The Sum of its Parts: How Supreme Court Justices Disparately Shape Attention to Their Opinions

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Objective. While studies frequently examine the impact of the U.S. Supreme Court as an institution, little is known about how individual justices influence attention to their opinions. We investigate whether inherent differences in the majority opinions of individual justices result in certain justices being systematically more influential than their peers. *Methods.* We advance a theory in which Supreme Court adoption of prior opinions is influenced by factors that relate to the identity of the authoring justice. To test these propositions, we explore the universe of the Supreme Court's signed majority opinions from 1986 to 2000. *Results.* We find that intricate tendencies in opinion writing vary systematically by justice in key dimensions relating to their opinions. We also discover that differences among the justices exert an asymmetric impact on citation and adherence to precedent. *Conclusion.* The findings offer important theoretical and normative implications toward a better understanding of the impact of Supreme Court justices on attentiveness to precedent and doctrinal development.

> One can agree with the Brennan opinions and one may disagree with them, but their collective influence is an enormously powerful defining force.
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> U.S. Supreme Court Justice David Souter (July 1997)

Earlier in 2019, the U.S. Supreme Court issued an important decision in *United States v. Davis*.[1] The issue at hand was an ambiguous federal statute from 1946, known as the Hobbs Act, mandating criminal defendants to be subject to additional imprisonment, of up to 20 years, when possessing a firearm in conspiracy or during the commission of a violent crime. A divided Court, in a 5–4 decision, struck down the federal statute as unconstitutionally vague. The majority coalition consisted of Justices Breyer, Ginsburg, Gorsuch, Kagan, and Sotomayor. As the senior associate justice, Ginsburg could have assigned the opinion to any of the justices in the majority, including herself. Justice Ginsburg, ultimately, assigned the opinion to Justice Gorsuch. In addition to maintaining the majority coalition, the decision to assign the opinion undoubtedly had implications for the contents, the style, and the precedents cited within. Writing for the majority, Justice Gorsuch notably opined that "[i]n our constitutional order, a vague law is no law at all."[2] Could the decision to

[1] 588 U.S. ——— (2019).
[2] 588 U.S. ——— (2019) at 1.

assign the opinion to Justice Gorsuch affect how the opinion would be perceived by the Supreme Court in future decisions?

While existing studies rigorously explore the influence of the Supreme Court as an institution, little attention is given to how individual justices may influence attentiveness to their opinions. Important works by Baum (1997) and Black et al. (2016) suggest that Supreme Court justices have many goals and multiple audiences in mind as they craft legal opinions. If Supreme Court justices are interested in influencing legal policy and doctrinal development through their opinions, then one might expect that the Court's adoption of opinions authored by any one of the nine justices to be comparable over time upon controlling for key factors. Our intuition is that this is not the case. This is because justices seemingly vary in both the style and the substance of their opinions. This raises important questions. First, do Supreme Court justices vary in how they craft their opinions? Second, is the impact of a Supreme Court decision conditioned by the identity and tendencies of the justice who authors the Court's opinion? We investigate how attributes of majority opinions written by each justice vary and whether the opinions of certain justices are adopted more frequently by the majority of the Supreme Court compared to their peers. While prior research examines the influence of individual characteristics on decision-making behavior, no previous work, to our knowledge, examines how differences among the way individual justices formulate their opinions impacts subsequent attentiveness to their decisions.

We begin with a discussion on the need for an alternative approach to assess the impact of Supreme Court decision making by focusing on the influence of individual justices rather than the Court as an institution. We then offer a theory in which we argue that attentiveness to precedent within the Supreme Court is driven by factors directly related to the justices. Some of these factors are within the control of each justice, whereas other factors are related to the Court's composition as a whole and are largely outside of the control of an individual justice. We test these expectations on a data set of all Supreme Court majority opinions issued between 1986 and 2000. By focusing on citation and positive treatments of majority opinions, we believe that we have added leverage in examining the impact of the judicial opinions authored by each individual justice. Our findings reveal that the majority opinions of Supreme Court justices vary systematically in their construction. Moreover, we find that the majority opinions of justices asymmetrically impact the extent to which the Court adopts a given precedent in future decisions. The findings offer a new and important development for judicial studies by accounting for the influence of individual justices in motivating different levels of engagement with the Supreme Court's opinions over time. More broadly, these findings offer implications toward a more nuanced understanding of the influence of individual justices in crafting and, ultimately, promulgating disparate levels of attention to their majority opinions.

The Elusive Nature of Justice Influence

Extant research demonstrates that Supreme Court justices vary in their ideological dispositions and policy preferences, which influence their decision-making behavior (see Baum, 2017; Segal and Spaeth, 2002). But beyond ideological preferences, certain characteristics of the justices can also impact their decision-making behavior (Baum, 2006; Epstein, Knight, and Martin, 2003; Wedeking, 2012). One of the underlying concepts for understanding how background characteristics may affect decision-making behavior relates to the idea of judicial quality, that is, the notion that certain Supreme Court justices are more influential on the Court compared to their peers. A number of measures of "judicial quality" have been

deployed by scholars. These include external citations of a judge's opinion, the number of positive and negative treatments of a majority opinion, and the rate of reversal for lower court decisions (see Anderson, 2011; Choi and Gulati, 2004; Knight, 2009; Landes, Lessig, and Solimine, 1998). Still other work demonstrates that variation in the judicial prestige or "quality" of a judge may impact the speed and degree to which a court adopts a legal rule (Bhattacharya and Smyth, 2001; Klein and Morrisroe, 1999). Additional research suggests that from an attitudinal perspective, ideologically extreme justices on either end of the political spectrum tend to have less of an impact on the Court compared to justices who are more moderate in their preferences (see Williams, 2007).

Some important studies on Supreme Court decision making focus on patterns of citation and adherence to precedent. In their seminal work, Hansford and Spriggs (2006) find that the U.S. Supreme Court's preferred policy positions and treatments of Court opinions strongly influence both future Supreme Court and lower court responses to these opinions. A number of important studies demonstrate that law exerts a meaningful influence on the U.S. Supreme Court (see, e.g., Black and Owens, 2009; Lindquist and Klein, 2006; Pacelle, Curry, and Marshall, 2011; Richards and Kritzer, 2002). While these studies greatly improve our understanding of the impact of the Supreme Court as an institution, relatively little is known about how the tendencies of individual justices in how they craft their majority opinions promulgate sustained policy influence.

The omission of factors related to individual justices provides fertile ground for theoretical development on disentangling the discrepancy in the Supreme Court frequently relying on certain majority opinions more so than others. Fortunately, previous work provides some insight on how variation exists among the opinions of the justices. For instance, Owens and Wedeking (2011) find that justices differ in the clarity of their opinions even when controlling for a variety of other important variables, such as ideological predisposition, issue type, and case salience. There is also some evidence that certain justices author lengthier opinions than their peers (Black and Spriggs, 2008). Beyond this, an intriguing study demonstrates that justices vary in how they rely on clerks—with conservative clerks, for instance, exerting an exceptionally large influence on a justice's final vote and shaping the language of his or her opinions (Kromphardt, 2015). Yet other work suggests that justices write differently depending on how they rely on their clerks (Wahlbeck, Spriggs, and Sigelman, 2002). Building on these studies, which show that justices systematically vary in ways that relate to opinion-writing processes, we derive new expectations on differences in writing tendencies among justices and how the opinions of individual justices disparately impact the likelihood of their adoption in future Supreme Court decisions.

The Varying Tendencies of Supreme Court Justices

We argue that the justices systematically vary in how they write opinions. For instance, it is well established in the lower federal courts that judges on the U.S. Court of Appeals vary in terms of their life experience prior to the bench, such as where they attended law school and the communities they are from, as well as the type of professional experience they had prior to getting on the bench (Hettinger, Lindquist, and Martinek, 2006; Landes, Lessig, and Solimine, 1998; Songer, Sheehan, and Haire, 2000). Recent research, in fact, demonstrates that there is variation in opinion tendencies within the lower federal courts (see Budziak, Hitt, and Lempert, 2019; Corley and Wedeking, 2014).

There is ample evidence that the justices vary in their behavior on the bench based on their identity. Prior work suggests that the justices are asymmetrically influenced by

their clerks (see Kromphardt, 2015, 2017; Ward and Weiden, 2006). Existing research also demonstrates differences in how much language the justices adopt from party and amicus curiae briefs (Corley, 2008; Collins, Corley, and Hamner, 2015) as well as lower court opinions (Corley, Collins, and Calvin, 2011). The differences among justices in some instances can be substantial. Just as the justices vary in how they use clerks and the degree to which they tend to borrow from external sources, we expect that the justices will also vary in how they compose their majority opinions. The seminal work by Tate (1981) demonstrates that factors related to a justice's identity substantially affect his or her vote. These factors include whether a justice served in elected office, the type of prior judicial experience, and prosecutorial experience prior to serving on the bench. We expect that such differences among the justices manifest in both style and the types of supporting evidence (e.g., precedents) used by each justice within their opinions.

Differences in writing tendencies are important theoretically for two reasons. First, a key aspect of writing is having content control on both style and substance of the opinion. In other words, justices have the ability to alter how they write if they believe that a different writing style may accomplish a specific goal (Baum, 2006). For instance, a justice wanting to speak to a general audience (i.e., one not composed of jurists) may choose to write in a manner that is simpler. A series of studies suggest that justices alter the content of their opinions based on external audiences (see Black et al., 2016a; Owens, Wedeking, and Wohlfarth, 2013). On the other hand, if a justice believes in incorporating substantial nuance within her opinions, a justice may take into consideration the need to write opinions that are lengthier, more (or less) complex, and opinions more densely embedded within existing law. We expect such variation among the opinions of a justice even upon accounting for confounding factors that a justice cannot independently control. Among others, these factors include the issue area of the case and the ideological composition of the majority coalition.

A second reason that writing style matters is that its content and scope may impact the perception of diverse audiences (Black et al., 2016b). Ultimately, Supreme Court justices may be more inclined to adopt majority opinions based on their broad composition compared to other opinions that are narrower in scope or more difficult to implement. A substantial amount of evidence also demonstrates that justices vary in the extent to which they rely on their clerks in drafting opinions. While most justices use all of their clerks to write the first draft of an opinion, there is substantial variation in how individual justices rely on their clerks to produce the final opinion (Kromphardt, 2015; Wahlbeck, Spriggs, and Sigelman, 2002; Ward and Weiden, 2006). While it is difficult to ascertain how relying on clerks impacts the exact construction of opinions, it is widely accepted that a greater reliance on clerks promulgates greater variation in the attributes of a justice's opinions.

We believe that the majority opinions of justices can vary in three key quantifiable ways. First, the degree to which a justice's majority opinions are embedded with other precedents (Fowler et al., 2007). Second, the clarity of a justice's majority opinions. That is, we expect that the justices will vary in terms of the readability of their opinions. In fact, prior work demonstrates that the justices vary in terms of their opinion clarity on average (see Black et al., 2016b; Owens and Wedeking, 2011). However, existing work does not discern the extent to which differences in opinion clarity affect attentiveness to the Supreme Court's precedents. Third, the length of a justice's majority opinions should vary even upon controlling for key case-level factors (Black and Spriggs, 2008). Our expectation is that some justices may be more verbose compared to other justices. We offer a caveat that we have no a priori expectation as to which justices are most likely to write lengthier opinions. Our expectation simply is that justices systematically vary in the average length of

their opinions and such differences are likely to impact adoption of opinions in subsequent decisions.

We expect that differences in writing tendencies will influence the Supreme Court's attentiveness to majority opinions over time. We operationalize attentiveness following the convention set forth by Hansford and Spriggs (2006) by relying on citations and positive treatments of Supreme Court opinions. There are good theoretical reasons to focus on both citations and positive treatments. Citations are useful in that they capture the applicability of a given Supreme Court opinion to other decisions over time. Fowler and Jeon (2008:17) note that citation behavior "provides information about which precedents serve important roles in the development of American law." Hansford, Spriggs, and Stenger (2013:896) offer that "citations to precedent provide meaningful information about the meaning, scope, and authority of the cited cases." The precise use of citations by the justices is somewhat heterogeneous. A citation may at times reflect whether a precedent is potentially applicable. On other occasions, a citation involves substantive engagement with prior doctrine. Yet, at times, a citation may result from responding to a counternarrative brought up by a justice, the involved parties, amicus briefs, or the lower court opinion. Ultimately, the decision to cite is a deliberate one and the metric is a reliable way for assessing the influence of precedents (see Fowler et al., 2007; Hansford and Spriggs, 2006). Positive treatments, on the other hand, are able to quantify the extent to which a given Supreme Court opinion serves as a substantial guiding force in reaching an outcome. The threshold for engagement to be considered a positive treatment by *Shepard's* is substantially higher compared to a citation. Recent work by Hitt (2016, 2019) calls attention to "doctrinal paradoxes" in Supreme Court opinions where "every rationale for the Court's judgment is rejected by a majority." Notably, such paradoxes correspond with higher citation rates but a lower frequency of positive treatments in subsequent decisions. The increase in citations by the Supreme Court of "doctrinal paradoxes" is notable in that it illustrates that influences on citations and positive treatments may, at times, be theoretically distinct. While not identical, both citations and positive treatments are the result of deliberate choices by justices that are quantifiable, valid, and intrinsically reliable metrics to gauge the influence of the Supreme Court's precedents (see Black and Spriggs, 2013; Cross and Spriggs, 2010; Cross et al., 2010; Hansford and Spriggs, 2006; Hinkle, 2015, 2016; Spriggs and Hansford, 2000). We now consider the mechanisms of how differences among the justices' majority opinions are likely to influence the attentiveness to the Supreme Court's precedents.

Justice Attributes and Their Impact on Attentiveness to Precedent

We contend that factors related to individual justices impact the extent to which their signed majority opinions are adopted in subsequent decisions. We believe that these factors can be divided into two categories. The first category includes factors that are outside the control of an individual justice, while the second set includes factors that are largely in the control of each individual justice. The ideological extremity of an opinion's majority coalition is one such factor. While a justice's ideology can vary over time and ideological drift is a well-known phenomenon (Owens and Wedeking, 2012), a justice's *overall* ideology cannot change in the context of an individual case or even within a single term.[3] On the other hand, several factors, which we discussed in the previous section, may also affect how

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[3]That is not to suggest that justices cannot have differing ideologies in different issue areas (Clark and Lauderdale, 2010). For instance, Justice Scalia was significantly more liberal on criminal procedure issues compared to other issue areas.

majority opinions are perceived in the future by justices on the Court. We begin with the ideological extremity of a justice. Justices who are ideologically extreme are often less likely to author opinions in the most consequential cases based on their ideological position. These factors include the innate bargaining ability and inclination of justices to want to bargain (Maltzman, Spriggs, and Wahlbeck, 2000), as well as the ideological extremity of a justice relative to a moderate justice (see Williams, 2007). Importantly, we do not think the direction of the ideological extremity determines which justices get cited, as many opinion configurations are possible, allowing for both liberal and conservative decisions to be adopted.[4] Rather, since moderate justices are likely to get a disproportionately large share of politically charged cases, such justices should be more likely to have their opinions cited and followed over time.

A justice near the ideological center should be appealed to frequently by peer justices and, as such, should have the opportunity to write more influential opinions. Moreover, a justice near the median is likely to be more effective at bargaining with her colleagues than justices on either ends of the ideological spectrum given her position at the ideological pivot point and her innate tendencies to appeal to individuals on the liberal or conservative wing of the Court. On the other hand, justices who are more ideologically extreme may be less willing to bargain, accommodate, and modify the content of their majority opinions in response to exchanges with other justices (Maltzman, Spriggs, and Wahlbeck, 2000). Taken together, we expect that as the ideological distance between the authoring and median justice increases, the propensity to cite and follow should be lower compared to the opinions of a justice who is ideologically proximate to the Court's median.

For other justice attributes, the degree to which a majority opinion is embedded within other, important opinions is likely to be influential. A prominent study by Fowler and Jeon (2008) demonstrates that lower courts are likely to cite Supreme Court opinions in the future if such opinions are embedded in a broad network of Supreme Court decisions. This is likely due to the fact that opinions that extensively discuss many and important opinions are seen as especially persuasive. Anecdotally, the justices state that reviewing dissents and other points of view helps strengthen their majority opinions by addressing counterpoints to the majority opinion's argument.[5] We believe that this iterative process of opinion writing will result in additional revisions of the majority opinion to discuss particular cases, especially key ones in greater detail (Maltzman, Spriggs, and Wahlbeck, 2000). Using the hub scores created by Fowler et al. (2007), we expect that opinions that tend to cite centrally located opinions in a citation network will be more likely to be adopted compared to opinions with lower centrality. We expect this because opinions that are centrally located are those that are seen as critical cases that are foundational to contemporary jurisprudence. These cases also tend to be cited often, throughout the judiciary, compared to cases that are less central. As a result, majority opinions that rely heavily on key cases are seen as more credible. We expect that this heightened credibility gained through citing more central precedents will result in a greater likelihood of citation and positive treatment.

Another theoretically important area where systematic variation among the justices is likely to manifest is in the clarity of the opinion. We conceptualize opinion clarity using the readability score of a given majority opinion. Novel work by Owens and Wedeking (2011)

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[4]This argument is plausible because while the Court leans conservative during the period of our study, the median justice—either O'Connor or Kennedy—is relatively close to a perfectly moderate justice in our analysis.
[5]For instance, Justice Ginsburg stated in a eulogy for Justice Scalia that his dissents specifically helped her find weaknesses in her majority opinions during the drafting stage.

demonstrates that clearer opinions are likely to be "better," broadly defined compared with opinions that are vague. As such, we should expect that simpler opinions are easier to implement because they offer clear explanations and articulations of some new legal rule. Our expectation is that justices who use clear and simple language will be rewarded by having their opinions cited more often in subsequent Supreme Court opinions. Since such opinions are simpler to follow, the justices may prefer relying on opinions that are especially clear. Thus, we expect the policies expressed in opinions that have a higher degree of clarity (i.e., readability) to be more readily adopted by Supreme Court justices in future decisions.

Our next prediction is on the impact of the length of a justice's opinion. Black and Spriggs (2008:628) note that "longer opinions might mean a surplus of more ambiguous information, which may complicate the lower courts' task of understanding what the Supreme Court wants." However, since our analysis is on the attentiveness to majority opinions, the impact of length on adding to a Court opinion's ambiguity may not be as pervasive. That is, since the Supreme Court is interpreting its own language, we believe that the length of the opinion should not negatively impact precedent adoption. Other empirical work demonstrates that longer statutes have the effect of constraining judges on federal circuit and state high courts (Randazzo, Waterman, and Fine, 2006). Thus, longer statutes bind future behavior in meaningful ways. Moreover, we believe that lengthier opinions are applicable to a wider set of cases by virtue of covering a larger set of issues. It may also be the case that decisions in more controversial areas of the law require lengthier opinions, as the law is less settled. Thus, a justice may feel a greater need to justify her majority opinion by grounding it in the existing law. By doing so, such a justice should craft a more persuasive argument in favor of the outcome reached within the majority opinion. As such, the Court will tend to cite and follow such opinions with a greater propensity.

Finally, we expect that justices by virtue of their identities will also impact citations and positive treatments to their opinions in future decisions. The notion that some justices' opinions are more likely to be adopted compared to others, ceteris paribus, based on their identity should not be controversial. This is because, among other reasons, certain justices have a reputation of being a tour de force, such as Justices Brennan or Scalia, who were known for writing clear, concise, and accessible opinions. Moreover, their opinions were designed to cater to law students among other legal audiences. Accounting for the attributes theorized above may not be sufficient to control for all reputational effects of justices. For instance, justices who write particularly controversial opinions and justices who write relatively complex opinions may have reputational effects that common attributes for writing style may not fully take into account. Therefore, we expect that in addition to differences in writing tendencies among justices in crafting opinions, the identity and reputation of a justice will also impact the propensity with which his or her majority opinions are adopted in future Supreme Court decisions.

Data and Research Design I: Variation Among Justices

For the initial set of analyses on whether justices vary systematically in how they author opinions, we examine the universe of signed Supreme Court opinions from the 1986 to 2000 terms.[6] To determine whether justices differ on various dimensions of opinion writing,

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[6]We select these years to stay consistent with our later analyses, since the Fowler et al. (2007) data are available through the end of 2001.

we rely on three dependent variables. The first dependent variable comes from Fowler et al. (2007) hub scores, which capture the degree of embeddedness of a Supreme Court opinion. This measure, which is closely related to eigenvector centrality from network analyses, uses network data to symmetrically measure the number of cases that a Court opinion cites within it. In addition, this measure simultaneously determines the importance of the cited opinion based on subsequent citations. Thus, a majority opinion with a relatively high hub score is one that cites a large number of precedents while also capturing opinions that have been cited more frequently in subsequent decisions. According to Fowler and Jeon (2008), cases with higher hub scores are those that tend to occupy key areas of Supreme Court doctrine over time. The embeddedness measure ranges from 0 to approximately 3; however, we modify this by multiplying it by 100 and then take the square root to normalize the measure from its exponential form to make substantive interpretation more intuitive to readers. The second dependent variable captures the readability of an opinion, based on the Black et al. (2016) measure. Since the readability measure is based on a principal-components analysis from a series of readability and language complexity measures, it has a theoretical range from negative to positive infinity. The third dependent variable captures the length of the majority opinion by each justice. This variable has a theoretical range from one to infinity.

The main variables of interest are indicator variables for each of the justices. The excluded category (i.e., baseline justice) in each model is Justice Souter.[7] Several of the more recent justices in our data are outliers in these factors, specifically for both Justices Ginsburg and Breyer. We include several control variables. These include the readability of an opinion (except for Model 2 where it is the outcome), the majority opinion length (except for Model 3 where it is the outcome), the vote margin of an opinion, whether an opinion altered precedent, political salience, which we operationalize as whether an opinion appeared on the front page of the *New York Times* the day after the opinion was released, and the ideological direction of the decision. Finally, we include a linear time trend variable to control for a potential relationship with cases becoming more readable over time in the data. Data for opinion readability and political salience are obtained from Black et al. (2016) and Epstein and Segal (2000), respectively. Data for all other variables come from the U.S. Supreme Court Database (Spaeth et al., 2017).[8]

We estimate three separate models to test the dependent variables. For the model with embeddedness, we estimate a censored regression model. Upon transforming the dependent variable by multiplying it by 100 and then taking the square root of the resulting score, the distribution of the dependent variable and residuals represents an approximately normal distribution. However, the values are such that they arbitrarily cannot be lower than zero since it is impossible to have a negative hub score. Therefore, we estimate a Tobit censored regression model with the lower bound set to zero for the first dependent variable. For opinion readability, we estimate a linear regression model, as the variable is generated from a principal-components analysis. This creates an interval-level variable that has normal residuals and is normally distributed. Finally, for opinion length, we use a zero-truncated negative binomial model (Leonard and Ross, 2016). This specification is appropriate since the resulting distribution for the variable is discrete (i.e., only consists of integers) and closely resembles an event count distribution with a tail extending to the upper end of the

[7]The length of Justice Souter's majority opinions, on average, is in the middle among all justices in our data set. We also find that Justice Souter tends to be roughly in the middle in terms of opinion readability scores, making him relatively well suited as the baseline.

[8]The U.S. Supreme Court Database is maintained by the Center for Empirical Research in the Law at Washington University in St. Louis and is available at ⟨http://www.scdb.wustl.edu⟩.

TABLE 1

Model on Justice Variation on Majority Opinion Embeddedness

Variable	Coefficient	Robust *SE*
Justice Brennan	0.127	0.079
Justice White	0.111*	0.051
Justice Marshall	0.022	0.057
Justice Blackmun	0.046	0.051
Justice Powell	0.130	0.089
Justice Rehnquist	0.238*	0.045
Justice Stevens	0.115*	0.048
Justice O'Connor	0.054	0.045
Justice Scalia	0.094*	0.045
Justice Kennedy	0.049	0.046
Justice Thomas	0.035	0.045
Justice Ginsburg	0.031	0.045
Justice Breyer	0.011	0.056
Readability	0.008*	0.003
Opinion length	0.000*	0.000
Vote margin	−0.025*	0.003
Overruling precedent	0.102	0.066
Political salience	0.236*	0.035
Decision direction	−0.027	0.018
Term	−0.016*	0.003
Constant	31.877*	5.160
N	1,515	
Var(e.Hub scores)	0.135*	
Probability > *F*	0.000*	

NOTE: The outcome is opinion embeddedness based on Fowler et al. (2007) hub scores. Robust standard errors are reported with Justice Souter as the baseline comparison;*$p < 0.05$.

distribution. There is also evidence of overdispersion in these data, making a Poisson model less than ideal for this analysis. Since an opinion, by definition, must be longer than zero words, we estimate a zero-truncated negative binomial model to account for the inability to observe zero values.

Empirical Results I: Variation Among Justices

We begin with an initial set of models to examine whether justices vary in dimensions of opinion formulation. As there are 1,559 individual case citations included in our data set, the number of observations is approximately equal to that number.[9] The results for embeddedness of the justices' majority opinions are reported in Table 1. Exploring differences among the majority opinions of the justices, we find that the justices systematically vary in terms of their average rate of embeddedness, even upon controlling for an array of confounders. Interestingly, we find that four justices are statistically different in terms of average embeddedness (all four are higher) compared to the baseline. These include Justice White, Justice Rehnquist, Justice Stevens, and Justice Scalia. While the baseline average hub score is 0.54, for Justice White, this increases to approximately 0.64; for Justice Rehnquist,

[9]Missing data for some variables slightly reduce the number of observations for these models. In particular, a few cases cannot be defined ideologically in the Spaeth database.

TABLE 2

Model on Justice Variation in Majority Opinion Readability

Variable	Coefficient	Robust *SE*
Justice Brennan	−1.885*	0.661
Justice White	−0.381	0.555
Justice Marshall	−0.559	0.614
Justice Blackmun	0.449	0.514
Justice Powell	2.090*	0.693
Justice Rehnquist	−0.010	0.475
Justice Stevens	−0.161	0.482
Justice O'Connor	0.236	0.461
Justice Scalia	−0.889	0.469
Justice Kennedy	−0.398	0.470
Justice Thomas	0.682	0.512
Justice Ginsburg	1.410*	0.492
Justice Breyer	1.310*	0.518
Opinion length	−0.000*	0.000
Vote margin	0.055	0.031
Overruling precedent	1.358*	0.590
Political salience	−0.139	0.280
Decision direction	0.061	0.182
Term	0.210*	0.025
Constant	−418.844*	50.213
N	1,515	
R^2	0.142	
Probability > *F*	0.000*	

NOTE: The outcome is opinion readability based on the Owens and Wedeking (2011) measure. Robust standard errors are reported with Justice Souter as the baseline comparison; $^{*}p < 0.05$.

0.75; for Justice Stevens, 0.64; and for Justice Scalia, 0.62. This result suggests that some justices tend to rely on more central precedents in their majority opinions compared to their peers. Several controls also reach statistical significance—including readability, opinion length, vote margin, and political salience—all of which are associated with higher rates of embeddedness.

Table 2 presents the estimates for the readability model. These results reveal several interesting findings. First, one justice in our analysis, Justice Brennan, has a statistically significant and lower readability score compared to the baseline of Justice Souter. Three justices, Powell, Ginsburg, and Breyer, have a statistically significant and higher readability score compared to the baseline. For some justices, the difference is large, including Justice Brennan who has a −1.79 readability score compared to the baseline of 0.061. On the other hand, Justice Ginsburg has a 1.36 readability score compared to the baseline. Justice Breyer has a 1.28 average readability score, while Justice Powell has a 2.09 average readability score. This suggests that Justice Powell's opinions were especially easy to read. In addition, the variable for opinion length is significant, with longer opinions having a lower readability score compared to shorter opinions. These results also suggest that recent opinions are more readable compared to opinions from the past. For each year advance in the term, we find that the readability score correspondingly increases, holding all other variables as constant.

Table 3 presents the results for the model examining differences in majority opinion length. We find that most of the justices write opinions that are shorter compared to

TABLE 3

Model on Justice Variation in Majority Opinion Length

Variable	Coefficient	Robust *SE*
Justice Brennan	−0.106	0.073
Justice White	−0.304*	0.060
Justice Marshall	−0.305*	0.064
Justice Blackmun	−0.071	0.063
Justice Powell	−0.295*	0.079
Justice Rehnquist	−0.406*	0.055
Justice Stevens	−0.190*	0.058
Justice O'Connor	0.048	0.056
Justice Scalia	−0.213*	0.057
Justice Kennedy	−0.024	0.595
Justice Thomas	−0.292*	0.060
Justice Ginsburg	−0.203*	0.069
Justice Breyer	−0.136*	0.067
Readability	−0.011*	0.003
Vote margin	−0.038*	0.003
Overruling precedent	0.196*	0.062
Political salience	0.296*	0.031
Decision direction	0.049*	0.022
Term	0.013*	0.003
Constant	−16.911*	6.045
N	1,515	
Ln α	−1.847*	
Probability $> \chi^2$	0.000*	

NOTE: The outcome is the majority opinion length. Robust standard errors are reported with Justice Souter as the baseline comparison; *$p < 0.05$.

the baseline. However, there are four justices whose average opinion length is not statistically significant compared to the baseline. This list includes Justices Brennan, Blackmun, O'Connor, and Kennedy. For Justice Souter, the average baseline length is 3,424 words. For Justice White, the average length is 899 words shorter, making an average majority opinion approximately 2,526 words. Justice Rehnquist has the shortest average opinion length of 1,143 words shorter compared to the baseline. Interestingly, a divided, 5–4, opinion has an average length of 4,473 words compared to a unanimous opinion with an average length of 3,173 words. The variables for overruling precedent, the ideological direction of a decision, and political salience are also statistically significant. Taken together, these results tell a complex but interesting story. That is, Supreme Court justices vary systematically in how they formulate their opinions in all three quantifiable dimensions. We next explore the extent to which such differences may promulgate higher (or lower) levels of opinion adoption in future decisions.

Data and Research Design II: Citation and Adherence to Majority Opinions

To test the predictions on the Supreme Court's citation and positive treatment of its precedents, we examine the population of signed Supreme Court opinions from 1986 through the 2000 Supreme Court terms. Since we are interested in citation and adherence, we include one observation for each majority opinion in a given year ($t, t + 1, t + n$),

from the time an opinion is written through 2016, where our data set ends. Thus, the unit of analysis is the precedent-year dyad, starting with the year that the majority opinion was released. We include two dependent variables for this part of the analysis. The first dependent variable is whether a justice's majority opinion is cited in a given year *at least once*. The second dependent variable captures whether *at least one* majority opinion positively treats a prior Supreme Court opinion under observation in a given year.[10]

We obtain data from the U.S. Supreme Court Database for all variables that relate to case characteristics (Spaeth et al., 2017). To construct our two dependent variables, we then collect data on Supreme Court citations and positive treatments from *Shepard's Citations*. In doing so, we follow the approach of previous studies (see Hansford and Spriggs, 2006), and count the designation "Cited," "Explained," Harmonized," and any positive treatment as a citation to a majority opinion.[11] We count the designation that the Supreme Court "Followed" a justice's majority opinion as a positive treatment. Since both these dependent variables take values of 0 or 1, we estimate logistic regression models with the standard errors clustered on each Supreme Court majority opinion.[12] We also include individual justice fixed effects to account for the potential impact of individual justices on the outcomes.

Since we set out to explore how the tendencies of justices impact precedent adoption, we specify several explanatory variables that likely influence the likelihood of citation and positive treatment. Our first explanatory variable is the ideological extremity of the authoring justice from the Court's median. This variable is based on the ideological distance from the median justice to the justice who wrote the opinion in each year. The median justice will always have a value of 0 in any given term. The ideological extremity for the other justices can theoretically range from 0 to infinity.

The second variable of interest is embeddedness, which is derived from Fowler et al. (2007) hub scores. Hub scores are designed to jointly measure how many precedents a majority opinion cites and the importance of the cited cases.[13] To normalize these scores, we multiply the hub score by 100 to rescale the variable and then take the square root of these values. The third explanatory variable is opinion readability. For this measure, we rely on the readability scores developed by Black et al. (2016b), which rely on text-processing analytics to examine patterns of words in terms of the type of language used. We expect to find that opinions that are relatively complex (i.e., those that are *less* readable) will be less frequently adopted compared to opinions that are relatively simple and straightforward. Next, we include a variable that captures the length of a majority opinion. This measure is based on the number of words in the body and footnotes of each majority opinion.

We include a number of control variables to capture other case characteristics. We include a variable that captures the vitality of a majority opinion. This variable is based on the difference between the difference in positive and negative treatments by the Court in prior decisions. We lag the vitality variable by one year to prevent issues of simultaneity. We also control for vote margin, political salience, the ideological direction of a decision, and whether an opinion overturns a prior precedent. We include these variables since they are

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[10]We include two models in the Online Appendix—one for citation and one for positive treatment—which use an aggregated unit of analysis. In these models, rather than including one observation for each precedent-year combination, we include one observation for each precedent in our data set. The aggregated model results corroborate the reported results.

[11]The values of the dependent variable do not include citations and treatments from dissenting or concurring opinions, as these are not part of the Court's majority opinion (cf. Hansford and Spriggs, 2006).

[12]Since positive treatments are rare, we include a Firth (rare events) logistic model in the Online Appendix. The results from the Firth model indicate the results are highly robust.

[13]We also estimate alternative models using Fowler et al.'s out-degree measure, which accounts for the raw number of precedents a majority opinion cites. Results are highly robust.

known confounders within the literature. We include a caseload variable to account for how many cases the Supreme Court heard in a given year as a higher caseload provides a greater number of opportunities to adopt a particular policy. In addition, we include dummy variables to account for a broad set of issue areas appearing in the data set.[14] We also control for the size of the docket for each issue area within a given year. We include this control as a way to account for the fact that some issue areas simply are a larger part of the Court's docket over time, such as criminal and civil liberties cases. Finally, we control for the age of an opinion along with its quadratic term, since age is known to have a nonlinear effect on citation behavior over time.

Empirical Results II: Citation and Adherence to Majority Opinions

Table 4 presents the results for citations and positive treatments controlling for differences in justices, based both on how individual justices write as well as the identities of the justices. We find strong evidence that variation among the justices has a profound impact on citation and positive treatment. Interestingly, and in line with our expectations, we find that both the identities of individual justices and the way in which justices author opinions exert a meaningful influence on attentiveness to their majority opinions. Specifically, we find support for three of the four hypotheses: the embeddedness of precedent, the readability of a majority opinion, and the length of a majority opinion. Based on the estimates, majority opinions that have a higher embeddedness score have a greater likelihood of citation in a given year. We find similar effects for opinion readability and length. From a substantive perspective, we find that an increase in the embeddedness score from $2SD$s below the mean to $2SD$s above the mean increases the probability of a majority opinion getting cited in a given year from approximately 0.144 to 0.260. This substantive effect, given the relative infrequency of Supreme Court citations of its own precedent, represents a roughly 80 percent increase in the probability of citation, which if extrapolated to 10 years, would result in close to double the number of Supreme Court citations.

The second statistical finding in line with our expectations is the effect of opinion readability. We find that higher levels of opinion readability correspond with a greater probability of having an opinion cited in a given year. But the substantive effect of readability is more modest compared to embeddedness, with an increase of readability from -6 to 6 being associated with an approximately 27 percent increase in the probability of citation in a given year. Third, we find that longer opinions tend to be cited more frequently compared to shorter opinions. Specifically, we find that for opinions that are 1,000 words in length, which corresponds with roughly $2SD$s below the average length, the probability of citation in a given year is 0.143. However, for an opinion that is 7,000 words ($2SD$s above the mean), the probability of citation increases to a 0.246 probability in a given year, which represents a large effect.

For some context, it is useful to compare the magnitude of the substantive effect for embeddedness or opinion length to Supreme Court precedent vitality. Precedent vitality is often considered one of the most important predictors of future Supreme Court treatments of its own precedents. Yet, we find that the substantive effect of vitality is smaller in comparison. Specifically, we find that for a vitality score of -1, the baseline probability of a citation by the Supreme Court in a given year is 0.160. By contrast, for opinions that have

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[14]Dummy variables are included for the following issue areas, of which federal taxation cases serve as the baseline: criminal, civil rights, First Amendment, due process, unions, economic cases, judicial power, and federalism. Changing the excluded category does not meaningfully alter the substantive results.

TABLE 4

Models of U.S. Supreme Court Citation and Positive Treatment of Majority Opinions

Variable	Citation	SE	Positive Treatment	SE
Ideological extremity	0.278	0.283	1.488	0.477
Embeddedness	0.739*	0.082	0.648*	0.139
Readability	0.024*	0.007	0.001	0.011
Opinion length	0.000*	0.000	0.000*	0.000
Precedent vitality	0.145*	0.028	0.221*	0.049
Vote margin	−0.008	0.008	−0.021	0.015
Overruling precedent	0.535*	0.131	0.024	0.222
Political salience	0.151*	0.065	−0.039	0.112
Decision direction	−0.026	0.051	−0.075	0.091
Caseload	0.003*	0.001	−0.004	0.002
Number of cases in same issue area	−0.000	0.006	−0.000	0.011
Constitution-based decision	−0.206*	0.058	−0.104	0.104
Age of majority opinion	−0.123*	0.007	−0.099*	0.018
Age of majority opinion^2	0.002*	0.000	0.003*	0.001
Justice Brennan	−0.378	0.227	−1.662*	0.408
Justice White	−0.130	0.143	0.078	0.259
Justice Marshall	−0.292	0.234	−1.448*	0.413
Justice Blackmun	−0.286	0.150	−0.519	0.292
Justice Powell	−0.607*	0.169	−0.534	0.562
Justice Rehnquist	−0.007	0.122	−0.012	0.210
Justice Stevens	−0.414*	0.153	−0.747*	0.260
Justice O'Connor	−0.084	0.126	0.197	0.224
Justice Scalia	0.218	0.117	−0.007	0.210
Justice Kennedy	0.065	0.137	0.254	0.235
Justice Thomas	−0.062	0.167	−0.362	0.253
Justice Ginsburg	−0.177	0.146	−0.299	0.254
Justice Breyer	−0.545*	0.170	−0.625*	0.287
Constant	−1.914*	0.261	−4.450*	0.461
Majority opinion cluster SEs	✓		✓	
Dummy variables for all issue areas	✓		✓	
N	32,977		32,977	
Probability > χ^2	0.000*		0.000*	

NOTE: The outcomes are whether a majority opinion is cited, or positively treated, in a majority Supreme Court opinion in a given year. Justice fixed effects are included in both models, and standard errors are clustered on the Supreme Court majority opinion. Federal taxation is the reference category for issue areas; *$p < 0.05$.

a precedent vitality score of 1, the probability of citation in at least one majority opinion in a given year is 0.207. Thus, the evidence suggests that the manner in which justices write opinions and the degree to which they systematically vary over time leads to meaningful increases in how a precedent is perceived over time.

Notably, we find evidence that the identity of the justice impacts how majority opinions are adopted over time. The results suggest that three justices perform poorly compared to the baseline. These include Justices Powell, Stevens, and Breyer. When examining the combination of justice identity and the average writing characteristics of Justice Powell, we find that Justice Powell's opinions had a probability of 0.132 of receiving a citation in an average year (0.099, 0.166) versus a 0.20 probability of Justice Souter's opinions receive a citation in an average year (0.165, 0.227). Given that the 95 percent confidence intervals

for Justice Powell's probability of receiving a citation in a given year do not overlap with the point estimate for Justice Souter, this difference is statistically significant. Finally, the results for Justice Breyer are similar to those of Justice Stevens and Justice Powell. In particular, we find that the average opinion authored by Justice Breyer has a 0.120 probability of being cited in a particular year (0.090, 0.150), which is statistically significant compared to the baseline.

To more effectively examine whether average differences in *writing style* have statistically significant effects on the probability of citation, we consider an additional set of tests examining whether significant differences exist between the most extreme justices. The idea behind this test is that if significant differences exist even when examining the average score for each justice, differences in how justices write would have real-world implications on how their opinions get cited over time. Examining differences in average length from the justice with the shortest average opinion length (Chief Justice Rehnquist) to the justice with the longest average opinion length (Justice O'Connor), we find that the average change in the probability of citation that can be attributed to the difference in average opinion length is 0.023, which suggests roughly a 15 percent relative difference in the probability of citation in a given year. When examining differences in readability, the effect on citation is similar, with a 0.02 difference in the probability of citation that can be attributed to the difference between average readability scores among justices, suggesting that differences in both average readability scores among the justices and average opinion length, do result in real-world differences among how justices' opinions are cited. When examining differences in average opinion embeddedness from the justice with the least embedded precedents (Justice Thomas) to the justice with the most embedded precedents (Justice Powell), we find that the average change in the probability of citation attributed to the difference in typical opinion embeddedness is 0.035, which suggests roughly a 20–25 percent relative difference in the probability of being cited in a given year, which, over time, represents a substantial difference.

Table 4 also presents the results examining the presence of at least one positive treatment of a precedent in a particular year.[15] We find strong support for two of our predictions regarding differences in writing style among the justices, and one based on the identity of the justice. Examining the substantive effect of an increase in embeddedness from 2SDs below the mean to 2SDs above the mean, holding all variables constant, we find that the probability of a positive treatment in a given year more than doubles (from 0.014 to 0.035), which suggests that opinions that are highly embedded in precedent are significantly more likely to be positively treated in the future compared with those opinions that are poorly embedded in precedent. When examining the substantive effect of majority opinion length, we find that as opinion length increases from 1,000 to 7,000 words, the probability of a positive treatment also increases strongly in a relative sense (from a 0.015 to 0.028 probability of a positive treatment in a given year). As informative as this may be, it tells us little on how the identity of a justice may affect positive treatments over time.

To more effectively explore whether average differences in *writing style* have statistically significant effects on the probability of positive treatment in a given year, we again run one more set of tests, examining whether significant effects exist between the most extreme justices. Examining differences in average length from the justice with the shortest average opinion length (Chief Justice Rehnquist) to the justice with the longest average opinion

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[15]Tables A2–A6 in the Online Appendix serve as robustness checks. Tables A2 and A3 (Online Appendix) include a unanimous dummy indicator. Table A4 (Online Appendix) employs a Firth logistic regression model, which controls for rare events data effectively. Finally, Tables A5 and A6 (Online Appendix) estimate models of the aggregated number of citations and positive treatments of precedents over time.

length (Justice O'Connor), we find that the average change in the probability of positive treatment can be attributed to the difference in average opinion length of 0.004, which suggests roughly a 20 percent relative difference in the probability of a positive treatment in a given year. We again find that the difference in average embeddedness scores between the justice with opinions least embedded (Justice Thomas) to the justice whose majority opinions were most well embedded (Justice Powell) results in a difference of approximately 0.005, which is just over a 20 percent relative increase in the probability of a positive treatment in a given year. Overall, these results demonstrate that the identity and writing tendencies of justices disparately impact how their majority opinions are adopted over time.

Discussion and Conclusion

The project embarks on an ambitious task to change the perception of the U.S. Supreme Court as a single, homogeneous policy-making entity. We suggest viewing the Court from a different lens by changing the focal point from the institutional level to the individual justice. By focusing on the justices, we believe that there is much to be gained in terms of a more nuanced understanding of the complex mechanisms at work within the Supreme Court. We take up this task by posing new questions. First, are there meaningful differences in the majority opinions of Supreme Court justices? Second, are there ways to identify differences in the content of the justices' opinions? Finally, how do inherent differences in the writing tendencies of the justices impact attentiveness to precedent?

Overall, the results strongly suggest that both citation and adherence to precedent are influenced in meaningful ways by differences in the majority opinions of Supreme Court justices. These findings have important normative implications for judicial selection and nomination politics. The vast majority of presidents tend to prefer Supreme Court nominees who are ideologically aligned with them. Perhaps it may benefit a president's legacy to nominate and confirm justices who are collegial in their interactions, persuasive in their deliberations, and effective in their writing. We believe this because such a justice is more likely able to persuade her colleagues to adopt her positions. An additional benefit to having a justice who is an effective writer is that it may encourage increased engagement and accommodation by ideologically divergent justices—as was often the case between Justices Ginsburg and Scalia. Presidents may also want to focus on a justice who can make persuasive arguments, building up a reservoir of trust and agreement with his or her colleagues, which may allow both the nominating president and the justice to have a particularly meaningful and sustained policy impact that extends well beyond their tenure. Perhaps the best example in recent years where a president used this approach was President Obama's nomination of Elena Kagan to the U.S. Supreme Court. While Kagan did not have an extensive legal record in the traditional sense, as Dean of Harvard Law School, she was known as someone who could get along with all sides while being effective. In fact, President Obama introduced her as such, and Justice Kagan has quickly developed such a reputation as a Supreme Court justice.

Our analyses suggest that differences among justices have important empirical implications in that the majority opinions produced by individual justices exert a varying impact on attentiveness to precedent. Our approach of examining the impact of individual Supreme Court justices rather than the Court as a whole offers an improvement over existing approaches to model judicial impact in assessing the extent to which decisionmakers in lower federal courts, state courts, and even outside the United States rely on the opinions of certain individuals. We believe that a promising extension of this study is exploring

opinion adoption by justices among inferior courts. For instance, do lower courts adopt the opinions of certain justices more frequently than others? Relatedly, are lower court judges less likely to incorporate the opinions of ideologically distant justices compared to ideologically proximate justices? Given the large number of cases adjudicated by the lower courts, examining hierarchical responses to the opinions of the individual justices may demonstrate even greater levels of variance in the overall impact of the policies created by each justice.

This study also highlights the need for further theoretical development on how Supreme Court justices may be able to influence legal policy over time through their opinions. If scholars can successfully integrate the influence of justice attributes, in fact, we might get one step closer to understanding how judges behave (Baum, 1997). Moreover, attention to justice-level factors may also contribute to our understanding of other aspects of judicial behavior, including how likely the Supreme Court is to overturn the policies created by the opinions of a given justice and the willingness of individual justices to bargain to discourage separate opinions. Another fruitful avenue may be to explore the impact of individual justices outside of the judicial system. For instance, future work may consider the impact of individual justices on court curbing legislation. Ultimately, we believe that the potential for justice-level influences is one that remains largely untapped, yet holds enormous promise for future inquiries that will undoubtedly improve our understanding of decision-making behavior and attention to precedent in the American courts.

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Supporting Information

Additional supporting information may be found online in the Supporting Information section at the end of the article.

Table A1: Descriptive Statistics for Supreme Court Justices
Table A2: Logistic Model of Citations with Dummy Variable for Unanimous Decisions
Table A3: Logistic Model of Positive Treatments with Dummy Variable for Unanimous Decisions
Table A4: Firth Logistic Model of Positive Treatments
Table A5: Aggregated Citations Model
Table A6: Aggregated Positive Treatments Model