

“LAW AS DATA”

Visualizations

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Plots

Alexander

Alexander

Figure 4

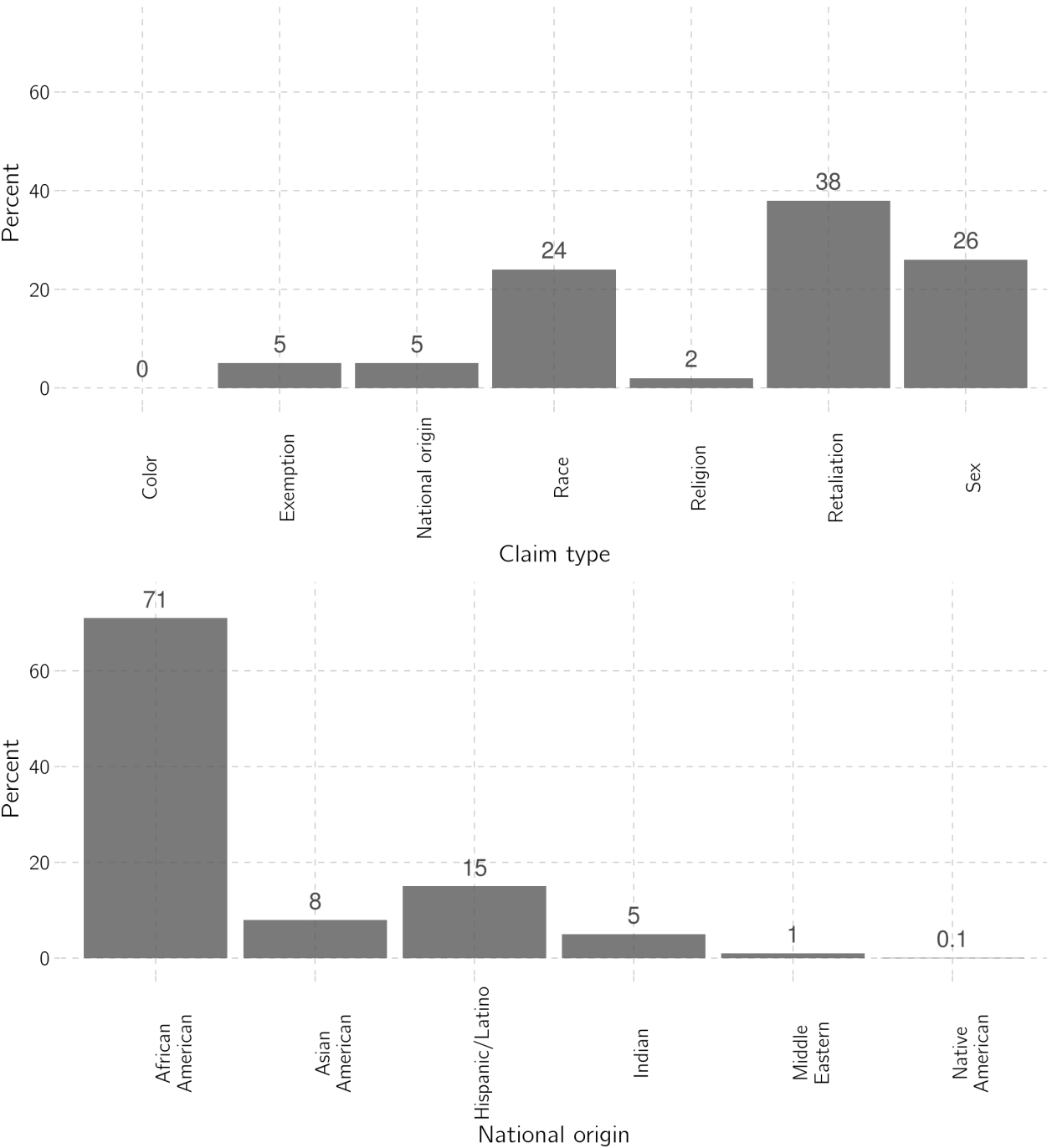
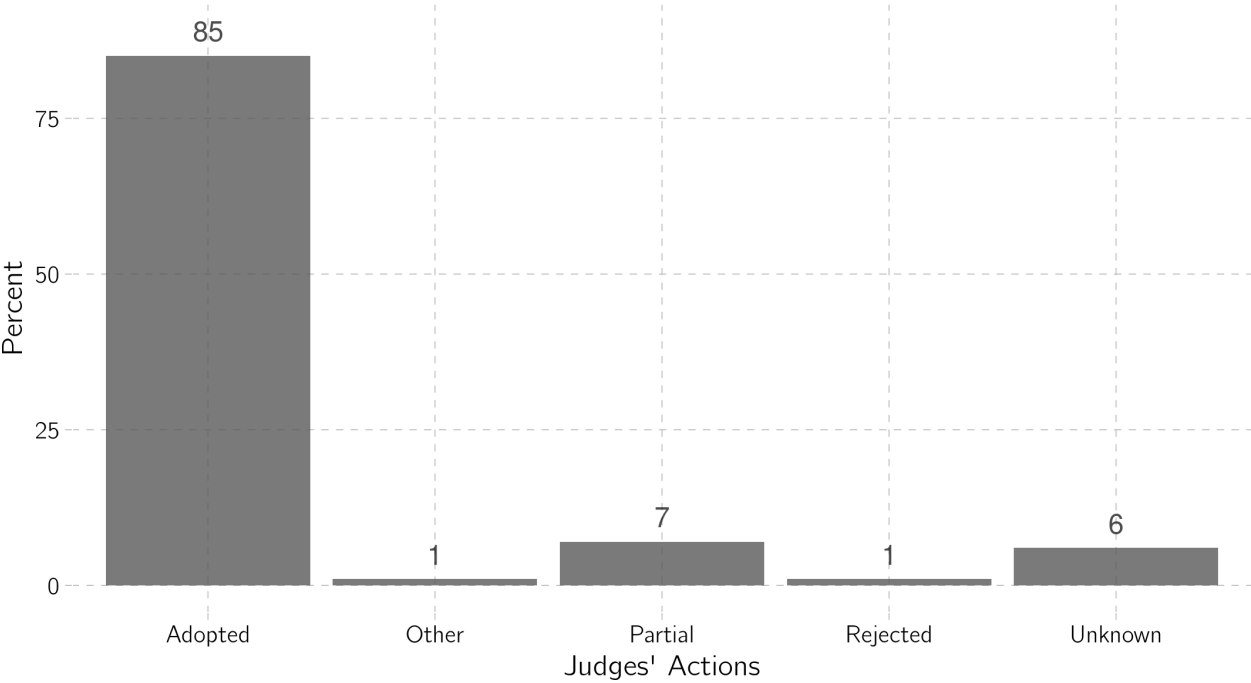


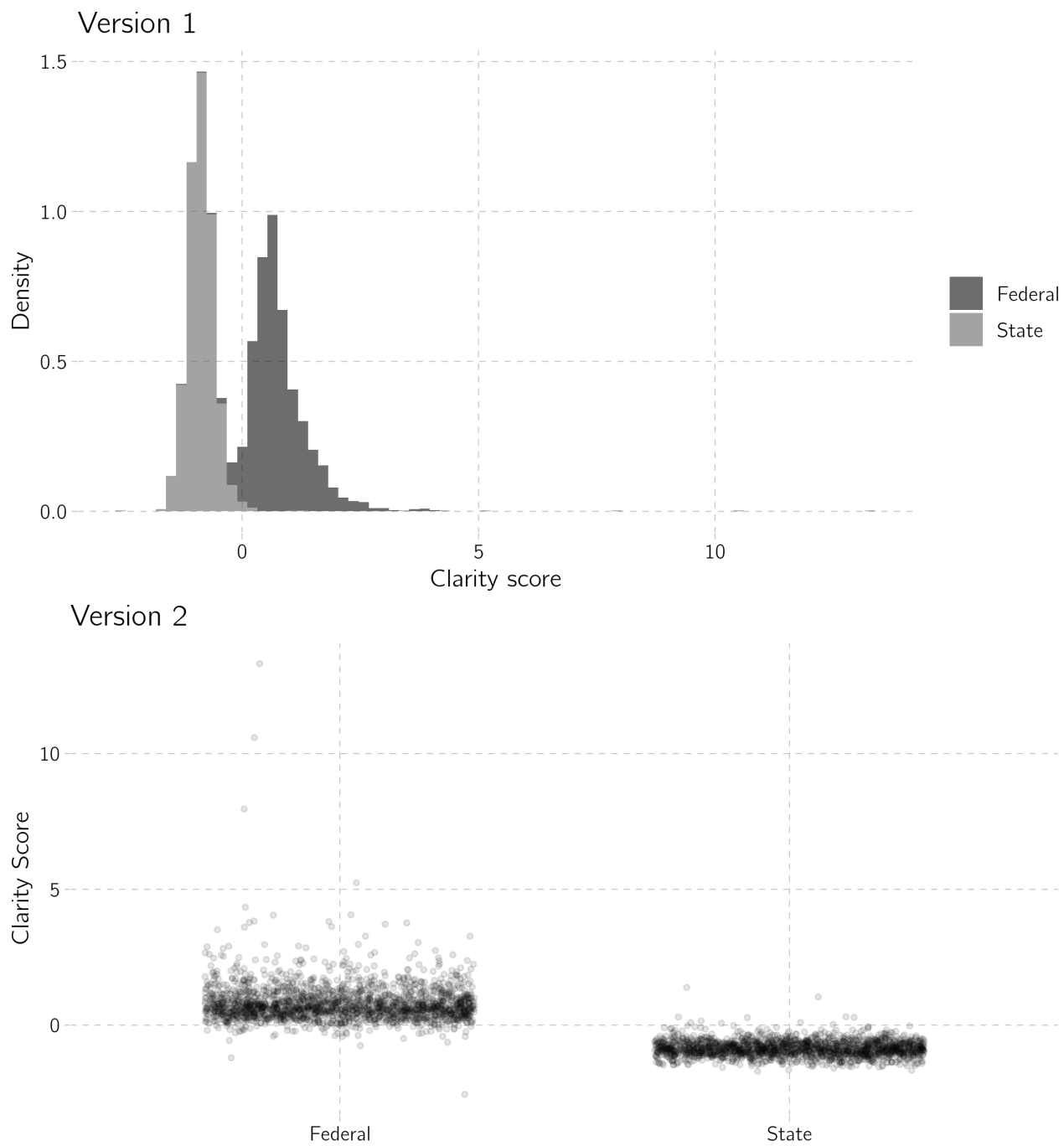
Figure 7



Feldman

Feldman

Figure 1



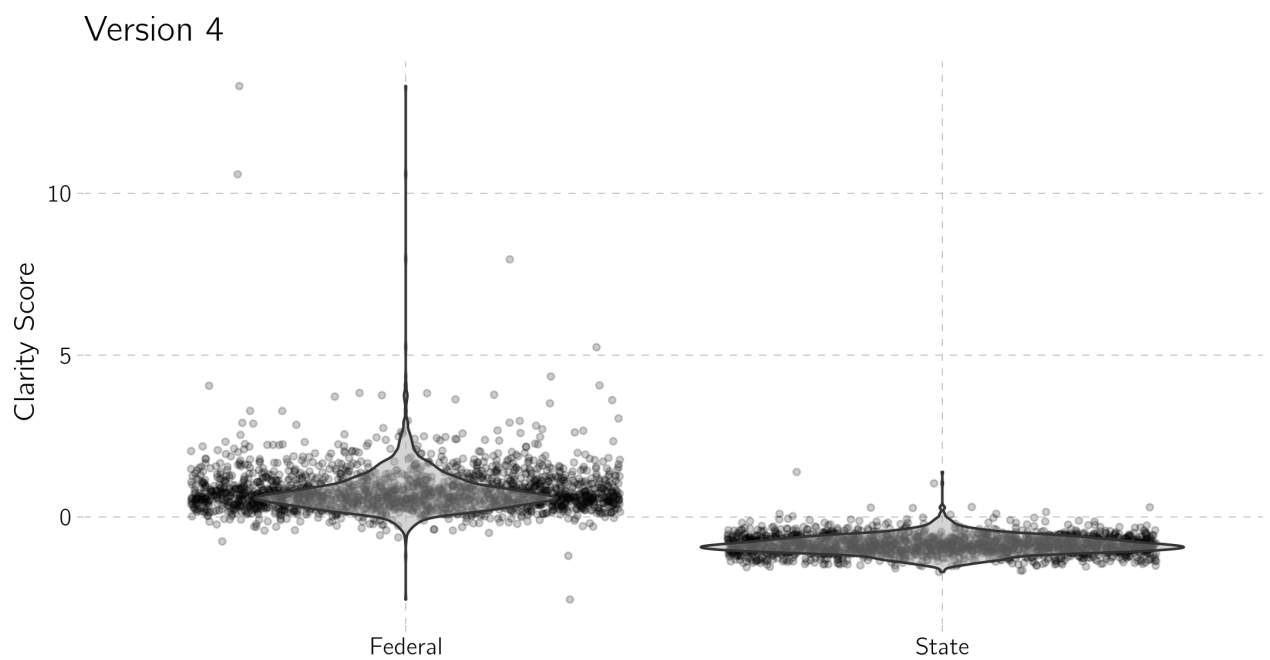
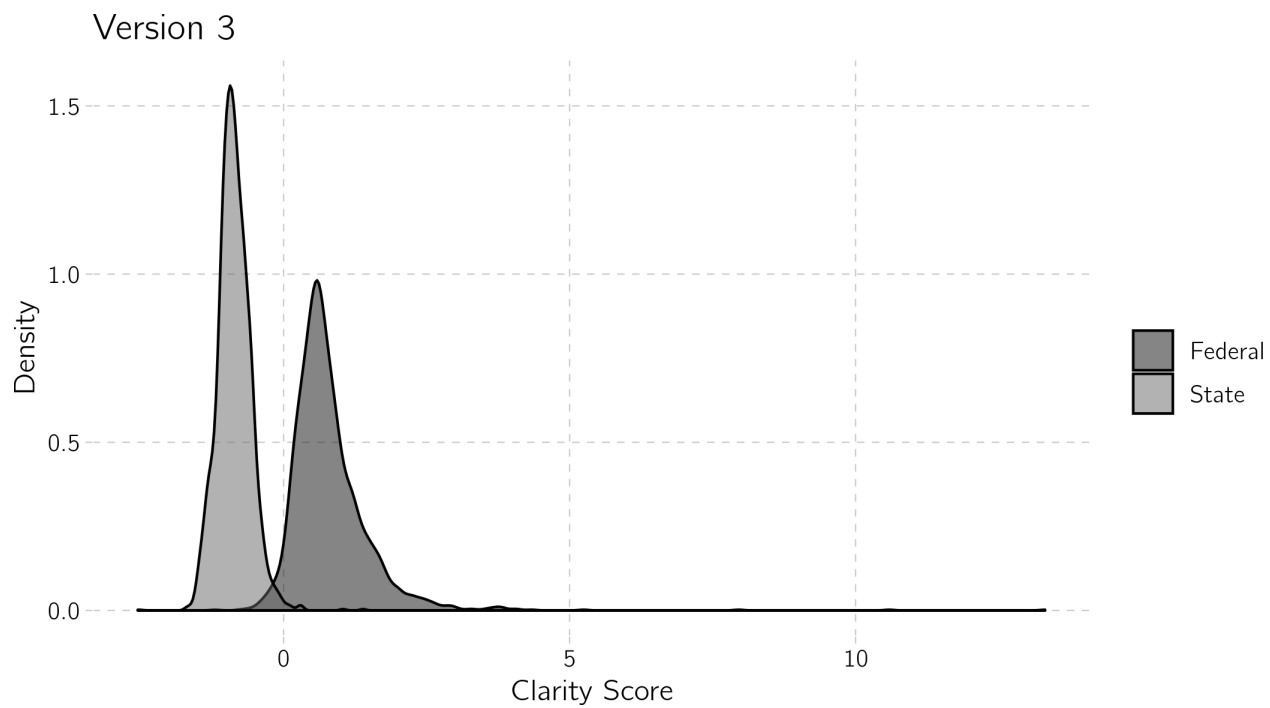
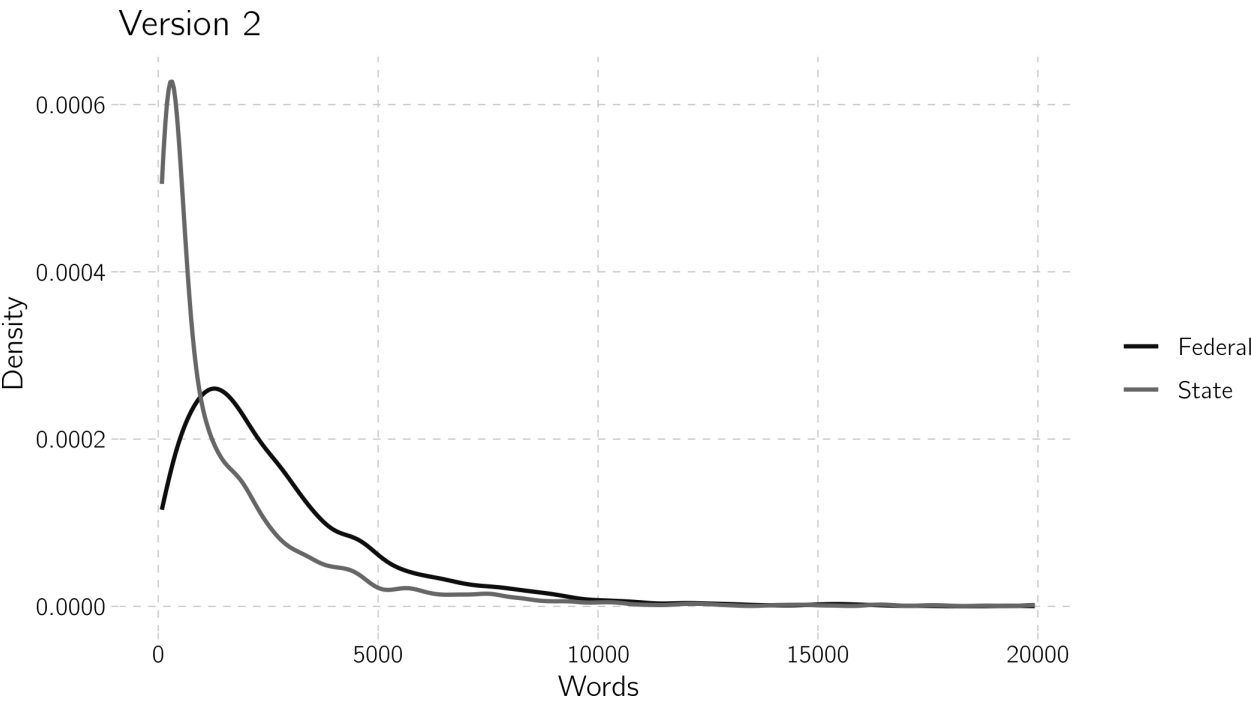
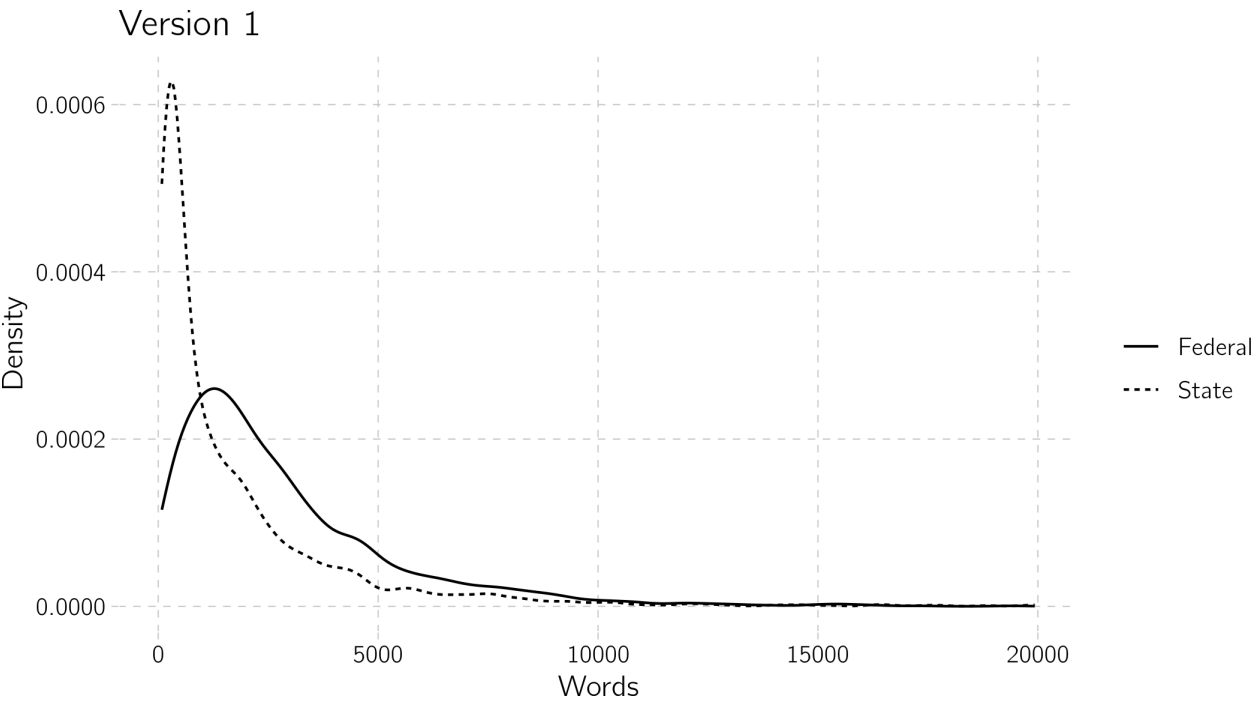
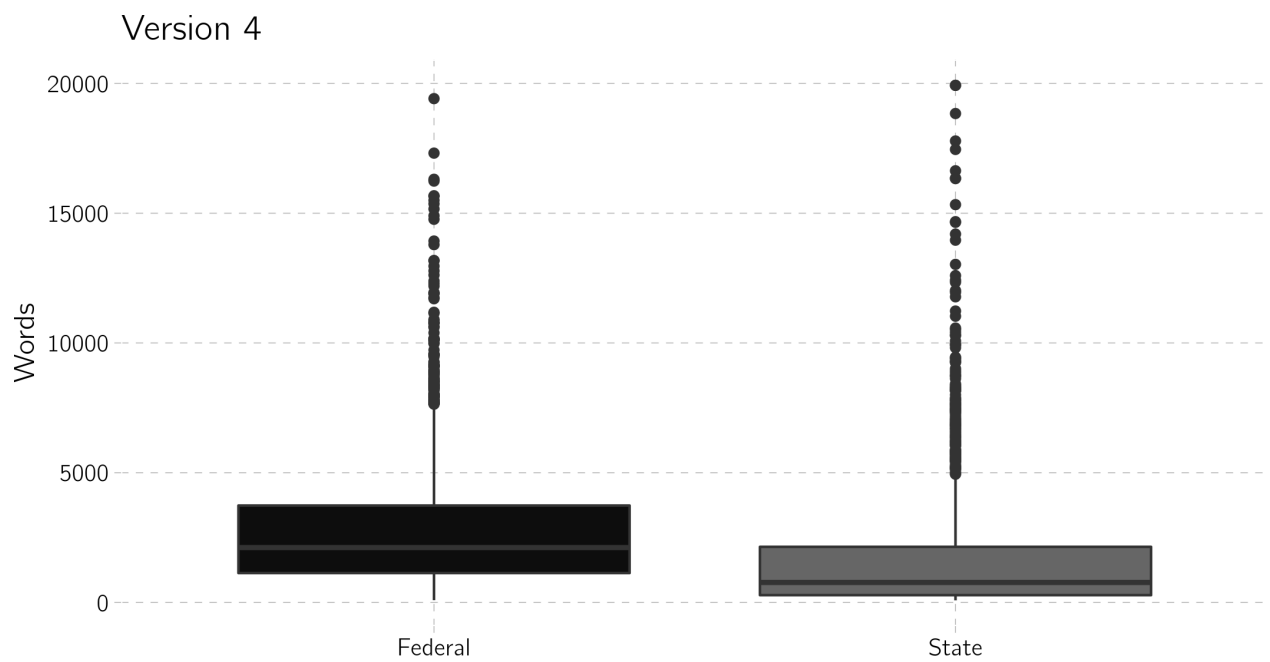
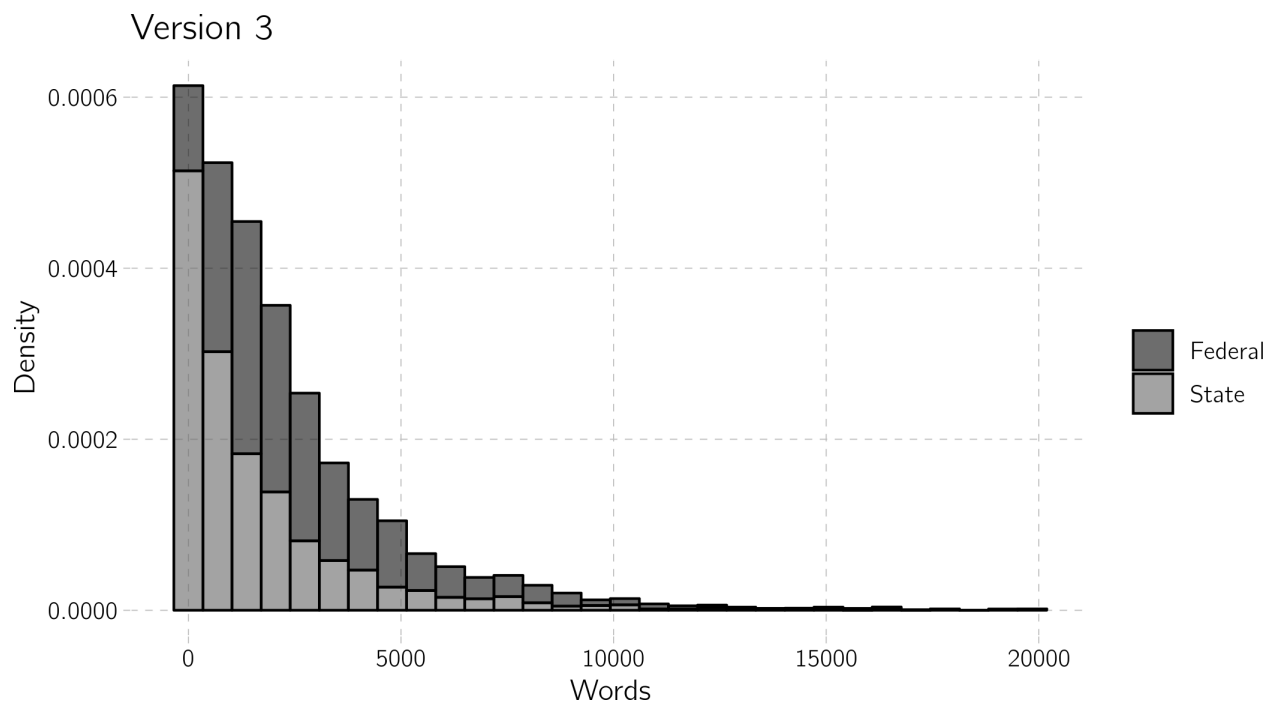
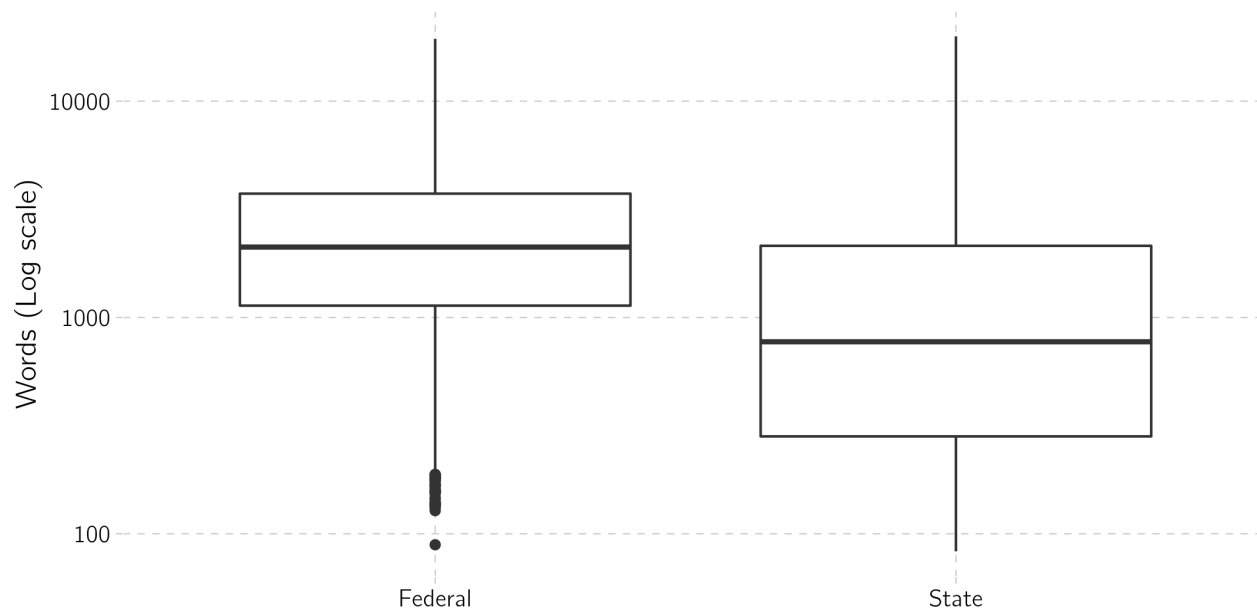


Figure 2

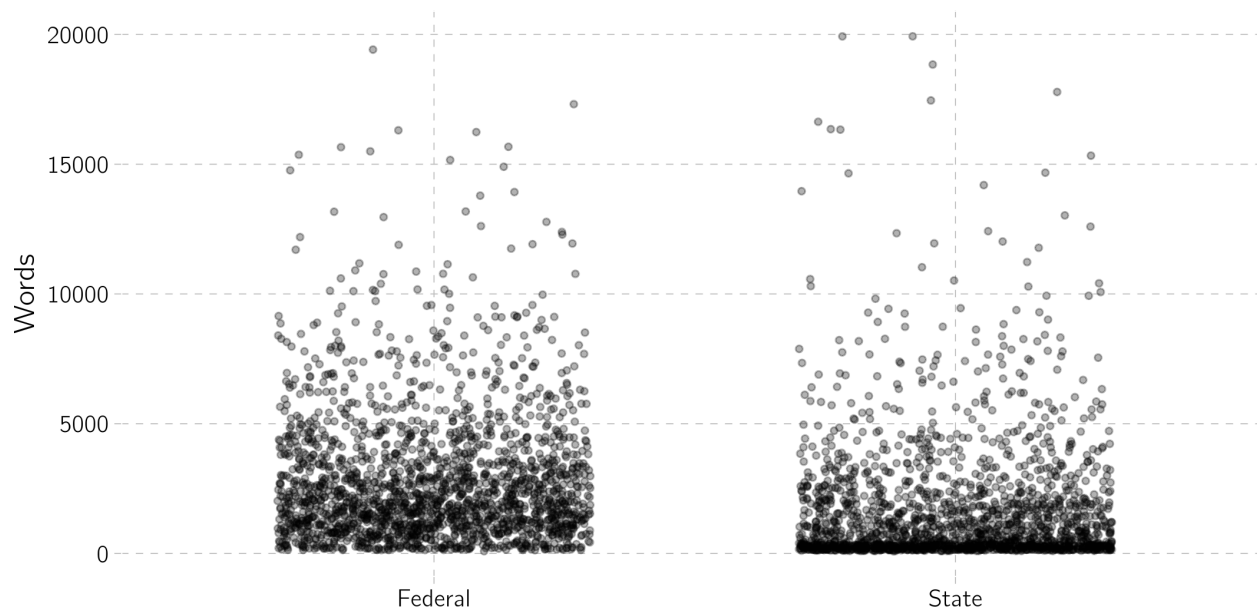


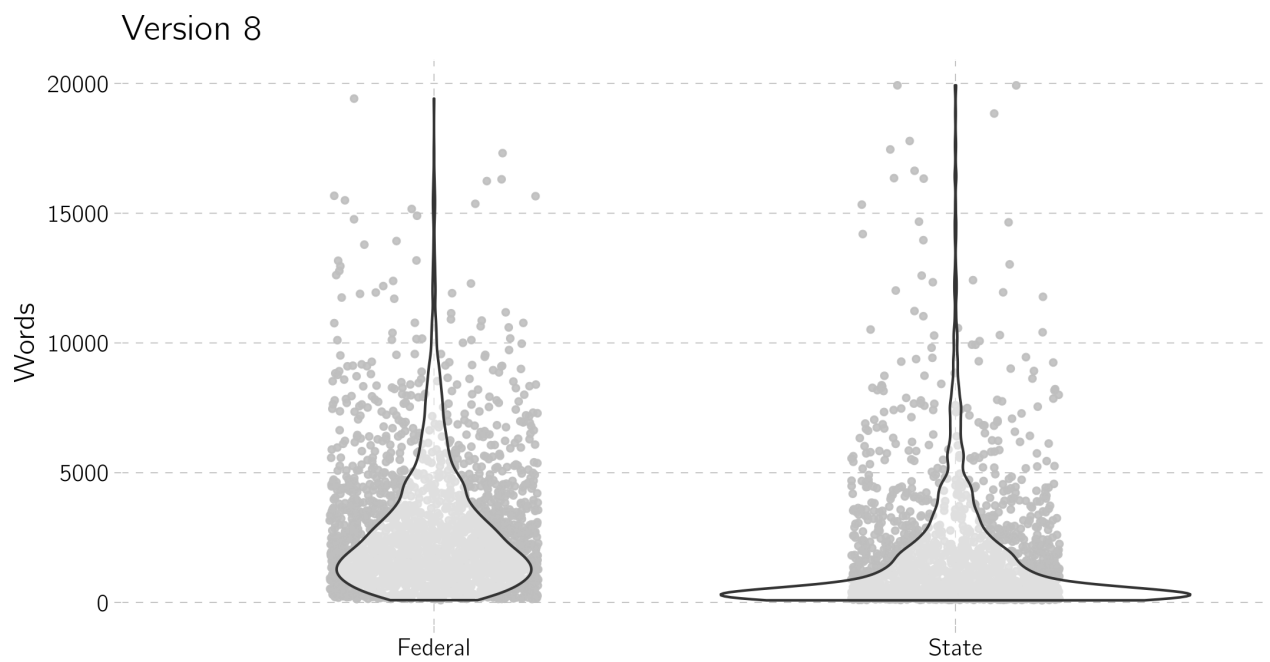
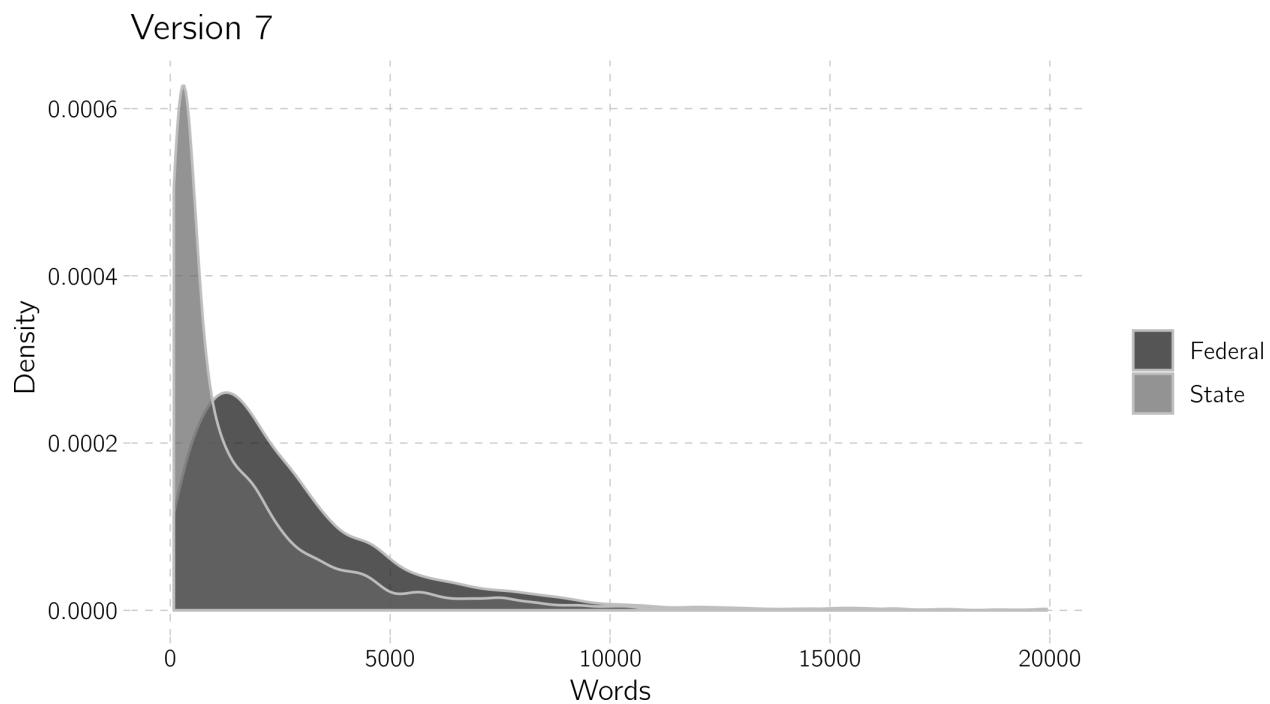


Version 5

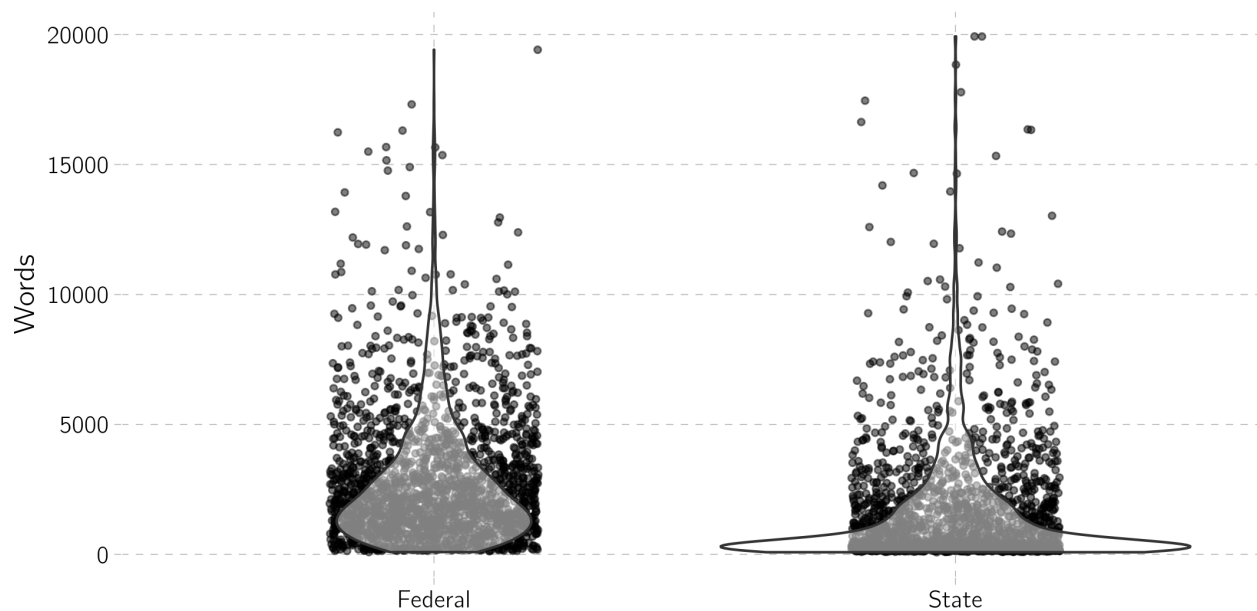


Version 6

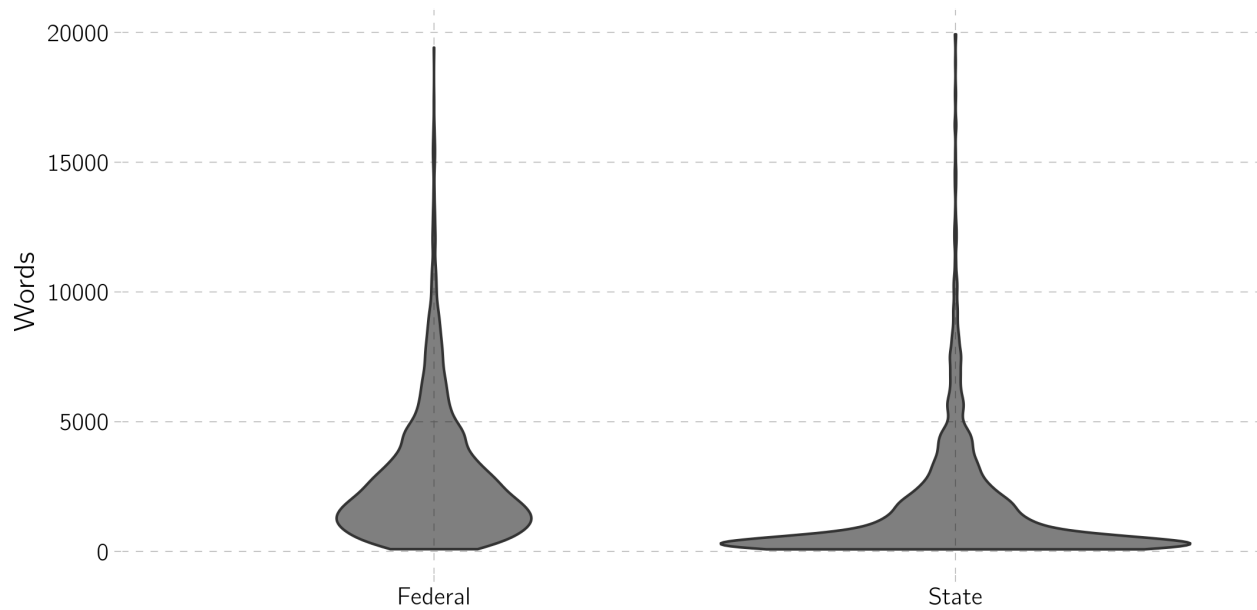




Version 9



Version 10

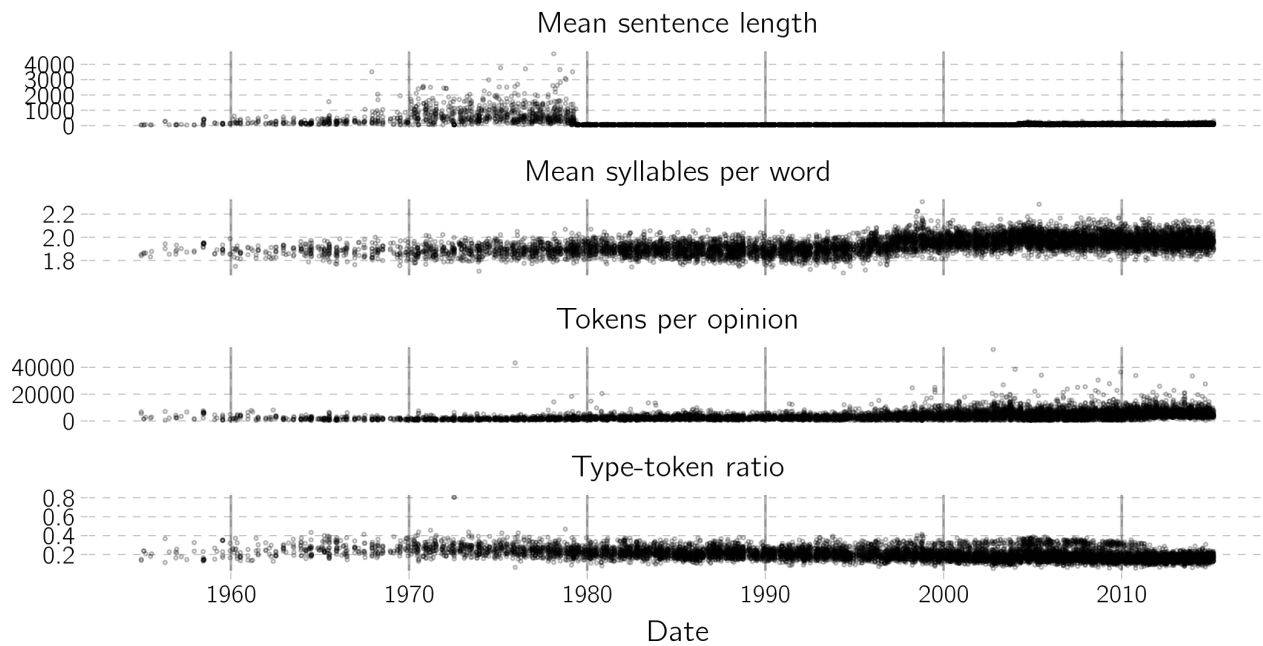


Frankenreiter

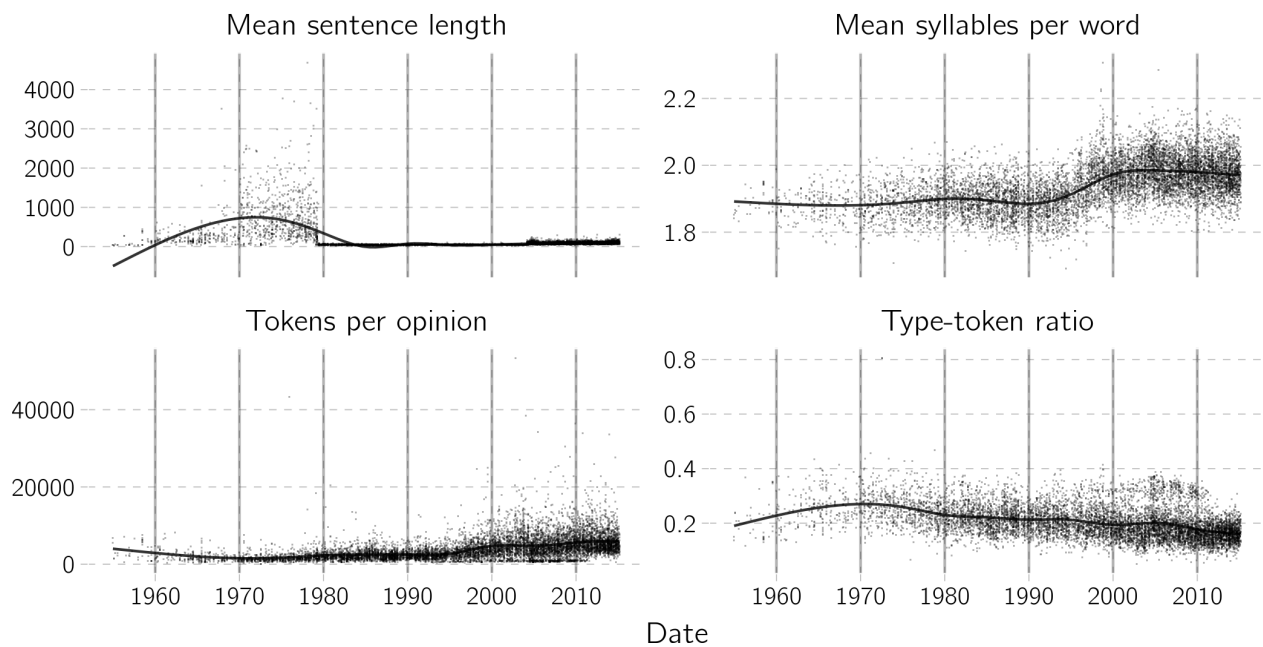
Frankenreiter

Figure 2

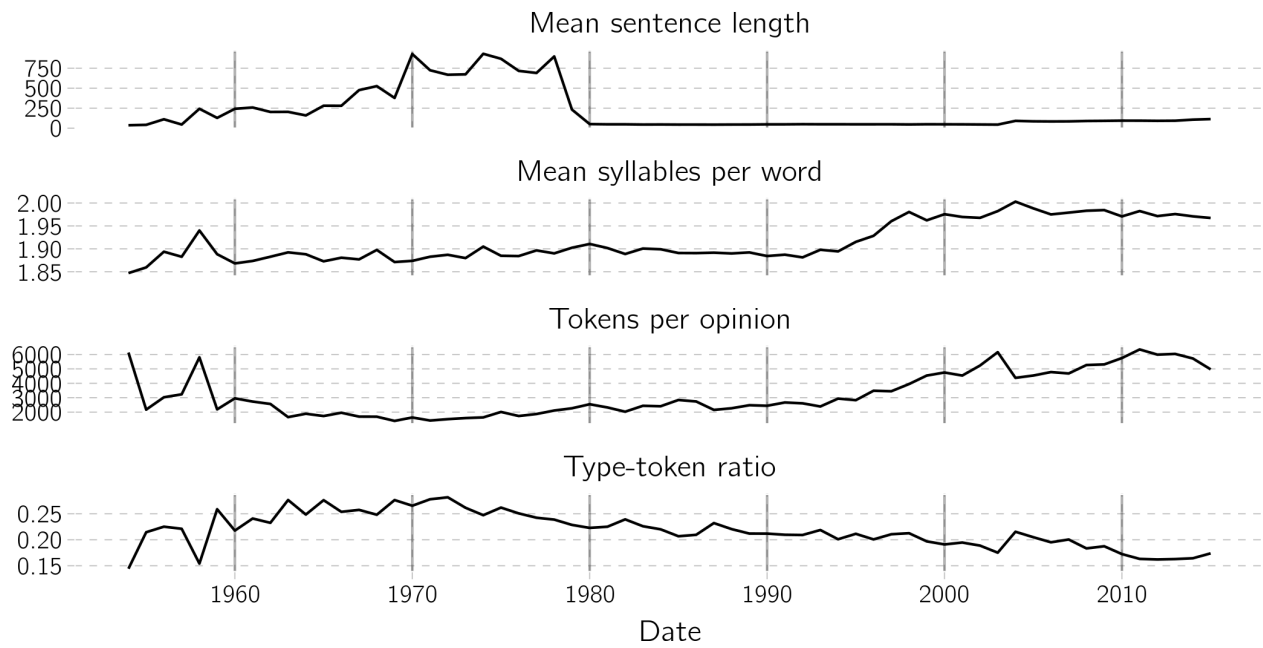
Version 1



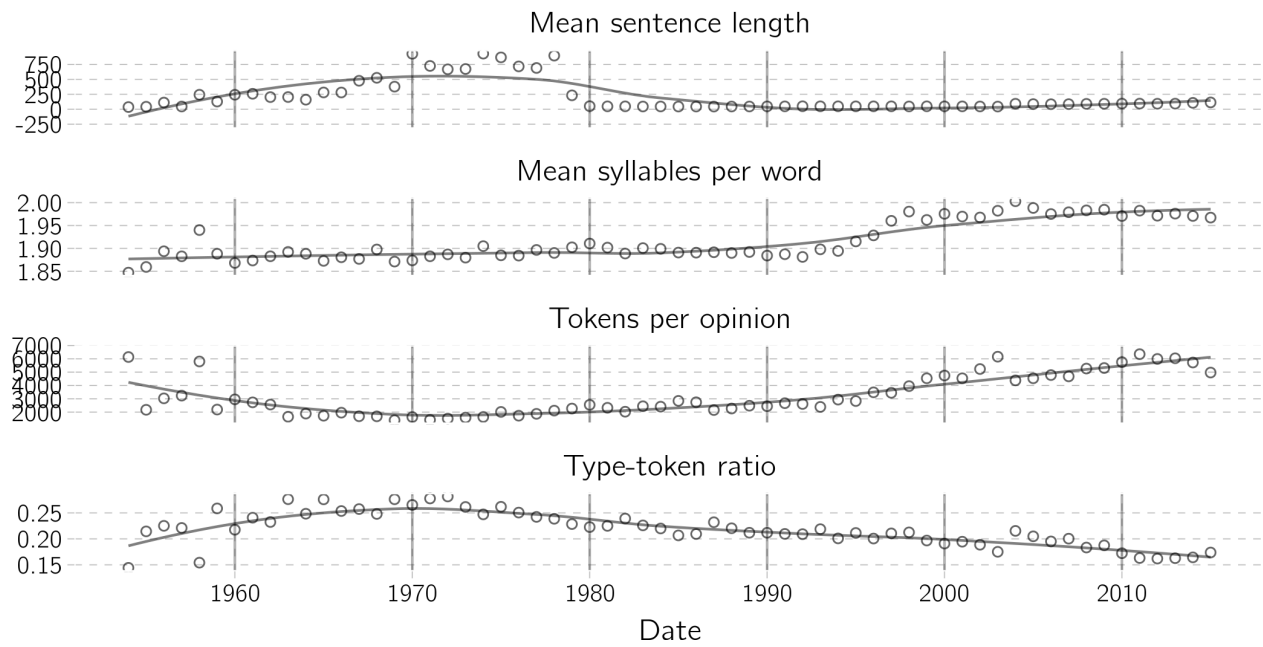
Version 2



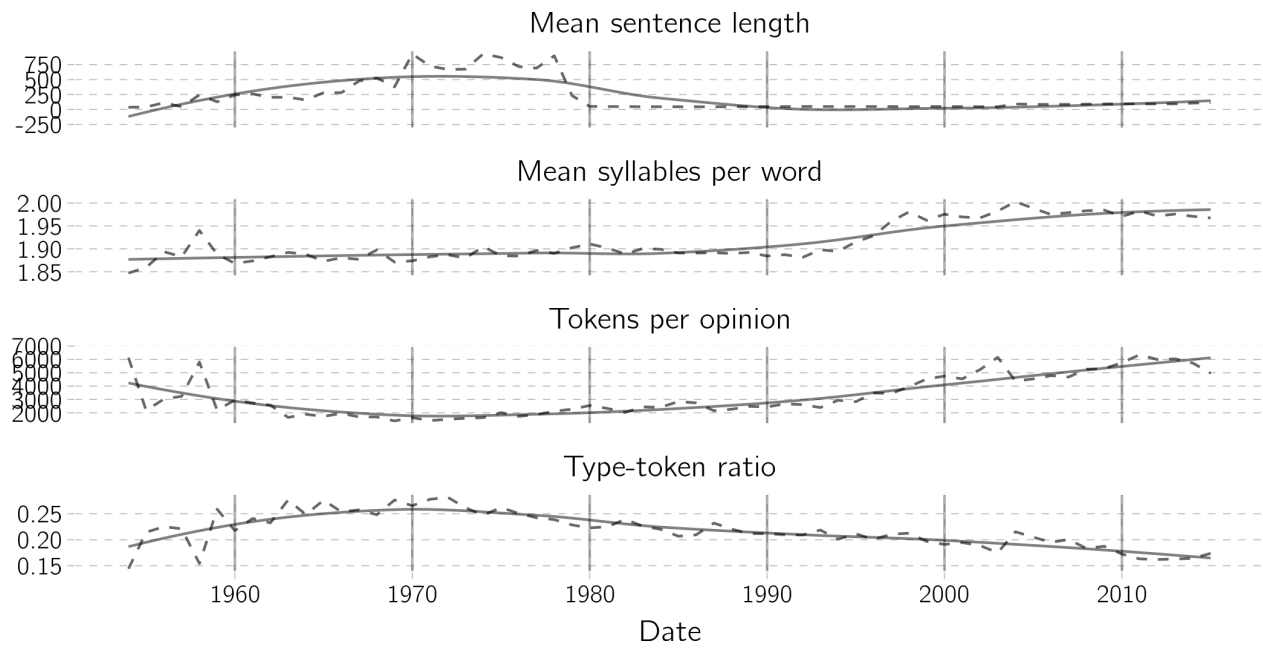
Version 3



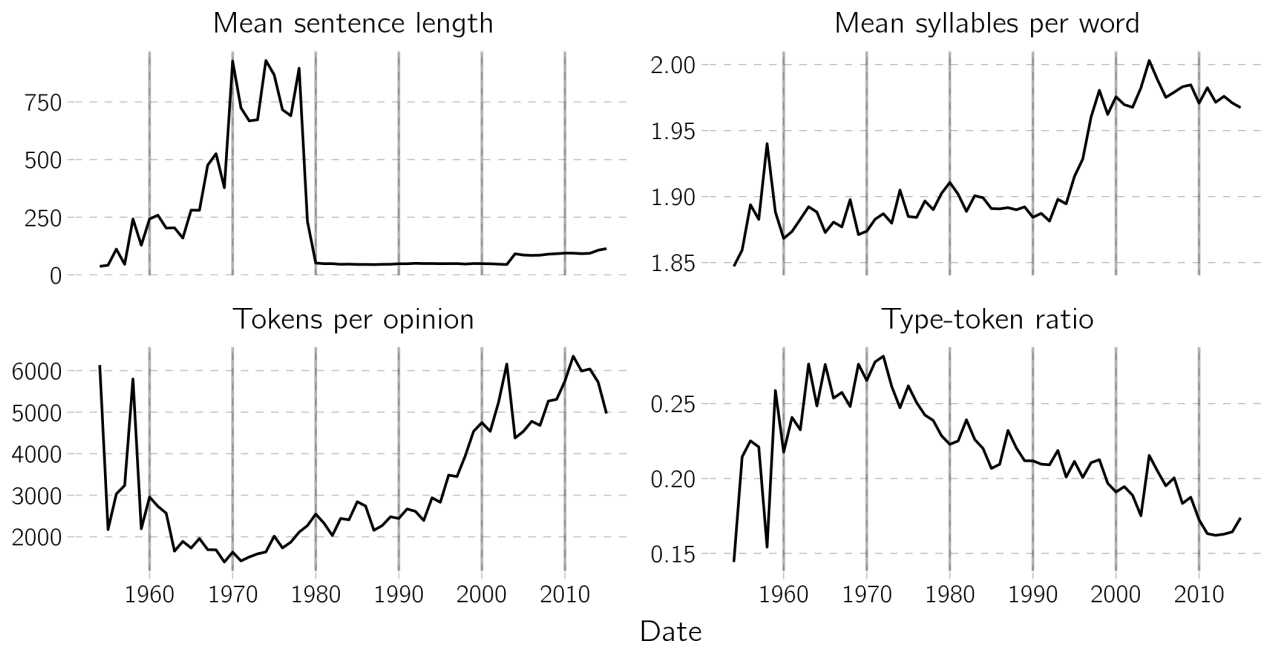
Version 4



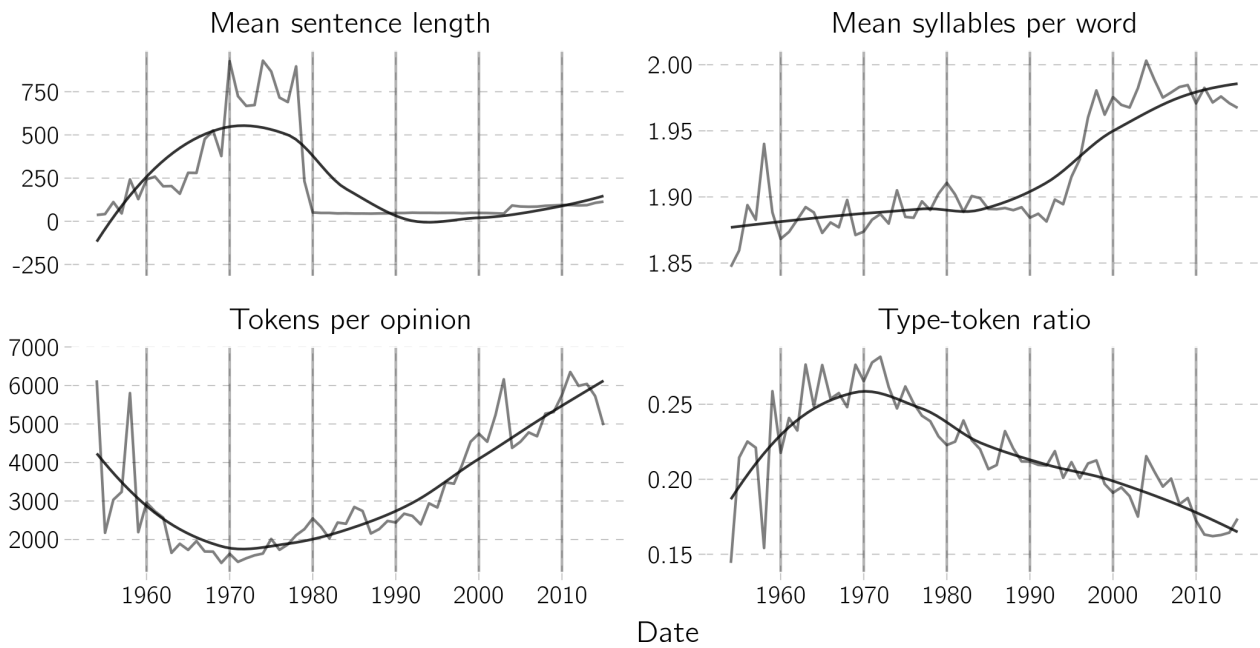
Version 5



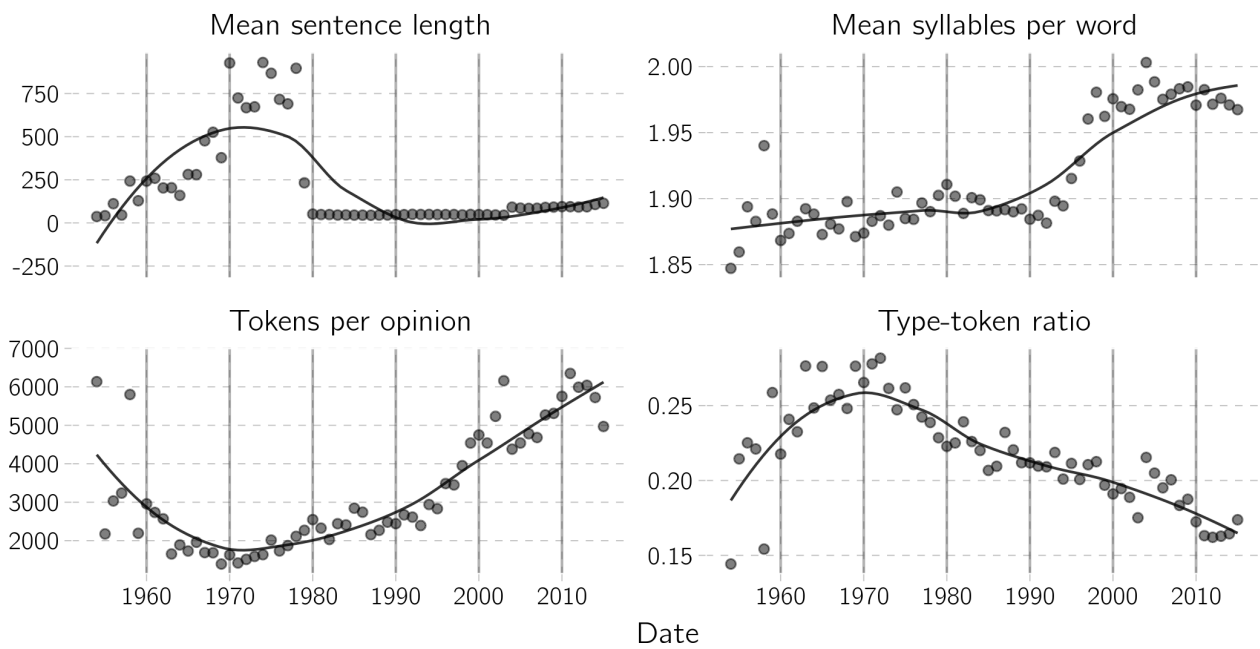
Version 6



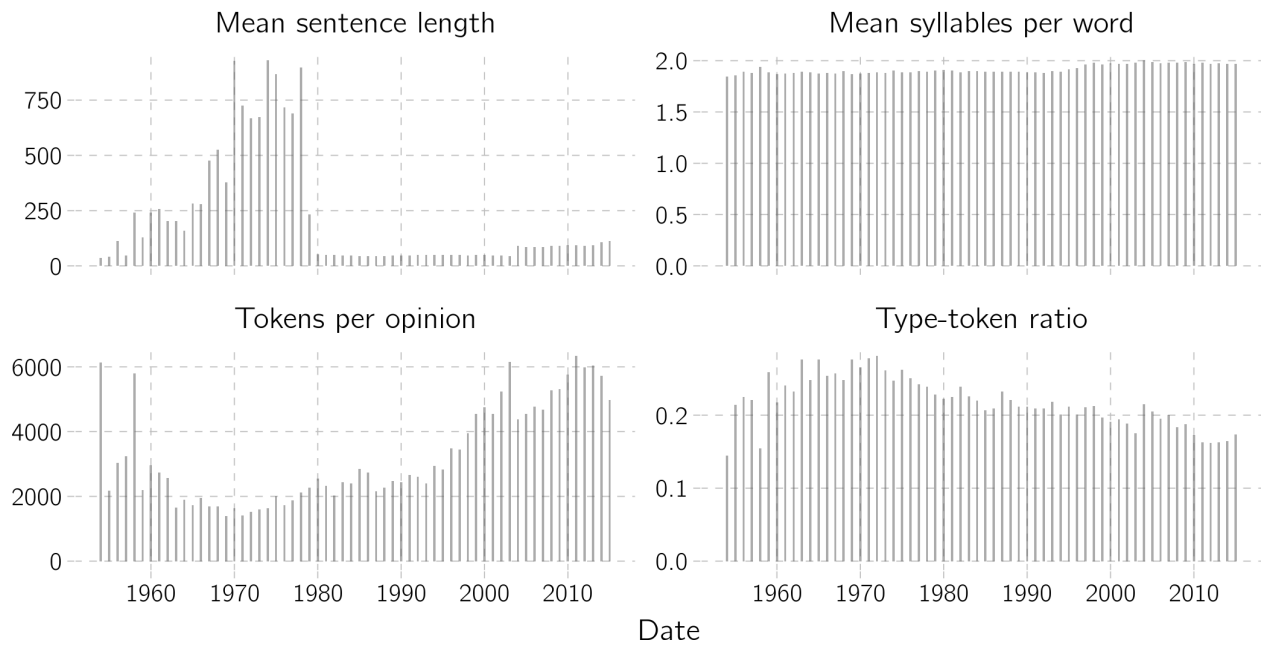
Version 7



Version 8



Version 9



Version 10

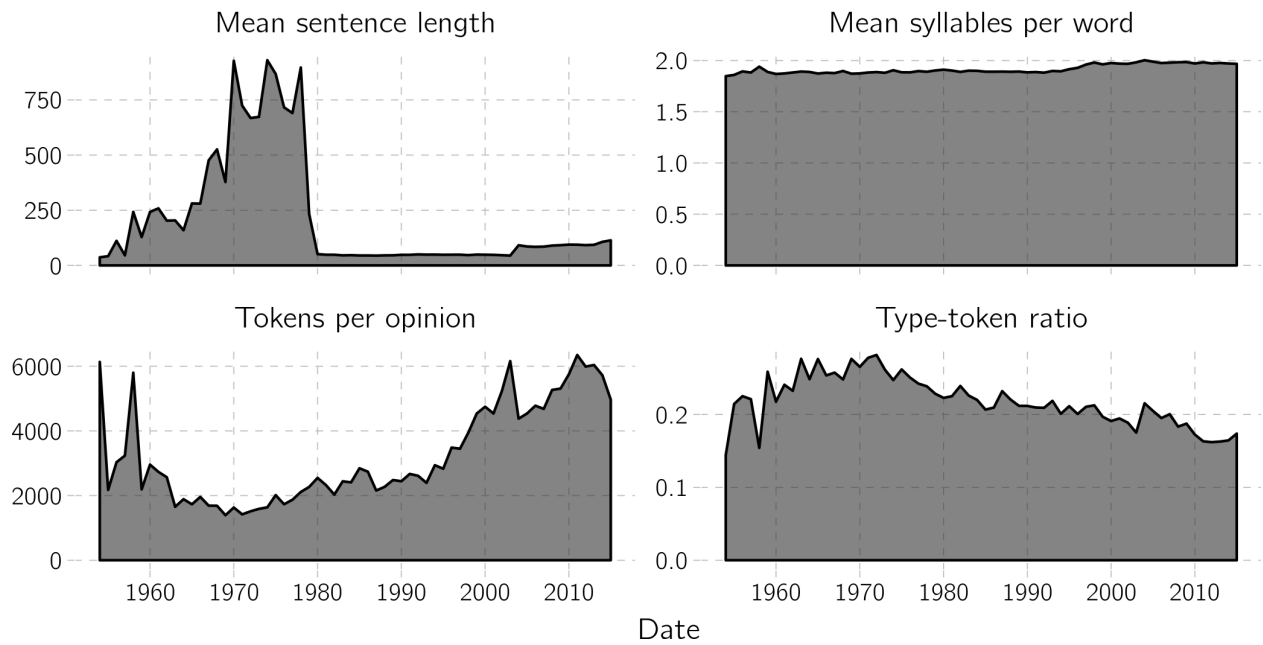


Figure 3

```
# A tibble: 1,919 x 3
  x1 diff similarity
<int> <dbl>      <dbl>
1     1     0         1
2    64     0         1
3   126     0     0.588
```

```

4  127    0    1
5  188    0    0.593
6  189    0    0.615
7  190    0    1
8  250    0    0.480
9  251    0    0.507
10 252    0    0.492
# ... with 1,909 more rows

```

```
[[1]]
```

```
mapping: group = ~diff
```

```
geom_boxplot: outlier.colour = NULL, outlier.fill = NULL, outlier.shape = 3, outlier.size = 0.5, outlier.stroke = 1
```

```
stat_boxplot: na.rm = FALSE
```

```
position_dodge2
```

```
<ggproto object: Class ScalesList, gg>
```

```
  add: function
```

```
  clone: function
```

```
  find: function
```

```
  get_scales: function
```

```
  has_scale: function
```

```
  input: function
```

```
  n: function
```

```
  non_position_scales: function
```

```
  scales: list
```

```
  super: <ggproto object: Class ScalesList, gg>
```

```
Aesthetic mapping:
```

```
* `x` -> `diff`
```

```
* `y` -> `similarity`
```

```
List of 18
```

```
$ text :List of 11
```

```
..$ family : chr "CMU Bright"
```

```
..$ face : chr "plain"
```

```
..$ colour : chr "black"
```

```
..$ size : num 11
```

```
..$ hjust : num 0.5
```

```
..$ vjust : num 0.5
```

```
..$ angle : num 0
```

```
..$ lineheight : num 0.9
```

```
..$ margin : 'margin' num [1:4] Opt Opt Opt Opt
```

```
.. ..- attr(*, "valid.unit")= int 8
```

```
.. ..- attr(*, "unit")= chr "pt"
```

```
..$ debug : logi FALSE
```

```
..$ inherit.blank: logi FALSE
```

```
..- attr(*, "class")= chr [1:2] "element_text" "element"
```

```
$ axis.title.x :List of 11
```

```
..$ family : NULL
```

```
..$ face : chr "plain"
```

```
..$ colour : chr "black"
```

```
..$ size : num 12
```

```
..$ hjust : NULL
```

```
..$ vjust : num 1
```

```
..$ angle : NULL
```

```
..$ lineheight : NULL
```

```

..$ margin      : 'margin' num [1:4] 2.75pt Opt Opt Opt
.. ..- attr(*, "valid.unit")= int 8
.. ..- attr(*, "unit")= chr "pt"
..$ debug       : NULL
..$ inherit.blank: logi FALSE
..- attr(*, "class")= chr [1:2] "element_text" "element"
$ axis.title.y   :List of 11
..$ family       : NULL
..$ face         : chr "plain"
..$ colour       : chr "black"
..$ size         : num 12
..$ hjust        : NULL
..$ vjust        : num 1
..$ angle        : num 90
..$ lineheight   : NULL
..$ margin       : 'margin' num [1:4] Opt 2.75pt Opt Opt
.. ..- attr(*, "valid.unit")= int 8
.. ..- attr(*, "unit")= chr "pt"
..$ debug       : NULL
..$ inherit.blank: logi FALSE
..- attr(*, "class")= chr [1:2] "element_text" "element"
$ axis.text      :List of 11
..$ family       : NULL
..$ face         : chr "plain"
..$ colour       : chr "black"
..$ size         : num 9.6
..$ hjust        : NULL
..$ vjust        : NULL
..$ angle        : NULL
..$ lineheight   : NULL
..$ margin       : NULL
..$ debug       : NULL
..$ inherit.blank: logi FALSE
..- attr(*, "class")= chr [1:2] "element_text" "element"
$ axis.ticks     :List of 6
..$ colour       : chr "grey"
..$ size         : num 0.2
..$ linetype     : NULL
..$ lineend      : NULL
..$ arrow        : logi FALSE
..$ inherit.blank: logi FALSE
..- attr(*, "class")= chr [1:2] "element_line" "element"
$ legend.key     :List of 5
..$ fill         : chr "transparent"
..$ colour       : chr "transparent"
..$ size         : NULL
..$ linetype     : NULL
..$ inherit.blank: logi FALSE
..- attr(*, "class")= chr [1:2] "element_rect" "element"
$ legend.text    :List of 11
..$ family       : NULL
..$ face         : chr "plain"
..$ colour       : chr "black"
..$ size         : num 9.6

```

```

..$ hjust      : NULL
..$ vjust      : NULL
..$ angle      : NULL
..$ lineheight : NULL
..$ margin     : NULL
..$ debug      : NULL
..$ inherit.blank: logi FALSE
..- attr(*, "class")= chr [1:2] "element_text" "element"
$ legend.title :List of 11
..$ family      : NULL
..$ face        : chr "plain"
..$ colour      : chr "black"
..$ size        : num 12
..$ hjust       : num 0
..$ vjust       : NULL
..$ angle       : NULL
..$ lineheight  : NULL
..$ margin      : NULL
..$ debug       : NULL
..$ inherit.blank: logi FALSE
..- attr(*, "class")= chr [1:2] "element_text" "element"
$ legend.position : chr "right"
$ panel.background:List of 5
..$ fill        : chr "transparent"
..$ colour      : chr "white"
..$ size        : NULL
..$ linetype    : NULL
..$ inherit.blank: logi FALSE
..- attr(*, "class")= chr [1:2] "element_rect" "element"
$ panel.border   :List of 5
..$ fill        : logi NA
..$ colour      : chr "white"
..$ size        : NULL
..$ linetype    : NULL
..$ inherit.blank: logi FALSE
..- attr(*, "class")= chr [1:2] "element_rect" "element"
$ panel.grid     :List of 6
..$ colour      : chr "grey"
..$ size        : num 0.2
..$ linetype    : chr "dashed"
..$ lineend     : NULL
..$ arrow       : logi FALSE
..$ inherit.blank: logi FALSE
..- attr(*, "class")= chr [1:2] "element_line" "element"
$ panel.grid.minor: list()
..- attr(*, "class")= chr [1:2] "element_blank" "element"
$ plot.background :List of 5
..$ fill        : chr "white"
..$ colour      : logi NA
..$ size        : NULL
..$ linetype    : NULL
..$ inherit.blank: logi FALSE
..- attr(*, "class")= chr [1:2] "element_rect" "element"
$ plot.title     :List of 11

```

```

..$ family      : NULL
..$ face        : chr "plain"
..$ colour      : chr "black"
..$ size        : num 14.4
..$ hjust       : num 0
..$ vjust       : num 1
..$ angle       : NULL
..$ lineheight  : NULL
..$ margin      : 'margin' num [1:4] 0pt 0pt 5.5pt 0pt
.. ..- attr(*, "valid.unit")= int 8
.. ..- attr(*, "unit")= chr "pt"
..$ debug       : NULL
..$ inherit.blank: logi FALSE
..- attr(*, "class")= chr [1:2] "element_text" "element"
$ strip.background:List of 5
..$ fill        : chr "transparent"
..$ colour      : chr "transparent"
..$ size        : NULL
..$ linetype    : NULL
..$ inherit.blank: logi FALSE
..- attr(*, "class")= chr [1:2] "element_rect" "element"
$ strip.text.x   :List of 11
..$ family      : NULL
..$ face        : chr "plain"
..$ colour      : chr "black"
..$ size        : num 12
..$ hjust       : NULL
..$ vjust       : NULL
..$ angle       : NULL
..$ lineheight  : NULL
..$ margin      : NULL
..$ debug       : NULL
..$ inherit.blank: logi FALSE
..- attr(*, "class")= chr [1:2] "element_text" "element"
$ strip.text.y   :List of 11
..$ family      : NULL
..$ face        : chr "plain"
..$ colour      : chr "black"
..$ size        : num 12
..$ hjust       : NULL
..$ vjust       : NULL
..$ angle       : num -90
..$ lineheight  : NULL
..$ margin      : NULL
..$ debug       : NULL
..$ inherit.blank: logi FALSE
..- attr(*, "class")= chr [1:2] "element_text" "element"
- attr(*, "class")= chr [1:2] "theme" "gg"
- attr(*, "complete")= logi FALSE
- attr(*, "validate")= logi FALSE

<ggproto object: Class CoordCartesian, Coord, gg>
  aspect: function
  clip: on

```

```

    default: TRUE
    distance: function
    expand: TRUE
    is_free: function
    is_linear: function
    labels: function
    limits: list
    modify_scales: function
    range: function
    render_axis_h: function
    render_axis_v: function
    render_bg: function
    render_fg: function
    setup_data: function
    setup_layout: function
    setup_panel_params: function
    setup_params: function
    transform: function
    super: <ggproto object: Class CoordCartesian, Coord, gg>
<ggproto object: Class FacetNull, Facet, gg>
  compute_layout: function
  draw_back: function
  draw_front: function
  draw_labels: function
  draw_panels: function
  finish_data: function
  init_scales: function
  map_data: function
  params: list
  setup_data: function
  setup_params: function
  shrink: TRUE
  train_scales: function
  vars: function
  super: <ggproto object: Class FacetNull, Facet, gg>
<environment: 0x55cc159d8d50>

$x
[1] "Difference in years"

$y
[1] "Similarity"

$title
[1] "Version 9"

$subtitle
[1] "(Grouped every 10 years)"

$group
[1] "diff"

```

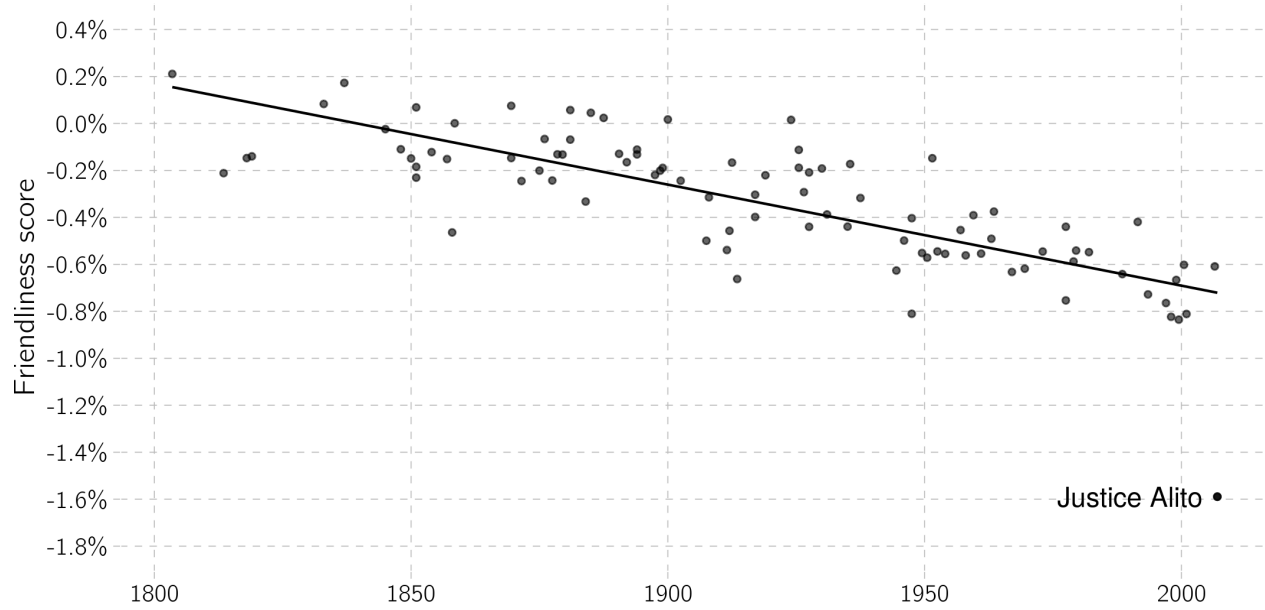
Livemore

Livemore

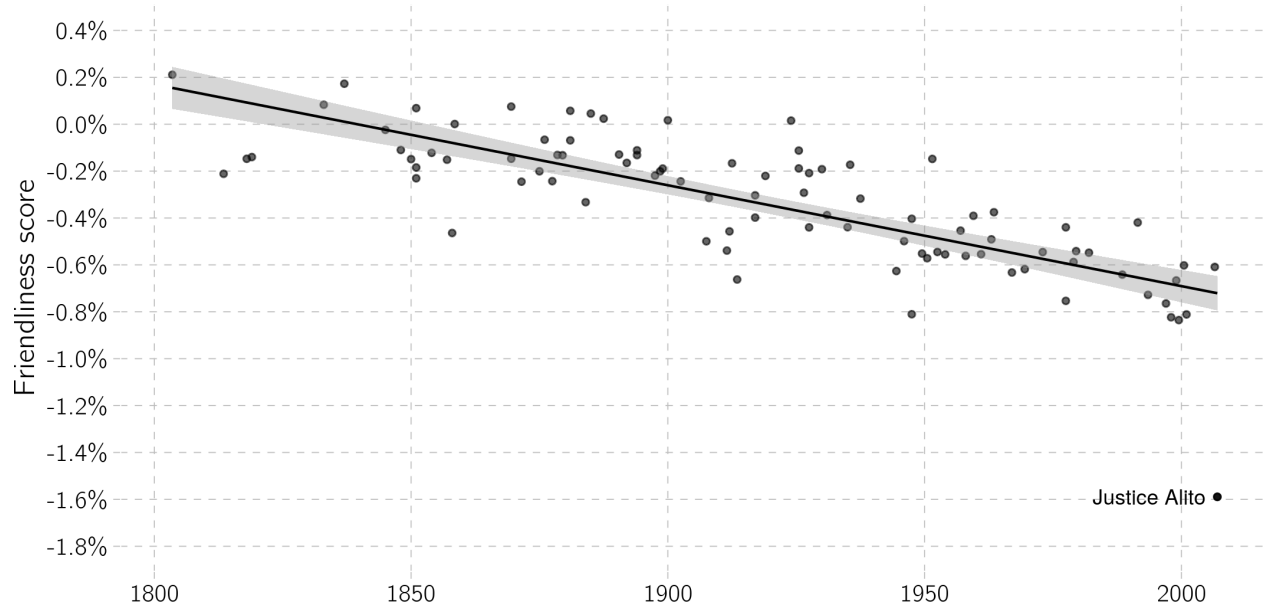
Figure 1



Version 3



Version 4



Tables

Alexander

Alexander

Table 1

Case number	Date	Docket text
1:10-cv-00002-ODE	1/4/2010	NOTICE OF REMOVAL with COMPLAINT, filed by Children's Healthcare of Atlanta, Inc.. Consent form to proceed before U.S. Magistrate and pretrial instructions provided. (Filing fee \$ 350.00 receipt number 19815) (Attachments: # 1 Exhibit A, # 2 Civil Cover Sheet)(eop) Please visit our website at http://www.gand.uscourts.gov to obtain Pretrial Instructions. (Entered: 01/04/2010)
1:10-cv-00002-ODE	1/5/2010	Unopposed MOTION for Extension of Time to File Answer by Children's Healthcare of Atlanta, Inc.. (Attachments: # 1 Text of Proposed Order)(Kotun, Melissa) (Entered: 01/05/2010)
1:10-cv-00002-ODE	1/5/2010	ORDER granting 2 Motion for Extension of Time to Answer; Children's Healthcare of Atlanta, Inc.'s Answer due 1/29/2010. Signed by Magistrate Judge Russell G. Vineyard on 1/5/2010. (ank) (Entered: 01/05/2010)
1:10-cv-00002-ODE	1/29/2010	ANSWER to 1 NOTICE OF REMOVAL with Complaint by Children's Healthcare of Atlanta, Inc.. Discovery ends on 6/28/2010.(Kotun, Melissa) Please visit our website at http://www.gand.uscourts.gov to obtain Pretrial Instructions. (Entered: 01/29/2010)
1:10-cv-00002-ODE	1/29/2010	Certificate of Interested Persons by Children's Healthcare of Atlanta, Inc.. (Kotun, Melissa) (Entered: 01/29/2010)
1:10-cv-00002-ODE	2/2/2010	Guidelines for Discovery and Motion Practice. Signed by Magistrate Judge Russell G. Vineyard on 2/2/2010. (ank) (Entered: 02/03/2010)
1:10-cv-00002-ODE	2/23/2010	Joint PRELIMINARY REPORT AND DISCOVERY PLAN filed by Emmanuel Nketop, Children's Healthcare of Atlanta, Inc.. (Kotun, Melissa) (Entered: 02/23/2010)
1:10-cv-00002-ODE	2/27/2010	Initial Disclosures by Emmanuel Nketop.(Fuchs, Dean) (Entered: 02/27/2010)
1:10-cv-00002-ODE	3/2/2010	Initial Disclosures by Children's Healthcare of Atlanta, Inc..(Kotun, Melissa) (Entered: 03/02/2010)
1:10-cv-00002-ODE	3/5/2010	Certificate of Interested Persons by Emmanuel Nketop. (Fuchs, Dean) (Entered: 03/05/2010)
1:10-cv-00002-ODE	3/10/2010	SCHEDULING ORDER approving the 7 Preliminary Report and Discovery Plan. Discovery ends on 6/28/2010. Summary Judgment Motions due by 7/28/2010. Proposed Consolidated Pretrial Order due by 8/9/2010. The Clerk is DIRECTED to submit the action by 8/19/2010 if the parties have not filed a motion for summary judgment or proposed consolidated pretrial order. The Clerk is DIRECTED to change the docket to reflect the correct spelling of the Plaintiff's last name as "Ntekop." Signed by Magistrate Judge Russell G. Vineyard on 3/9/2010. (ank) (Entered: 03/10/2010)

1:10-cv-00002-ODE	4/2/2010	CERTIFICATE OF SERVICE filed by Children's Healthcare of Atlanta, Inc. Defendant's First Interrogatories (Kotun, Melissa) (Entered: 04/02/2010)
1:10-cv-00002-ODE	4/2/2010	CERTIFICATE OF SERVICE filed by Children's Healthcare of Atlanta, Inc. Defendant's First Request for Production of Documents (Kotun, Melissa) (Entered: 04/02/2010)
1:10-cv-00002-ODE	4/19/2010	CERTIFICATE OF SERVICE re: Plaintiff's First Interrogatories to Defendant by Emmanuel Ntekop.(Fuchs, Dean) (Entered: 04/19/2010)
1:10-cv-00002-ODE	4/19/2010	CERTIFICATE OF SERVICE re: Plaintiff's First Request for Production of Documents to Defendant by Emmanuel Ntekop.(Fuchs, Dean) (Entered: 04/19/2010)
1:10-cv-00002-ODE	5/5/2010	CERTIFICATE OF SERVICE re: Plaintiff's Responses to Defendant's First Interrogatories by Emmanuel Ntekop.(Fuchs, Dean) (Entered: 05/05/2010)
1:10-cv-00002-ODE	5/5/2010	CERTIFICATE OF SERVICE re: Plaintiff's Responses to Defendant's First Request for Production of Documents by Emmanuel Ntekop.(Fuchs, Dean) (Entered: 05/05/2010)
1:10-cv-00002-ODE	5/10/2010	JOINT STIPULATION and Proposed Order of Confidentiality by Emmanuel Ntekop, Children's Healthcare of Atlanta, Inc.. (Kotun, Melissa) Modified on 5/10/2010 in order to update docket text (ank). (Entered: 05/10/2010)
1:10-cv-00002-ODE	5/11/2010	STIPULATION AND ORDER OF CONFIDENTIALITY. Signed by Magistrate Judge Russell G. Vineyard on 5/11/2010. (ank) (Entered: 05/12/2010)
1:10-cv-00002-ODE	6/22/2010	ORDER REASSIGNING CASE. Case reassigned to Magistrate Judge Walter E. Johnson for all further proceedings. Magistrate Judge Russell G. Vineyard no longer assigned to case. Signed by Magistrate Judge Russell G. Vineyard on 6/22/2010. (ank) (Entered: 06/23/2010)
1:10-cv-00002-ODE	6/23/2010	NOTICE TO ALL COUNSEL OF RECORD re Magistrate Judge reassignment (ank) (Entered: 06/23/2010)
1:10-cv-00002-ODE	6/24/2010	Joint MOTION for Extension of Time to Complete Discovery by Emmanuel Ntekop, Children's Healthcare of Atlanta, Inc.. (Attachments: # 1 Text of Proposed Order)(Kotun, Melissa) (Entered: 06/24/2010)
1:10-cv-00002-ODE	6/29/2010	ORDER granting 22 Motion for Extension of Time to Complete Discovery. Discovery ends on 9/15/2010. All post-discovery deadlines are likewise extended. Signed by Magistrate Judge Walter E. Johnson on 6/29/10. (klb) (Entered: 06/29/2010)
1:10-cv-00002-ODE	8/3/2010	Request for Leave of Absence for the following date(s): 8/23, 8/24, 8/25, 8/26, 8/27, 8/30, 8/31, 9/1, 9/2, 9/3, 9/6, 9/7/2010, by Dean Richard Fuchs. (Fuchs, Dean) (Entered: 08/03/2010)
1:10-cv-00002-ODE	9/13/2010	Joint MOTION for Extension of Time to Complete Discovery (Second) by Children's Healthcare of Atlanta, Inc., Emmanuel Ntekop. (Attachments: # 1 Text of Proposed Order)(Kotun, Melissa) (Entered: 09/13/2010)
1:10-cv-00002-ODE	10/13/2010	STIPULATION of Dismissal With Prejudice by Children's Healthcare of Atlanta, Inc., Emmanuel Ntekop. (Fuchs, Dean) (Entered: 10/13/2010)
1:10-cv-00002-ODE	1/4/2010	Submission of 1 Notice of Removal for Review, submitted to District Judge Orinda D. Evans. (eop) (Entered: 01/04/2010)

1:10-cv-00002-ODE	6/29/2010	Reset Scheduling Order Deadlines: Discovery ends on 9/15/2010. Motions for summary judgment due 10/15/10. Proposed Pretrial Order due by 10/15/2010 or within 30 days from a final ruling on any motion for summary judgment that is not dispositive of all claims. (klb) (Entered: 06/29/2010)
1:10-cv-00002-ODE	9/14/2010	ORAL ORDER granting 25 Joint Motion for Extension of Time to Complete Discovery Discovery ends on 9/24/2010. All post-discovery deadlines are likewise extended. Entered by Magistrate Judge Walter E. Johnson on 9/14/10. (klb) (Entered: 09/14/2010)
1:10-cv-00002-ODE	9/14/2010	Reset Scheduling Order Deadlines: Discovery ends on 9/24/2010. Motions for summary judgment due 10/25/10. Proposed Pretrial Order due by 10/25/2010 or within 30 days from a final ruling on any motion for summary judgment that is not dispositive of all claims.(klb) (Entered: 09/14/2010)
1:10-cv-00002-ODE	10/13/2010	Clerk's Entry of Dismissal APPROVING 26 Stipulation of Dismissal pursuant to Fed.R.Civ.P.41(a)(1)(ii) (ank) (Entered: 10/15/2010)
1:10-cv-00002-ODE	10/13/2010	Civil Case Terminated. Magistrate Judge Walter E. Johnson terminated from case. (ank) (Entered: 10/15/2010)

Table 6

Case number	Docket text	Paired order text	Filled by	Adoption	Case ended
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1:10-cv-00007-
JEC

FINAL
REPORT AND
RECOMMEN-
DATION
recommending
GRANTING 22
MOTION for
Summary
Judgment as to
all of Plaintiff's
claims. Signed
by Magistrate
Judge Gerrilyn
G. Brill on
06/14/11.
(Attachments:
1 Order for
Service)(fap)
(Entered:
06/15/2011) *

ORDER
regarding
Magistrate
Judge's Final
Report and Rec-
ommendation.
IT IS HEREBY
ORDERED
that the Court
ADOPTS the
Magistrate
Judge's Final
Report and Rec-
ommendation
28 GRANTING
defendants'
Motion for
Summary
Judgment as to
all of plaintiff's
claim 22 . The
Clerk is
directed to
close this
action. Signed
by Judge Julie
E. Carnes on
7/5/11. (cem)
(Entered:
07/06/2011) *
* * *

defendant

adopt

Yes

1:10-cv-00383-ODE	REPORT AND RECOMMENDATION that Defendant's 42 MOTION for Summary Judgment be GRANTED IN PART AND DENIED IN PART. Specifically, the undersigned RECOMMENDS that the motion for summary judgment be DENIED with respect to Plaintiffs' Title VII claims, DENIED with respect to Plaintiffs' S. 1981 claims, and GRANTED with respect to Plaintiff Lewis, Power, and Johnson's claims under the Equal Protection Clause. Signed by Magistrate Judge Alan J. Baverman on 1/31/2012. (rej) (Entered: 02/01/2012) *	ORDER that City of Kennesaw's Objections are 56 SUSTAINED and the 55 Report and Recommendation is ADOPTED IN PART AND REJECTED IN PART. The City of Kennesaw's 42 Motion for Summary Judgment is GRANTED in accordance with Federal Rule of Civil Procedure 56(a) because Plaintiffs have failed to establish a prima facie case of discrimination. Signed by Judge Orinda D. Evans on 3/30/2012. (anc) (Entered: 03/30/2012) * * * *	defendant	partial	No
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