The Effect of Opinion Readability on the Impact of U.S. Supreme Court Precedents in State High Courts

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Objective. This article examines whether more readable U.S. Supreme Court opinions are cited with greater frequency in state courts of last resort. *Methods.* We use random slope, random intercept multilevel models to analyze 30 years of state high court citations to U.S. Supreme Court majority opinions issued during the 1987–2006 terms. *Results.* Our analysis reveals that opinion readability exerts a strong substantive impact on citation rates. This effect holds while accounting for a variety of factors previously shown to influence citation rates. *Conclusion.* Institutional constraints, workload considerations, and audience costs should lead state high courts to find clearly written opinions more attractive than jargon-laden ones. This makes the readability of a U.S. Supreme Court precedent a useful heuristic for state courts when selecting among potential relevant precedents. As these courts play a major role in implementing U.S Supreme Court decisions, our findings indicate that the readability of U.S. Supreme Court opinions has a strong effect on their long-term impact.

While there is much scholarly debate over the ceiling for societal impact that the Court's decisions can have (see, e.g., Rosenberg, 1991), the exact level of impact any individual decision can have within the range of theoretical possibility is highly dependent on how other actors—especially other courts—react to it. State high courts have long been recognized as holding a key role in this process across a wide array of substantive legal areas (see, e.g., Murphy, 1959; Romans, 1974). The literature examining state high court reactions to the decisions of the U.S. Supreme Court has identified a number of factors that affect how state high courts respond to these precedents. However, one factor largely overlooked in the existing literature is the readability of the precedent or how clearly written the opinion is. Our theoretical focus in this article attempts to fill this gap by exploring whether more readable U.S. Supreme Court opinions are cited with greater frequency in state courts of last resort.

More frequently cited opinions not only have a greater ability to impact the development of legal policy (Nelson and Hinkle, 2018; Posner, 2014), but they also can influence the prestige of the opinion author (Caldeira, 1985; Hinkle and Nelson, 2016) and allow for the transmission of legal logic from jurisdiction to jurisdiction (Canon and Baum, 1981). Given the importance of state high courts in this process, understanding how qualities of a given precedent affect how frequently it is cited in state high courts has important implications for our broader understanding of why some precedents have a greater impact than others on the development and evolution of the law.

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Our central argument is that the readability of U.S. Supreme Court opinions should exert a significant and independent influence on the degree to which state high courts use those opinions. No court would ever be able to cite all potentially relevant precedents in a given case. Courts need heuristics to help them select a precedent to cite from the pool of potential precedents. Due to institutional constraints, workload considerations, and audience costs, state high courts are likely to find clearly written opinions more attractive than jargon-laden ones, making the readability of a U.S. Supreme Court precedent a useful heuristic for selecting among potential relevant precedents independent of other factors.

To test our theoretical argument, we examine the impact of the readability of all U.S. Supreme Court opinions issued during the 1987–2006 terms on cumulative citations to those opinions by each state high court over the 1987–2017 period. Our results show that the readability of U.S. Supreme Court opinions impacts their citation rates by state high courts. This finding provides evidence that more clearly written opinions are more frequently cited independent of other factors, which increases their potential to have a greater impact on the evolution of legal policy.

Readability and Judicial Decisions

When discussing the clarity of legal writing or opinion readability, it is necessary to provide a precise conceptual definition of what we mean. Scholars use the term clarity in different contexts to mean different things. Even in the context of legal writing, the term can be used for different purposes. For example, Owens and Wedeking (2011:1038) identify three distinct—although somewhat overlapping—types of clarity: doctrinal, cognitive, and rhetorical. As our focus is on whether the nature of the writing itself affects the impact of an opinion, our focus is on the readability of legal opinions, or what Owens and Wedeking call rhetorical clarity. Generally speaking, readability is an extremely intuitive concept to understand in the abstract. At its core, it is simply a measure of how easily a text or document can be comprehended and understood, and to what degree a group of readers can understand it, comprehend it at an ideal speed, and find it interesting (e.g., Coleman and Liau, 1975; Coleman and Phung, 2010; Dale and Chall, 1949; Sawyer, Laran, and Xu, 2008).

Most of the existing scholarship on clarity or readability of judicial decisions focuses on the factors that lead judges to author more clearly written opinions or the theoretical determinants of variation in readability across opinions. Our theoretical focus in this article differs from most of this prior work. Rather than examining the motivations that might lead judges to craft more readable opinions, our interest instead turns to questions about the effect more readable opinions have on the law. We know that numerous features of individual precedents affect the impact those precedents have on the evolution of legal policy. However, very little work has examined whether the quality of the writing itself can influence a precedent's impact. We begin to address that question in this article by focusing on one specific—but important—context. Specifically, this article is motivated by the question of whether more readable U.S. Supreme Court opinions are more heavily cited by state high courts.

While our interest is distinct from much of the existing work on the readability of judicial opinion, this work nonetheless provides a foundation for much of our theoretical development. In the most thorough study of the factors that drive Supreme Court justices to craft more readable opinions, Black et al. (2016) conclude that the justices of the U.S. Supreme Court are motivated to enhance the level of clarity in their opinions for several

reasons. Specifically, they find that increased clarity in written opinions removes discretion, makes monitoring of execution easier, facilitates whistle-blowing by outside actors, provides clearer instructions of the Court's wishes, and helps manage public perceptions of the Court by increasing legitimacy and perceptions of procedural fairness.

Given these reasons for writing more readable opinions, the obvious question is why would a tradition of writing in nearly impenetrable language alone be sufficient to maintain the status quo. While the answer to this is complex, there are a few key systematic reasons why courts in general, and the U.S. Supreme Court in particular, would prefer intentionally ambiguous opinions in certain contexts. As Staton and Vanberg (2008) show, there are conditions under which judges may strategically craft vague opinions in order to deal with policy uncertainty or to hide noncompliance. Additionally, Owens, Wedeking, and Wohlfarth (2013) find that the U.S. Supreme Court sometimes alters opinion readability to strategically evade review by Congress when the preferences of the two are divergent.

In addition to this research examining the reasons why the Supreme Court justices might be motivated to write more clear or more ambiguous opinions, other work has examined the factors that systematically influence variation in the readability or clarity of individual opinions. For example, studies show that legal clarity within the Supreme Court can be connected to specific judges, the issue area, and the type of opinion (Black et al., 2016; Owens and Wedeking, 2011). However, at least at the U.S. Supreme Court, there appears to be no systematic relationship between ideology and opinion clarity (Owens and Wedeking, 2011). This may be in part because the two justices with the highest levels of clarity during the period of their study have ideologies on opposite ends of the spectrum.

Additionally, opinion clarity plays a major role in our understanding of compliance. Corley and Wedeking (2014) show that variations in authority and legal certainty will increase the favorability of a decision by the lower courts. Yet, increased clarity does not always necessitate compliance. Hinkle et al. (2012) find that district court judges will mediate the language used in their opinions when they are ideologically distant from the majority of judges on the appellate court that may review their opinions. Additionally, Beavers and Walz (1998) show that state supreme court judges rely heavily on language from state statutes to avoid potential review by the U.S. Supreme Court.

Readability and Impact

Citation rates are more than a trivial question. Scholars and jurists recognize that precedents cited at higher rates have a greater potential to shape the development of legal policy (Nelson and Hinkle, 2018; Posner, 2014). Moreover, citations of opinions are often used as evidence to show that opinion content, reasoning, and language persist to influence subsequent judges (Cross and Spriggs, 2010; Fowler et al., 2007), or to show support or expansion of the scope of precedent as it develops over time (Hansford and Spriggs, 2006). A judge may use citations of cases for a variety of reasons, including ideology (Hinkle, 2015), legal clarity (Corley and Wedeking, 2014), persuasiveness and argument clarity (Nelson and Hinkle, 2018), or to account for *stare decisis* (Schauer, 2008). Citations can show that a precedent is impacting the law independently of whether those citations are made in a positive, negative, or neutral way, in much the same way that Corley (2008) argues that the use of language from party briefs in the Supreme Court's opinions has an influence on the law regardless of whether the brief influenced the Court's decision.

As such, if the readability of opinions has a systematic impact on citation rates, then more readable opinions may have an outsized influence on the evolution of the law independent of any other feature of the opinion. Moreover, this likely remains true even if the Supreme

Court itself does not care about opinion readability. While anecdotal and empirical evidence suggests that the U.S. Supreme Court does not cite more readable opinions at higher rates (Nelson and Hinkle, 2018), if lower courts do then the potential impact of increased opinion readability still matters for the development of the law. Lower court judges and other actors exert significant control over shaping the impact of the Supreme Court's decisions (Canon and Johnson, 1999). If these actors care about clarity of writing, then the potential impact of opinion readability on which precedents influence the development of the law may be great.

Despite the importance of this topic, only one study has directly examined the relationship between the readability of judicial opinions and rates of citation to those opinions. In an examination of citation patterns in search and seizure cases across federal and state courts, Nelson and Hinkle (2018) find that lower courts are more likely to discuss the opinions of higher courts when they are more readable out of efficiency concerns. Like Nelson and Hinkle (2018), we recognize the importance of understanding the impact of readability on citation rates and thus a precedent's potential for long-term influence. However, we depart from Nelson and Hinkle (2018) in terms of the scope of our study by focusing on citation patterns for all U.S. Supreme Court opinions by state high courts. State high courts, in contrast to lower federal courts, have significantly more flexibility in how they incorporate the decisions of the U.S. Supreme Court into state law (Comparato and McClurg, 2007; Fix, Kingsland, and Montgomery, 2017; Hoekstra, 2005). This enhanced freedom means that their decision to use (or not use) a particular precedent is going to be influenced by a variety of factors related to the precedent. Our central theoretical argument is that readability of the precedent will exert a significant, independent influence on this decision for four core reasons.

First, one goal of most judges is time management (Baum, 1997). As state high courts lack the resources of the U.S. Supreme Court, they must find ways to maximize the efficiency with which they spend their time. As Nelson and Hinkle (2018) argue, relying upon more readable opinions offers a potential time-saving mechanism. State high courts generally have higher caseloads, fewer law clerks, and other resource disadvantages. These problems limit their flexibility to devote significant time to researching applicable precedents, which should lead them to seek heuristics to help sift through the mountain of potentially relevant precedents. More readable opinions may offer state high courts one such heuristic since these opinions can be read and digested with an expenditure of fewer resources.[1]

Second, as Baum (2006) notes, audience considerations affect many aspects of judicial behavior generally (see also Black et al., 2016). Yet, state high courts write for a different audience than does the U.S. Supreme Court. As state high court judges must target their opinions to state trial court judges, intermediate appellate court judges, and members of their state's bar, it is reasonable to expect that the opinions they issue will reflect these audiences. Moreover, as Romano and Curry (2019) argue, most state high courts must also consider an additional audience: their retention constituency. Since judges on state high courts desire to both maximize the impact of their opinion in shaping legal policy in their states and ensure their own retention when they face the voters or the elite actors who determine their reappointment, they will factor in these audience considerations when crafting an opinion (Romano and Curry, 2019). For both these goals, increasing the clarity of their opinions seems a logical course of action for state high courts to take most of the

[1]With modern electronic resources like WestLaw, it is unlikely that judges (or their clerks) read relevant precedents in their entirety rather than skimming them. However, this logic should apply equally, if not more so, in this situation as it is more efficient to skim a clearly written document.

time.[2] As state high courts consider which U.S. Supreme Court precedents to incorporate into state law through their own decisions, it seems likely that this logic would generalize, and that they would seek out the most clearly written U.S. Supreme Court opinions for the same audience-based reasons they would be more likely to use clear language in their own opinions.

Third, a variety of legal mechanisms provide state high courts with substantial flexibility to pick and choose which U.S. Supreme Court precedents they rely upon. Unlike lower federal courts that are bound to follow all U.S. Supreme Court precedents, state high courts are only bound to follow them when interpreting questions involving federal laws, federal treaties, and the U.S. Constitution. This means that when state high courts are dealing with questions of *state law only*, they can treat U.S. Supreme Court precedents the same as decisions from their sister courts in other states: as influential but not binding. Additionally, even when a state high court confronts a case containing federal questions, it can still avoid these questions—and the related obligation to follow U.S. Supreme Court precedent—when it can ground its decision in adequate and independent state grounds (Fix, Kingsland, and Montgomery, 2017).[3]

Finally, state high courts care about the legal policy set by their opinions, and the choice of which precedents to rely on plays a significant role in shaping the policy content of an opinion (Kassow, Songer, and Fix, 2011). When a state high court finds itself in a position where it must address a question of federal law, that court is bound by the precedents of the U.S. Supreme Court. However, in any given area of law, there are often a number of potentially applicable Supreme Court precedents. As none of these precedents were likely to have dealt with identical factual scenarios, the state court will have some flexibility in its choice of which precedent or precedents to use. Combining the flexibility state courts possess in choosing among the universe of potentially relevant precedents with the importance of this decision for their ability to set legal policy in their state creates a situation where these courts are under tremendous pressure to make the right decision. Given a choice between an array of potentially relevant precedents, it is likely that a court in this position would be drawn to the more readable opinions so that they could easily determine the policy content with maximum efficiency.

Taken together, these factors place state high courts in a unique position that would lead them to care more about the readability of Supreme Court precedents, and would make them more likely to rely on more readable precedents. Thus, our primary hypothesis:

H_1: As the readability of a U.S. Supreme Court opinion increases, the number of citations to that opinion by state high courts will increase.

While we expect that our primary hypothesis should hold across all state high courts, we also recognize that specific features of these courts may lead to variation in the degree to which readability matters. State high courts play the same role in each state as the final arbiter of questions related to their state law. However, substantial variation exists among courts on a number of important dimensions. One such area of high variation is the degree of court professionalism. More professional state high courts possess greater control over

[2]It seems likely that there are some circumstance where there may be value in using vague language, applying the logic of Staton and Vanberg (2008) to state high courts. However, this seem likely to be an uncommon event on these courts for all the reasons discussed herein.

[3]Even when explicitly invoking adequate and independent state grounds as the basis for a decision, state high courts still often discuss relevant U.S. Supreme Court decisions regarding the analogous provision of the federal constitution, in much the same way that they often discuss decisions of other state high courts interpreting similar provisions in their state constitutions. Thus, the impact of those Supreme Court precedents is affected even when they do not serve as the basis of the state court decision.

their workload, via docket control, and more resources, in the form of higher salaries and larger staffs (Squire, 2008). It may be the case that the most professional state high courts have different standards regarding what constitutes good law than their less professional counterparts. Were this to be the case, the most professional state high courts might be more likely to cite more readable precedents than less professional ones. This is especially likely if these courts feel that more readable opinions better communicate with their audiences, and the greater resources available to them allow them to better take advantage of their flexibility in selecting preferable precedents. Our second hypothesis accounts for the possibility of this conditional relationship.

H_2: As the readability of a U.S. Supreme Court opinion increases, the number of citations to that opinion by state high courts will increase for more professional state high courts, but not for less professional state high courts.

Data and Methods

In order to test our hypotheses, we use a unique data set of cumulative state high court citations to U.S. Supreme Court decisions. The unit of analysis is the state high court–U.S. Supreme Court precedent dyad. Because state high courts vary on a number of important dimensions that may impact their citation behavior generally and with respect to specific cases (Fix, Kingsland, and Montgomery, 2017; Kassow, Songer, and Fix, 2011), we measure the total number of citations to each U.S. Supreme Court precedent separately for each of the 52 state high courts. Specifically, our dependent variable is the total number of cases in which a given state high court makes at least one citation to a given U.S. Supreme Court precedent over the 1987–2017 time frame. We construct a measure for each state high court with respect to each U.S. Supreme Court majority opinion issued from 1987 to 2006.[4] We use information from *Shepard's Citations* provided in Lexis-Nexis to locate all decisions for each state high court citing each U.S. Supreme Court decision. This yields a total *N* of 86,413.[5]

We recognize that citations appear to be a bit of a blunt measure, whereas a more refined approach might examine variation in treatments. However, there are three reasons why we feel that this is the best approach for testing our hypothesis. First, citations alone are relatively rare. Over 70 percent of the observations in our data represent instances where there are no cites by a state high court to a U.S. Supreme Court precedent, and treatments of precedents are significantly less common than citations. Thus, were we to look only at those precedents receiving a positive or negative treatment, we would be looking at a small fraction of total cases. Second, paralleling Corley's (2008) argument that the use of language from party briefs influences the development of the law regardless of how that language is used, we argue that citations alone are a meaningful marker of the influence of a precedent. Citing a case shows that it is considered authoritative or at least deserving of respect from the perspective of the citing court. Even when a court negatively treats a precedent, it is taking the time to acknowledge that this is a relevant precedent such that it is necessary to explain why the facts in the current case distinguish it from the set of cases to which the precedent ought to apply. Finally, on more practical grounds, *Shepard's*

[4]This time frame was selected to ensure at least 10 years had passed since the precedent was initially issued to allow enough time for there to have been a reasonable opportunity for most of the precedents to have been cited by most state high courts.

[5]We dropped majority opinions with less than 100 words to eliminate exceptionally short opinions that might have abnormally high or low readability scores.

Citations does not classify treatments by state high courts prior to the late 1990s (Kassow, Songer, and Fix, 2011). This would mean that a significant portion of our data would have to be hand-coded, an undertaking that would require us to limit the scope of our study unnecessarily. Thus, in the interest of generalizability, we argue that it is better to examine citations for the universe of cases rather than treatments for a small sample.

For our primary independent variable, we recognize that a debate exists in the literature regarding which readability measure is best, as reliance on a specific measure of readability varies across studies (Black et al., 2011; Corley, 2008; Corley and Wedeking, 2014; Nelson and Hinkle, 2018; Owens and Wedeking, 2011). All readability measures are an assessment of two important factors: reader comprehension and text complexity. Each measure accounts for a variety of different specific factors such as reading skill, prior knowledge, word length, syllable count, design, organization, reader motivation, reader interest, and writing style (see, e.g., Dale and Chall, 1949; Coleman and Liau, 1975). However, the specific factors used and the weighting of those factors varies significantly across measures, and there exists significant debate over which is most appropriate in a given context.

Rather than wade into the debate over which readability score is best for our purposes, creating a challenging position to defend regardless of the specific score selected, we follow Black et al. (2016) and use a combination of multiple scores. The Black et al. (2016) measure of readability, which we borrow here, derives a single factor score from a principal component analysis of 28 different measures of readability (from 19 distinct formulae).[6] For our period of study, this score ranges from a low of −16.966 to a high of 14.768, with higher values representing more readable opinions. Black et al. (2016) provide a detailed examination of the validity of this measure. However, a brief comparison of a particular high- and low-scoring opinion is useful to illustrate its face validity for our study.

One of the lowest scoring opinions in our data is *Colonial American Life Insurance Company v. Commissioner*.[7] The complexity of writing in this opinion is made clear in its first sentence where Justice Kennedy describes the question as follows: "The arcane but financially important question before us is whether ceding commissions paid by a reinsurance company to a direct insurer under a contract for indemnity reinsurance are fully deductible in the year tendered or instead must be amortized over the anticipated life of the reinsurance agreements." In comparison, one of the highest scoring opinions, *Ayotte v. Planned Parenthood*,[8] deals with a narrow issue in an abortion case regarding when judicial remedies are sufficient to remedy unconstitutional applications of the law without the need to hold the entire law unconstitutional.

To examine our second hypothesis, including a measure of readability alone is insufficient. To test for the hypothesized conditional effect, we first include a measure of state high court professionalism. Specifically, we use Squire's (2008) measure of court *Professionalism* that combines the salary, staff size, and docket control. We then create a cross-level interaction term, *Readability* × *Professionalism*, to test whether the effect of readability is conditional on variation in court professionalism.

Our theoretical interest is on the effect of readability on citation rates independent of other factors. Thus, it is essential that we also include additional covariates to account for factors known to impact state high court reactions to Supreme Court precedents First, to account for the *Salience* of a given precedent, we include Epstein and Segal's (2000) measure of whether the case appeared on the front page of the *New York Times* the day after the decision was issued. We expect that salient cases will be cited more than nonsalient

[6]For more detail on this measure, see Black et al. (2016:49–53).
[7]491 U.S. 244 (1989).
[8]546 U.S. 320 (2006).

cases due to the attention that the cases generate and since they tend to involve important issues that are likely to be frequently litigated.

Next, we account for the legal significance of the decision by including an indicator of whether the decision formally *Altered precedent*. Like with *Salience*, we expect that Supreme Court decisions formally altering their own precedents will be cited more frequently than those that do not. Precedent alteration occurs when the Court feels the need to revisit its extant precedents. When this occurs, it is likely to reverberate through the judicial system as other courts adjust to the change in the law. State high courts are thus more likely to cite these precedents than ones without an alteration of existing precedent. Our measurement of this variable comes from the Supreme Court Database. Relatedly, we recognize that it takes time for a precedent to build significance. As such, we include a measure of *Precedent age*. Both these account for the potential for older precedents to have more time to build up significance, but it also recognizes that older precedents simply have more time to be cited than more recent ones, independent of any other factors. It is also likely that U.S. Supreme Court precedents from different issue areas will be cited with more or less frequency by state high courts, all else equal. Some areas—such as criminal procedure—are simply relevant to state high courts on a more regular basis than others. To account for this, we include issue area fixed effects in all models (with criminal procedure as the excluded baseline category).

Additionally, we account for potential ideological influences and intracourt conflict by including a measure of the *Median ideology* of the Supreme Court at the time of the decision using Martin and Quinn's (2002) ideology scores. Ideally, we would include a measure of the ideological distance between the state high court and the U.S. Supreme Court. However, as our measure of state high court citations is aggregated over a 30-year period, it is impossible to accurately measure the ideology of a given court over the entire time period with a single measure.[9] Additionally, we include a variable measuring the *Majority size*. This is a simple difference between the number of justices in the majority and the number in the minority such that a 9 would represent a unanimous opinion and a 1 would represent a 5–4 vote. As both these variables could introduce competing ideological effects, we do not have any a priori predictions regarding the direction of their effect on citation frequency.

Finally, we include a measure of *Contestable elections* that equals 1 for states that use partisan or nonpartisan elections to retain their state high court judges, and 0 otherwise. While evidence reveals that the method of judicial retention has no significant impact on the clarity of those courts' opinions (Goelzhauser and Cann, 2014), this institutional feature impacts a number of other important behaviors. Thus, while we have no theoretical expectations regarding this variable, we include it to account for a potential alternative influence. Due to the nested nature of the data, we use a two-level random intercept, random slope multilevel regression model to test our hypotheses.

Results

The results of our primary model are presented in Table 1. The results for Model 1, our Standard Model, provide evidence of a conditional relationship between opinion readability and court professionalism. The positive coefficient on the interaction term indicates that predicted citation rates are highest from the most professional courts for the most readable

[9] Additionally, even if an average measure would be sufficient to capture this concept, there are no measures of state high court ideology that span the entire time frame of our study, are available for all 52 state high courts, and are directly comparable to available ideology measures for U.S. Supreme Court justices.

TABLE 1

The Impact of Opinion Readability on Citations

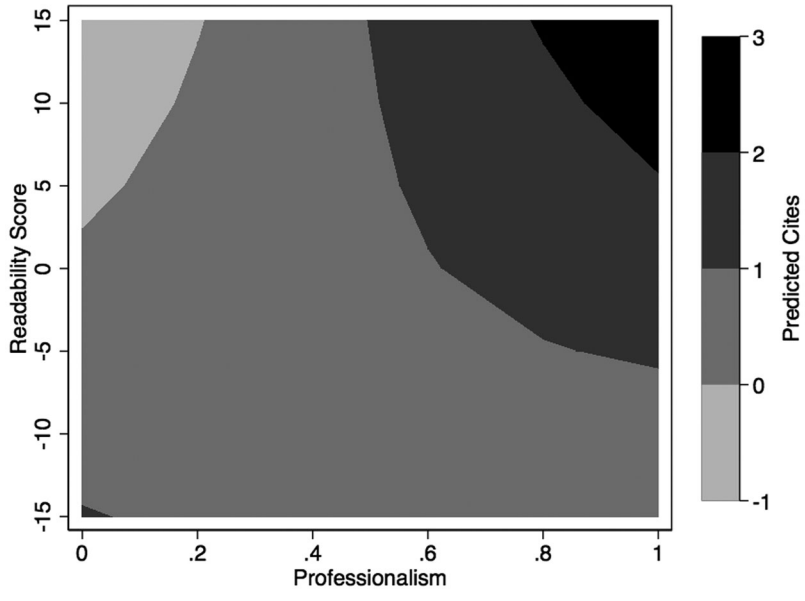
	Model 1 Standard	Model 2 No Zeros
Fixed effects	Coefficient (*SE*)	Coefficient (*SE*)
Readability	−0.058	−0.223
	(0.040)	(0.123)
Professionalism	1.368*	2.362*
	(0.454)	(1.177)
Readability × *Professionalism*	0.145*	0.403*
	(0.067)	(0.203)
Salience	0.708*	1.027*
	(0.085)	(0.255)
Ideology	−0.003	−0.098*
	(0.014)	(0.048)
Majority size	−0.042*	−0.064*
	(0.009)	(0.031)
Precedent alteration	1.456*	2.138*
	(0.197)	(0.519)
Precedent age	0.042*	0.029
	(0.005)	(0.019)
Contestable election	0.018	0.030
	(0.135)	(0.353)
Intercept	0.593	2.705*
	(0.304)	(0.857)
Random effects	Variance (S.D.)	Variance (S.D.)
Residual (e_{ij})	68.138	228.071
	(0.328)	(2.046)
Intercept (u_{0j})	0.190	1.098
	(0.046)	(0.311)
Readability (u_{1j})	0.002	0.017
	(0.001)	(0.009)
N	86,413	24,957
χ^2	985.75*	207.20*

NOTE: All estimates are from random intercept, random slope multilevel regression models. Coefficients and standard errors are reported for the fixed effects portion of the model and variance components, and standard deviations are reported for the random effects portion. Issue fixed effects are included in both models but are not reported for space considerations. *$p < 0.05$.

opinions. In addition to our primary variable of interest, Model 1 also shows that the several features of U.S. Supreme Court precedents impact their citation rates, consistent with prior research. The salience of the precedent, whether it involved an alteration to an existing precedent, and the age of the precedent all have a positive impact on the predicted number of citations a state high court will make to that precedent, while the size of the majority coalition has a negative effect. Additionally, coefficient estimates for all of the issue area fixed effects were statistically significant and negative. We can interpret this as implying that state high courts are like to cite U.S. Supreme Court precedents dealing with any other issue at a lower rate than cases dealing with criminal procedure (the excluded

FIGURE 1

Conditional Impact of Readability and Professionalism on Citation Rates



baseline category). This is rather intuitive given the number of criminal cases state high courts decide.

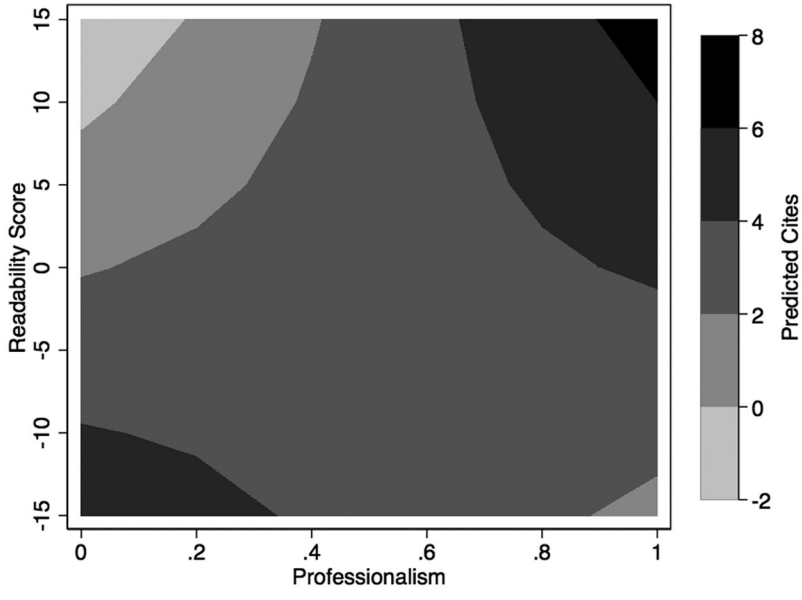
Figure 1 presents a substantive illustration of the conditional impact of U.S. Supreme Court precedent readability and state high court professionalism on the predicted cites a state high court will make to a given precedent. The figure shows a predicted number of cites between two and three at the highest levels of both readability and professionalism. Additionally, it shows a prediction of between one and two cites at moderate levels of both. Further, we see that the conditional effect of professionalism works both ways. At the lowest levels of professionalism, courts are less likely to cite more readable opinions. Thus, professionalism seems to condition the impact of readability on citations for both the most and least professional state high courts. However, this conditional effect appears to be only meaningful at moderate-to-high levels of readability. Consistent with our general hypothesis, we see that at the lowest levels of readability, the predicted number of cites is between 0 and 1 regardless of the level of professionalism.

While this effect is somewhat weak in terms of the raw substantive impact, this impact is still substantively notable when two important considerations are taken into account. First, this represents the estimated impact of readability on citations while accounting for a host of factors that we know from prior research have a strong impact on citation rates. Thus, while the substantive impact of readability on predicted citations would be small if viewed in a vacuum, the fact that it is greater than the estimated effect of *Salience*, *Majority size*, or *Altered precedent* is noteworthy. Looking at it from this perspective, we can say that the magnitude of the estimated impact of increased readability on citations is equivalent (or higher) to the impact of other factors known to be of theoretical importance.

Second, over 71 percent of the observations in the data represent instances where there were no citations. Given the substantial number of zeros in the data, it is unsurprising that any substantive effects are relatively small, given that the modal case will have zero

FIGURE 2

Conditional Impact of Readability and Professionalism on Citation Rates



cites. Thus, the effect is potentially damped by the high percentage of cases with zero citations. Additionally, while an increase of a single citation seems minimal even in these circumstances, we know from existing work that state high courts tend to rely more on U.S. Supreme Court cases that they have previously relied on, creating a sort of snowball effect (Fix, Kingsland, and Montgomery, 2017). Substantively, this is an important consideration. If the readability of a citation can move a case from the pool of never-cited opinions, it may set off a chain reaction whereby the state high court continues to rely upon that precedent in the future.

To ensure that our results are not simply an artifact of measurement decisions related to our dependent variable, we reestimate our Standard Model to account for the highly skewed nature of the dependent variable,[10] the difference between an increase in citation for a precedent that has never been cited compared to a precedent that already has over 100 citations is a very different thing. Moreover, we know that U.S. Supreme Court precedents that are cited by a state high court are more likely to be cited by that same court in the future (Fix, Kingsland, and Montgomery, 2017).

The second model in Table 1 is a reestimation of Model 1 with all observations with zero citations dropped.[11] This serves the dual purpose of ensuring that our initial results are not merely a function of the skewed nature of the dependent variable, while allowing us to examine the substantive impact of readability for just those observations where at least one citation is made. As the table shows, there is little change between the two models despite the massive reduction in the sample size. Only one variable that is statistically significant in

[10]Descriptively, 71.46 percent of the observations in our data set represent instances of zero citations. Moreover, an additional 13.84 percent have only a single citation, and 99.01 percent have 11 or fewer citations. In contrast, only 24 observations (0.03 percent) have more than 100 citations.

[11]As a robustness check, Model 2 was reestimated as a negative binomial model with standard errors clustered on court. The substantive results were nearly the same between the two models.

Model 1 loses significance (*Precedent age*),[12] and only one variable that was not significant previously achieves significance in this model (*Median ideology*). Otherwise, the model estimates look quite similar.

Figure 2 presents a visualization of the substantive impact of the conditional relationship between readability and state high court professionalism on citation rates for Model 2. As the figure shows, the conditional relationship on the predicted number of citations is largely unchanged from Figure 1, but the substantive effect is over twice as much at the highest levels of both readability and professionalism. When both these variables are near their maximum levels, the predicted number of cites is between six and eight. Also consistent with Figure 1, the predicted effect is also more than double at moderately high levels of both variables. We see a similar mirroring of Figure 1 at the lowest levels of professionalism, reinforcing the substantive conclusions we drew from Figure 1 regarding courts with the lowest level of professionalism citing more readable opinions at lower rates. Finally, we see that our conclusion from Figure 1, that all courts are unlikely to cite opinions with low readability at significant levels, largely remains unchanged. Interestingly, however, we do see an area of high predicted cites corresponding with the lowest levels of readability for the least professional courts and a similar region of low predicted cites corresponding with the lowest levels of readability for the most professional courts. While the latter is a rather intuitive finding, the former is a bit surprising. We are hesitant to speculate about potential causes for this result, as it is quite possible that this is simply an artifact of the reduced sample size as there are no observations in our Model 2 data that would reside in this region of the graph.

Conclusion

A wide array of factors is known to influence the potential impact of U.S. Supreme Court precedents. This article contributes to this literature by examining one specific aspect of this: the effect of more readable opinions on citation rates by state high courts. In many areas of the law, it is state courts, more than federal courts, which play the lead role in the implementation of legal policy set by the Supreme Court through its precedents. This gives these courts an outsized influence over the long-term impact of these precedents. As such, it is important to understand what precedent-specific factors may influence the attention paid to a given precedent by state high courts.

Examining 30 years of state high court citations to U.S. Supreme Court majority opinions issued during the 1987–2006 terms, we show that the readability of U.S. Supreme Court opinions has a strong, independent impact on citation rates. Clearly, we do not suggest that opinion readability is the only factor influencing the impact of U.S. Supreme Court opinions. However, it is striking that the substantive impact of opinion readability is as strong as other factors known to exert a significant influence on citation rates. Additionally, as most of the other things that influence the long-term importance of a Supreme Court opinion fall outside the control of the opinion author, Supreme Court justices (and other legal writers) would be strategically wise to capitalize on anything that could help increase the impact of their opinions.

While this finding is consistent with our expectations, the study design is limited in its ability to test all of the specific mechanisms we theorize as likely to cause this behavior. Specifically, we argue that state high courts will be more likely to use more readable

[12]Additionally, the issue fixed effect term for *Interstate relations* also fails to achieve statistical significance in Model 2. However, that issue only represents 75 cases (0.30 percent) in the reduced data.

precedents when possible due to a consideration of the audiences they must communicate with. As such, a valuable course of future research would be to look at the readability of state high court opinions to examine factors that influence variation in the readability of their opinions, including the readability of the precedents they rely upon. Additionally, such a study could explore whether variation in state high court opinion readability influences their impact on state intermediate appellate courts as a sort of second-level effect.

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