

The Linguistic Style of Justice Ketanji Brown Jackson

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I. INTRODUCTION

With the historic confirmation of Ketanji Brown Jackson to the Supreme Court, many are wondering what type of Justice she will be. Most

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of this focus has been on trying to predict what type of outcomes she will reach as a Supreme Court Justice based on how she decided cases as a lower court judge.¹ This Article has a different focus. Given that lower courts treat the words of Supreme Court opinions as law, how Justices write these opinions has important significance. This study is the first to empirically examine the linguistic style of then-Judge Jackson. It does so by analyzing opinions she wrote as a district court judge and comparing those to the recent opinions of current and recent Supreme Court Justices, as well as opinions from then-Judge Sotomayor as a district court judge. For the analysis, this study uses the just-updated Linguistic Inquiry and Word Count (“LIWC-22”) software to measure 15 different features of then-Judge Jackson and various Justices’ linguistic style in opinion writing. While this study cannot say anything about how Justice Jackson may vote or what her jurisprudence may look like, it does provide an insight into the linguistic style she will likely employ in writing opinions for the highest court in the land. And that style, as measured by LIWC-22, appears to be most like then-Judge Sonia Sotomayor, as well as Chief Justice Roberts.

II. THE LIWC-22 SOFTWARE

LIWC-22 was developed based on decades of research showing that a person’s “language can provide extremely rich insights into their psychological states, including their emotions, thinking styles, and social concerns.”² In a simple and obvious example, frequently using words in a particular context such as *excited* or *happy*, but not the opposite, such as *depressed* or *sad*, reflects a positive emotional state.³ However, the connections between psychology and verbal behavior are not always as obvious. For instance, studies have shown that “people who are more confident and higher in social standings tend to use ‘you’ words at relatively high rates, and ‘me’ words at relatively low rates.”⁴

LIWC-22 has over 100 dictionaries to measure various psychological and social states.⁵ “Each dictionary consists of a list of words, word stems, emoticons, and other specific verbal constructions that have been identified to reflect a psychological category of interest.”⁶ As an example,

1. See John Fritze, *Review of Supreme Court Nominee Ketanji Brown Jackson’s Opinions Shows Outcomes Cut Both Ways*, USA TODAY (Mar. 14, 2022, 5:00 AM ET), <https://bit.ly/3RnnUnr>; Andrew Chung & Lawrence Hurley, *U.S. Supreme Court Nominee Jackson a Tough Sell on Racial-Bias Claims*, REUTERS (Mar. 17, 2022, 7:19 PM EDT), <https://reut.rs/3D5v3EJ>.

2. *How It Works*, LIWC, <https://bit.ly/3AHsU0O> (last visited July 9, 2022).

3. See *id.*

4. *Id.*

5. See *id.*

6. *Id.*

the dictionary for “cognitive processes”—which this study uses—has “over 1,000 entries that reflect when a person is actively processing through information, both in general and more specific ways.”⁷ For most of the measures, LIWC-22 reads a text and computes how many words are found in a particular dictionary, reporting the results as a percentage of the total words.⁸ Additionally, some words are found in multiple dictionaries.⁹ For example, words in the “anger” dictionary are also included in the “negative emotion” dictionary, which is part of the “emotion” dictionary.¹⁰ And four summary measures, which are discussed below, issue a standardized score ranging from 1 to 99 from “algorithms derived from various LIWC variables based on previous empirical research.”¹¹

Of course, as its creators concede, LIWC-22 “is a relatively crude instrument.”¹² It can make errors in classifying words.¹³ For example, one can use a negative word, such as “mad,” which is found in the anger dictionary, in a positive way: “He is mad for her.”¹⁴ This usually is not a problem though, because LIWC-22 “takes advantage of probabilistic models of language use.”¹⁵ Thus, while one can use “mad” in the context of a positive emotion, “if the author is actually experiencing positive emotion, they would generally tend to use more than one positive emotion word, and most likely few other anger words, which should result in a high positive emotion score and low anger score.”¹⁶

Another caveat is in order. The dictionaries from which LIWC-22 is created come from non-legal texts—what its creators call “the test kitchen corpus.”¹⁷ This corpus consists of samples of texts from 15 different sources:

- Technical college admissions essays
- Personal blogs from blogger.com
- Natural conversations
- Internal emails from Enron
- Facebook posts from mypersonality.com
- Transcribed movie dialogue

7. *Id.*

8. *See id.*

9. *See id.*

10. *See id.*

11. *See LIWC Analysis*, LIWC, <https://bit.ly/3Pji1qi> (last visited July 9, 2022).

12. *How It Works*, *supra* note 2.

13. *See id.*

14. *See id.*

15. *Id.*

16. *Id.*

17. *See* Ryan L. Boyd et al., *The Development of Psychometric Properties of LIWC-22*, UNIV. OF TEX. AT AUSTIN 6 (Feb. 2022), <https://bit.ly/3Is8Lh1>.

- Novels from Project Gutenberg
- New York Times articles
- Individuals' Reddit comments
- Short stories
- Stream of consciousness essays
- U.S. congressional speeches
- An online website of the Thematic Apperception Test
- Collected tweets from individual accounts
- Restaurant reviews posted on Yelp¹⁸

The relevance of these sources for analyzing legal texts is of varying utility. Further, it is not clear what underlying psychological constructs can be gleaned from using LIWC-22 on legal texts, a type of writing from which these constructs are not generally derived or tested on. To be safe, then, the best way to interpret the results below is not so much as a reflection of the psychology of the particular Justices and judges, but rather of the linguistic style of their opinion writing, whatever that may reflect.

III. DATA COLLECTION & DESCRIPTION

To fully analyze then-Judge Jackson's linguistic style, first Supreme Court opinions were collected for the past three terms (October 2019, October 2020, and October 2021).¹⁹ These opinions also included statements and dissents from denial of certiorari opinions. This methodology meant ten Justices were included in the dataset, given that Justice Ginsburg was part of the Court during the first term included and Justice Barrett was part of the next two terms. The list of opinions was gathered from the Supreme Court's website, and then these opinions were downloaded from Westlaw. If a case had multiple opinions—i.e., majority, concurrence, dissent—each opinion was put into a separate document. And everything but the Justices' words were removed from each opinion.²⁰ Per curiam opinions were not included because it was unknown which Justice wrote it, but if there was a concurrence or dissent with the per curiam opinion, it was included. Finally, any opinions less than 100 words were not included given the lack of reliability of the measures for so few words.²¹

18. *Id.* at 9.

19. The October 2021 term opinions were gathered through March 5, 2022, so *FBI v. Fazaga*, 142 S. Ct. 1051 (2022), was the last opinion included.

20. For example, any front matter, end matter, or headnotes put in by the Court or Westlaw were removed.

21. LIWC-22 was created from test files that "had to have a minimum of 100 words" for similar reasons. See Boyd et al., *supra* note 17, at 34.

Because then-Judge Jackson had only written a few appellate opinions while on the U.S. Court of Appeals for the D.C. Circuit,²² which makes statistical analysis rather worthless, the last 50 opinions from when she was a district court judge were likewise downloaded and any material that was not her writing was deleted.²³ Only documents that had “Opinion” in the title were included—orders were excluded.

Admittedly, a district court opinion and a Supreme Court opinion is a bit of a quince-to-kumquat comparison. District court judges write for themselves, whereas Supreme Court Justices, even in dissents or concurrences, are usually writing for a coalition of their colleagues. Likewise, district court opinions may be more fact-intensive and Supreme Court opinions more focused on legal doctrine. Finally, the audiences differ, which could affect the content and style of the opinions for the two different courts. The Supreme Court writes for lower courts and future litigants and perhaps also the broader public, whereas district court judges write mostly for higher courts and the specific parties to a case.

These differences may mean that any distinction between then-Judge Jackson’s opinions and opinions by Supreme Court Justices may not so much reflect her personal style, but rather which court she was on. To get some leverage on this issue, the last 50 opinions that then-Judge Sotomayor wrote on the Southern District of New York were also downloaded and cleaned up to include as a comparison. Where then-Judge Sotomayor and Justice Sotomayor have similar scores on the linguistic measures included in this study, one can have more confidence that the scores are not an artifact of the type of court. And where the scores between then-Judge Sotomayor and Justice Sotomayor significantly differ, that difference may be mostly driven by the fact that the opinions were written for different courts.

The table below reports the number of opinions, the total word counts, and the average word counts for each opinion type of the Justices and judges included in this study.

22. See *Wye Oak Tech., Inc. v. Republic of Iraq*, 24 F.4th 686, 689 (D.C. Cir. 2022) (Jackson, J.); *Am. Fed’n of Gov’t Emps. v. Fed. Lab. Rels. Auth.*, 25 F.4th 1, 2 (D.C. Cir. 2022) (Jackson, J.).

23. This means that materials such as an appendix or a magistrate judge’s report and recommendation were not included.

Description of Opinions Included in Study

Justice/Judge	Total Opinions <i>Total Words</i>	Majority <i>Total Words</i> Avg. Words	Concurrences <i>Total Words</i> Avg. Words	Dissents <i>Total Words</i> Avg. Words
Alito	47 205,024	14 78,556 5611.1	16 45,298 2831.1	17 81,170 4774.7
Barrett	9 24,217	4 13,234 3308.5	2 1248 624.0	3 9735 3245.0
Breyer	32 112,382	13 60,529 4656.1	5 3326 665.2	14 48,527 3466.2
Ginsburg	14 34,036	5 16,276 3255.2	2 943 471.5	7 16,817 2402.4
Gorsuch	37 141,459	14 16,276 3255.2	13 26,563 2043.3	10 37,265 3726.5
Kagan	23 83,357	12 56,340 4695.0	7 8657 1236.7	4 18,360 4590.0
Kavanaugh	30 79,963	11 41,136 3739.6	15 12,785 852.3	4 26,042 6510.5
Roberts	23 114,936	15 88,184 5878.9	5 11,719 2343.8	3 15,033 5011.0
Sotomayor SC ²⁴	68 171,867	13 50,142 3857.1	32 38,769 1211.5	23 82,956 3606.8
Thomas	82 176,985	13 40,070 3082.3	34 49,334 1451.0	35 87,581 2502.3
Sotomayor DC ²⁵	50 239,696 ²⁶	n/a	n/a	n/a
Jackson	50	n/a	n/a	n/a

24. "SC" stands for Supreme Court.

25. "DC" stands for district court.

26. Then-Judge Sotomayor's district court opinions averaged 4793.9 words each.

	281,658 ²⁷			
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Given how few opinions Justices Barrett and Ginsburg have in this dataset, the measures of their linguistic style should be interpreted with greater caution. Also, given how few concurrences or dissents some Justices have, Justices will be analyzed by their total opinions rather than by opinion type so as to have greater confidence in the measures' statistics.

Of course, not everything within an opinion is written by a judge or Justice because judicial opinions quote other opinions and sometimes the parties' briefs or the record. However, removing quoted material would not only be rather labor-intensive, but would also leave incomplete sentences since opinions often partially quote material. Furthermore, judges and Justices choose which material to quote and to not; including quoted language in this study should not significantly change the results.

Additionally, at least for Supreme Court opinions, Justices sometimes get repeatedly assigned to write opinions in certain legal areas, such as Justice Ginsburg with civil procedure.²⁸ Writing more in a certain legal area than other Justices could influence a few of the measures discussed below. However, there are two reasons why this is likely not a problem for this study. First, the study only covers a little over two terms, and there are not many cases from a particular legal area in that short of a time period.²⁹ Second, the measures for the individual Justices include concurrences and dissents, which Justices are free to write in any type of case outside the assignment of majority opinions. Thus, despite the caveats discussed above, the Article's findings will still provide insight into Justice Jackson's linguistic style.

IV. THE FINDINGS

A total of 15 categories from LIWC-22 were analyzed. Based on relationships between these categories, these are presented below in four meta-categories:

27. Then-Judge Jackson's opinions averaged 5633.2 words each.

28. See Zachary D. Tripp & Gillian E. Metzger, *Professor Justice Ginsburg: Justice Ginsburg's Love of Procedure and Jurisdiction*, 121(RBG) COLUM. L. REV. 729, 729 (2021); David L. Shapiro, *Justice Ginsburg's First Decade: Some Thoughts About Her Contributions in the Fields of Procedure and Jurisdiction*, 104 COLUM. L. REV. 21, 21 (2004) (observing that Justice Ginsburg, as of 2004, "has authored some two hundred opinions, approximately fifty of which (or 25%) deal in whole or in part with issues of civil procedure and/or federal jurisdiction").

29. For example, according to data collected by the Supreme Court Database, there was only one civil procedure case during the October 2020 term. See *The Supreme Court Database*, WASH. U.L. (Sept. 30, 2021), <https://bit.ly/3vXJwOJ>.

- Writing Style
 - Words Per Sentence
 - Big Words
 - Adverbs
 - Adjectives
- Analysis and Cognition
 - Analytical Thinking
 - Cognitive Processes
 - Differentiation
 - Absolutism
 - Certitude
 - Tentative Language
- Tone and Emotion
 - Tone
 - Anger
 - Affect
- Clout and Authenticity
 - Clout
 - Authenticity

Each of these measures will be explained below before the results are introduced.

Additionally, as mentioned above, Justice Sotomayor has two measures in each category, one for recent opinions on the Supreme Court and one for her time as a federal district court judge on the Southern District of New York. For the first, her results will be reported in the charts as “Sotomayor SC,” and for the second as “Sotomayor DC.” Furthermore, statistical testing using a t-test with equal variances was done to see whether then-Judge Jackson’s measures significantly differed statistically from the Justices. To visually show which Justices’ measures differed in a statistically significant way ($p < .05$) from then-Judge Jackson’s,³⁰ the bars in the charts are color-coded to show statistical significance. Then-Judge Jackson’s bar is always dark green. Any Justice whose measure is not significantly different statistically from then-Judge Jackson will be shown in light green. Finally, those Justices whose measure does differ from then-Judge Jackson in a statistically significant way are colored orange.

A. Writing Style

The Writing Style category examines word choice and sentence length. There are four different measures included within this category,

30. One way to think of the meaning of $p < .05$ is that there is less than a 5% chance that the results found are random.

with their results discussed below: Words Per Sentence, Big Words, Adverbs, and Adjectives.

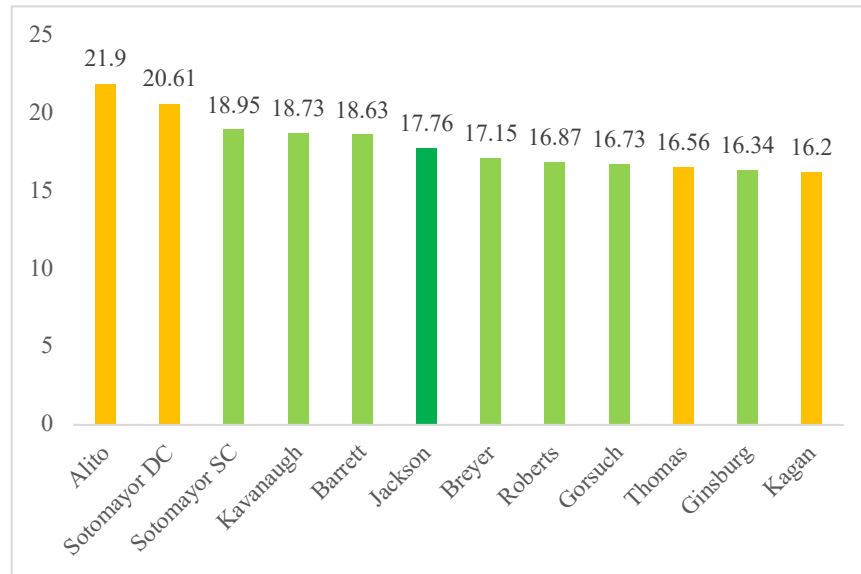
1. Words Per Sentence

The first measure is the average number of words per sentence. Consistently writing long sentences can be more difficult for a reader to process. Most readability tests include a measure of the average number of words per sentence, with more words per sentence increasing the difficulty of reading the text.³¹ Of course, good, readable writing varies in sentence length. If all sentences were short, they would have a staccato feel that would create challenges to read.³² It should be noted that the average sentence length of a judicial opinion will be affected by things like citations, and that judicial opinions often quote previous opinions, which means a judge's score will somewhat reflect the sentence length of other judges she is quoting. But it is not clear that will make much of a difference between judges since all will be using citations and quotations. The chart below reports then-Judge Jackson's average sentence length compared to other current and recent Justices.

31. See Jillian Murphy, *How to Measure Readability*, UNIV. OF N. GA. (Nov. 14, 2018), <https://bit.ly/3OUv2qv>.

32. See B.J. Keeton, *Readability Score: What It Is, Why It's Important, & How to Get a Good One on Every Post*, ELEGANT THEMES (Jan. 17, 2019), <https://bit.ly/3Q9yXQJ> (“[T]oo many short sentences give the content a staccato feeling of starting and stopping too often.”); Norman Otto Stockmeyer, *Using Microsoft Word's Readability Program*, MICH. B.J., Jan. 2009, at 46, 47 (“[J]ust using shorter words and sentences can result in a text that is more difficult, not less.”).

Average Sentence Length



Then-Judge Jackson is about in the middle of the pack with an average of 17.76 words. She is statistically indistinguishable from seven other Justices: Justice Sotomayor on the Supreme Court, Justices Kavanaugh, Barrett, Breyer, Gorsuch, and Ginsburg,³³ and Chief Justice Roberts. Then-Judge Jackson's average words per sentence do not appear to be primarily driven by the fact that she was writing district court opinions compared to Supreme Court opinions, as Justice Sotomayor's words per sentence while a district court judge are only modestly different from the average length of her sentences on the Supreme Court. Given the trend that Justice Sotomayor demonstrated, perhaps Justice Jackson's sentences will get a little shorter on the Supreme Court.

2. Big Words

The LIWC-22 measure of "Big Words" measures the percentage of words with seven or more letters.³⁴ Big words also affect readability, with longer words tending to be more difficult to process, both because of their length but also because such words tend to be used less often.³⁵ Of course,

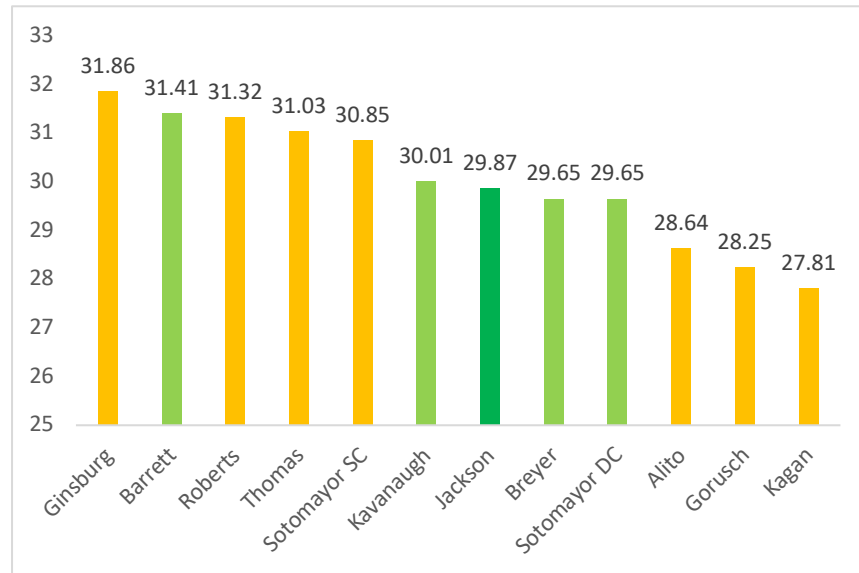
33. Justice Ginsburg, despite having a value further away from then-Judge Jackson as compared to Justice Thomas's statistically significantly different value, did not significantly differ statistically because she has so few opinions in the dataset. This phenomenon sometimes also occurs with Justice Barrett.

34. Boyd et al., *supra* note 17, at 11.

35. See *Measuring Readability*, CLEAR LANGUAGE & DESIGN, <https://bit.ly/3BTUEjz> (last visited Aug. 10, 2022).

this measure will be slightly affected by citations³⁶ and quoting other cases, though again, that should not necessarily affect the difference between judges.

Percentage of Big Words (Seven Letters or More)



Again, then-Judge Jackson is about in the middle of the Supreme Court as to how often she uses larger words. Her score does not differ in statistical significance from Justices Barrett, Kavanaugh, or Breyer and then-Judge Sotomayor. Not surprisingly, Justices Kagan and Gorsuch,³⁷ both of whom have a reputation as excellent and very readable writers,³⁷ are the two Justices who use the fewest big words. On the other hand, Chief Justice Roberts also has a similar reputation as a writer,³⁸ but he tends to use longer words more often than most of the other Justices.

As to what degree then-Judge Jackson's measure of Big Words may be driven by writing district court opinions, Justice Sotomayor used moderately fewer long words in opinions while a district judge (29.65%) than on the Supreme Court (30.85%), so perhaps Justice Jackson will trend

36. Party names can be long, but the numbers in a citation are short.

37. See Robert Barnes, *What Does the Junior Supreme Court Justice Do? Kagan Tells Gorsuch It Starts in the Kitchen*, WASH. POST (Apr. 9, 2017), <https://wapo.st/3Qf6sBi> ("Kagan is known as one of the [C]ourt's best writers, with a style that is clever, conversational, even a little sassy at times. She and Gorsuch, also known for his legal prose, formed a bit of a mutual admiration society.").

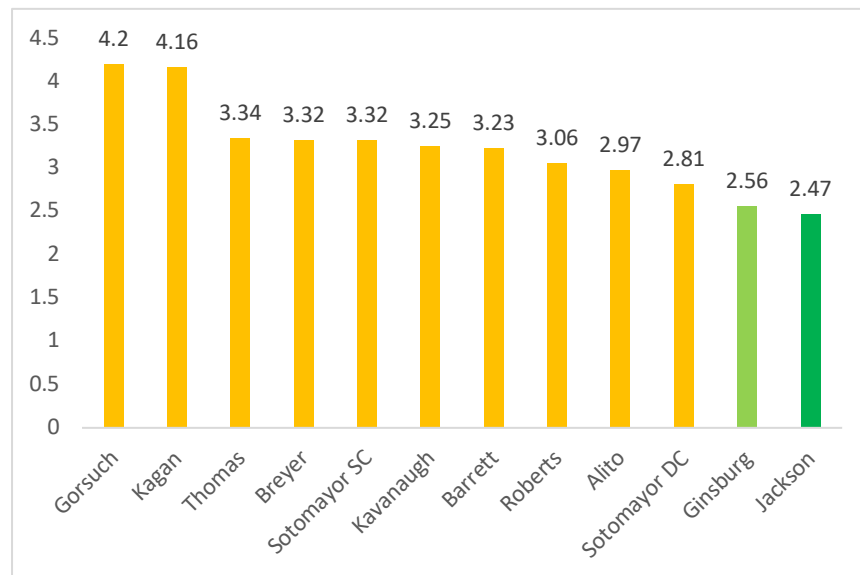
38. See Ross Guberman, *Five Ways to Write Like John Roberts*, LEGAL WRITING PRO 1 (2010), <https://bit.ly/3zKLzXr>.

in the direction of using more big words on the Court. In sum, on the two measures of readability above, then-Judge Jackson is in the middle of the Court as far as her writing style is concerned.

3. Adverbs

There is not a consensus on adverbs in legal writing. To the extent good legal writing is just good writing, as some have argued, the use of adverbs can make legal writing punchier and more enjoyable to read.³⁹ On the other hand, some may argue that adverbs gum up legal writing and that a more spartan form of writing would be better in the legal context.⁴⁰ The chart below shows the percentage of words judges used in their opinions that were adverbs.

Percentage of Words That Are Adverbs



Here we see two of the Justices who have a reputation for being good writers—Gorsuch and Kagan⁴¹—use adverbs much more often than their colleagues. Conversely, then-Judge Jackson used them comparatively sparingly. In fact, she used them the fewest of any judge analyzed in this

39. See Lisa A. Mazzie, *Law's Love of Adverbs*, MARQ. U.L. SCH. FAC. BLOG (Oct. 20, 2014), <https://bit.ly/3Pg7v2k>.

40. See Veronica J. Finkelstein & Nicole E. Crossey, *Making Every Word Count: Using Strategic Editing to Increase the Readability of Your Appellate Brief*, 67 DEP'T OF JUST. J. FED. L. & PRAC. 85, 94 (2019); Lance N. Long & William F. Christensen, *When Justices (Subconsciously) Attack: The Theory of Argumentative Threat and the Supreme Court*, 91 OR. L. REV. 933, 935 n.8 (2013).

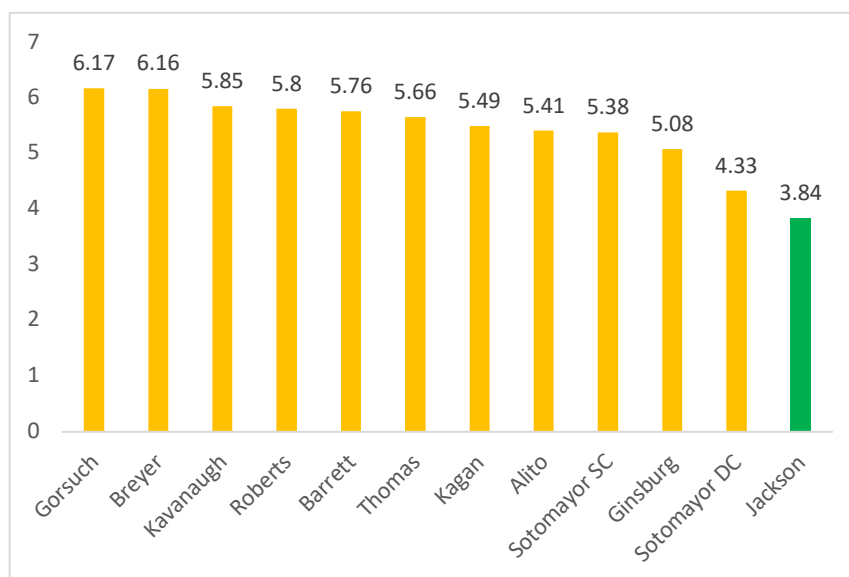
41. See Barnes, *supra* note 37.

study, and only Justice Ginsberg had a rate of adverb usage that was not significantly different statistically from then-Judge Jackson. Perhaps some of this is driven by the type of court then-Judge Jackson was writing opinions on, since then-Judge Sotomayor also did not use many adverbs while a district court judge but used them more often on the Supreme Court.

4. Adjectives

The debate over adjectives is similar to the one over adverbs—some contend they make legal writing more interesting and readable, whereas others argue they should be used quite sparingly, if at all.⁴² The chart below shows the percentage of words the judges used that were adjectives.

Percentage of Words That Are Adjectives



Similar to adverbs, then-Judge Jackson used the fewest adjectives of any of the judges, and the difference between her percentage of usage and each other judge was statistically significant. The pattern compared to adverbs does differ somewhat in comparing the Justices. While, like adverbs, Justice Gorsuch used the highest percentage of adjectives, Justice Kagan was more in the middle of the judges for adjective usage.

As to the extent then-Judge Jackson's adjective usage was driven by

42. See Bret Rappaport, *Using the Elements of Rhythm, Flow, and Tone to Create a More Effective and Persuasive Acoustic Experience in Legal Writing*, 16 LEGAL WRITING 65, 103 (2010).

writing district court as opposed to Supreme Court opinions, there may be something to that; then-Judge Sotomayor had the next lowest adjective usage rates. However, Justice Sotomayor also does not use adjectives very often compared to her colleagues, so perhaps Justice Jackson's use of adjectives may not increase much on the Supreme Court. In sum, when it comes to using adverbs and adjectives in her writing, then-Judge Jackson did so more sparingly than any of the judges studied in this Article.

B. Analysis and Cognition

These next six measures are all related to analysis and cognition. They only reflect patterns of word choice.⁴³ Thus, it may not necessarily say anything about then-Judge Jackson's style or ability in analysis and cognition, but rather her linguistic style and choices.

1. Analytical Thinking

The Analytical Thinking measure is scaled on a score of 1 to 99 and "is a factor-analytically derived dimension based on several categories of function words."⁴⁴ This variable "captures the degree to which people use words that suggest formal, logical, and hierarchical thinking patterns."⁴⁵ A low score indicates writing that is more "personal" and "intuitive," and thus more "personable" and "friendly."⁴⁶ A high score tends to be viewed as more "rigid" and "cold" and is correlated with reasoning skills.⁴⁷ One would expect, then, that legal opinions score very high on the Analytical Thinking measure. The chart below confirms this.

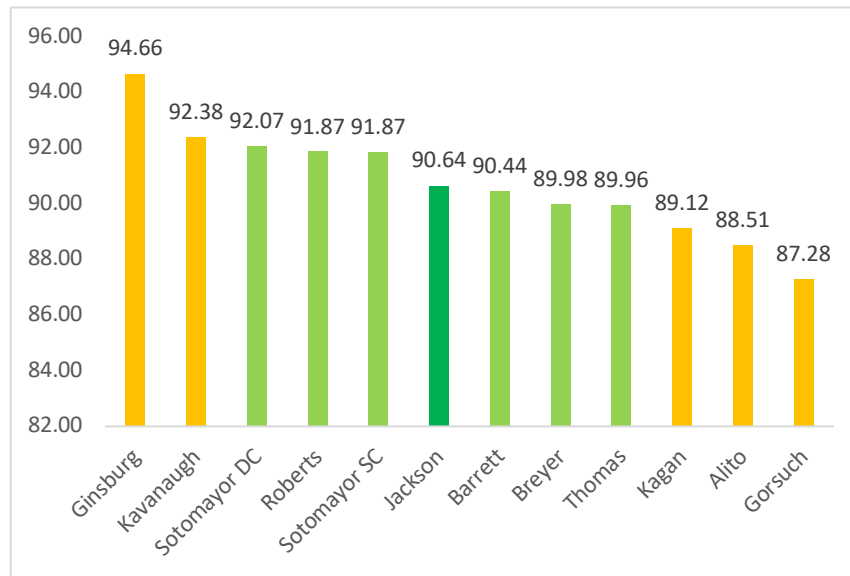
43. See Boyd et al., *supra* note 17, at 17.

44. *LIWC Analysis*, *supra* note 11.

45. *Id.*

46. *See id.*

47. *See id.*

Analytical Thinking

Then-Judge Jackson scores in the middle of the Court on this measure, and her value is not significantly different statistically from most of the Court. It also does not appear that her score is too much a product of district court opinion writing because Justice Sotomayor's Analytical Thinking score was almost identical as a district court judge compared to as a Supreme Court Justice.

Interestingly, Justices Gorsuch and Kagan score low on this measure, just as they scored high on adverbs and adjectives and low on the use of big words. Correlation analysis shows that the Analytical Thinking measure is positively correlated with big words and negatively correlated with adverb and adjective usage percentages, indicating that the Analytical Thinking measure is driven by word choice rather than underlying analysis and thinking.⁴⁸

2. Cognitive Processes

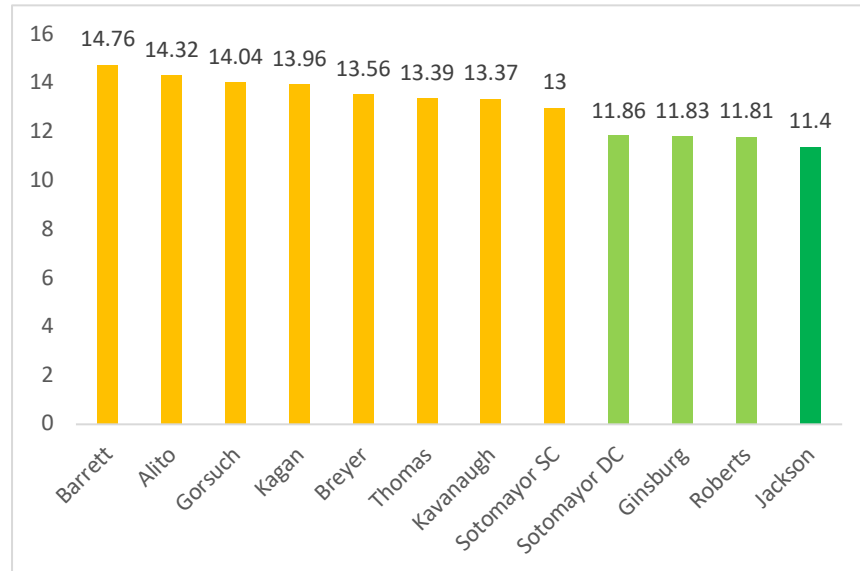
The Cognitive Processes measure combines words from five smaller dictionaries that cover insight, causation, discrepancy, tentativeness, certitude, and differentiation.⁴⁹ The words are deemed to reflect cognitive

48. Pairwise correlation coefficients and probability values: Analytical Thinking-Big Words (0.146, $p = .0016$); Analytical Thinking-Adverbs (-0.5359 , $p < .0001$); Analytical Thinking-Adjectives ($-.1031$, $p = .0263$).

49. See Boyd et al., *supra* note 17, at 15.

processes and include words like *but*, *because*, *if*, *how*, and *know*.⁵⁰ The measure is simply the percentage of cognitive process words. Below is the relevant chart.

Cognitive Processes



Of note, the three Justices who scored the lowest on the Analytical Thinking measure were three of the four highest on the Cognitive Processes measure: Justices Alito, Gorsuch, and Kagan. Then-Judge Jackson scored the lowest on this measure of all the judges, though her score did not differ in a statistically significant way from then-Judge Sotomayor, Justice Ginsburg, or Chief Justice Roberts. As for how much her score is caused by writing district court opinions compared to Supreme Court opinions, Justice Sotomayor's Cognitive Processes score did increase moderately when she started writing opinions on the Supreme Court, perhaps somewhat reflecting the different style of opinion.⁵¹

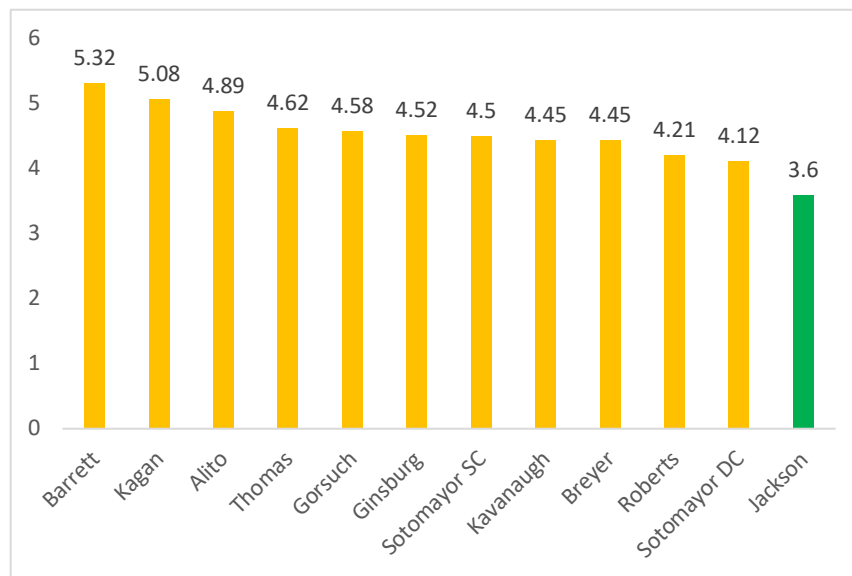
50. See *id.* at 11.

51. Of course, three alternative explanations for the change in Justice Sotomayor's scores between district court opinions and Supreme Court opinions cannot be ruled out. The first is experience: Justice Sotomayor has been writing opinions for over twenty additional years in the sample of Supreme Court opinions compared to the sample of district court opinions, and perhaps that significant additional experience affects the measure. Second, age: Justice Sotomayor is over twenty years older when writing the Supreme Court opinions as compared to the district court opinions and perhaps age affects the measure. Third, type of clerks: The intellectual and writing abilities of Supreme Court clerks who help Justice Sotomayor write her opinions may differ sufficiently from the level of clerks she had on the Southern District of New York such as to affect the measure. See Brian Leiter, *Top 15 Law Schools by "Per Capita" Placement of Graduates as Supreme*

3. Differentiation

The Differentiation score measures the percentage of words related to distinguishing or drawing distinctions,⁵² something quite common in the law and that reflects nuance in thinking and arguing. Such words include *but*, *not*, *if*, and *or*.⁵³ Writing that scores lower on differentiation includes Twitter (2.46% of words) and the New York Times (2.81%), whereas conversations (3.93%) and blogs (3.48%) tend to score higher.⁵⁴ As can be seen in the chart below, nearly all the Justices have a higher Differentiation score than these sources.

Percentage of Differentiation Words



Then-Judge Jackson's opinions score low on differentiation, somewhere between blogs and conversations. In fact, her score is significantly lower statistically than all other judges. However, her score could be largely an artifact of writing district court opinions, as such opinions do not have to engage with dissenting or concurring opinions and tend to deal with more straightforward legal and factual matters than the more complicated issues that make it all the way to the Supreme Court. Additionally, the next lowest Differentiation score is then-Judge

Court (SCOTUS) Clerks in the Past Five Years, BRIAN LEITER'S L. SCH. REPS. (Sept. 20, 2021), <https://bit.ly/3Qw1Gza> (noting that nearly all Supreme Court clerks come from elite law schools).

52. See Boyd et al., *supra* note 17, at 11.

53. *Id.*

54. *Id.* at 15.

Sotomayor's, and Justice Sotomayor's Differentiation score did increase some writing on the Supreme Court. Thus, there is a decent chance Justice Jackson's Differentiation score will increase on the Court too.

4. Absolutism

The next measure, called "All-or-none" in LIWC-22,⁵⁵ measures absolutist language. Absolutist language is words such as *all*, *no*, *never*, and *always*.⁵⁶ Such language can reflect what is called "dichotomous thinking," which is "a style of thinking that tends to be over-generalized and more extreme."⁵⁷ For example, conversations (1.97%) and Twitter (1.62%) tend to have a higher percentage of absolutist language compared to the New York Times (0.58%).⁵⁸ However, whatever such language may mean in these other contexts, it is unclear whether such language is a good or a bad thing for legal opinions. On the one hand, such language could provide clear rules for future litigants and lower courts. On the other hand, such language might oversimplify complex legal or factual issues. As can be seen below, and as might be expected in the complexities of legal opinions, the Justices and judges use absolutist language less frequently than is seen in conversations, Twitter, and blogs (1.45%),⁵⁹ with most of them using a rate similar to the New York Times.

55. *See id.* at 11.

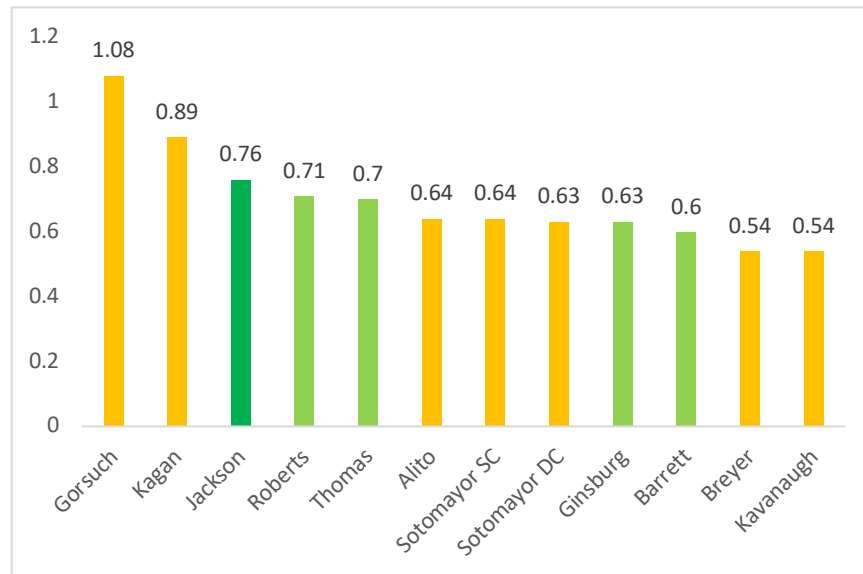
56. *See id.* at 17.

57. *Id.*

58. *See id.* at 15.

59. *Id.*

Percentage of Absolutist Language



Then-Judge Jackson scores on the higher end of absolutist language, though not significantly different statistically from four other Justices: Roberts, Thomas, Ginsburg, and Barrett. Additionally, the raw differences between other Justices and then-Judge Jackson are not very high. Then-Judge Jackson's score seems unlikely to be a function of writing district court opinions, as Justice Sotomayor's Absolutism score barely changed between the district court and the Supreme Court. Interestingly, the two Justices who scored the highest on Absolutism—Gorsuch and Kagan—are also the Justices who scored the highest on adjectives and the lowest on big words. Amongst all the data, while there is no statistical relationship between absolute words and adjectives, there is a statistically significant relationship between big words and absolute words, with the two negatively correlated.⁶⁰

5. Certitude

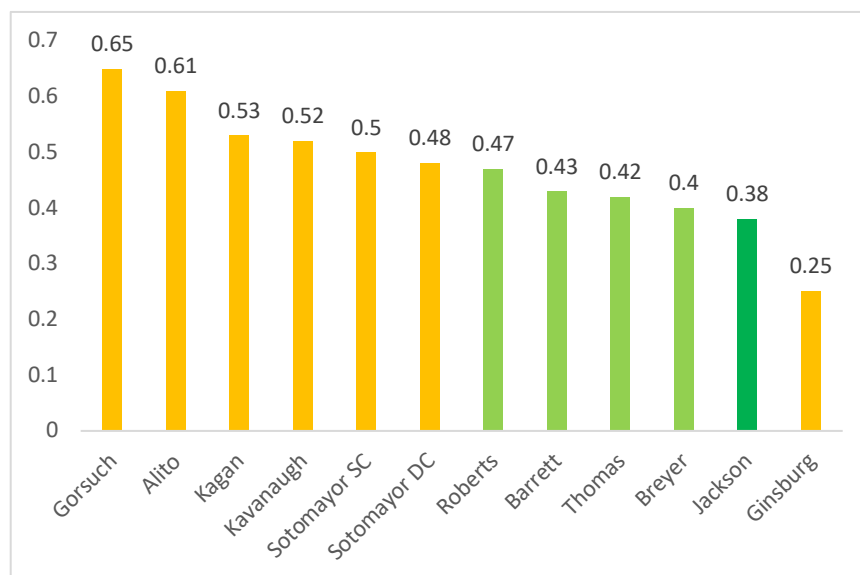
A separate construct from Absolutism is Certitude, though the two constructs are weakly correlated. In more ordinary contexts, Certitude “appears to reflect a degree of bravado, boasting of certainty that often reveals an insecurity or lack of truly verifiable, concrete information.”⁶¹ However, it is not clear this construct reflects the same underlying

60. Pairwise correlation coefficients and probability values: Absolutism-Big Words (-.195, $p < .0001$); Absolutism-Adjectives (.039, $p = .403$). This makes sense at a basic level since absolute words tend to be words shorter than seven letters.

61. See Boyd et al., *supra* note 17, at 17.

phenomena in a legal opinion or what language classified as certitude means in legal opinions. Conversations tend to score higher on this measure (1.23%), whereas New York Times articles score lower (0.30%).⁶² Examples of words that fall in the certitude dictionary include *really*, *actually*, *of course*, and *real*.⁶³ Similar to absolutist language, it is not clear whether Certitude is a pro or a con for legal opinions. The Certitude in the opinions analyzed in this Article reflect scores similar to those found on Twitter (0.59%) and in blogs (0.73%).⁶⁴

Percentage of Certitude Words



Then-Judge Jackson scored low on the Certitude measure, with the second lowest score. That score was not significantly different statistically, however, from four other Justices: Roberts, Barrett, Thomas, and Breyer. Her score is arguably not driven by being on the district court because then-Judge Sotomayor's score differs from then-Judge Jackson's score in a statistically significant manner, and Justice Sotomayor's Certitude scores from the two different courts are almost identical.

Also of note, the Certitude measure is significantly correlated statistically with a few other measures; positively correlated with Absolutism and Cognitive Processes and negatively correlated with Analytical Thinking.⁶⁵

62. *Id.* at 15.

63. *See id.* at 17.

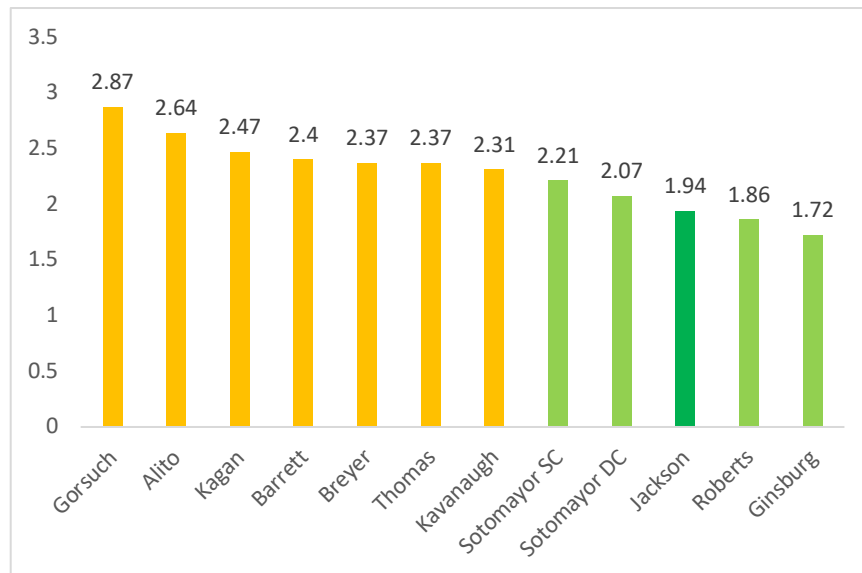
64. *Id.* at 15.

65. Pairwise correlation coefficients and probability values: Certitude-Absolutism

6. Tentative Language

The last measure in the Analysis and Cognition category is Tentative Language. Examples include *if* or *something*.⁶⁶ Tentative language is not necessarily a reflection of tentativeness, and in the data the Tentative Language measure is positively correlated with Certitude and Absolutism.⁶⁷ Tentative language is higher in conversations (3.25%) and blogs (2.43%) and lower on Twitter (1.51%) and in the New York Times (1.43%).⁶⁸ The Justices and judges reflect a range on this measure.

Percentage of Tentative Words



Then-Judge Jackson is on the low end of using tentative language, and she is not significantly different statistically from then-Judge Sotomayor, Justice Sotomayor, Justice Ginsburg, or Chief Justice Roberts. Her score is likely not affected much by writing district court opinions because while then-Judge Sotomayor had a similar Tentative Language score, Justice Sotomayor's score did not change much for Supreme Court opinions. Additionally, as noted above, besides the correlations between Tentative Language and Certitude and Absolutism, Tentative Language is also positively correlated with Cognitive Processes and negatively correlated

(.205, $p < .0001$); Certitude-Cognitive Processes (.373, $p < .0001$); Certitude-Analytical Thinking (-.340, $p < .0001$).

66. See Boyd et al., *supra* note 17, at 11.

67. Pairwise correlation coefficients and probability values: Tentative-Certitude (.165, $p = .0004$); Tentative-Absolutism (.124, $p = .0075$).

68. Boyd et al., *supra* note 17, at 15.

with Analytical Thinking.⁶⁹

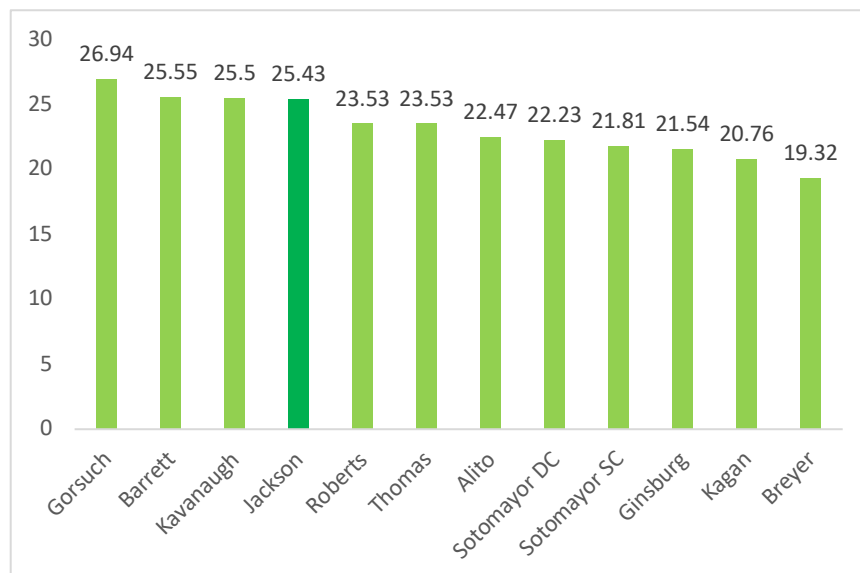
C. *Tone and Emotion*

Three variables comprise the Tone and Emotion category: Tone, Anger, and Affect. As will be discussed more fully, then-Judge Jackson falls roughly in the middle of each of these categories.

1. *Tone*

The LIWC-22 measure for Tone is similar to the Analytical Thinking measure in that it is scaled from 1 to 99.⁷⁰ The Tone measure puts the positive tone and negative tone measures “into a single summary variable.”⁷¹ Because the “algorithm is built so that the higher the number, the more positive the tone,” a score above 50 indicates a more positive emotional tone, and a score below 50 a more negative emotional tone.⁷² As a reference point, tweets (68.00) and conversations (63.88) are on the more positive side, whereas New York Times articles (37.08) are more negative in tone.⁷³ As seen below, the legal opinions in this study were all rather negative in tone.

Tone



69. Pairwise correlation coefficients and probability values: Tentative-Cognitive Processes (.600, $p < .0001$); Tentative-Analytical Thinking (-.283, $p < .0001$).

70. See *LIWC Analysis*, *supra* note 11.

71. See *id.*

72. See *id.*

73. Boyd et al., *supra* note 17, at 15.

While all the Justices and judges were negative in tone, then-Judge Jackson was a bit more positive than most, though her Tone score was not significantly different statistically from anyone else. Then-Judge Jackson's slightly more positive tone does not appear to be related to writing district court opinions as opposed to Supreme Court opinions, as there is minimal difference between Justice Sotomayor's tone on the Supreme Court and her tone on district court. Justice Jackson's tone may therefore not change much on the Court.

An interesting pattern emerges among the Justices: the more conservative Justices tend to be more positive in tone, and the more liberal Justices tend to be more negative in tone. This pattern is not perfectly correlated by voting patterns, however, as the correlation between tone and ideology is not quite statistically significant.⁷⁴ Additionally, the pattern is not driven by writing more dissenting opinions because there was no statistically significant difference between the Tone scores for dissents as compared to concurrences and majority opinions. Perhaps being in the minority on the Court just leads to an overall more negative tone, though it is possibly also a function of personality or writing style.

2. Anger

A previous study by one of the creators of LIWC-22 looked at Supreme Court opinions and measured anger.⁷⁵ The study surmised that the use of anger in an opinion may not be so much a reflection of the underlying personality of a Justice, but rather that anger may "be strategically used."⁷⁶ The study concluded that "Chief Justice Roberts showed the lowest use of anger overall, consistent with his relatively cool image."⁷⁷ Surprisingly, there was no consistent pattern overall as to whether majority, concurring, or dissenting opinions displayed more anger—it depended on the Justice.⁷⁸ Anger words include *hate*, *mad*, *angry*, and *frustrated*.⁷⁹ The measure is simply the percentage of all words that fall under the Anger category. Below are the findings on Anger from this study.

74. $P = .0772$. I ran a correlation analysis of the Justices' Tone score and their Martin-Quinn score. Martin-Quinn scores are based off voting patterns and coding case outcomes as conservative and liberal. Justice Thomas's 2020 term Martin-Quinn Score was the most conservative on the Court, whereas Justice Sotomayor's score was the most liberal. The pairwise correlation coefficient was 0.5825.

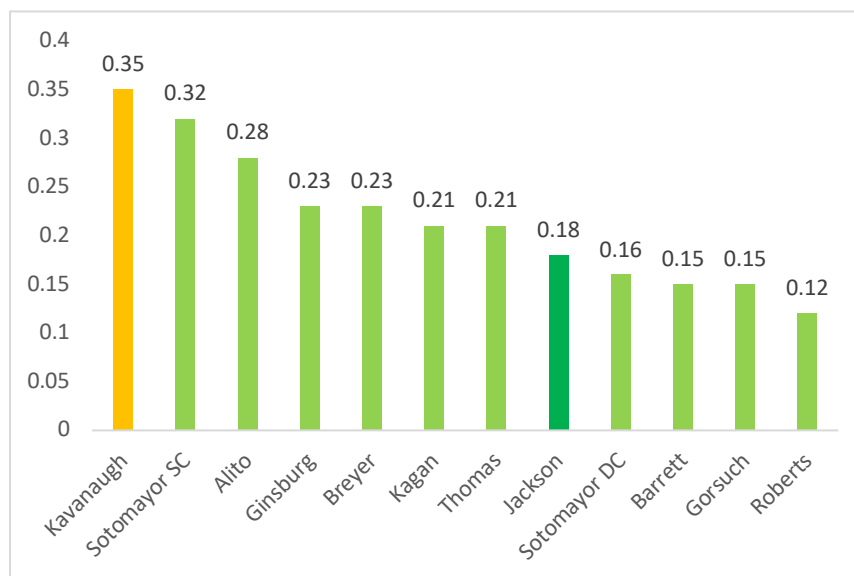
75. See Frank B. Cross & Charles W. Pennebaker, *The Language of the Roberts Court*, 2014 MICH. ST. L. REV. 853, 891 (2014).

76. See *id.* at 890.

77. *Id.* at 891.

78. See *id.*

79. See Boyd et al., *supra* note 17, at 11.

Percentage of Anger Words

As in the previous study,⁸⁰ Chief Justice Roberts had the lowest percentage of anger words. Then-Judge Jackson was in the low to middle range of anger, but her value was not significantly different statistically from every other judge or Justice, except Justice Kavanaugh. Her score could be very much driven by writing district court opinions rather than Supreme Court opinions because then-Judge Sotomayor had a very similar Anger score when on the district court, but that score doubled upon becoming a Supreme Court Justice. Thus, Justice Jackson's Anger score could change significantly on the Court as well.

3. Affect

The final measure of the Tone and Emotion category, Affect, looks at the percentage of words related to affect rather than a specific type of emotion or the direction of one's tone.⁸¹ Words included in the Affect dictionary include *good*, *well*, *bad*, or *wrong*.⁸² These words capture sentiment rather than emotion.⁸³ One would expect legal opinion writing to be lower on Affect because it is the law, rather than affect, that is supposed to determine legal outcomes. By comparison, Twitter (8.96%) has a much higher percentage of Affect words, whereas the New York

80. See Cross & Pennebaker, *supra* note 75, at 891.

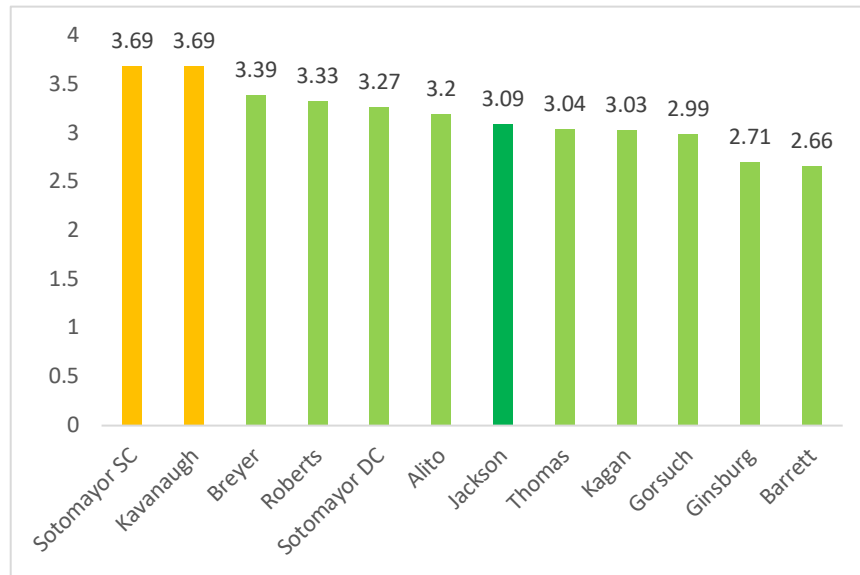
81. See Boyd et al., *supra* note 17, at 15.

82. See *id.* at 11.

83. See *id.* at 18.

Times (3.79%) is much lower.⁸⁴ The Justices and judges, as seen below, are also writing opinions low in Affect.

Percentage of Affect Words



Then-Judge Jackson is roughly in the middle of the Affect measure, though her score does not differ in a statistically significant way from everyone else except Justice Sotomayor and Justice Kavanaugh. Perhaps Justice Jackson's Affect score will change on the Court since Justice Sotomayor's Affect score did moderately increase from when she was a district court judge. There do not appear to be any other easily discernable patterns driving the Affect scores, as ideology and gender do not appear related to the score.

D. Clout and Authenticity

The Clout and Authenticity category measures just that—Clout and Authenticity. Both measures are discussed in greater detail below.

1. Clout

The Clout measure is a standardized measure that ranges from 1 to 99.⁸⁵ It “refers to the relative social status, confidence, or leadership that people display through their writing or talking.”⁸⁶ The algorithm for the Clout measure “was developed based on the results from a series of studies

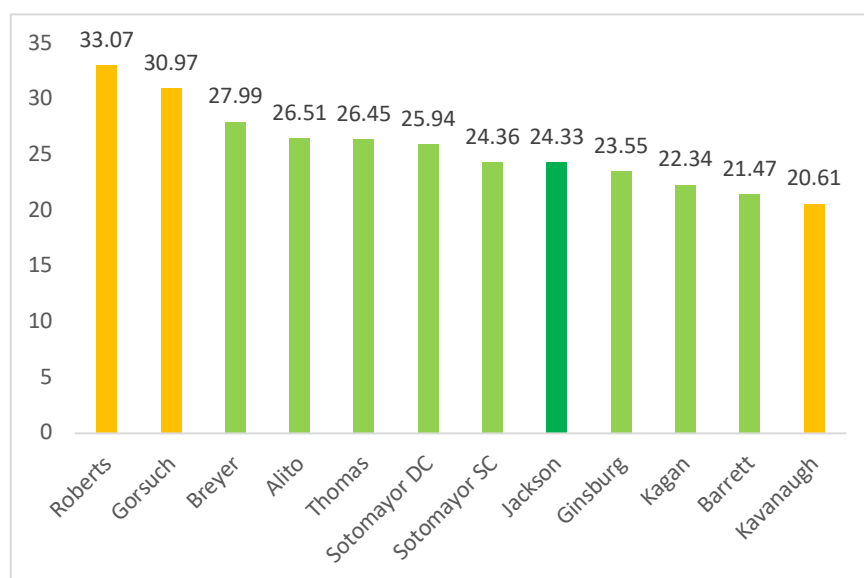
84. *Id.* at 15.

85. See *LIWC Analysis*, *supra* note 11.

86. *Id.*

where people were interacting with one another.”⁸⁷ How this measure translates to legal opinions is uncertain. On the one hand, at least on an appellate court, judges interact with each other when there are separate opinions. However, this interaction is missing in both unanimous opinions without a separate opinion and district court opinions, though judges may still want to show confidence or leadership in addressing the parties, their attorneys, and higher or lower courts. By way of comparison, conversations tend to score higher on Clout (61.01), whereas blogs score much lower (29.99).⁸⁸ The opinions in this study also scored rather low, as seen below.

Clout



Then-Judge Jackson is roughly in the middle of the Clout measure, though her score is not significantly different statistically from everyone except Chief Justice Roberts, Justice Gorsuch, and Justice Kavanaugh. Her score probably will not change significantly on the Court if the pattern with Justice Sotomayor holds, as Justice Sotomayor’s Clout score only lowered a bit in Supreme Court opinions compared to her district court opinions.

As for the broader pattern, it is hard to say what may be driving the Clout scores. That the Chief Justice has the highest score may not be surprising given his leadership position. And that two of the newest

87. *Id.*

88. Boyd et al., *supra* note 17, at 15.

Justices have the lowest Clout scores perhaps is also not surprising, but the pattern overall does not seem to completely follow the time a Justice has been on the Court.⁸⁹ Of interest, the difference in Clout scores between Supreme Court majority (29.28) and dissenting (25.58) opinions is statistically significant,⁹⁰ as is the difference between majority and concurring (23.82) opinions.⁹¹

2. Authenticity

The final measure is Authenticity, which is a standardized measure ranging from 1 to 99.⁹² The measure tends to pick up on the fact that “[w]hen people reveal themselves in an ‘authentic’ or honest way, they tend to speak more spontaneously and do not self-regulate or filter what they are saying.”⁹³ Thus, the measure is “a reflection of the degree to which a person is self-monitoring.”⁹⁴ Texts that score low in Authenticity are those that are prepared rather than spontaneous, or texts where the author or speaker is being socially cautious.⁹⁵ Texts that score high on this measure “tend to be spontaneous conversations between close friends or political leaders with little-to-no social inhibitions.”⁹⁶ Blogs (68.08) tend to score higher in Authenticity, whereas the New York Times (28.90) scores lower.⁹⁷ One would expect judicial opinions, which are carefully crafted, to score rather low on Authenticity, and that is the case as seen below.

89. Years on the Court and one’s Clout score are not statistically significantly correlated. Pairwise correlation coefficient and probability value: .259, $p = .471$.

90. T-test with equal variances ($p = .0054$).

91. T-test with equal variances ($p = .0001$). There was no statistically significant difference between the Clout scores of dissents and concurrences.

92. See *LIWC Analysis*, *supra* note 11.

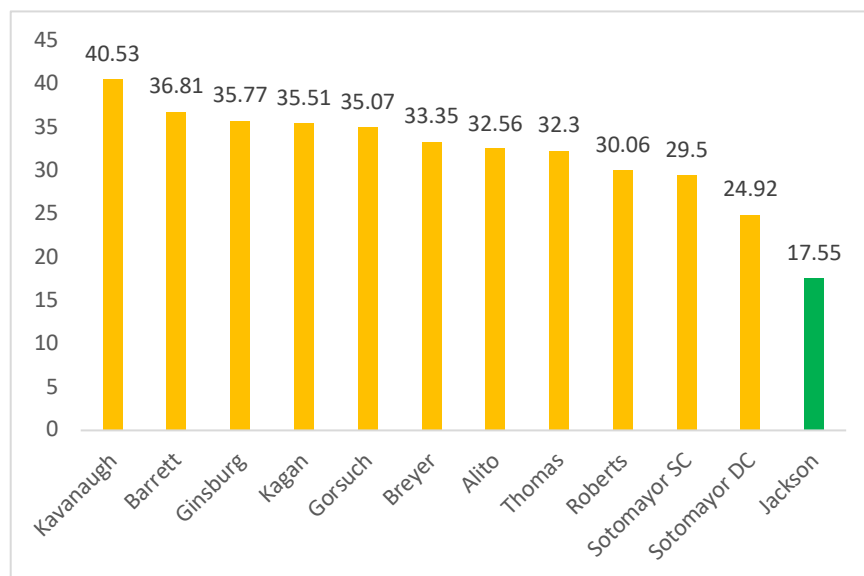
93. *Id.*

94. *Id.*

95. See *id.*

96. *Id.*

97. Boyd et al., *supra* note 17, at 15.

Authenticity

Then-Judge Jackson scored the lowest on Authenticity, and her score was significantly different statistically from all other scores. Some of this may be due to the difference between writing on the district court versus the Supreme Court, as then-Judge Sotomayor's Authenticity score increased once on the Supreme Court. Likewise, concurrences and dissents score higher on Authenticity than do majority opinions,⁹⁸ which is not surprising because a Justice can often write for herself when writing a separate opinion—or at least has a smaller coalition of Justices to appease—than when writing a majority opinion that reflects the views of multiple Justices. Separate opinions are also not the law,⁹⁹ so a Justice is writing a different style of opinion. However, while Justice Jackson's Authenticity score may increase some just as Justice Sotomayor's did, also like Justice Sotomayor, it may not change much.

V. WHO IS THEN-JUDGE JACKSON'S LINGUISTIC DOPPELGANGER ON THE COURT?

On the measures included in this study, then-Judge Jackson tends to score on the middle to lower end of the scale compared to her colleagues

98. Concurrences (36.30) have a statistically significantly higher Authenticity score compared to majority opinions (30.46) in a t-test with equal variances ($p = .0048$). Dissents (32.31) have a higher score as well compared to majority opinions, but that difference is not statistically significant: $p = .3466$.

99. With the exception of some concurrences. See *Marks v. United States*, 430 U.S. 188, 193 (1977).

on the Court. Specifically:

- Low
 - Adverbs
 - Adjectives
 - Cognitive Processes
 - Differentiation
 - Certitude
 - Tentative Language
 - Authenticity
- Medium
 - Words Per Sentence
 - Big Words
 - Analytical Thinking
 - Anger
 - Affect
 - Clout
- High
 - Absolutism
 - Tone (more positive)

Who, then, among the Justices studied in this Article, looks linguistically most like then-Judge Jackson—her linguistic doppelganger, so to speak? To measure that, I calculated z-scores for the Justices and judges on each measure, subtracted the difference from then-Judge Jackson’s z-score on that particular measure, and then converted these differences into absolute values and summed them. The table below shows the overall difference between then-Judge Jackson and each Justice or judge, ranked by nearest to furthest.

Rankings of Linguistic Similarity to Then-Judge Jackson

Ranking	Justice/Judge	Absolute Value Z-Score Sum
1.	Sotomayor DC	10.51
2.	Roberts	15.21
3.	Thomas	16.53
4.	Sotomayor SC	18.51
5.	Ginsburg	18.58
6.	Barrett	22.49
7.	Breyer	21.35
8.	Kavanaugh	21.63
9.	Kagan	23.41
10.	Alito	23.31
11.	Gorsuch	27.20

Perhaps not surprisingly, at least on the 15 measures included in this study, then-Judge Jackson looks most like then-Judge Sotomayor linguistically. Since both were writing district court opinions, that could describe some of this similarity, though perhaps not all because Justice Sotomayor is also more similar to then-Judge Jackson than most of the other Justices included in this study. Perhaps somewhat surprisingly, the Supreme Court opinions most linguistically similar to then-Judge Jackson are those of Chief Justice Roberts. Finally, the opinions least like then-Judge Jackson linguistically are those of Justice Gorsuch. This does not mean that Justice Jackson will necessarily have a jurisprudence and voting pattern like Justice Sotomayor or Chief Justice Roberts—just that her linguistic style is more likely to be similar to theirs.

VI. CONCLUSION

Linguistic software can provide some insights into the style of judges. In comparing then-Judge Jackson's 50 most recent district court opinions with Supreme Court Justices' opinions from the past three terms and then-Judge Sotomayor's last 50 opinions while a district judge, then-Judge Jackson tends to score on the lower to middle end of the measures compared to the other Justices included in this study. Her linguistic fingerprints most match those of then-Judge Sotomayor as well as Chief Justice Roberts. This could change some after Justice Jackson's confirmation to the Court, though probably not significantly.