probabilities, so it is important that reference texts be roughly equal in size.

The problem with raw scores, however, is that distributions tend to cluster toward the center, because dimension-neutral words (of which there are many) push the mean of all scored words misleadingly toward the moderate (or neutral) center of the reference text scale (in our analysis, towards 3). Again, the raw scores do reflect meaningful distinctions among virgin texts, but the compressed scale makes it difficult to interpret them *viz à viz* the reference texts. For example, the raw virgin textscore generated for the amicus brief submitted by the conservative Pacific Legal Foundation (in *Grutter*) was 2.7894 and the score for the liberal NAACP/ACLU (also in *Grutter*) was 3.2689. Those scores (near the extremes of the raw score distribution) are certainly in the correct order, but because they both rely upon a common lexicon of content-neutral words, they both are clearly drawn toward the mean. Laver, et al., have suggested rescaling the raw virgin textscores so that they are more congruent with the reference text scale—i.e., to transform the raw scores so that they have the same “dispersion metric” as the reference texts, preserving “the mean and relative positions of the virgin scores but [setting] their variance equal to that of the reference texts” (Laver, et al., 2003, 316). More precisely, transformed textscores S_v^* are computed by this formula:

$$S_v^* = (S_v - S_r) (SD_r / SD_v) + S_r$$

where SD_r and SD_v are the standard deviations (discussed in more detail below) for the reference texts and virgin texts respectively. Thus we have calculated and rely upon transformed scores for all documents in our analysis. And, to follow our example, the Pacific Legal Foundation brief now shows a score of -2.3321, and the NAACP/ACLU brief weighs in at 5.7871.

Finally, it should be noted that a unique feature of the wordscoring method is that it allows for the computation of a variance, standard deviation, and standard error, and, thus, the generation of confidence intervals. This is a straightforward procedure. The variance of a virgin text V_v indicates the dispersion of wordscores S_w around the virgin textscore S_v . Since textscores are weighted averages, the variance must be weighted by the frequency of each word within the text F_{wv} in question. Thus, the formula is as follows:

$$V_v = \sum_w F_{wv} (S_w - S_v)^2$$

The standard deviation for each virgin text SD_v is the square root of V_v , and the standard error SE_v is calculated by dividing SD_v by the square root of the total number of virgin scored words N .

Analysis

In this section we test the capacity for the Wordscoring method to accurately score amicus briefs in congruence with their declared support for either the petitioners or respondents, detect substantive distinctions among the Justice's written opinions, predict Justice's votes, and to enable us to detect and interpret consistent and distinct patterns in issue conceptualization among the different sides of the affirmative action debate.

As we discussed above, we combined both petitioner (P1, P2) and respondent (R1, R2) briefs from *Gratz* and *Grutter* respectively to create two reference texts and then analyzed the 98 amici curiae briefs filed in support of one of the adversaries' position.

Figure 2 presents the distribution of the resulting textscores.²¹

²¹ In a different experiment, we produced comparably good results using an amicus brief submitted by the Pacific Legal Foundation and the amicus brief submitted by ACLU-NAACP-LDEF as reference texts (set

(Figure 2 about here)

Because we set the scores for the reference texts at P=1 and R=5, higher numbers among the virgin texts represent a closer mapping to the respondents' briefs, and lower scores, a closer proximity to the petitioners. Both of the amici distributions show a nearly normal distribution, with those supporting the petitioners clustering around 1 ($\mu = .458, \sigma = 1.949$) and those filed on behalf of the respondents having a mode of 5 ($\mu = 3.325, \sigma = 1.621$).²² In addition, petitioner amici are disproportionately dispersed toward the low end of the scale, while respondent amici are on the higher end – just as we would predict. For example, the Pacific Legal Foundation, which we would expect to present very conservative arguments, filed two amicus briefs, both producing textscores at the negative extremity of the continuum (their *Gratz* brief scored -1.570, and the *Grutter* filing measured -2.332). On the other side, the joint ACLU-NAACP-LDEF brief ($S_v = 5.787$) and the document offered by the United Negro College Fund ($S_v = 7.330$) fell near the opposite boundary.

This means that, although all brief writers begin with the same linguistic universe, they choose to emphasize a subset of words that is quite consistent with their respective side of the affirmative action debate but that is distinct from their opponents'. While this is certainly intuitive, and it would no doubt correspond to results obtained by reading and manually coding the materials, hand-coding this much text would consume countless hours, and the coding would likely be less reliably accurate.

at 1 and 5 respectively). We have chosen to emphasize the results using the principal parties' briefs as reference texts, however, because, unlike amici, they are available for every case and, thus, are a useful standard for comparing results across cases in future studies.

²² The textscores for the six "neutral" amici documents did overlap both of the "declared" distributions, but the skew was toward the respondents.

The Wordscoring method considers every word in a document and searches for its duplicate. This means that calculating wordscores and textscores will be quite consistent across documents.²³ The words that top each list in our analysis make very good sense and are indicative of the arguments that we would expect each side of the affirmative action issue to present (see Figure 1 for some examples). They also suggest real differences in conceptualization of the questions. Petitioners disproportionately (in some cases exclusively in comparison to the respondents, where $S_w = 1$) use language that conveys a legalistic, precedent-based argument stressing individual rights, focusing on “equal protection” to make the point that “race-based” “classifications” cannot be sufficiently “narrowly-tailored” to pass Constitutional muster. Indeed such language shows up repeatedly among the Petitioner Amici briefs, as they reiterated and reinforced those arguments to the Court, but they were used with far less frequency, if at all, by Respondent Amici. The wordscores indicate that the Respondents conceptualized the argument more in terms of the social benefits that accrue from affirmative action policies in higher education, focusing on “inequality” of “opportunity” structures, and the state’s responsibility to promote “social” “integration,” thus helping to overcome problems associated with a history of “slavery” and “racism.” There is, according to respondents, inherent value in “diversity.” Again, Respondent Amici reiterated those themes in their briefs. The wordscores and textscores thus provide a useful metric for analyzing and comparing large quantities of lengthy documents. The technique does not, however,

²³ Indeed, Laver, et al. argue that their technique can be used to score documents written in any language (2003, at 312).

contextualize word usage but simply takes a direct count,²⁴ and this is a potential limitation that we shall return to briefly a bit later.

We ran a control experiment for comparison and to make sure our results were not a fluke. Using two university catalogs—Western Washington University’s general catalog and the University of Maryland’s undergraduate catalog—as reference texts, the textscores for the *Gratz and Grutter* amici briefs are scattered, indicating no apparent pattern and reflecting the arbitrariness of the reference texts.²⁵ These results are reported in Figure 3.

(Figure 3 about here)

We selected these two control texts because the documents are large and, although they do not address a legal controversy, they are directly related to higher education. As the textscores indicate, however, neither document has predictive value for the two sets of amicus briefs in these cases. Presumably, similar results would obtain with other randomly selected reference texts.

Thus, we have good confidence in the findings with regard to our scoring of the amici documents, using the petitioner and respondent briefs as reference texts. With nearly 100 participants, we are likely to observe a wide range of positions as each one makes its case, trying to support the primary arguments offered by the principals but making some effort to distinguish itself, even if slightly, from others. Moreover, while we generally assume that an amicus will attempt to persuade the Court (or targeted Justices), such participants also have an incentive to play to their constituencies (e.g.,

²⁴ But the technique also allows a number of calculations regarding language use, to associate means, standard deviations, and confidence intervals with given words, and to determine whether language use in two documents is statistically similar or different.

²⁵ We also scored the briefs of the principal parties, again finding no relationship. (P1, *Grutter* petitioners, $S_v = 2.716$; P2, *Gratz* petitioners, $S_v = 2.734$; R1, $S_v = 5.144$; R2, $S_v = 1.409$).

Hansford 2004; Epstein and Knight 1999). Because such briefs represent advocacy with no responsibility of decision, the distributions represented in Figure 2 are consistent with what we should expect in a highly contentious issue field. The modal positions among those supporting either side are clearly distinct, and there are a good number of texts at the two extremes.

Judicial opinions are another affair entirely. Lead opinions, in particular, tend to be measured, and take into account the full sweep of arguments and precedential history, as well as the concerns of all colleagues who sign onto them (see e.g., Epstein and Knight 1998, ch. 3; Maltzman, et al. 2000, ch.4; Wahlbeck, et al. 1998). Indeed, as Chief Justice Rehnquist has stated, “There must be an effort to get an opinion for at least a majority of the Court in every case where that is possible. . . . To accomplish this, some give and take is inevitable, and doctrinal purity may be muddied in the process” (Rehnquist 1992, 270, quoted in Wahlbeck et al. 1998, 295). To obtain and sustain a majority generally requires some degree of compromise over the language that ultimately appears in the final draft. By contrast, single-authored concurrences and dissents can represent a clearer, perhaps more doctrinally pure, expression of a justice’s thoughts on the issue at hand. As Justice Antonin Scalia has recently written: “To be able to write an opinion solely for oneself, without the need to accommodate, to any degree whatever, the more-or-less-differing views of one’s colleagues; to address precisely the points of law that one considers important and no others; to express precisely the degree of quibble, or foreboding, or disbelief, or indignation that one believes the majority’s disposition should engender—that is indeed an unparalleled pleasure” (Scalia 1994, 42, quoted in Blomquist 2004, 77).

Our technique allows us to analyze the language of the various judicial opinions—at least, from the perspective of the adversaries and their respective supporters. Judicial opinions represent a vast set of records that is much read but underutilized as a database because of its sheer volume. Baum notes that “[l]ittle systematic evidence exists on the content of opinions, but it appears that justices’ positions in opinions follow ideological lines in the same general way that their votes do (Baum 1997, 71).

We analyzed the 13 *Gratz* and *Grutter* opinions using the petitioners’ and respondents’ briefs as reference texts. For comparison, we also ran the analysis using the corresponding amici briefs as reference texts.²⁶ The results are presented in Table 1.

(Table 1 about here)

The second set of scores are slightly inflated by the fact that the reference texts (all combined amici briefs on either side) encompass a more extensive dictionary; otherwise the results are quite similar. The opinion textscores are tightly packed, much more so than is the case among the advocates – which is certainly a reasonable distribution. We anticipated that the range of positions expressed by the justices would be smaller than for the amici, but, frankly, we were hoping for a bit more variety than our results indicate. Nonetheless, we think the approach has great promise and actually does correspond to the opinion universe in these two cases. Indeed, the scores indicate that the lines of reasoning expressed by the justices are for the most part fairly close, but they are skewed

²⁶ For this analysis, we combined all petitioner amici into one large document and did the same for all respondent amici. In future analysis we will segment the reference texts into several amici groupings.

toward the petitioners' position. Indeed, the two majority opinions indicate a Court that is generally not receptive to the pro-affirmative action position, although the *Grutter* opinion (affirming the law school policy) score is a bit higher than that in *Gratz*. The only real outlier is Justice Ginsberg. Her *Grutter* concurrence shows the highest score in that case, and her *Gratz* dissent is the only opinion located on the respondents' side of the language continuum. As we noted above, her opinion in *Gratz* was substantive and outward looking, offering a distinct alternative to the primary analysis provided in the other opinions. Justice Souter agreed with her, but devoted the bulk of his opinion to procedural issues, and Justice Stevens wrote primarily to express his questions regarding the petitioners' standing. The remaining six members of the Court voted to strike down the Michigan undergraduate admissions policy, and the textscores reflect that position. Notably, Justice Breyer wrote separately to concur with the majority opinion striking down the undergraduate admissions policy, but he did so with language more closely associated with affirmative action supporters. Indeed, he signed onto part of Justice Ginsberg's dissent.²⁷ *Grutter* was decided very closely, 5-4, with the three *Gratz* dissenters forming the core of the majority. Assuming that coalition theory is correct (e.g., Epstein and Knight 1998; Maltzman, et al. 2000), those members would feel a need to attenuate their views to hold onto the important vote of Justice O'Connor, who was assigned to write for the majority. Justice Ginsberg seems to have done precisely that. Her *Grutter* opinion textscore falls into a more moderate zone, although hers represents the strongest position in favor of upholding the policy. Among the other *Grutter* opinions, the two pure dissents (Rehnquist and Kennedy) produce the lowest scores, expressing strong support for the petitioners, Justice Scalia's caustic dissent/concurrence

²⁷ Justice Breyer also joined Justice Ginsberg's concurrence in *Grutter*.

is comparable, and Justice Thomas' dissent/concurrence scores a bit higher, probably because he engaged all the arguments offered by the policy defenders (indicating a potential weakness in relying solely on a technique that does not take word context into account).

Discussion

The primary aim of this analysis has been to explore the potential uses of the *Wordscores* method for the study of law in general, and of the Supreme Court in particular. The great promise of this approach is that students of the Court can increase substantially the quantity of legal texts used in their studies, and—since the method produces continuous variables with confidence intervals—can employ statistical techniques to analyze and compare large quantities of text documents.

Our preliminary analysis does indicate that the technique holds considerable promise. Textscores generated for the amici briefs produce two distinct distributions for the opposing sides of the affirmative action debate, and the wordscores help to isolate the primary issues that the two sides emphasized repeatedly. We are confident that the method can be applied to any competing set of adversaries to score the proximity of the arguments presented in their supporting documents. But there are certainly more questions than we have addressed here. Do different types of groups (e.g., membership-based, commercial, social advocacy, governments, and so on) participating as amici curiae make (discernibly) distinct types of arguments? Are there important differences among the parties on each side – i.e., are there significant characteristics among those falling above and below the means of each distribution? The technique also holds potential to determine consistency of argument over a period of years in a large number

of case iterations. For example, do the ACLU and Pacific Legal Foundation, long-term players in the affirmative action controversy, present consistent positions over time, or even across issue fields? Moreover, these methods can be used to assess linguistic connections between advocacy briefs and judicial opinions, thus adding to the scholarship exploring the potential influences of amici curiae on the process of legal development (e.g., Spriggs and Wahlbeck 1997).

One logical next step is to contextualize, to identify word clusters and phrases and assess them for ideological content.²⁸ The process can be used to develop a technique for improving speed and precision when dealing with large quantities of dense text. Clusters can include indicators of the relevant principles/rationales in contention in an argument, and, thus, allow a reader to formulate *a priori* working hypotheses/expectations. A first-time-read of a text, therefore, might be more efficient than normal since the reader will not need to engage in the “start-up” costs associated with approaching it cold.

What does our analysis say about the relationship between the arguments presented in the *Gratz and Grutter* affirmative action cases and the opinions written by the Justices? First, we readily admit that our initial assessment trial results would not allow us to predict the actual votes.²⁹ The textscores do indicate, however, that Justice Ginsberg's opinions were quite different from the others and much more closely in tune with the respondents' arguments to retain the admissions policies. Justice Breyer's textscore in *Gratz* also suggests that his opinion is different from his vote in that case,

²⁸ Spriggs and Wahlbeck (1997) used the argument headings in amici briefs as a method of determining which arguments were unique and which were most reiterated in support of the positions taken by the principal parties. This is a good first step. Argument headings and subheadings can be computer-read and coded quickly to create an analytical dictionary.

²⁹ In this case we are fairly certain that some of the scores simply missed the mark. However, we should not always assume that a disjunction between textscores and the votes they would seem to predict is an indication that the textscores are inaccurate. It is always possible in such a case that the Wordscores method has actually served us well by detecting an instance of "insincere" or "sophisticated" voting.

and the scores for Justice Rehnquist's and Justice Kennedy's dissents in *Grutter* suggest strongly held views. Although promising and suggestive, these results are not entirely satisfying and point to a need for refinement of the method and further research using additional case materials. As we noted above, further contextualization would be very useful, and we plan to develop this more fully in subsequent analysis. In addition, although 13 opinions were written for these two cases, most of them were not very lengthy. Combined, all the opinions here totaled 139 reporter pages. This gives us a good start for testing purposes, but it does not give us a great deal of leverage on the thinking of the Justices. As with the advocates, we feel these procedures offer great potential for determining the consistency of opinion offered by individual members of the Court on this set of issues as well as others, and we hope to develop a metric for analyzing and illustrating consistency and movement in judicial language over a series of cases in which the Court has addressed a similar set of legal questions, as well as across a range of issues.

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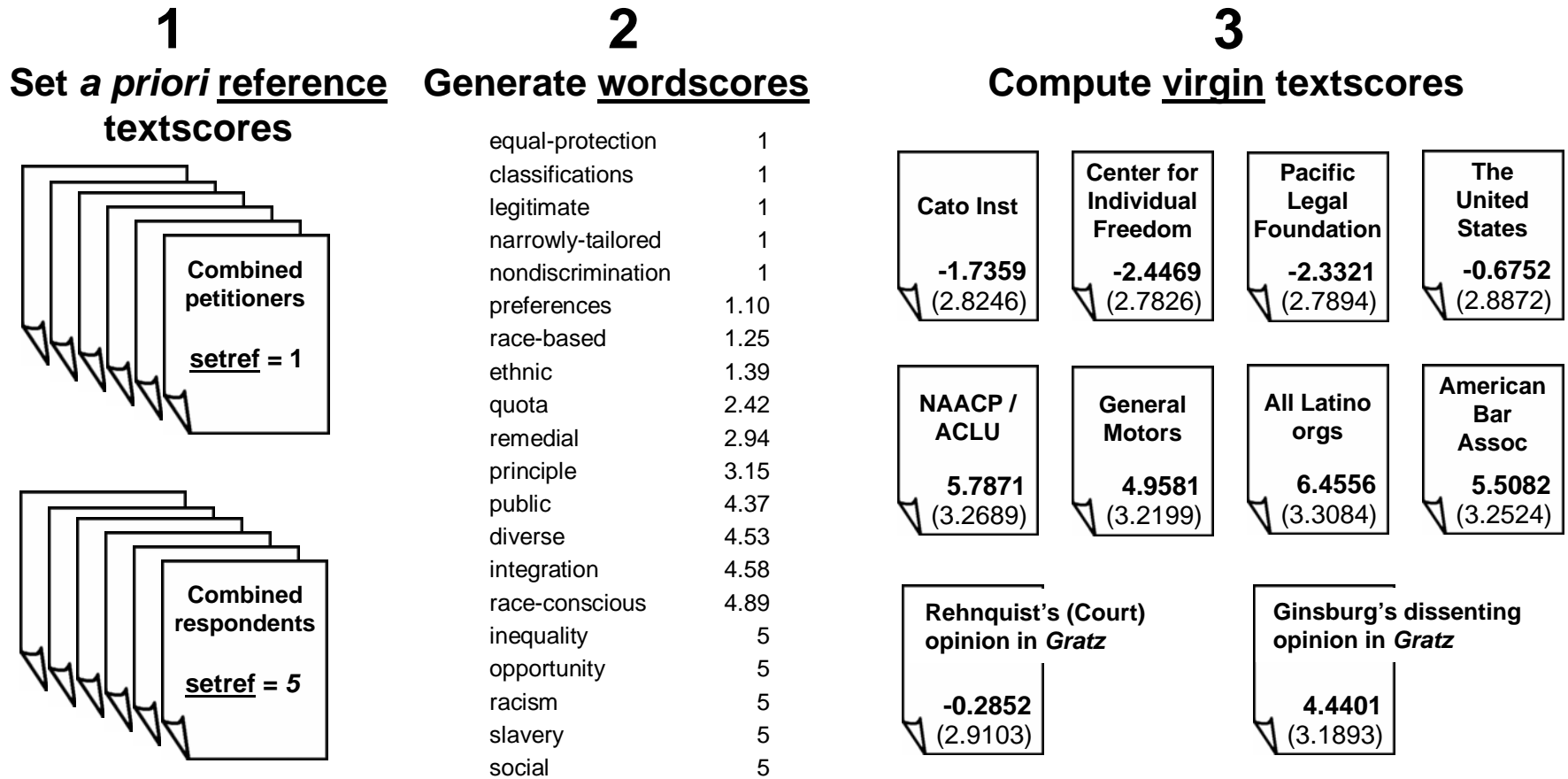
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Figure 1: Laver, et. al a *priori* “Wordscore” Procedure



Step 1: Establish reference texts and set a *priori* reference textscores along a given dimension.

Step 2: Generate wordscores based on relative word frequencies and the *a priori* scores designated in the previous step.

Step 3: Generate transformed (and raw) textscores for virgin texts, based on the frequency of each word within the new texts and their associated wordscores.

Figure 2

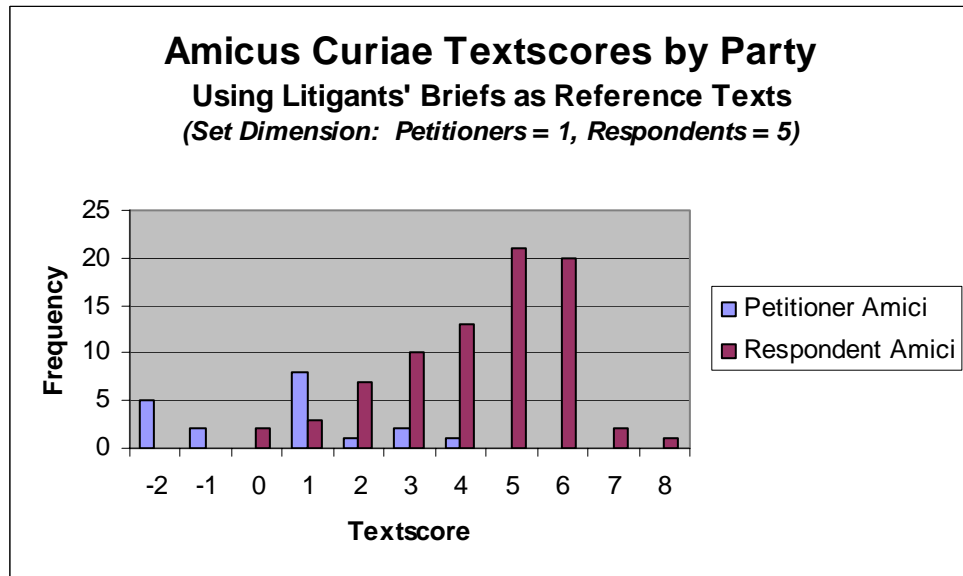


Figure 3

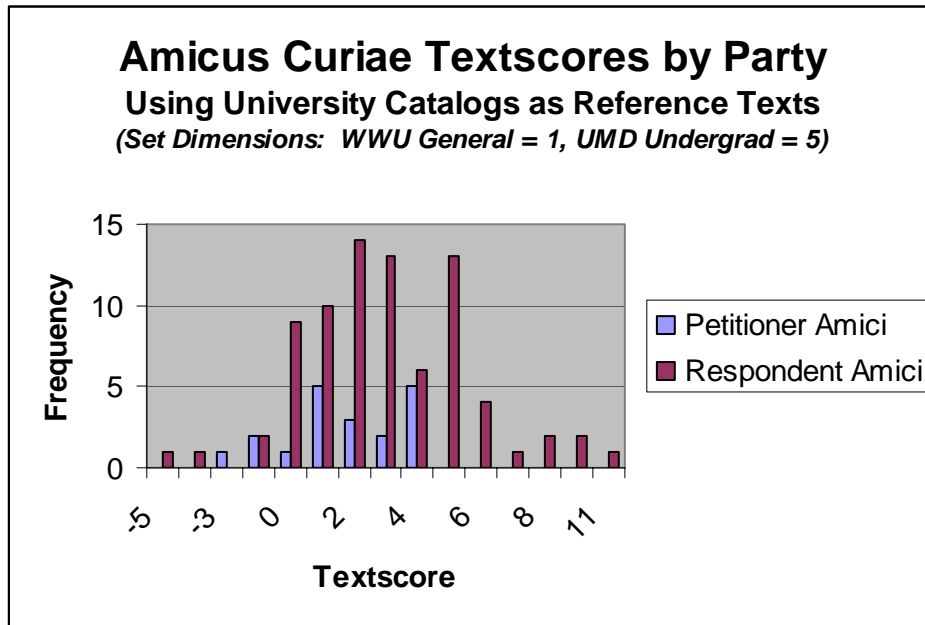


Table 1: Textscores for *Grutter* and *Gratz* Opinions

Virgin Text	Justices	Reference Texts: Petitioners' & Respondents' briefs		Reference Texts: Amici briefs		Word Count
		Transformed Textscore	SE	Transformed Textscore	SE	
GRUTTER						
Court opinion	O'Connor (Stevens, Souter, Ginsburg, Breyer join, and Thomas/Scalia join in part)	0.022	0.159	2.456	0.192	9525
Concurring	Ginsburg (Breyer joins) Rehnquist (Scalia, Kennedy, and Thomas join)	2.809	0.605	5.591	0.748	897
Dissent	Kennedy	0.702	0.297	2.591	0.371	2691
Dissent	Kennedy	0.166	0.301	2.286	0.369	2561
Dissent in part, Concur in part	Scalia (Thomas joins)	0.721	0.552	3.532	0.762	833
Dissent in part, Concur in part	Thomas (Scalia joins in part)	1.597	0.165	2.850	0.204	9257
GRATZ						
Court opinion	Rehnquist (O'Connor, Scalia, Kennedy, and Thomas join)	-0.285	0.172	1.641	0.210	8386
Concurring	O'Connor (Breyer joins "except for last sentence")	-0.563	0.393	2.305	0.515	1355
Concurring	Thomas	-0.294	0.954	-2.765	1.071	239
Concurring	Breyer	3.056	1.448	3.380	1.512	104
Dissent	Stevens (Souter joins)	1.836	0.311	2.609	0.381	2917
Dissent	Souter (Ginsburg joins in part)	0.437	0.307	1.341	0.369	2475
Dissent	Ginsburg (Souter joins, and Breyer joins Part I)	4.440	0.362	8.219	0.455	2439

**Appendix 1: Court Opinions and Principal Respondent / Petitioner
Briefs: Miscellaneous Information¹**

Text Code	Description	Total Words Scored	Raw Score	Transformed Score
R1	Principal brief submitted by Respondents in Grutter v. Bollinger	12,634	3.1492	6.3855
R2	Principal brief submitted by Respondents in Gratz v. Bollinger	10,388	3.1117	5.3051
P1	Principal brief submitted by Petitioners in Grutter v. Bollinger	10,052	2.8591	-1.9621
P2	Principal brief submitted by Respondents in Gratz v. Bollinger	12,014	2.8893	-1.0926

¹ All numerical data in this appendix are derived using the Wordscore method with the following reference texts: (1) all of the amicus briefs submitted for Petitioners combined into one text (setref = 1), and (2) all of the amicus briefs submitted for Respondents combined into one text (setref = 5).

Appendix 2: Amicus Curiae Briefs²

Amicus	Case Submitted For	Party in Support of	Total Words Scored	Raw Score	Transformed Score
Center For Individual Freedom	Both	Petitioners	3991	2.7826	-2.4469
Duane C. Ellison, Pro Se	Gratz	Petitioners	3467	3.0722	2.457
Law Professors Larry Alexander, Robert A. Anthony, Kingsley R. Browne, Jim Chen, George W. Dent, Jr., Stephen G. Gilles, Robert H. Heidt, Gail Heriot, Michael I. Krauss, Gary Lawson, Mark R. Lee, Nelson Lund, John Mcginnis, Geoffrey Miller, Dale A. Nance, Michael Stokes Paulsen, Stephen B. Presser, Michael Rappaport, Maimon Schwarzschild, Bernard H. Siegan, And Christopher T. Wonnell	Grutter	Petitioners	4117	2.846	-1.3735
National Association Of Scholars	Grutter	Petitioners	4072	2.9774	0.8515
National Association Of Scholars	Gratz	Petitioners	5703	3.0059	1.3347
Pacific Legal Foundation	Grutter	Petitioners	4532	2.7894	-2.3321
Pacific Legal Foundation	Gratz	Petitioners	2923	2.8344	-1.5698
Reason Foundation	Both	Petitioners	3660	3.1346	3.5132
The Asian American Legal Foundation	Both	Petitioners	6394	2.9854	0.9862
The Cato Institute	Both	Petitioners	4772	2.8246	-1.7359
The Center For Equal Opportunity, The Independent Women's Forum, And The American Civil Rights Institute	Both	Petitioners	6118	3.0049	1.3179
The Center For New Black Leadership	Both	Petitioners	3594	3.0959	2.8583
The Center For The Advancement Of Capitalism	Both	Petitioners	1357	2.9783	0.8671
The Claremont Institute Center For Constitutional Jurisprudence	Both	Petitioners	4865	3.0026	1.2782
The Michigan Association Of Scholars	Both	Petitioners	4386	2.9914	1.0883
The State Of Florida And The Honorable John Ellis "Jeb" Bush, Governor	Both	Petitioners	4701	3.1312	3.4557
The United States	Grutter	Petitioners	4855	2.8872	-0.6752
The United States	Gratz	Petitioners	3071	2.7981	-2.1847
Ward Connerly	Both	Petitioners	4077	2.9874	1.0203

² All numerical data in this appendix was derived using the Wordscore method with the following reference texts: (1) both principal briefs submitted by Petitioners for the two cases combined into one (setref = 1), and (2) both principal briefs submitted by Petitioners for the two cases combined into one (setref = 5).

Appendix 2: Amicus Curiae Briefs (continued)

13,922 Current Law Students At Accredited American Law Schools	Grutter	Respondents	1660	3.1316	3.4628
65 Leading American Businesses	Both	Respondents	2071	3.1936	4.512
A Committee Of Concerned Black Graduates Of Aba Accredited Law Schools: Vicky L. Beasley, Devon W. Carbado, Tasha L. Cooper, Kimberle Crenshaw, Luke Harris, Shavar Jeffries, Sidney Majalya, Wanda R. Stansbury, Jory Steele, Et Al.,	Grutter	Respondents	5097	3.2241	5.0285
American Council On Education And 52 Other Higher Education Organizations	Grutter	Respondents	6522	3.2342	5.1996
American Federation Of Labor & Congress Of Industrial Organizations	Both	Respondents	5959	3.2286	5.1051
American Law Deans Association	Grutter	Respondents	7874	3.1621	3.9795
Amherst, Barnard, Bates, Bowdoin, Bryn Mawr, Carleton, Colby, Connecticut, Davidson, Franklin & Marshall, Hamilton, Hampshire, Haverford, Macalester, Middlebury, Mount Holyoke, Oberlin, Pomona, Sarah Lawrence, Smith, Swarthmore, Trinity, Vassar, Wellesley, And Williams Colleges, And Colgate, Wesleyan And Tufts Universities	Both	Respondents	7100	3.188	4.4167
Association Of American Law Schools	Grutter	Respondents	7520	3.2039	4.6869
Behalf Of Hillary Browne, Danielle Conley, Nadine Jones Francis, Robin Konrad, And The Students Of Howard University School Of Law	Grutter	Respondents	5640	3.2186	4.9354
Boston Bar Association, Dwyer & Collora, Llp, Day, Berry & Howard, Goulston & Storrs, Krokidas & Bluestein, Llp, Shapiro Haber & Urmy Llp, Sterns Shapiro Weissberg & Garin, Testa, Hurwitz & Thibeault, Llp, And Weisman & Associates	Grutter	Respondents	2873	3.3252	6.7403
Carnegie Mellon University And 37 Fellow Private Colleges And Universities	Both	Respondents	3006	3.1869	4.3985
City Of Philadelphia, Pennsylvania, City Of Cleveland, Ohio And The National Conference Of Black Mayors, Inc.	Both	Respondents	3608	2.9445	0.2953
Columbia University, Cornell University, Georgetown University, Rice University And Vanderbilt University	Both	Respondents	3998	3.0478	2.0427
General Motors Corporation	Both	Respondents	5466	3.2199	4.9581
Graduate Management Admission Council And The Executive Leadership Council	Grutter	Respondents	198	3.1797	4.2775

Appendix 2: Amicus Curiae Briefs (continued)

Harvard University, Brown University, The University Of Chicago, Dartmouth College, Duke University, The University Of Pennsylvania, Princeton University, And Yale University	Both	Respondents	7267	3.0548	2.1613
Howard University	Both	Respondents	6461	3.2561	5.5711
Human Rights Advocates And The University Of Minnesota Human Rights Center	Both	Respondents	2946	3.105	3.0127
Indiana University	Grutter	Respondents	4280	3.0158	1.5023
John Conyers, Jr., Member Of Congress; John D. Dingell, Member Of Congress; Charles B. Rangel, Member Of Congress; Fortney Pete Stark, Member Of Congress; Edward J. Markey, Member Of Congress; George Miller, Member Of Congress; Dale E. Kildee, Member Of Congress; Martin Frost, Member Of Congress; Robert T. Matsui, Member Of Congress; Martin Olav Sabo, Member Of Congress; Barney Frank, Member Of Congress; Steny H. Hoyer, Member Of Congress; Et Al	Both	Respondents	6379	3.0748	2.5015
Judith Areen, Katharine Bartlett, Michael Fitts, Anthony Kronman, David Leebron, Saul Levmore, Richard Revesz, Kathleen Sullivan, Lee Teitelbaum, And David Van Zandt--In Their Individual Capacities As Deans Of, Respectively, Georgetown Law Center, Duke Law School, University Of Pennsylvania Law School, Yale Law School, Columbia Law School, University Of Chicago Law School, New York University Law School, Stanford Law School, Cornell Law School, And Northwestern University School Of Law	Grutter	Respondents	5838	3.0619	2.2825
King County Bar Association	Grutter	Respondents	2009	3.113	3.1479
Latino Organizations	Gratz	Respondents	8063	3.3084	6.4556
Latino Organizations	Grutter	Respondents	6214	3.2291	5.1135
Lt. Gen. Julius W. Becton, Jr., Adm. Dennis Blair, Maj. Gen. Charles Bolden, Hon. James M. Cannon, Lt. Gen. Daniel W. Christman, Gen. Westley K. Clark, Sen. Max Cleland, Adm. Archie Clemins, Hon. William Cohen, Adm. William J. Crowe, Gen. Ronald R. Fogleman, Lt. Gen. Howard D. Graves, Gen. Joseph P. Hoar, Sen. Robert J. Kerrey Et Al. [Former High Ranking Officers]	Both	Respondents	5543	3.2162	4.894

Appendix 2: Amicus Curiae Briefs (continued)

Massachusetts Institute Of Technology, Leland Stanford Junior University, E.I. Du Pont De Nemours And Company, International Business Machines Corp., National Academy Of Sciences, National Academy Of Engineering, National Action Council For Minorities In Engineering, Inc.,	Both	Respondents	5590	3.2956	6.24
Media Companies	Both	Respondents	1913	3.186	4.3835
Members And Former Members Of The Pennsylvania General Assembly And Pennsylvania Civic Leaders	Grutter	Respondents	3850	3.1978	4.5838
Members Of The United States Congress	Gratz	Respondents	5405	3.2383	5.2683
Michigan Black Law Alumni Society	Grutter	Respondents	4418	3.255	5.5517
Michigan Governor Jennifer M. Granholtm	Both	Respondents	3587	3.0418	1.942
MTV Networks	Both	Respondents	1458	3.2012	4.6408
National Asian Pacific American Legal Consortium, Asian Law Caucus, Asian Pacific American Legal Center, Et Al	Both	Respondents	5287	3.2609	5.6518
National School Boards Association, Et Al	Both	Respondents	5759	3.2168	4.9043
New York City Council Speaker A. Gifford Miller, New York City Council Members Bill De Blasio, Helen Foster, Hiram Monserrate, Charles Barron, William Perkins, Joel Rivera, Leroy G. Comrie And Other Individual Members Of The New York City Council	Both	Respondents	4911	3.1737	4.1744
Northeastern University	Gratz	Respondents	3991	3.1388	3.5844
NOW Legal Defense And Education Fund, Feminist Majority Foundation, International Human Rights Law Group, And The Allard K. Lowenstein International Human Rights Clinic, Yale Law School	Both	Respondents	3845	3.0768	2.5337
Representative Richard A. Gephardt, Et Al	Both	Respondents	6277	3.1365	3.5459
Senators Thomas A. Daschle, Edward M. Kennedy, Hillary Rodham Clinton, Jon S. Corzine, Richard J. Durbin, John Edwards, Russell D. Feingold, John F. Kerry, Mary L. Landrieu, Frank R. Lautenberg, Charles E. Schumer And Debbie Stabenow	Both	Respondents	6747	3.0762	2.5244
Social Scientists Glenn C. Loury, Nathan Glazer, John F. Kain, Thomas J. Kane, Douglas Massey, Marta Tienda And Brian Bucks	Both	Respondents	7045	3.2989	6.2956
State Of New Jersey	Both	Respondents	5426	3.0597	2.2442
The American Bar Association	Grutter	Respondents	5015	3.2524	5.5082

Appendix 2: Amicus Curiae Briefs (continued)

The American Educational Research Association, The Association Of American Colleges And Universities, And The American Association For Higher Education	Gratz	Respondents	6919	3.3002	6.3167
The American Educational Research Association, The Association Of American Colleges And Universities, And The American Association For Higher Education	Grutter	Respondents	7010	3.1933	4.5071
The American Jewish Committee; Central Conference Of American Rabbis; Hadassah; National Conference For Community And Justice; National Council Of Jewish Women; Progressive Jewish Alliance; Union Of American Hebrew Congregations; And Women Of Reform Judaism, The Federation Of Temple Sisterhoods	Both	Respondents	4695	3.0941	2.8282
The American Psychological Association	Both	Respondents	5647	3.2646	5.7136
The American Sociological Association, Et Al	Grutter	Respondents	6057	3.3769	7.6164
The Arizona State University College Of Law	Grutter	Respondents	4156	3.2129	4.8384
The Association Of American Medical Colleges, Et Al	Grutter	Respondents	6094	3.1364	3.5432
The Authors Of The Texas Ten Percent Plan	Gratz	Respondents	1892	3.3073	6.4377
The Bay Mills Indian Community, Grand Traverse Band Of Ottawa And Chippewa Indians, Hannahville Indian Community, Keweenaw Bay Indian Community, Lac Vieux Desert Band Of Lake Superior Chippewa Indians, Little River Band Of Ottawa Indians, Little Traverse Bay Bands Of Odawa Indians, Match-E-Be-Nash-She-Wish Band Of Pottawatomis Indians Of Michigan, Nottawaseppi Huron Band Of Potawatomi, Oneida Tribe Of Indians Of Wisconsin, Sault Ste. Marie Tribe Of Chippewa Indians, And Michigan Indian Legal Services	Grutter	Respondents	5255	3.2536	5.5276

Appendix 2: Amicus Curiae Briefs (continued)

The Bay Mills Indian Community, Grand Traverse Band Of Ottawa And Chippewa Indians, Hannahville Indian Community, Keweenaw Bay Indian Community, Lac Vieux Desert Band Of Lake Superior Chippewa Indians, Little River Band Of Ottawa Indians, Little Traverse Bay Bands Of Odawa Indians, Match-E-Be-Nash-She-Wish Band Of Pottawatomi Indians Of Michigan, Nottawaseppi Huron Band Of Potawatomi, Oneida Tribe Of Indians Of Wisconsin, Sault Ste. Marie Tribe Of Chippewa Indians, And Michigan Indian Legal Services,	Gratz	Respondents	4880	3.2637	5.6995
The Black Women Lawyers Association Of Greater Chicago, Inc	Both	Respondents	7324	3.2525	5.5098
The Clinical Legal Education Association	Gutter	Respondents	5992	3.1336	3.4954
The Coalition For Economic Equity, The Santa Clara University School Of Law Center For Social Justice And Public Service, The Justice Collective, The Charles Houston Bar Association, And The California Association Of Black Lawyers	Gutter	Respondents	6017	3.1001	2.9299
The College Board	Gratz	Respondents	3967	3.2231	5.0122
The Harvard Black Law Students Association, Stanford Black Law Students Association And Yale Black Law Students Association	Gutter	Respondents	6090	3.2655	5.7298
The Hayden Family	Both	Respondents	2549	3.003	1.2852
The Hispanic National Bar Association And The Hispanic Association Of Colleges And Universities	Gutter	Respondents	7004	3.1611	3.9626
The Law School Admission Council	Gutter	Respondents	5890	3.1706	4.1234
The Lawyers' Committee For Civil Rights Under Law, National Association For The Advancement Of Colored People, Minority Business Enterprise Legal Defense And Education Fund, Inc., National Women's Law Center, National Partnership For Women & Families, Coalition Of Bar Associations Of Color, And Sigma Pi Phi Fraternity	Gutter	Respondents	6175	2.9416	0.245
The Lawyers' Committee For Civil Rights Under Law, National Association For The Advancement Of Colored People, Minority Business Enterprise Legal Defense And Education Fund, Inc., National Women's Law Center, National Partnership For Women & Families, Coalition Of Bar Associations Of Color, And Sigma Pi Phi Fraternity	Gratz	Respondents	5753	3.0101	1.4055

Appendix 2: Amicus Curiae Briefs (continued)

The Leadership Conference On Civil Rights And The LCCR Education Fund	Both	Respondents	6866	3.2072	4.7423
The NAACP Legal Defense And Educational Fund, Inc. And The American Civil Liberties Union	Grutter	Respondents	7334	3.2689	5.7871
The National Center For Fair & Open Testing (FAIRTEST)	Grutter	Respondents	7203	3.2578	5.5994
The National Coalition Of Blacks For Reparations In America (N'COBRA) And The National Conference Of Black Lawyers (NCBL)	Both	Respondents	4280	3.1304	3.4426
The National Education Association, Et Al	Both	Respondents	5059	3.2598	5.6331
The National Urban League, The Southern Christian Leadership Conference Of Los Angeles, And The National Rainbow/Push Coalition	Both	Respondents	6240	3.2319	5.1602
The New America Alliance	Both	Respondents	5317	2.962	0.5913
The New Mexico Hispanic Bar Association, The New Mexico Black Lawyers Association, And The New Mexico Indian Bar Association	Grutter	Respondents	6788	3.2557	5.5643
The New York State Black And Puerto Rican Legislative Caucus	Grutter	Respondents	4724	3.1966	4.5632
The School Of Law Of The University Of North Carolina	Grutter	Respondents	5012	3.2877	6.1058
The Society Of American Law Teachers	Grutter	Respondents	6755	3.2148	4.8711
The States Of Maryland, New York, Arizona, California, Colorado, Connecticut, Illinois, Iowa, Maine, Massachusetts, Minnesota, Montana, New Mexico, North Carolina, Oklahoma, Oregon, Rhode Island, Vermont, Washington, West Virginia, Wisconsin, And The Territory Of The U.S. Virgin Islands	Both	Respondents	7282	3.0599	2.2489
The United Negro College Fund And Kappa Alpha Psi	Both	Respondents	7236	3.36	7.3301
The University Of Michigan Asian Pacific American Law Students Association, The University Of Michigan Black Law Students' Alliance, The University Of Michigan Latino Law Students Association, And The University Of Michigan Native American Law Students Association	Grutter	Respondents	3432	3.1905	4.4602
The University Of Pittsburgh, Temple University, Wayne State University, And The University Of Arizona	Both	Respondents	4932	3.1893	4.4392
UCLA School Of Law Students Of Color	Grutter	Respondents	6277	3.2108	4.804
Veterans Of The Southern Civil Rights Movement And Family Members Of Murdered Civil Rights Activists	Grutter	Respondents	3743	3.2989	6.295

Appendix 2: Amicus Curiae Briefs (continued)

The Equal Employment Advisory Council	Both	Neutral	4392	3.2073	4.7437
The Massachusetts School Of Law	Grutter	Neutral	3867	3.2536	5.5286
BP America Incorporated	Both	Neutral	1113	3.2031	4.6727
Exxon Mobil Corporation	Both	Neutral	1340	3.2829	6.0243
Anti-Defamation League	Both	Neutral	1972	2.8615	-1.1104
The Criminal Justice Legal Foundation	Grutter	Neutral	3605	2.8602	-1.1329