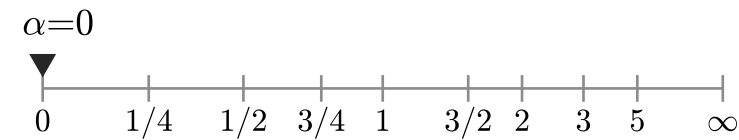


$\Omega_1$ : 1948 Google Books Fiction

$\Omega_2$ : 1987 Google Books Fiction

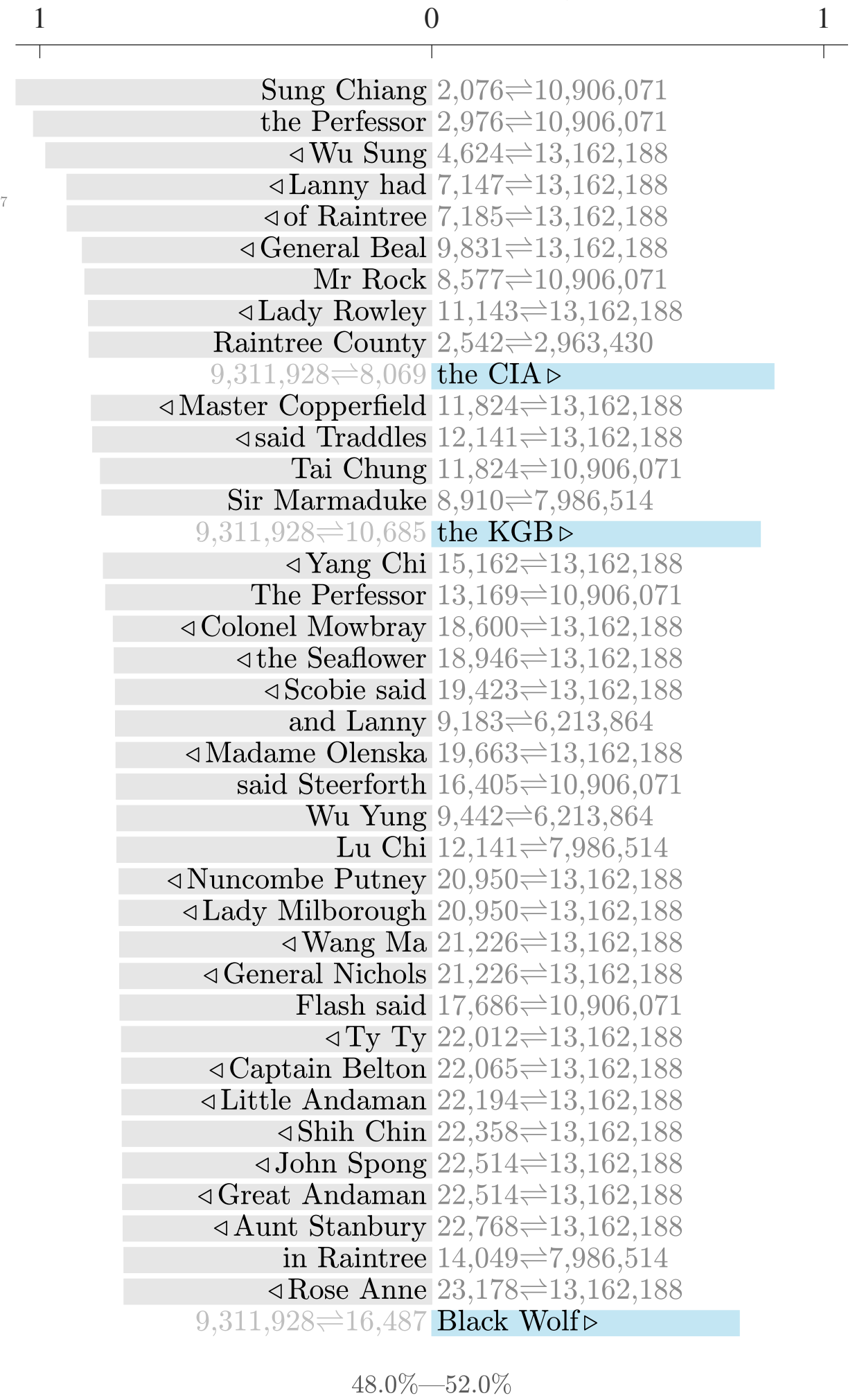
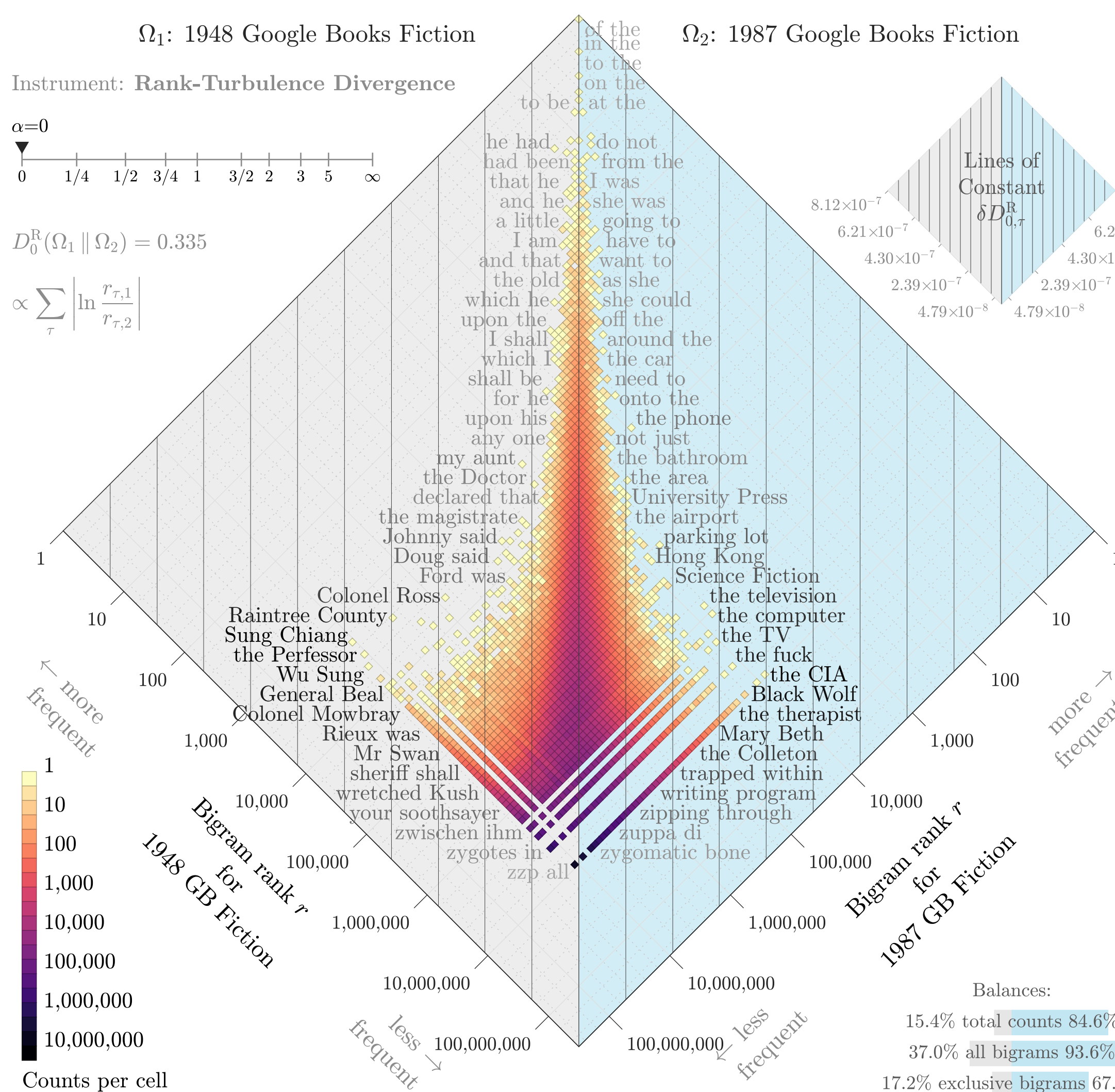
Divergence contribution  $\delta D_{0,\tau}^R (\times 10^{-4}\%)$

Instrument: Rank-Turbulence Divergence



$D_0^R(\Omega_1 \parallel \Omega_2) = 0.335$

$\propto \sum_{\tau} \left| \ln \frac{r_{\tau,1}}{r_{\tau,2}} \right|$



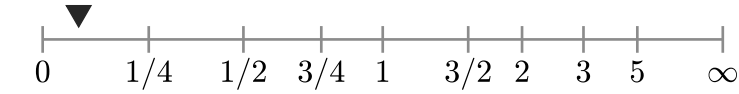
$\Omega_1$ : 1948 Google Books Fiction

$\Omega_2$ : 1987 Google Books Fiction

Divergence contribution  $\delta D_{1/12,\tau}^R (\times 10^{-4}\%)$

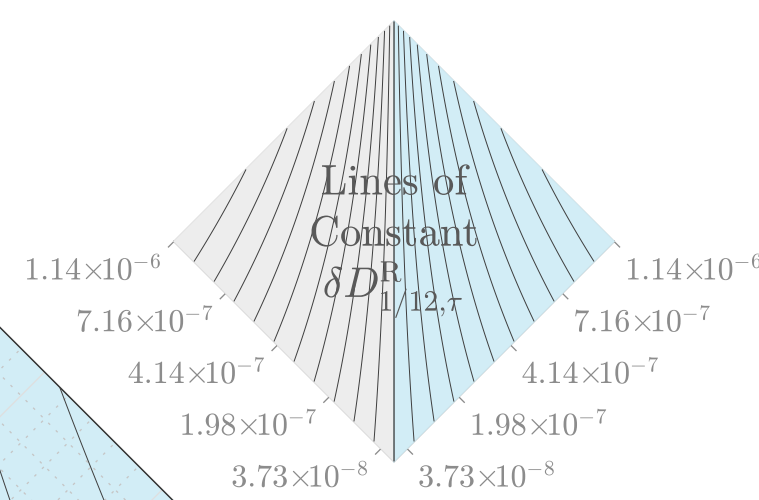
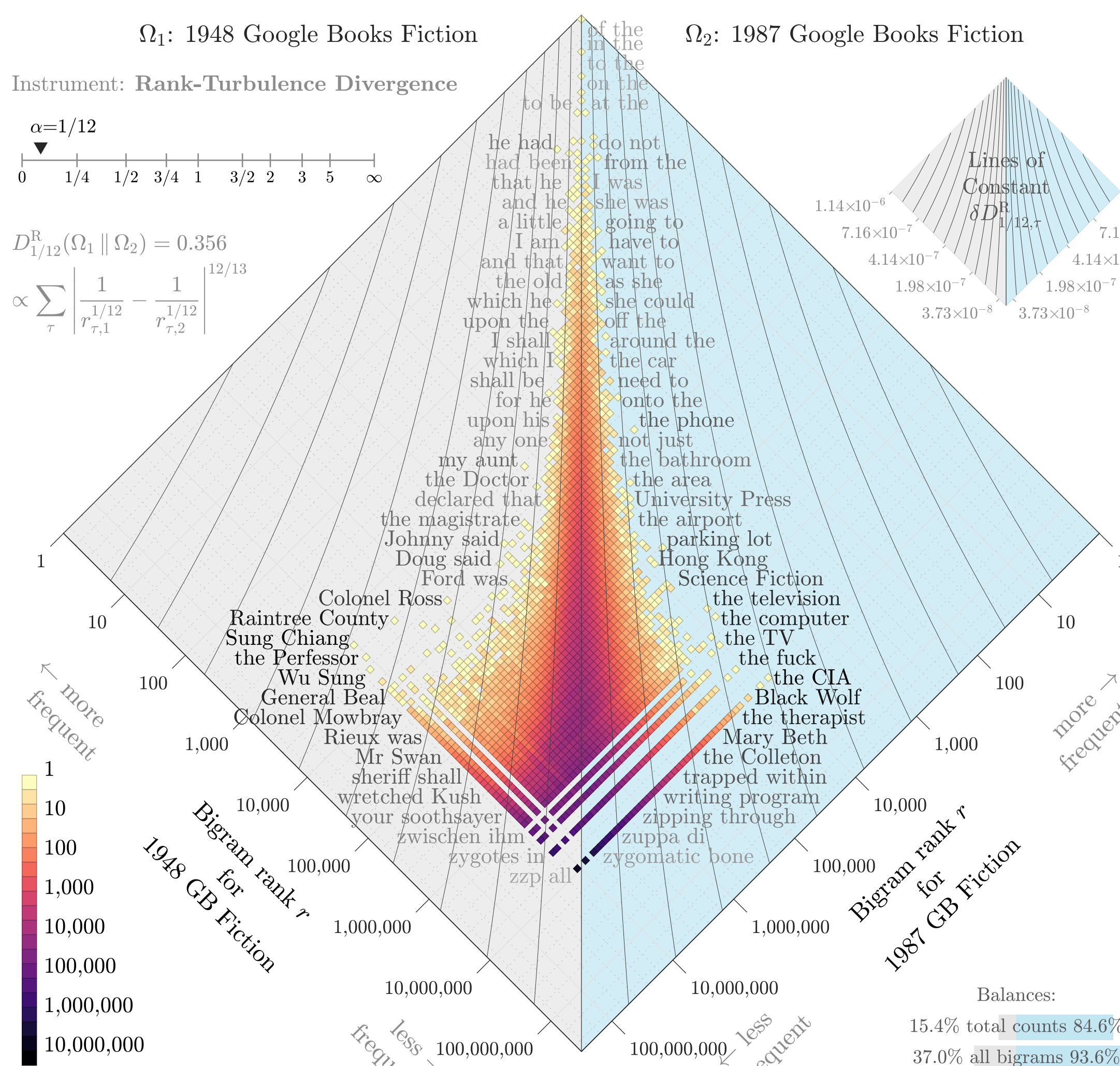
Instrument: Rank-Turbulence Divergence

$\alpha=1/12$



$$D_{1/12}^R(\Omega_1 \parallel \Omega_2) = 0.356$$

$$\propto \sum_{\tau} \left| \frac{1}{r_{\tau,1}^{1/12}} - \frac{1}{r_{\tau,2}^{1/12}} \right|^{12/13}$$



Rank	1948 GB Fiction	1987 GB Fiction	Divergence Contribution $\delta D_{1/12,\tau}^R (\times 10^{-4}\%)$
1	Sung Chiang	2,076 $\Rightarrow$ 10,906,071	
2	the Perfessor	2,976 $\Rightarrow$ 10,906,071	
3	$\triangleleft$ Wu Sung	4,624 $\Rightarrow$ 13,162,188	
4	Raintree County	2,542 $\Rightarrow$ 2,963,430	
5	$\triangleleft$ Lanny had	7,147 $\Rightarrow$ 13,162,188	
6	$\triangleleft$ of Raintree	7,185 $\Rightarrow$ 13,162,188	
7	Mr Rock	8,577 $\Rightarrow$ 10,906,071	
8	9,311,928 $\Rightarrow$ 8,069	the CIA $\triangleright$	
9	$\triangleleft$ General Beal	9,831 $\Rightarrow$ 13,162,188	
10	$\triangleleft$ Lady Rowley	11,143 $\Rightarrow$ 13,162,188	
11	Sir Marmaduke	8,910 $\Rightarrow$ 7,986,514	
12	$\triangleleft$ Master Copperfield	11,824 $\Rightarrow$ 13,162,188	
13	$\triangleleft$ said Traddles	12,141 $\Rightarrow$ 13,162,188	
14	9,311,928 $\Rightarrow$ 10,685	the KGB $\triangleright$	
15	Tai Chung	11,824 $\Rightarrow$ 10,906,071	
16	and Lanny	9,183 $\Rightarrow$ 6,213,864	
17	Wu Yung	9,442 $\Rightarrow$ 6,213,864	
18	The Perfessor	13,169 $\Rightarrow$ 10,906,071	
19	Jacob Levy	4,850 $\Rightarrow$ 1,901,684	
20	$\triangleleft$ Yang Chi	15,162 $\Rightarrow$ 13,162,188	
21	Lu Chi	12,141 $\Rightarrow$ 7,986,514	
22	said Steerforth	16,405 $\Rightarrow$ 10,906,071	
23	$\triangleleft$ Colonel Mowbray	18,600 $\Rightarrow$ 13,162,188	
24	in Raintree	14,049 $\Rightarrow$ 7,986,514	
25	$\triangleleft$ the Seaflower	18,946 $\Rightarrow$ 13,162,188	
26	$\triangleleft$ Scobie said	19,423 $\Rightarrow$ 13,162,188	
27	$\triangleleft$ Madame Olenska	19,663 $\Rightarrow$ 13,162,188	
28	Flash said	17,686 $\Rightarrow$ 10,906,071	
29	9,311,928 $\Rightarrow$ 16,487	Black Wolf $\triangleright$	
30	the Andamanese	15,270 $\Rightarrow$ 7,986,514	
31	$\triangleleft$ Nuncombe Putney	20,950 $\Rightarrow$ 13,162,188	
32	$\triangleleft$ Lady Milborough	20,950 $\Rightarrow$ 13,162,188	
33	$\triangleleft$ Wang Ma	21,226 $\Rightarrow$ 13,162,188	
34	$\triangleleft$ General Nichols	21,226 $\Rightarrow$ 13,162,188	
35	$\triangleleft$ Ty Ty	22,012 $\Rightarrow$ 13,162,188	
36	$\triangleleft$ Captain Belton	22,065 $\Rightarrow$ 13,162,188	
37	$\triangleleft$ Little Andaman	22,194 $\Rightarrow$ 13,162,188	
38	9,311,928 $\Rightarrow$ 18,169	in Vietnam $\triangleright$	
39	$\triangleleft$ Shih Chin	22,358 $\Rightarrow$ 13,162,188	
40	$\triangleleft$ John Spong	22,514 $\Rightarrow$ 13,162,188	

Balances:  
 15.4% total counts 84.6%  
 37.0% all bigrams 93.6%  
 17.2% exclusive bigrams 67.3%

47.9%—52.1%

Counts per cell

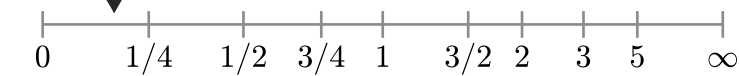
$\Omega_1$ : 1948 Google Books Fiction

$\Omega_2$ : 1987 Google Books Fiction

Divergence contribution  $\delta D_{1/6,\tau}^R (\times 10^{-4}\%)$

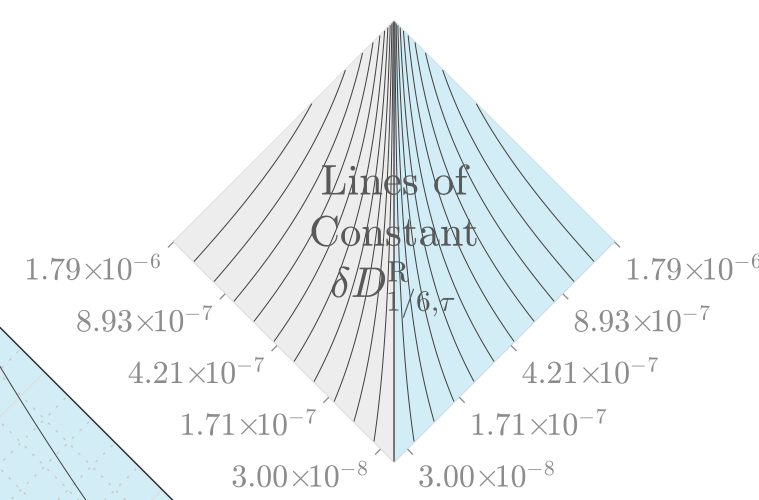
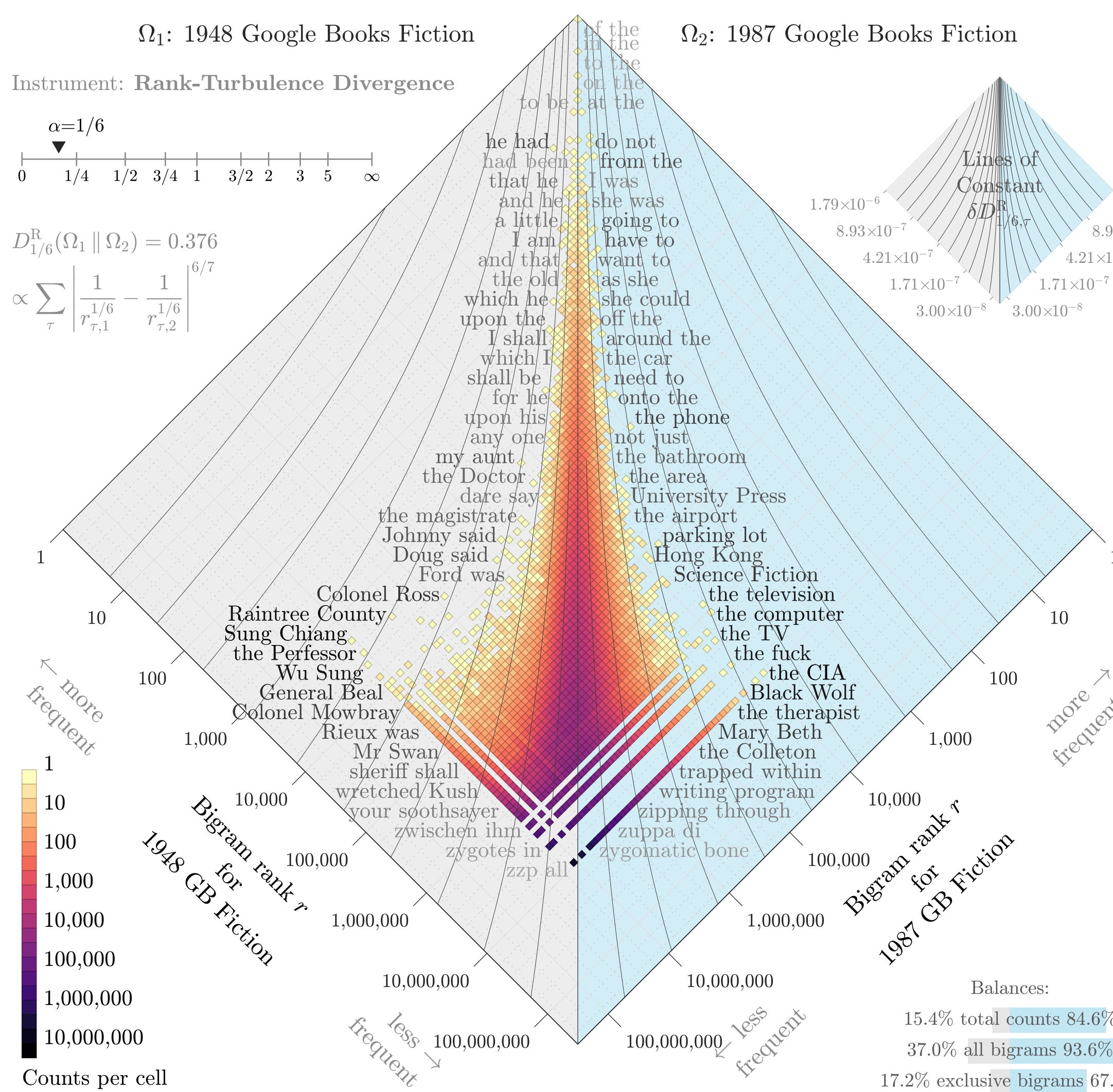
Instrument: Rank-Turbulence Divergence

$\alpha=1/6$



$$D_{1/6}^R(\Omega_1 \parallel \Omega_2) = 0.376$$

$$\propto \sum_{\tau} \left| \frac{1}{r_{\tau,1}^{1/6}} - \frac{1}{r_{\tau,2}^{1/6}} \right|^{6/7}$$



	1	0	1
Sung Chiang	2,076	⇒10,906,071	
the Perfessor	2,976	⇒10,906,071	
Raintree County	2,542	⇒2,963,430	
◁ Wu Sung	4,624	⇒13,162,188	
◁ Lanny had	7,147	⇒13,162,188	
◁ of Raintree	7,185	⇒13,162,188	
9,311,928	⇒8,069	<b>the CIA ▷</b>	
Mr Rock	8,577	⇒10,906,071	
Jacob Levy	4,850	⇒1,901,684	
◁ General Beal	9,831	⇒13,162,188	
Sir Marmaduke	8,910	⇒7,986,514	
◁ Lady Rowley	11,143	⇒13,162,188	
and Lanny	9,183	⇒6,213,864	
◁ Master Copperfield	11,824	⇒13,162,188	
9,311,928	⇒10,685	<b>the KGB ▷</b>	
Wu Yung	9,442	⇒6,213,864	
◁ said Traddles	12,141	⇒13,162,188	
Tai Chung	11,824	⇒10,906,071	
Miss Stanbury	6,513	⇒1,631,259	
The Perfessor	13,169	⇒10,906,071	
Lu Chi	12,141	⇒7,986,514	
Colonel Ross	5,105	⇒794,670	
◁ Yang Chi	15,162	⇒13,162,188	
Colonel Osborne	9,740	⇒2,963,430	
in Raintree	14,049	⇒7,986,514	
1,044,044	⇒6,642	<b>the computer</b>	
said Steerforth	16,405	⇒10,906,071	
the Andamanese	15,270	⇒7,986,514	
9,311,928	⇒16,487	<b>Black Wolf ▷</b>	
◁ Colonel Mowbray	18,600	⇒13,162,188	
Flash said	17,686	⇒10,906,071	
◁ the Seaflower	18,946	⇒13,162,188	
◁ Scobie said	19,423	⇒13,162,188	
◁ Madame Olenska	19,663	⇒13,162,188	
Lanny was	14,307	⇒5,076,082	
4,055,776	⇒13,151	<b>the fuck</b>	
Miss Murdstone	7,638	⇒1,068,541	
9,311,928	⇒18,169	<b>in Vietnam ▷</b>	
9,311,928	⇒18,433	<b>Bantam Books ▷</b>	
◁ Nuncombe Putney	20,950	⇒13,162,188	

Balances:  
 15.4% total counts 84.6%  
 37.0% all bigrams 93.6%  
 17.2% exclusive bigrams 67.3%

47.8%—52.2%

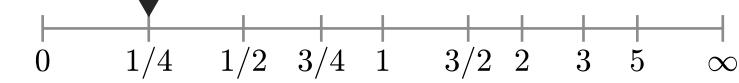
$\Omega_1$ : 1948 Google Books Fiction

$\Omega_2$ : 1987 Google Books Fiction

Divergence contribution  $\delta D_{1/4,\tau}^R (\times 10^{-4}\%)$

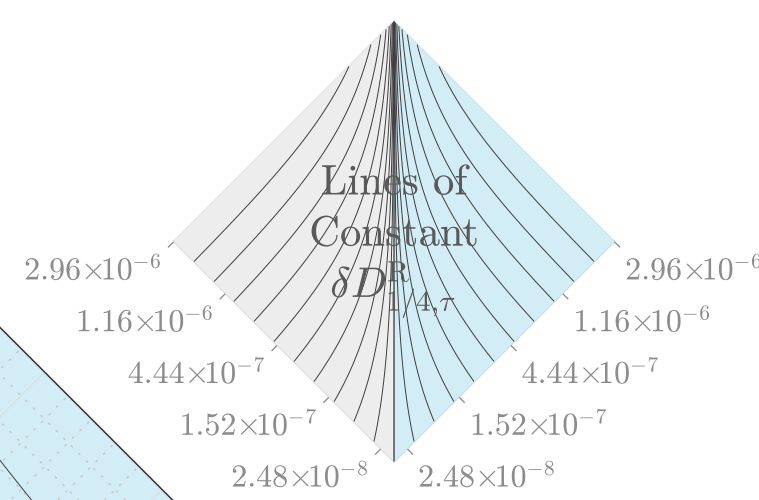
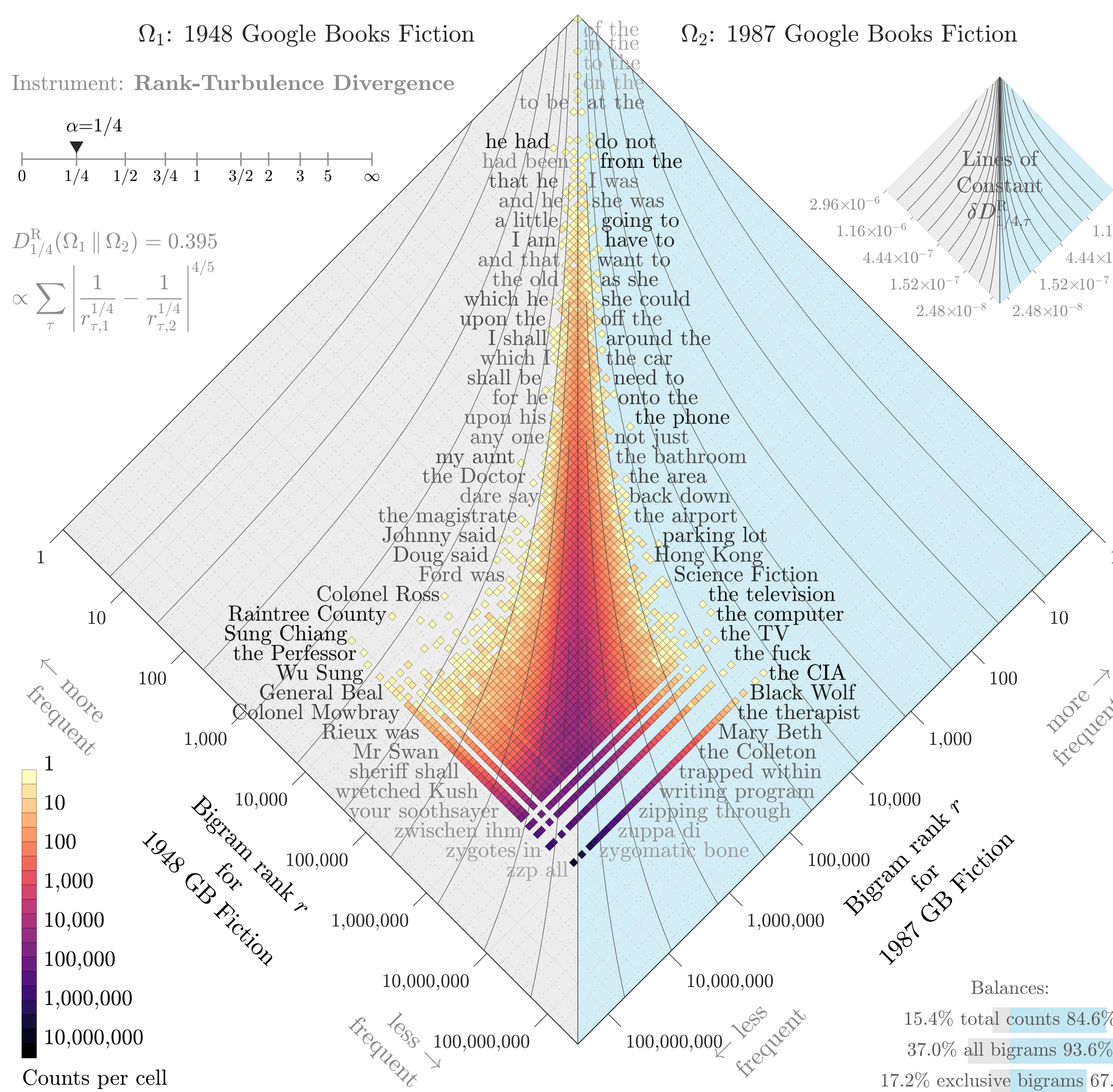
Instrument: Rank-Turbulence Divergence

$\alpha=1/4$



$$D_{1/4}^R(\Omega_1 \parallel \Omega_2) = 0.395$$

$$\propto \sum_{\tau} \left| \frac{1}{r_{\tau,1}^{1/4}} - \frac{1}{r_{\tau,2}^{1/4}} \right|^{4/5}$$



	1	0	1
Sung Chiang	2,076	⇒	10,906,071
the Perfessor	2,976	⇒	10,906,071
Raintree County	2,542	⇒	2,963,430
he had	8	⇒	19
◁ Wu Sung	4,624	⇒	13,162,188
Jacob Levy	4,850	⇒	1,901,684
◁ Lanny had	7,147	⇒	13,162,188
◁ of Raintree	7,185	⇒	13,162,188
9,311,928	⇒	8,069	the CIA ▷
Mr Rock	8,577	⇒	10,906,071
Colonel Ross	5,105	⇒	794,670
Sir Marmaduke	8,910	⇒	7,986,514
◁ General Beal	9,831	⇒	13,162,188
19	⇒	10	from the
Miss Stanbury	6,513	⇒	1,631,259
and Lanny	9,183	⇒	6,213,864
Wu Yung	9,442	⇒	6,213,864
◁ Lady Rowley	11,143	⇒	13,162,188
9,311,928	⇒	10,685	the KGB ▷
1,044,044	⇒	6,642	the computer
◁ Master Copperfield	11,824	⇒	13,162,188
◁ said Traddles	12,141	⇒	13,162,188
Tai Chung	11,824	⇒	10,906,071
Colonel Osborne	9,740	⇒	2,963,430
Lu Chi	12,141	⇒	7,986,514
806,773	⇒	6,972	the television
The Perfessor	13,169	⇒	10,906,071
Miss Murdstone	7,638	⇒	1,068,541
◁ Yang Chi	15,162	⇒	13,162,188
in Raintree	14,049	⇒	7,986,514
1,915,885	⇒	10,572	the TV
Lady Glencora	11,252	⇒	2,300,157
the Andamanese	15,270	⇒	7,986,514
4,055,776	⇒	13,151	the fuck
said Steerforth	16,405	⇒	10,906,071
uncle Toby	10,959	⇒	1,901,684
6,530	⇒	918	the phone
Lanny was	14,307	⇒	5,076,082
9,311,928	⇒	16,487	Black Wolf ▷
Flash said	17,686	⇒	10,906,071

Balances:  
 15.4% total counts 84.6%  
 37.0% all bigrams 93.6%  
 17.2% exclusive bigrams 67.3%

47.8%—52.2%

Counts per cell

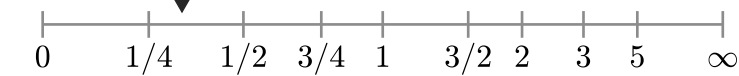
$\Omega_1$ : 1948 Google Books Fiction

$\Omega_2$ : 1987 Google Books Fiction

Divergence contribution  $\delta D_{1/3,\tau}^R (\times 10^{-4}\%)$

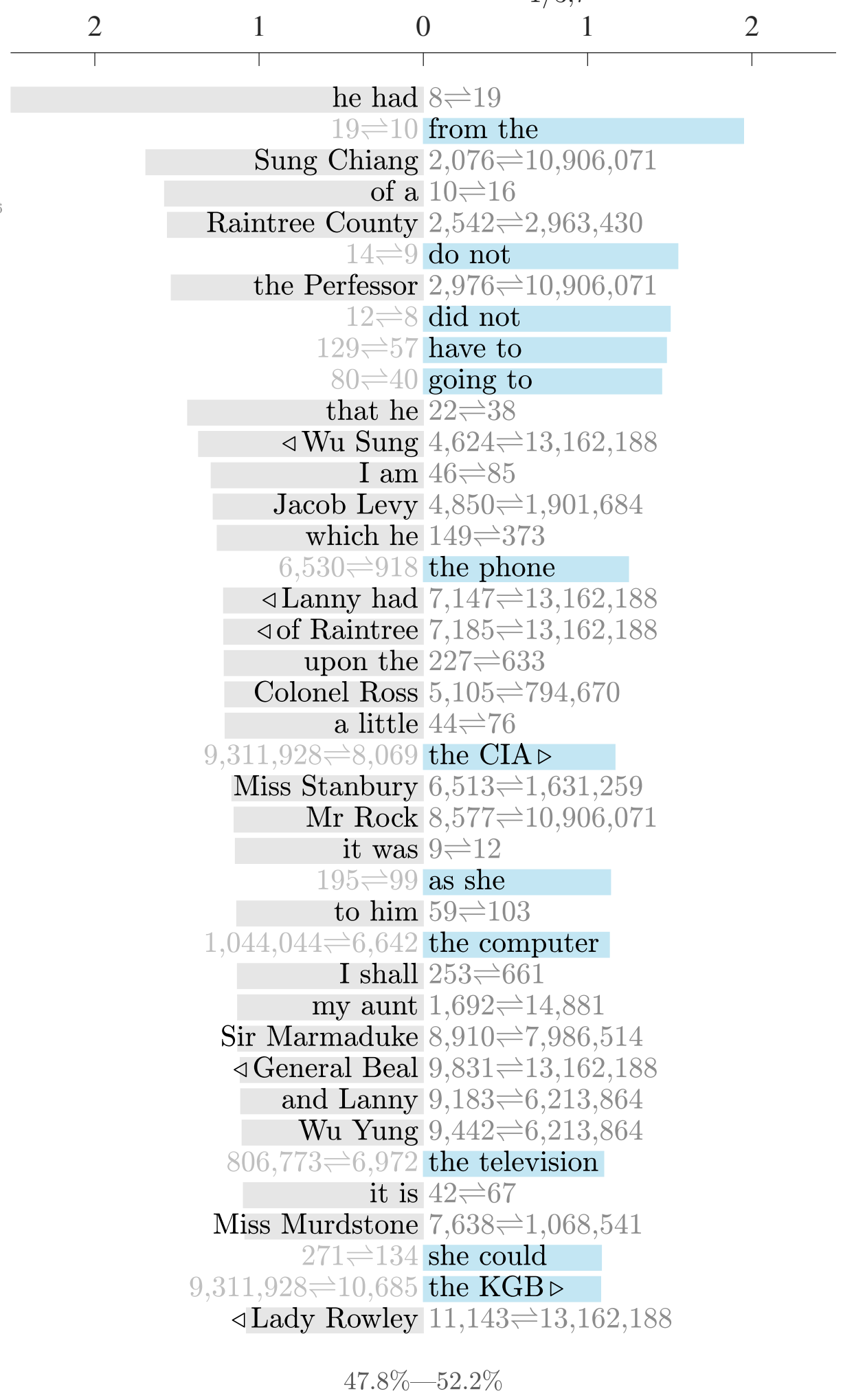
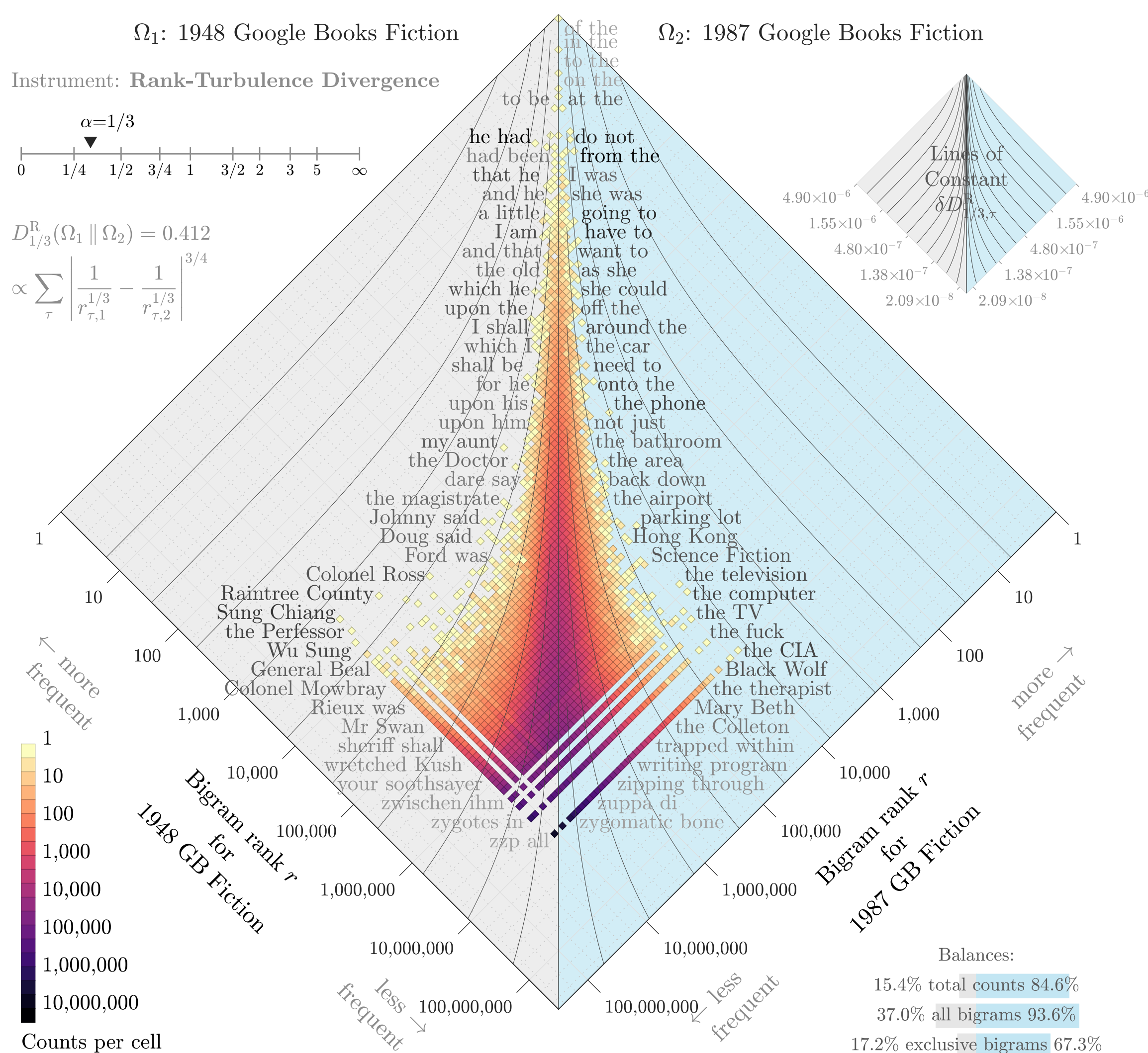
Instrument: Rank-Turbulence Divergence

$\alpha=1/3$



$$D_{1/3}^R(\Omega_1 \parallel \Omega_2) = 0.412$$

$$\propto \sum_{\tau} \left| \frac{1}{r_{\tau,1}^{1/3}} - \frac{1}{r_{\tau,2}^{1/3}} \right|^{3/4}$$



Balances:  
 15.4% total counts 84.6%  
 37.0% all bigrams 93.6%  
 17.2% exclusive bigrams 67.3%

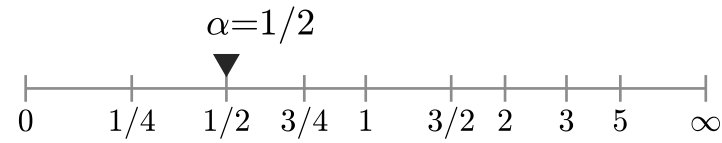
47.8%—52.2%

$\Omega_1$ : 1948 Google Books Fiction

$\Omega_2$ : 1987 Google Books Fiction

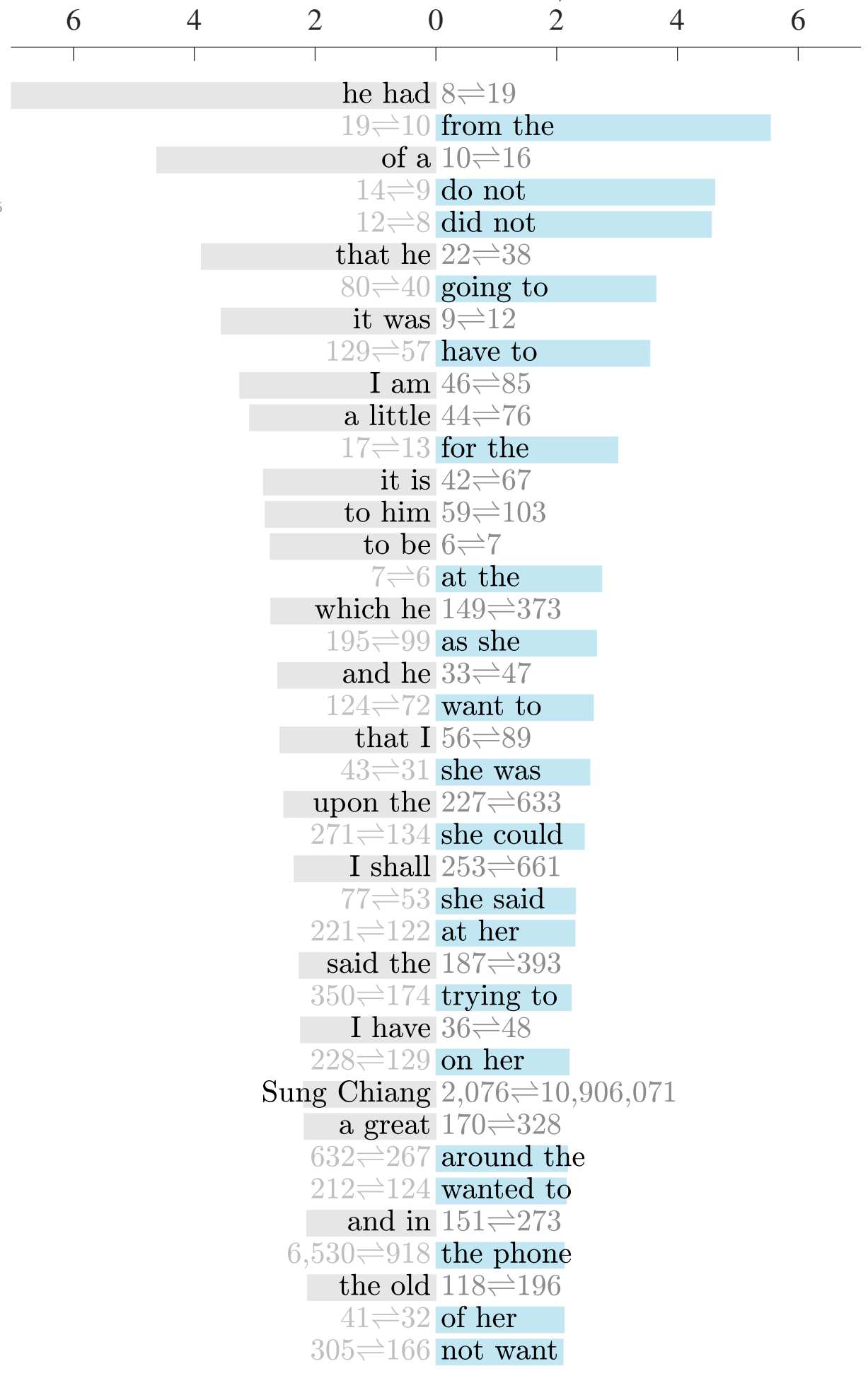
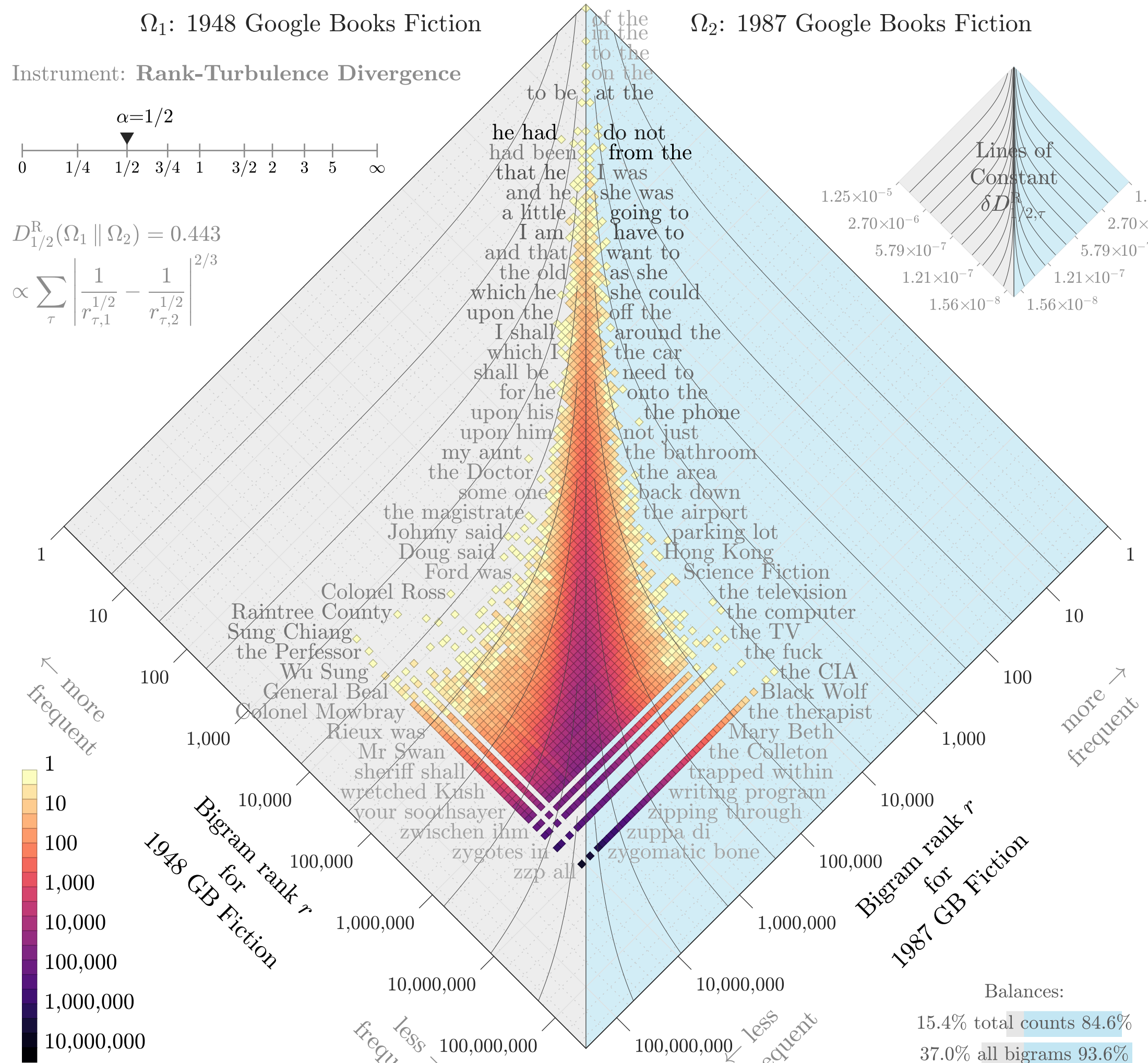
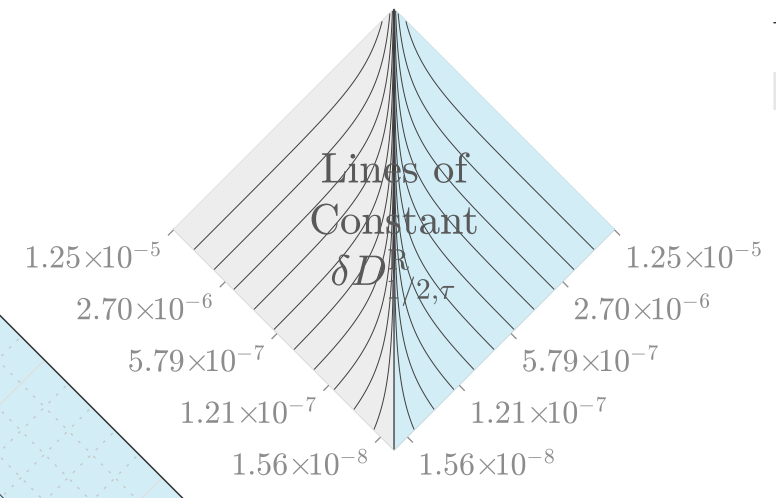
Divergence contribution  $\delta D_{1/2,\tau}^R (\times 10^{-4}\%)$

Instrument: Rank-Turbulence Divergence



$$D_{1/2}^R(\Omega_1 \parallel \Omega_2) = 0.443$$

$$\propto \sum_{\tau} \left| \frac{1}{r_{\tau,1}^{1/2}} - \frac{1}{r_{\tau,2}^{1/2}} \right|^{2/3}$$



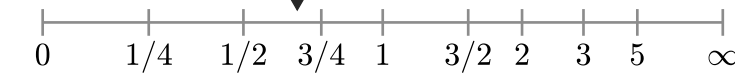
$\Omega_1$ : 1948 Google Books Fiction

$\Omega_2$ : 1987 Google Books Fiction

Divergence contribution  $\delta D_{2/3,\tau}^R (\times 10^{-3}\%)$

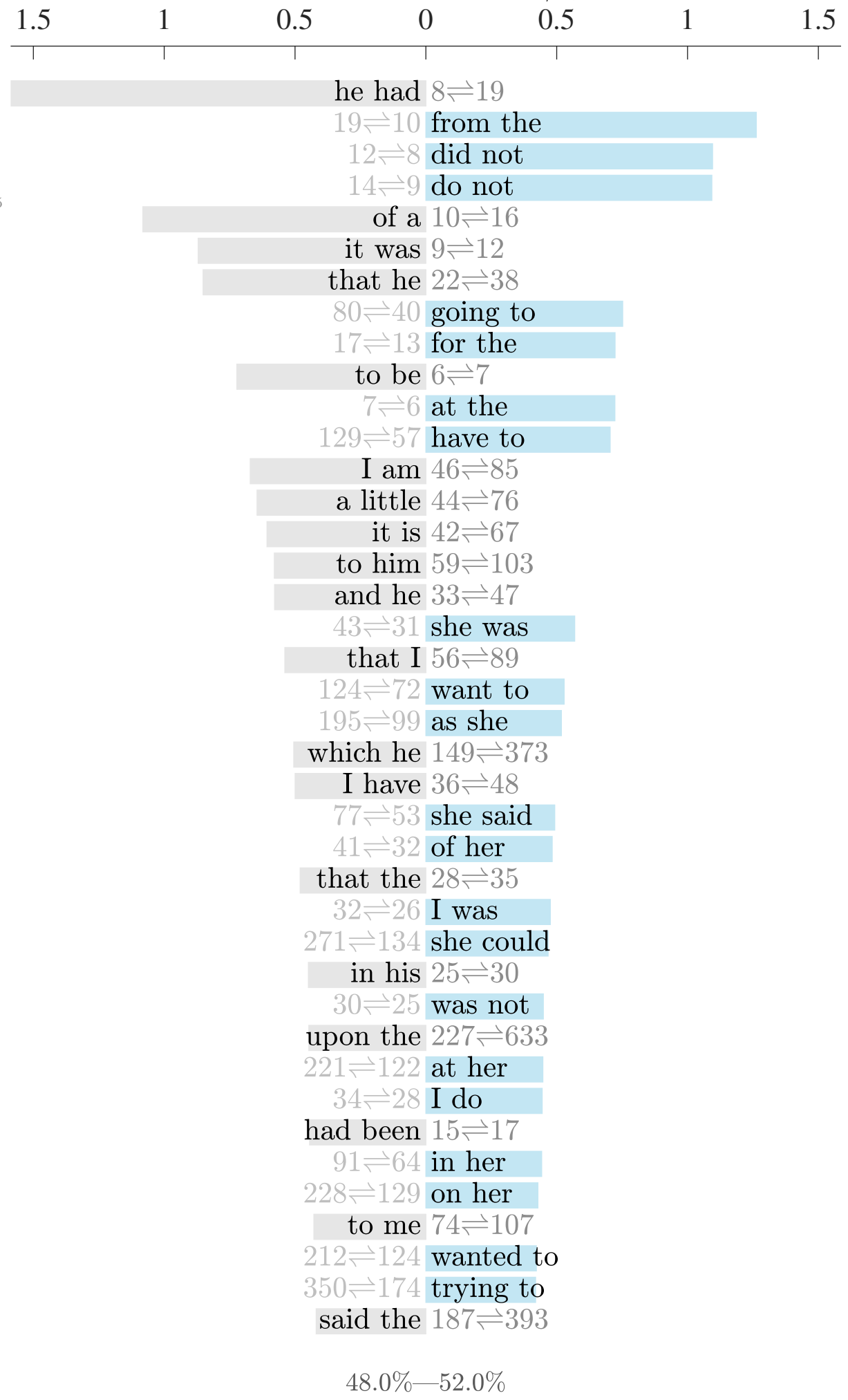
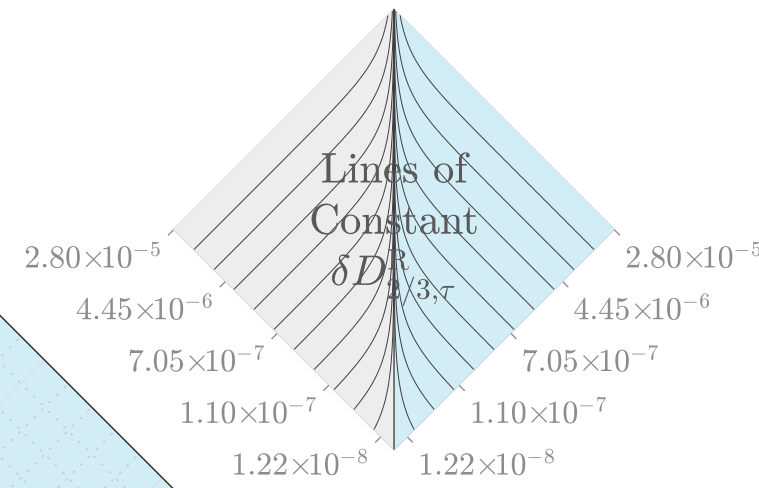
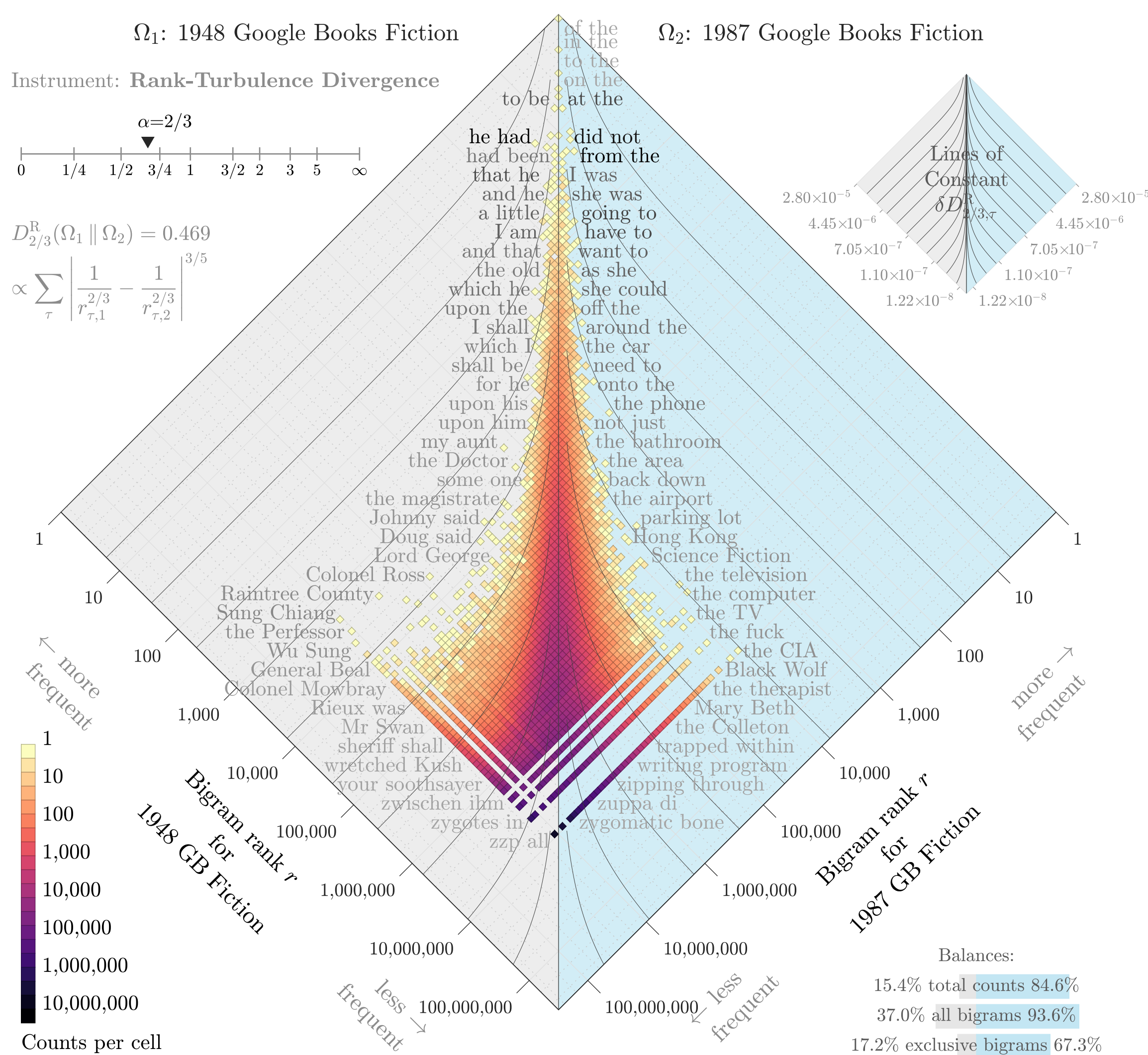
Instrument: Rank-Turbulence Divergence

$\alpha=2/3$



$$D_{2/3}^R(\Omega_1 \parallel \Omega_2) = 0.469$$

$$\propto \sum_{\tau} \left| \frac{1}{r_{\tau,1}^{2/3}} - \frac{1}{r_{\tau,2}^{2/3}} \right|^{3/5}$$



$\Omega_1$ : 1948 Google Books Fiction

$\Omega_2$ : 1987 Google Books Fiction

Divergence contribution  $\delta D_{1,\tau}^R (\times 10^{-3}\%)$

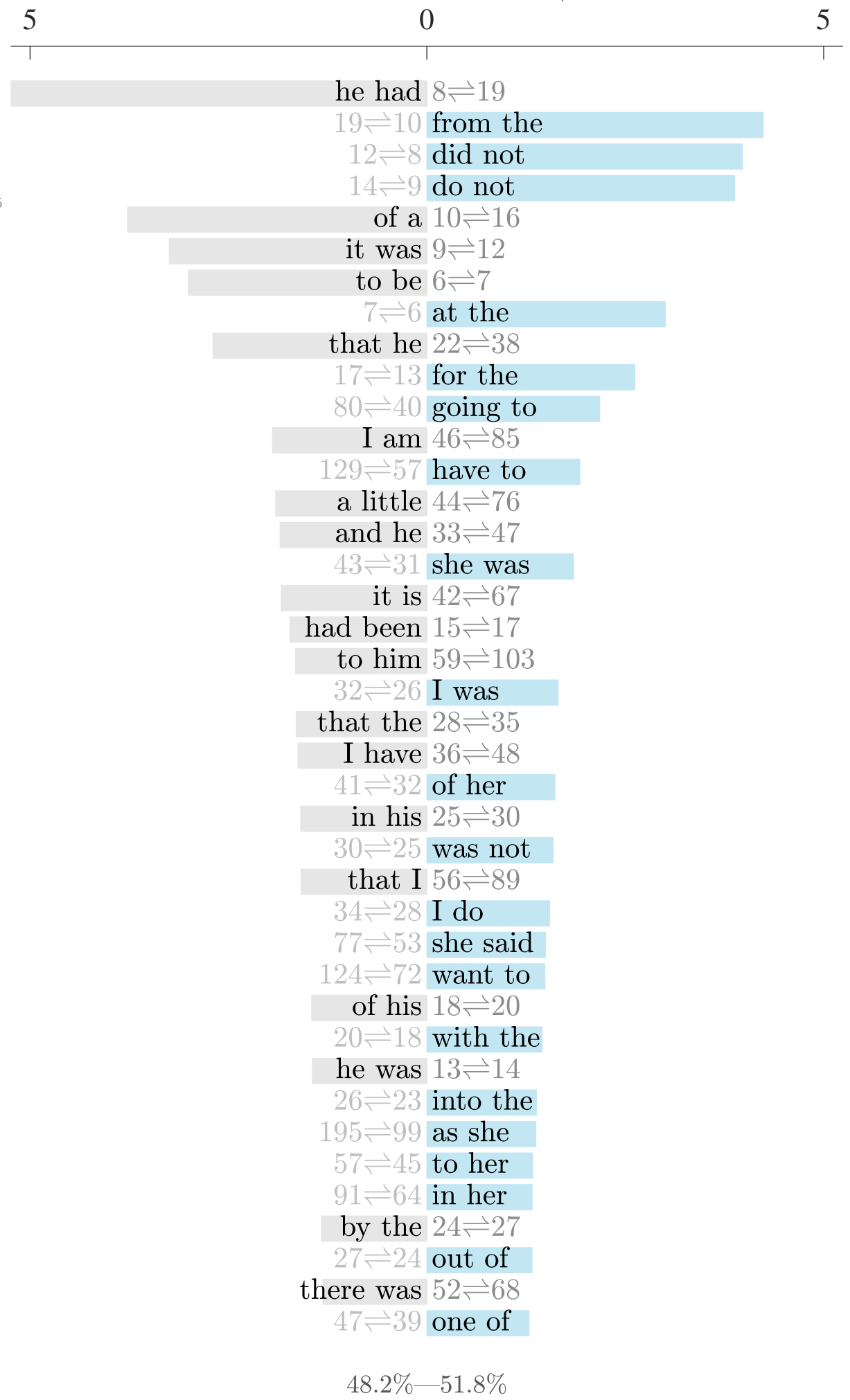
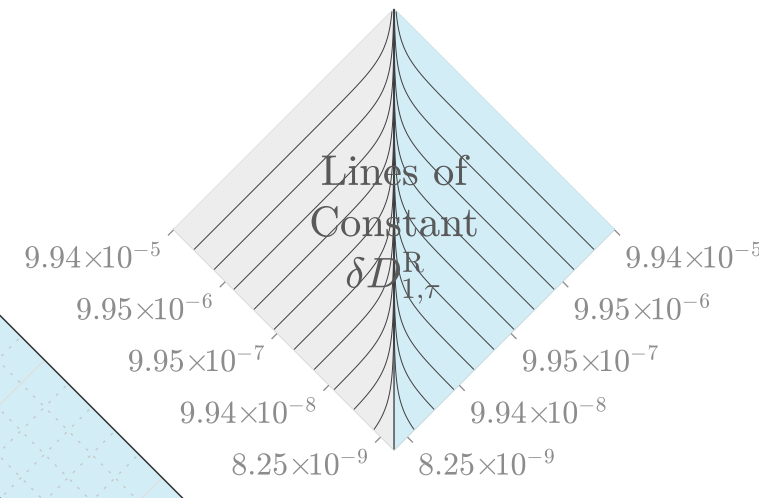
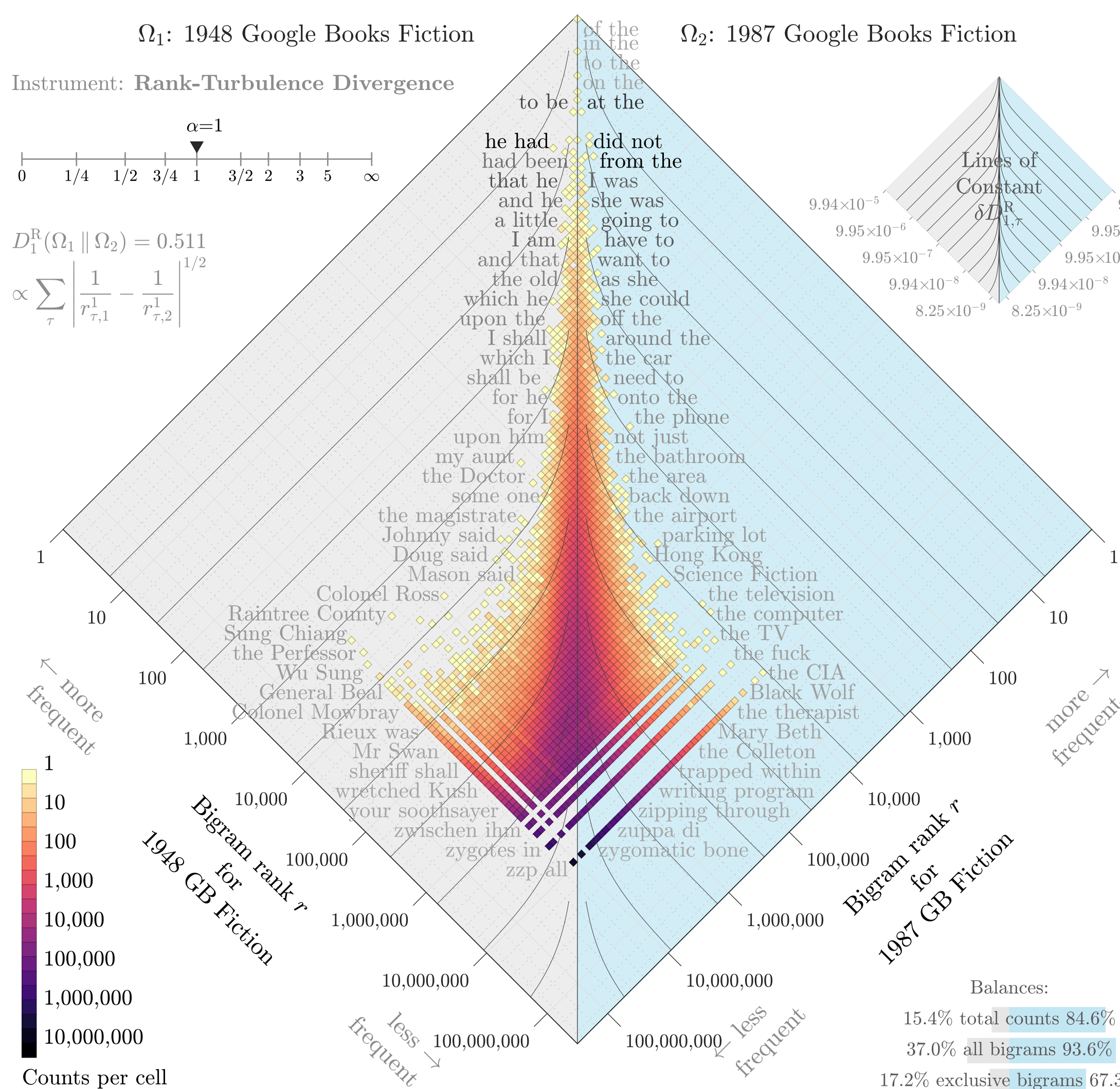
Instrument: Rank-Turbulence Divergence

$\alpha=1$



$$D_1^R(\Omega_1 \parallel \Omega_2) = 0.511$$

$$\propto \sum_{\tau} \left| \frac{1}{r_{\tau,1}^1} - \frac{1}{r_{\tau,2}^1} \right|^{1/2}$$



Balances:  
 15.4% total counts 84.6%  
 37.0% all bigrams 93.6%  
 17.2% exclusive bigrams 67.3%

48.2%—51.8%



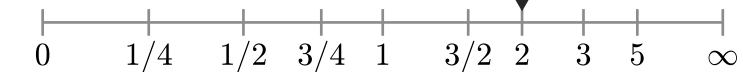
$\Omega_1$ : 1948 Google Books Fiction

$\Omega_2$ : 1987 Google Books Fiction

Divergence contribution  $\delta D_{2,\tau}^R$  (%)

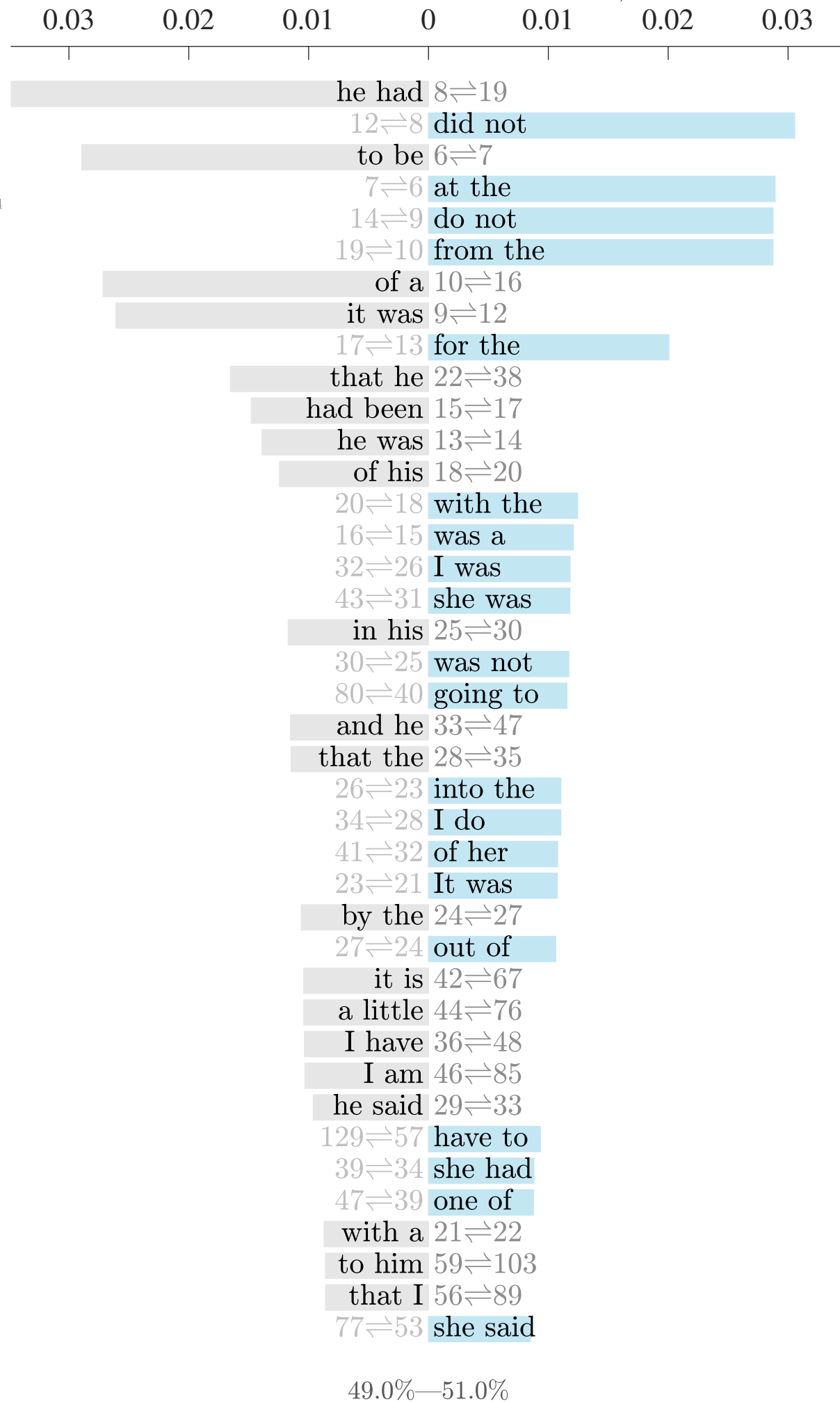
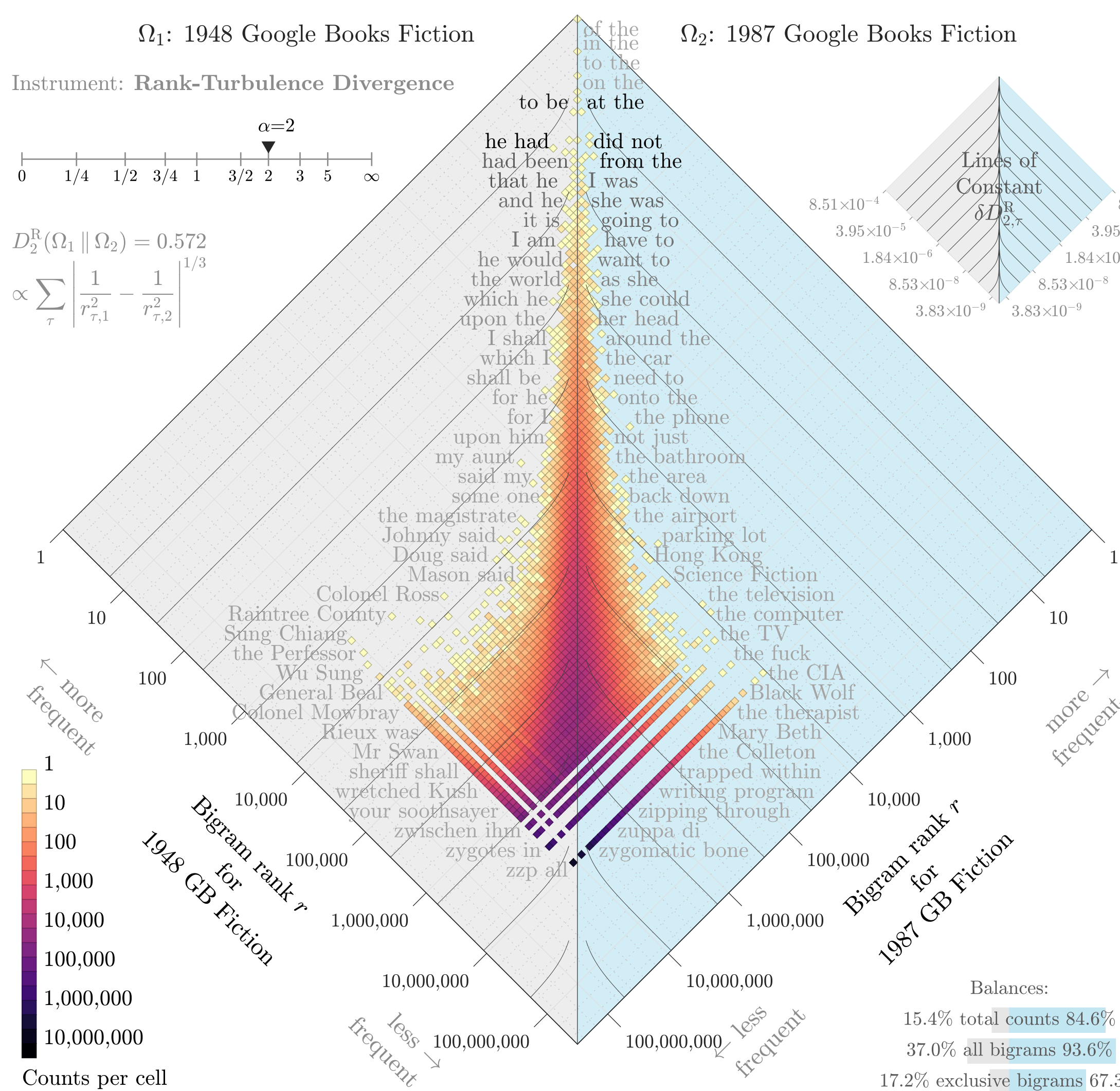
Instrument: Rank-Turbulence Divergence

$\alpha=2$



$$D_2^R(\Omega_1 \parallel \Omega_2) = 0.572$$

$$\propto \sum_{\tau} \left| \frac{1}{r_{\tau,1}^2} - \frac{1}{r_{\tau,2}^2} \right|^{1/3}$$



49.0%—51.0%

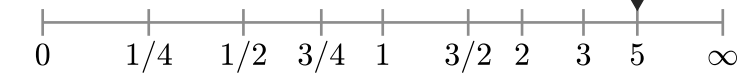
$\Omega_1$ : 1948 Google Books Fiction

$\Omega_2$ : 1987 Google Books Fiction

Divergence contribution  $\delta D_{5,\tau}^R(\%)$

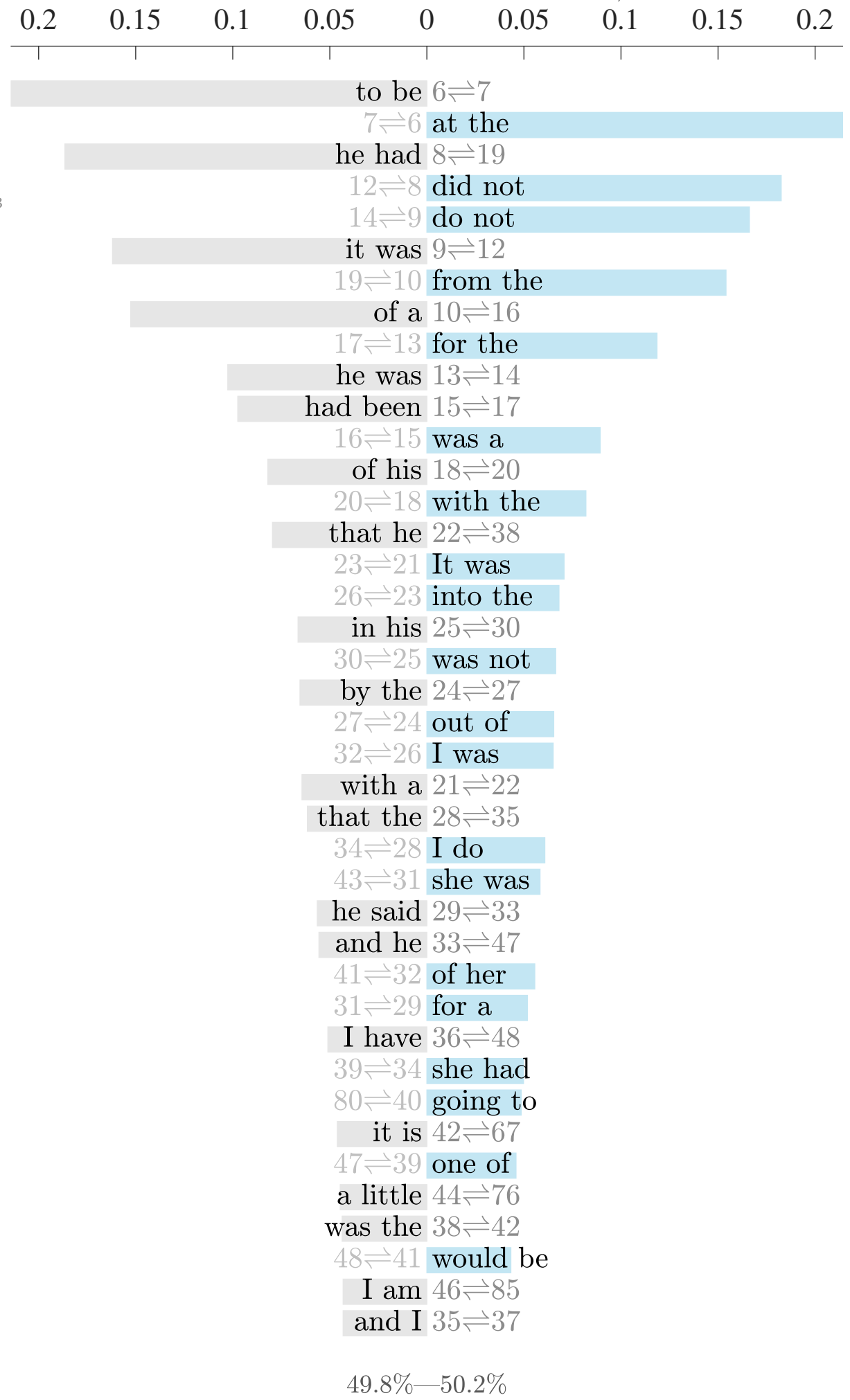
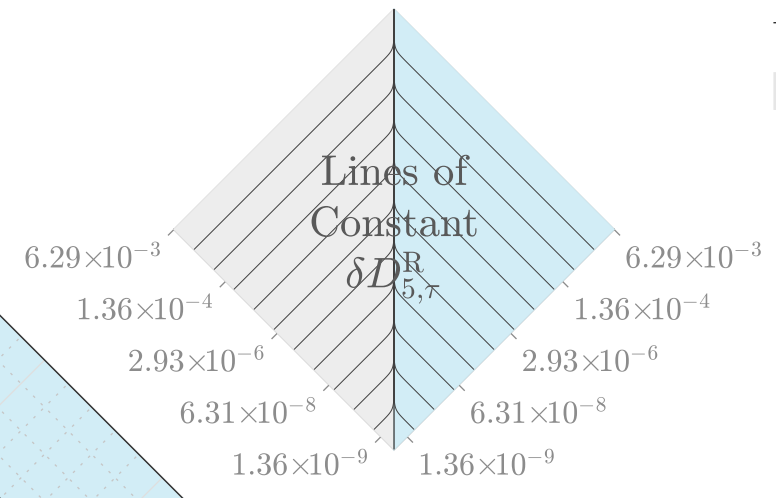
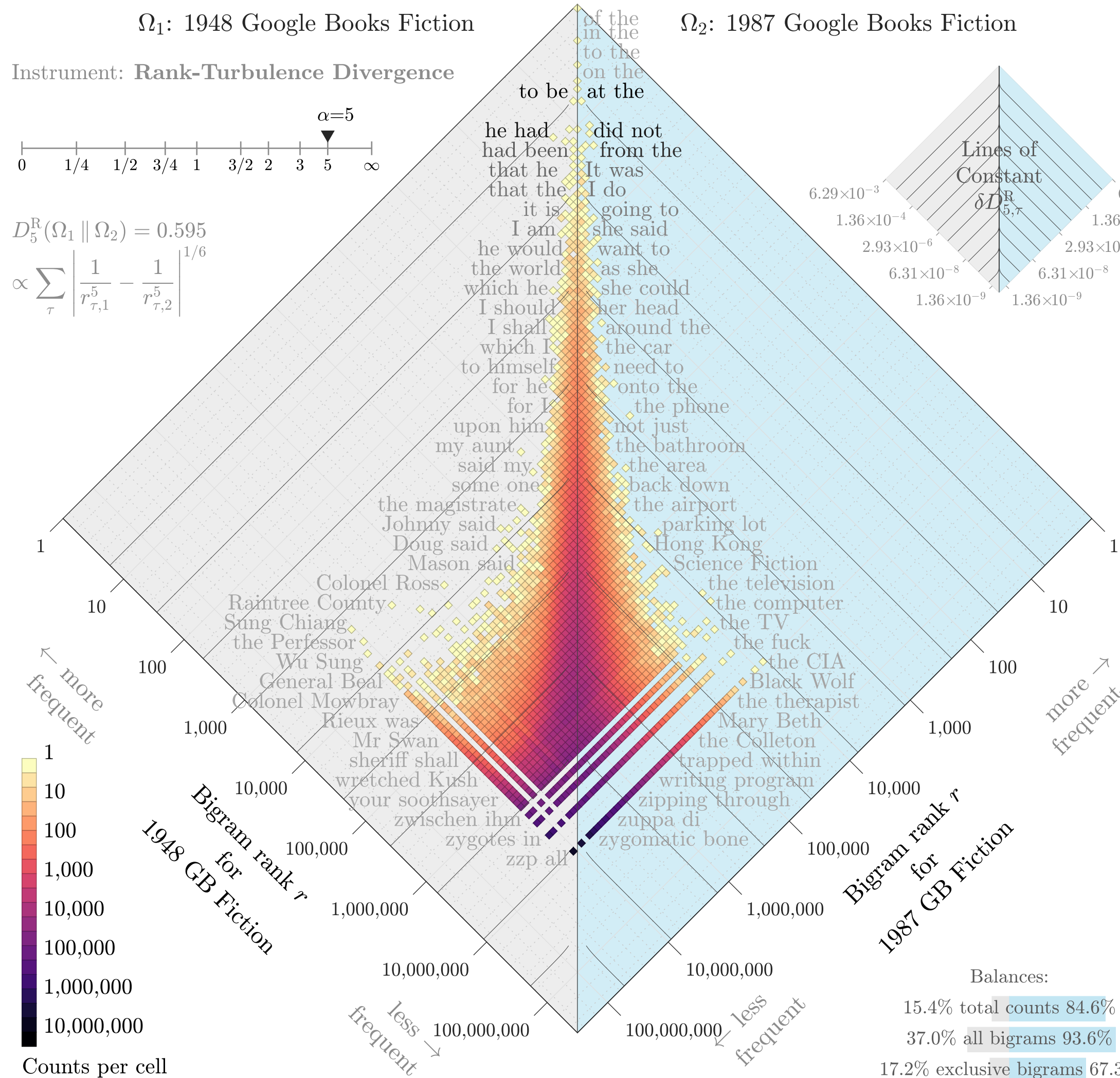
Instrument: Rank-Turbulence Divergence

$\alpha=5$



$$D_5^R(\Omega_1 \parallel \Omega_2) = 0.595$$

$$\propto \sum_{\tau} \left| \frac{1}{r_{\tau,1}^5} - \frac{1}{r_{\tau,2}^5} \right|^{1/6}$$



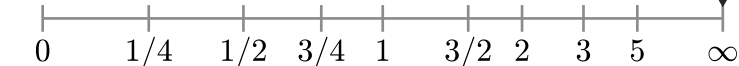
$\Omega_1$ : 1948 Google Books Fiction

$\Omega_2$ : 1987 Google Books Fiction

Divergence contribution  $\delta D_{\infty, \tau}^R$  (%)

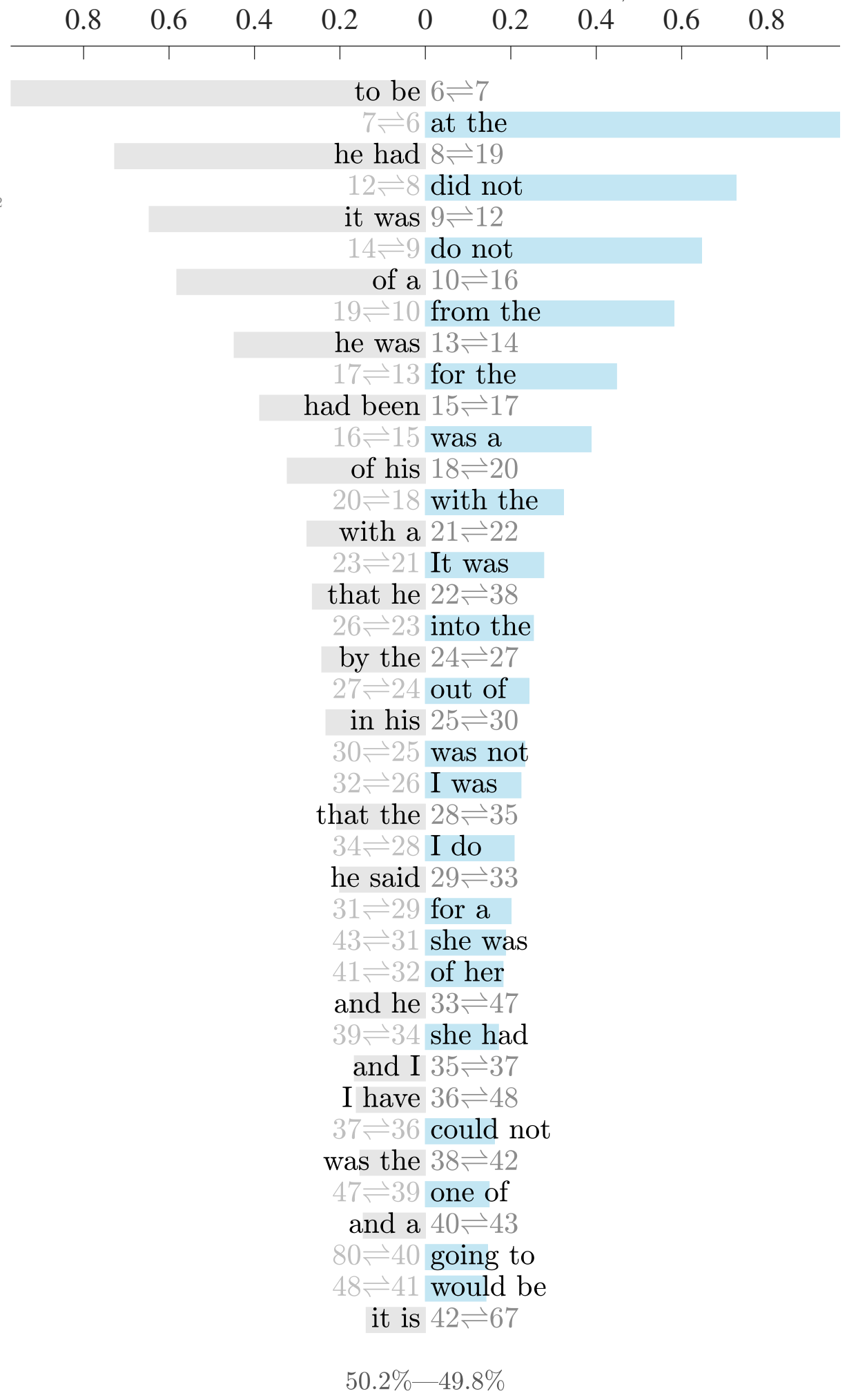
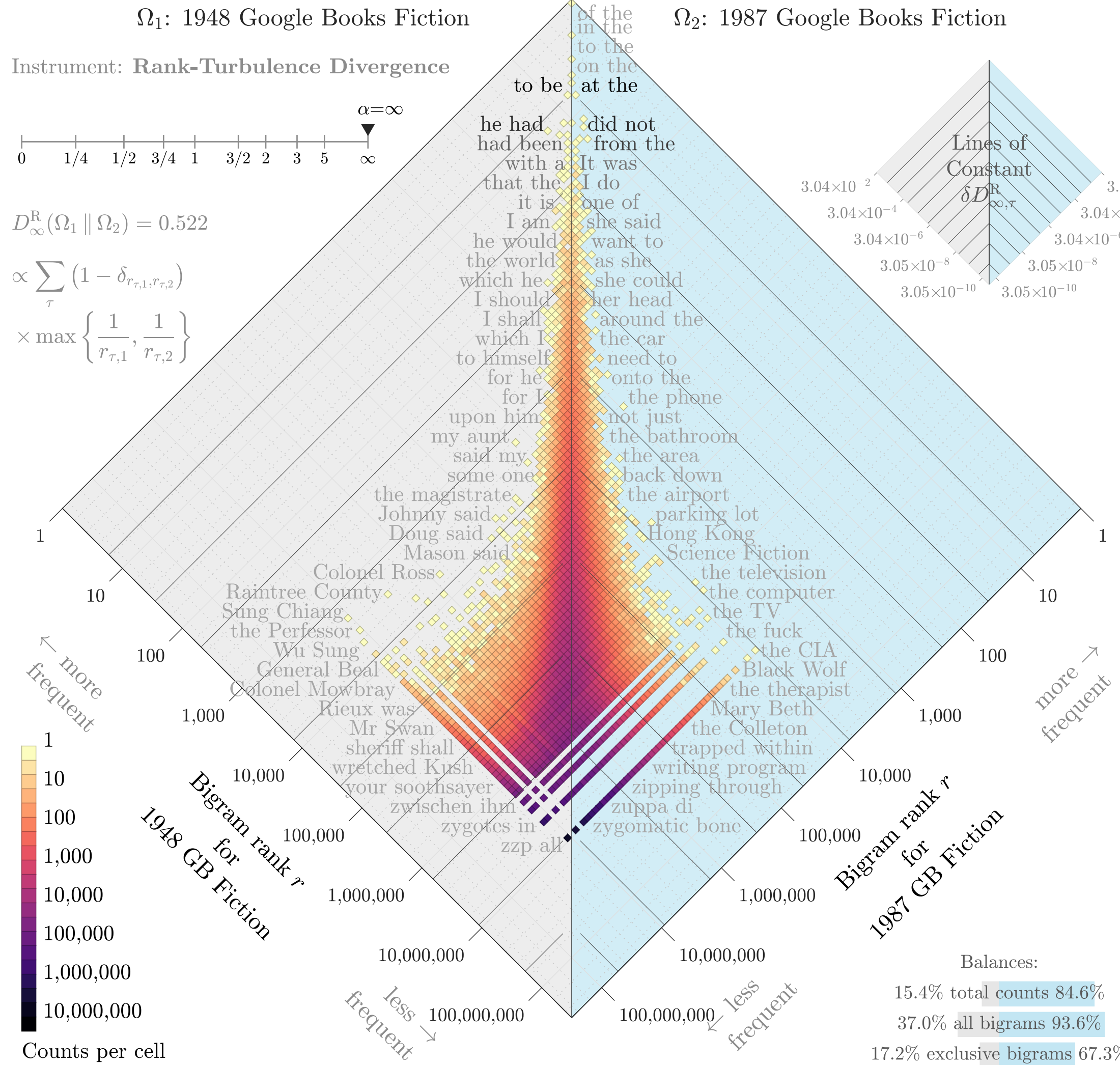
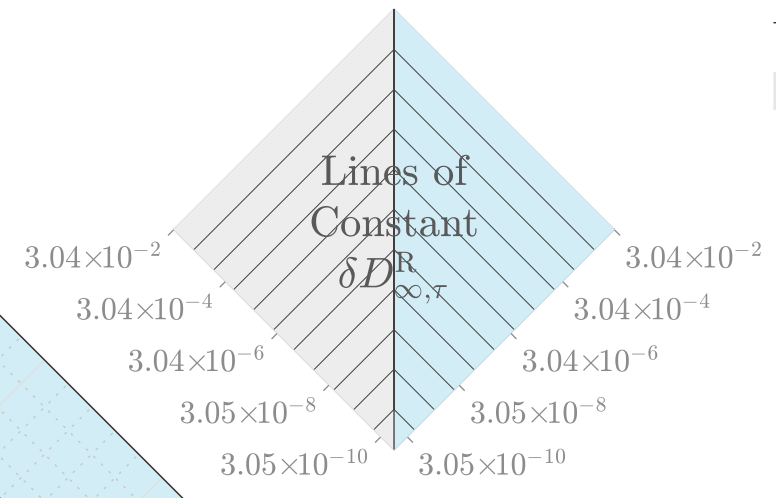
Instrument: Rank-Turbulence Divergence

$\alpha = \infty$



$$D_{\infty}^R(\Omega_1 \parallel \Omega_2) = 0.522$$

$$\propto \sum_{\tau} (1 - \delta_{r_{\tau,1}, r_{\tau,2}}) \times \max \left\{ \frac{1}{r_{\tau,1}}, \frac{1}{r_{\tau,2}} \right\}$$



Balances:  
 15.4% total counts 84.6%  
 37.0% all bigrams 93.6%  
 17.2% exclusive bigrams 67.3%

50.2%—49.8%