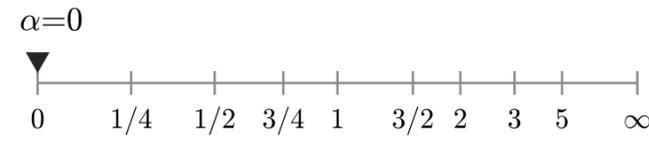


$\Omega_1$ : Twitter on 2020/03/12

$\Omega_2$ : Twitter on 2020/05/30

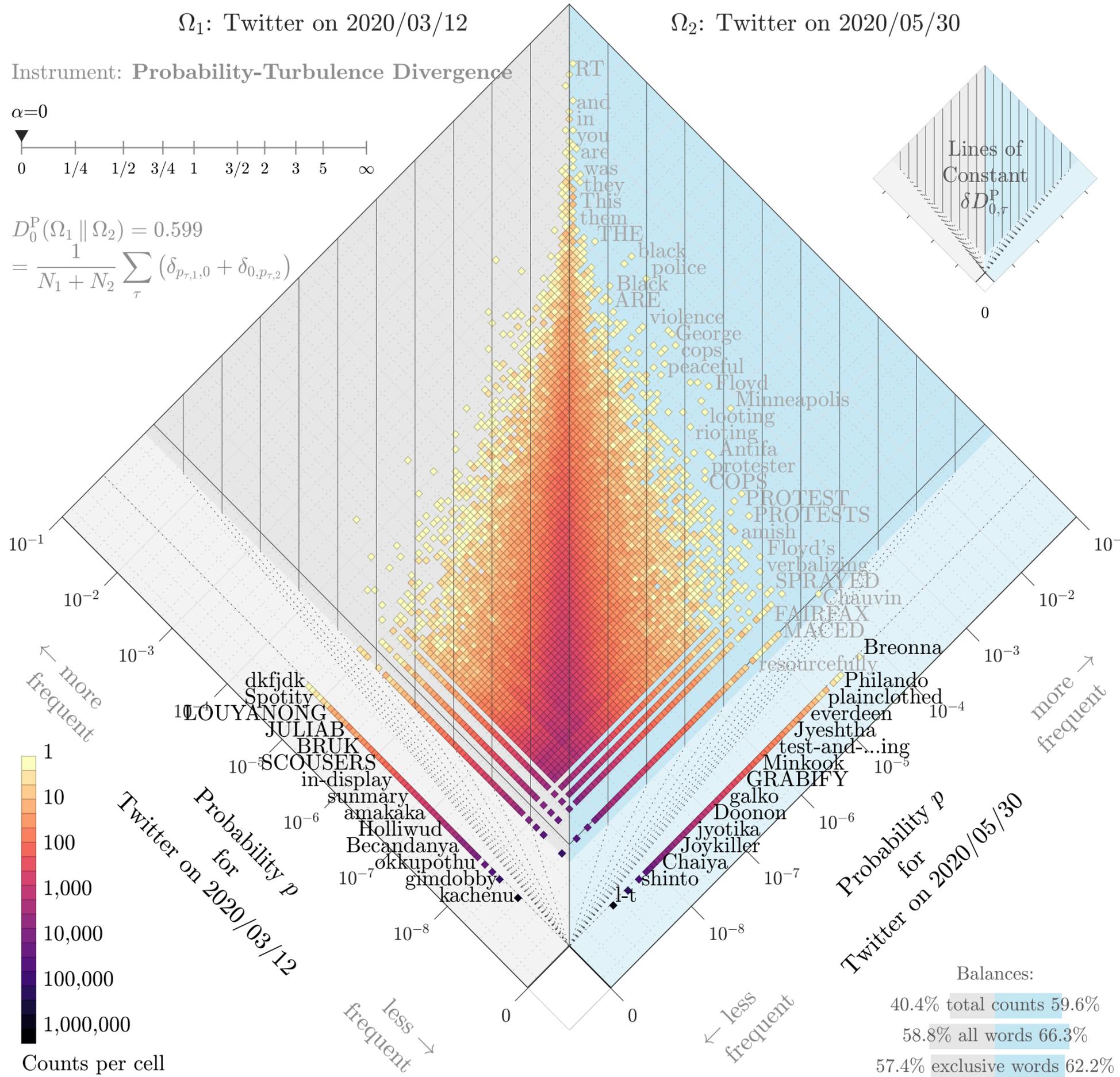
Divergence contribution  $\delta D_{0,\tau}^P (\times 10^{-5}\%)$

Instrument: Probability-Turbulence Divergence



$$D_0^P(\Omega_1 \parallel \Omega_2) = 0.599$$

$$= \frac{1}{N_1 + N_2} \sum_{\tau} (\delta_{p_{\tau,1},0} + \delta_{0,p_{\tau,2}})$$



6	4	2	0	2	4	6
1,717,011.5	⇒	1,327	Breonna▷			
1,717,011.5	⇒	2,719	Philando▷			
1,717,011.5	⇒	2,966.5	Ahmaud▷			
1,717,011.5	⇒	3,438	Talington▷			
1,717,011.5	⇒	3,456	chauvin▷			
◁	dkfjdk	3,873	⇒	1,797,555		
1,717,011.5	⇒	4,349	MadamD▷			
◁	autoplayer	4,408	⇒	1,797,555		
1,717,011.5	⇒	4,414	post-Tuesday▷			
1,717,011.5	⇒	4,619.5	Liftoff▷			
1,717,011.5	⇒	4,654.5	Arbery▷			
1,717,011.5	⇒	4,671.5	plainclothed▷			
1,717,011.5	⇒	4,716.5	WHITESPLAINING▷			
◁	Spotify	4,996	⇒	1,797,555		
1,717,011.5	⇒	5,076	Antifa-like▷			
◁	Wajngarten	5,115.5	⇒	1,797,555		
1,717,011.5	⇒	5,119.5	BODYCAMS▷			
◁	DIVOC	5,605.5	⇒	1,797,555		
1,717,011.5	⇒	5,764.5	Mujinga▷			
1,717,011.5	⇒	5,856.5	Horsford▷			
◁	GOBERT	6,101.5	⇒	1,797,555		
1,717,011.5	⇒	5,943	Demariontae▷			
◁	Socking	6,333.5	⇒	1,797,555		
1,717,011.5	⇒	6,155	performati▷			
◁	Armanto	6,379.5	⇒	1,797,555		
1,717,011.5	⇒	6,217.5	floyd's▷			
1,717,011.5	⇒	6,402	GINJO▷			
1,717,011.5	⇒	6,414	anarchtic▷			
1,717,011.5	⇒	6,466.5	Khosa▷			
1,717,011.5	⇒	6,727	Philonise▷			
1,717,011.5	⇒	6,872.5	Top-IT▷			
◁	AIRLINES'	7,135.5	⇒	1,797,555		
◁	Tabung	7,292	⇒	1,797,555		
1,717,011.5	⇒	7,059.5	ADELABU▷			
1,717,011.5	⇒	7,091	Chauvin's▷			
1,717,011.5	⇒	7,123	Timpa▷			
1,717,011.5	⇒	7,137	SJDHDKXTCKDGXKDGSKD...MHE▷			
◁	ehh'	7,504.5	⇒	1,797,555		
1,717,011.5	⇒	7,279	Atanta▷			
1,717,011.5	⇒	7,358	MotherCare▷			

Balances:  
 40.4% total counts 59.6%  
 58.8% all words 66.3%  
 57.4% exclusive words 62.2%

45.0%—55.0%



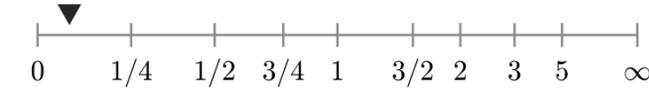
$\Omega_1$ : Twitter on 2020/03/12

$\Omega_2$ : Twitter on 2020/05/30

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

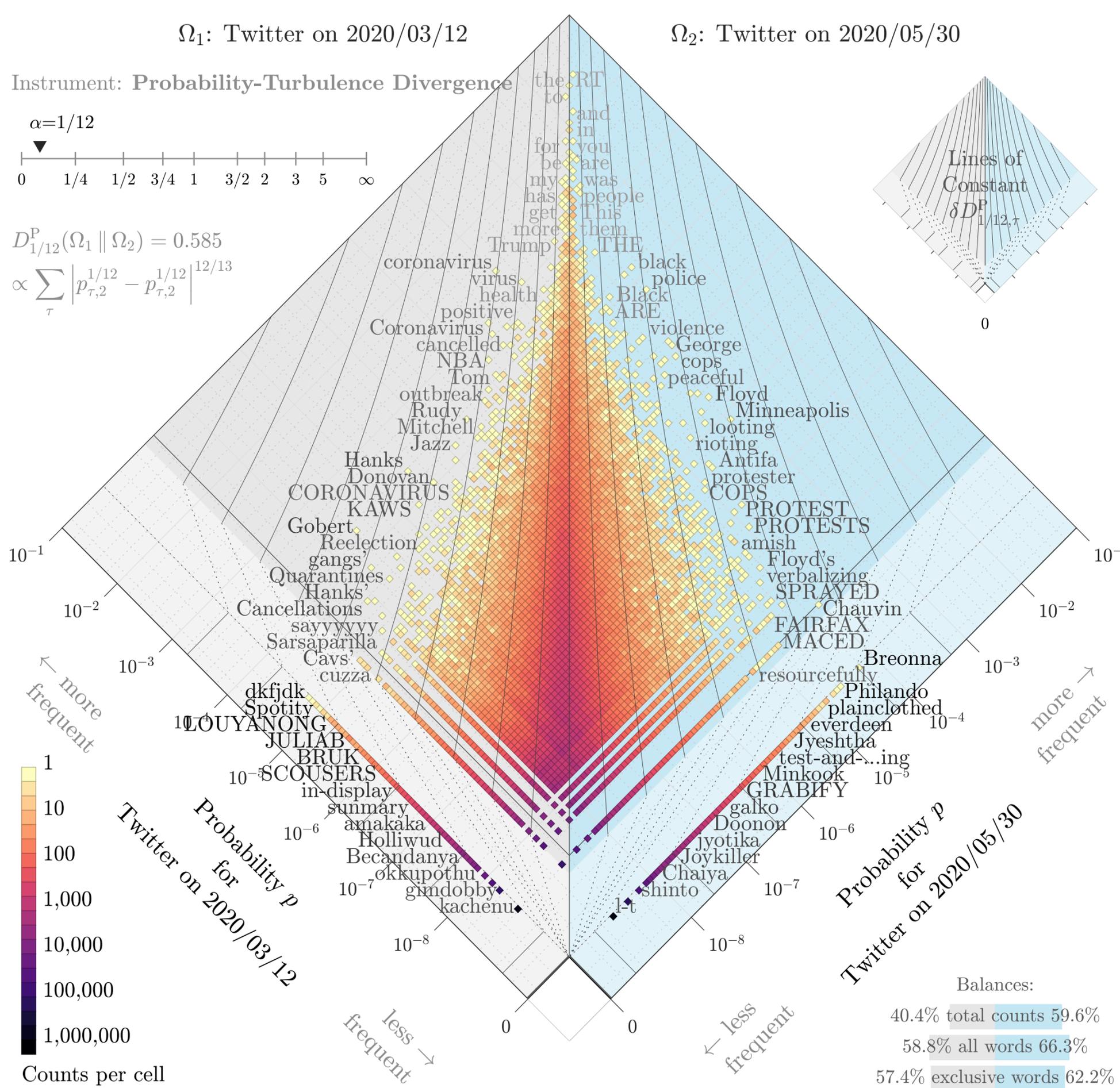
Instrument: Probability-Turbulence Divergence

$\alpha=1/12$



$$D_{1/12}^P(\Omega_1 \parallel \Omega_2) = 0.585$$

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



1	0	1
1,717,011.5	1,327	Breonna▷
1,717,011.5	2,719	Philando▷
1,717,011.5	2,966.5	Ahmaud▷
1,717,011.5	3,438	Talington▷
1,717,011.5	3,456	chauvin▷
		◁dkfjdk 3,873
1,717,011.5	4,349	MadamD▷
		◁autoplayer 4,408
1,717,011.5	4,414	post-Tuesday▷
1,717,011.5	4,619.5	Liftoff▷
1,717,011.5	4,654.5	Arbery▷
1,717,011.5	4,671.5	plainclothed▷
1,717,011.5	4,716.5	WHITESPLAINING▷
		◁Spotify 4,996
1,717,011.5	5,076	Antifa-like▷
		◁Wajngarten 5,115.5
1,717,011.5	5,119.5	BODYCAMS▷
		◁DIVOC 5,605.5
1,717,011.5	5,764.5	Mujinga▷
1,717,011.5	5,856.5	Horsford▷
		◁GOBERT 6,101.5
1,717,011.5	5,943	Demariontae▷
		◁Socking 6,333.5
1,717,011.5	6,155	performati▷
		◁Armanto 6,379.5
1,717,011.5	6,217.5	floyd's▷
1,717,011.5	6,402	GINJO▷
1,717,011.5	6,414	anarchtic▷
1,717,011.5	6,466.5	Khosa▷
1,717,011.5	6,727	Philonise▷
1,717,011.5	6,872.5	Top-IT▷
		◁AIRLINES' 7,135.5
		◁Tabung 7,292
1,717,011.5	7,059.5	ADELABU▷
1,717,011.5	7,091	Chauvin's▷
1,717,011.5	7,123	Timpa▷
1,717,011.5	7,137	SJDHDKXTCKDGXKDGSKD...MHE▷
		◁ehh' 7,504.5
1,717,011.5	7,279	Atanta▷
1,717,011.5	7,358	MotherCare▷

Balances:  
 40.4% total counts 59.6%  
 58.8% all words 66.3%  
 57.4% exclusive words 62.2%

46.2%—53.8%

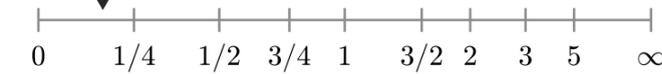
$\Omega_1$ : Twitter on 2020/03/12

$\Omega_2$ : Twitter on 2020/05/30

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

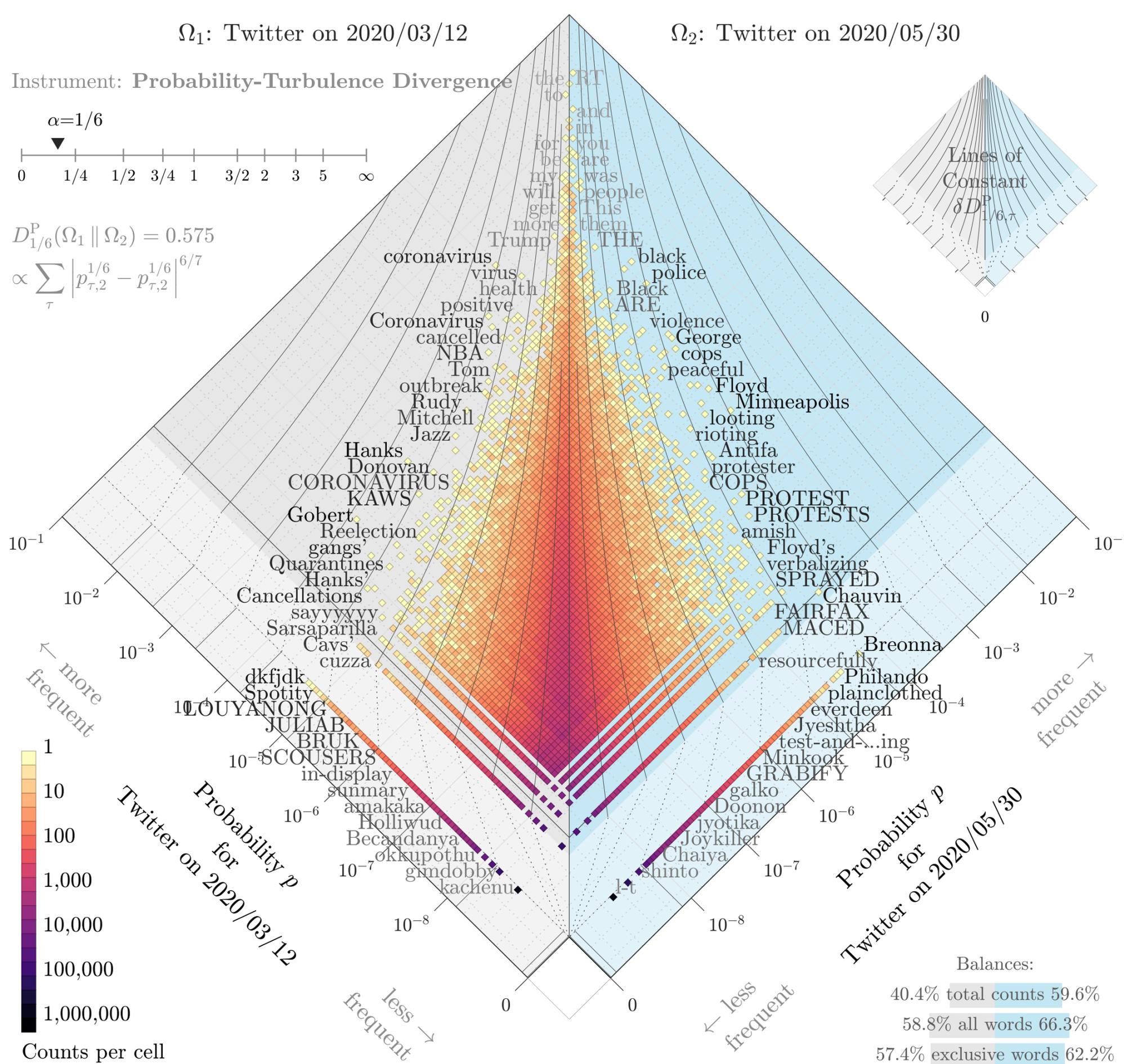
Instrument: Probability-Turbulence Divergence

$\alpha=1/6$



$$D_{1/6}^P(\Omega_1 \parallel \Omega_2) = 0.575$$

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



2	1	0	1	2
	29,291.5 $\Rightarrow$ 116			Minneapolis
	1,717,011.5 $\Rightarrow$ 1,327			Breonna $\triangleright$
	17,877 $\Rightarrow$ 117			Floyd
				Gobert 427 $\Rightarrow$ 164,877.5
	913,207.5 $\Rightarrow$ 921			Chauvin
	1,717,011.5 $\Rightarrow$ 2,719			Philando $\triangleright$
	1,717,011.5 $\Rightarrow$ 2,966.5			Ahmaud $\triangleright$
				Hanks 329 $\Rightarrow$ 48,943.5
	14,094.5 $\Rightarrow$ 150			protesting
	19,096.5 $\Rightarrow$ 194			protestors
	1,717,011.5 $\Rightarrow$ 3,438			Talington $\triangleright$
	1,717,011.5 $\Rightarrow$ 3,456			chauvin $\triangleright$
	22,116.5 $\Rightarrow$ 225			looting
				$\triangleleft$ dkfjdk 3,873 $\Rightarrow$ 1,797,555
	85,437 $\Rightarrow$ 579			PROTEST
	12,852.5 $\Rightarrow$ 166			protesters
	6,661 $\Rightarrow$ 105			cops
	4,689 $\Rightarrow$ 84			George
	1,717,011.5 $\Rightarrow$ 4,349			MadamD $\triangleright$
				$\triangleleft$ autoplayer 4,408 $\Rightarrow$ 1,797,555
	1,717,011.5 $\Rightarrow$ 4,414			post-Tuesday $\triangleright$
	121,716.5 $\Rightarrow$ 798			PROTESTS
	1,717,011.5 $\Rightarrow$ 4,619.5			Liftoff $\triangleright$
	1,717,011.5 $\Rightarrow$ 4,654.5			Arbery $\triangleright$
	1,717,011.5 $\Rightarrow$ 4,671.5			plainclothed $\triangleright$
	1,717,011.5 $\Rightarrow$ 4,716.5			WHITESPLAINING $\triangleright$
	4,472 $\Rightarrow$ 87			protest
				$\triangleleft$ Spotify 4,996 $\Rightarrow$ 1,797,555
	1,717,011.5 $\Rightarrow$ 5,076			Antifa-like $\triangleright$
				$\triangleleft$ Wajngarten 5,115.5 $\Rightarrow$ 1,797,555
	1,717,011.5 $\Rightarrow$ 5,119.5			BODYCAMs $\triangleright$
				gangs' 1,232 $\Rightarrow$ 217,899.5
	90,270.5 $\Rightarrow$ 774			ANTIFA
	43,060.5 $\Rightarrow$ 499			Antifa
				$\triangleleft$ DIVOC 5,605.5 $\Rightarrow$ 1,797,555
	1,717,011.5 $\Rightarrow$ 5,764.5			Mujinga $\triangleright$
	220,871.5 $\Rightarrow$ 1,311			Floyd's
	1,717,011.5 $\Rightarrow$ 5,856.5			Horsford $\triangleright$
				$\triangleleft$ GOBERT 6,101.5 $\Rightarrow$ 1,797,555
	1,717,011.5 $\Rightarrow$ 5,943			Demariontae $\triangleright$

Balances:  
 40.4% total counts 59.6%  
 58.8% all words 66.3%  
 57.4% exclusive words 62.2%

47.4%—52.6%







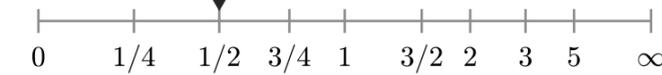
$\Omega_1$ : Twitter on 2020/03/12

$\Omega_2$ : Twitter on 2020/05/30

Divergence contribution  $\delta D_{1/2,\tau}^P (\times 10^{-3}\%)$

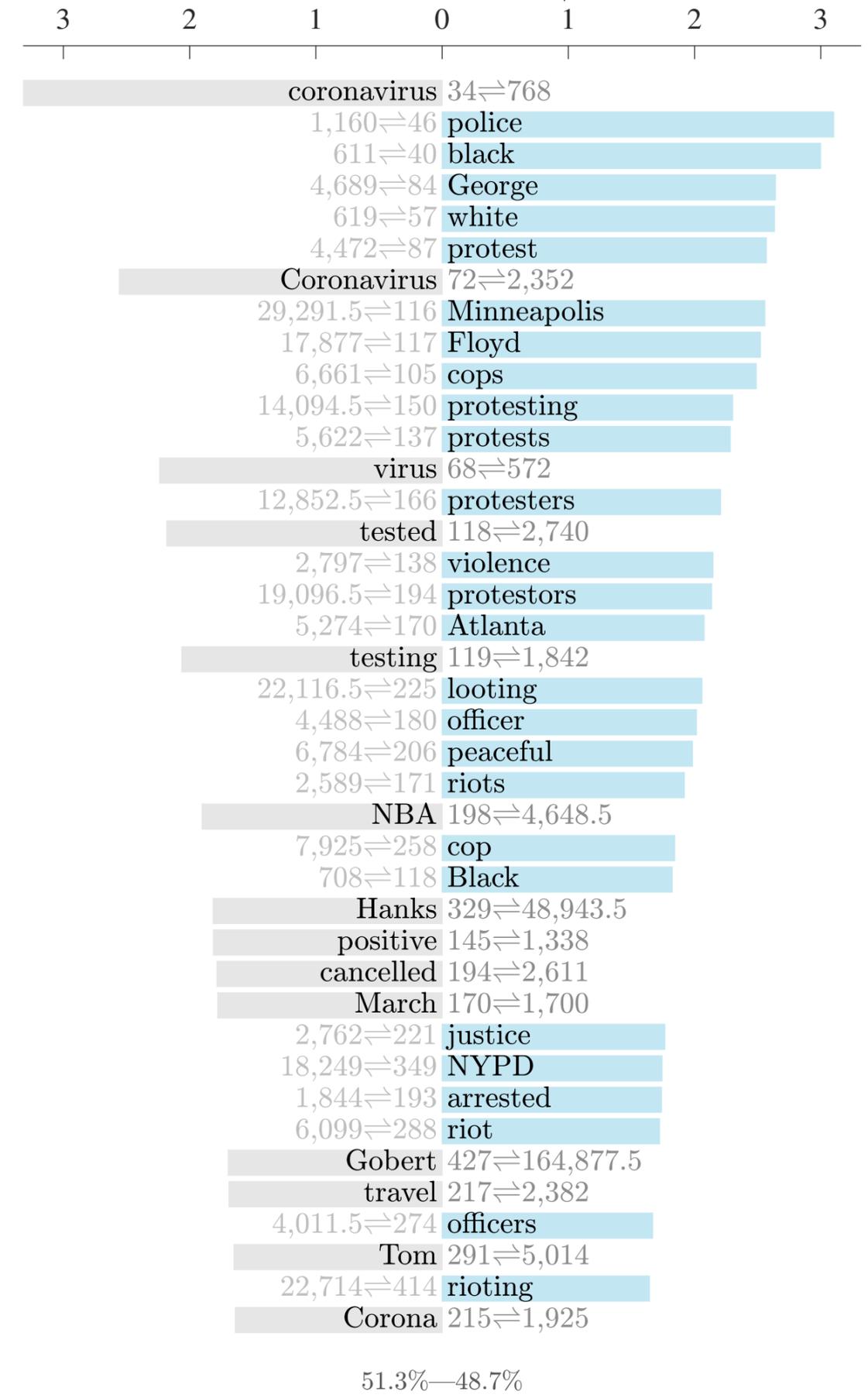
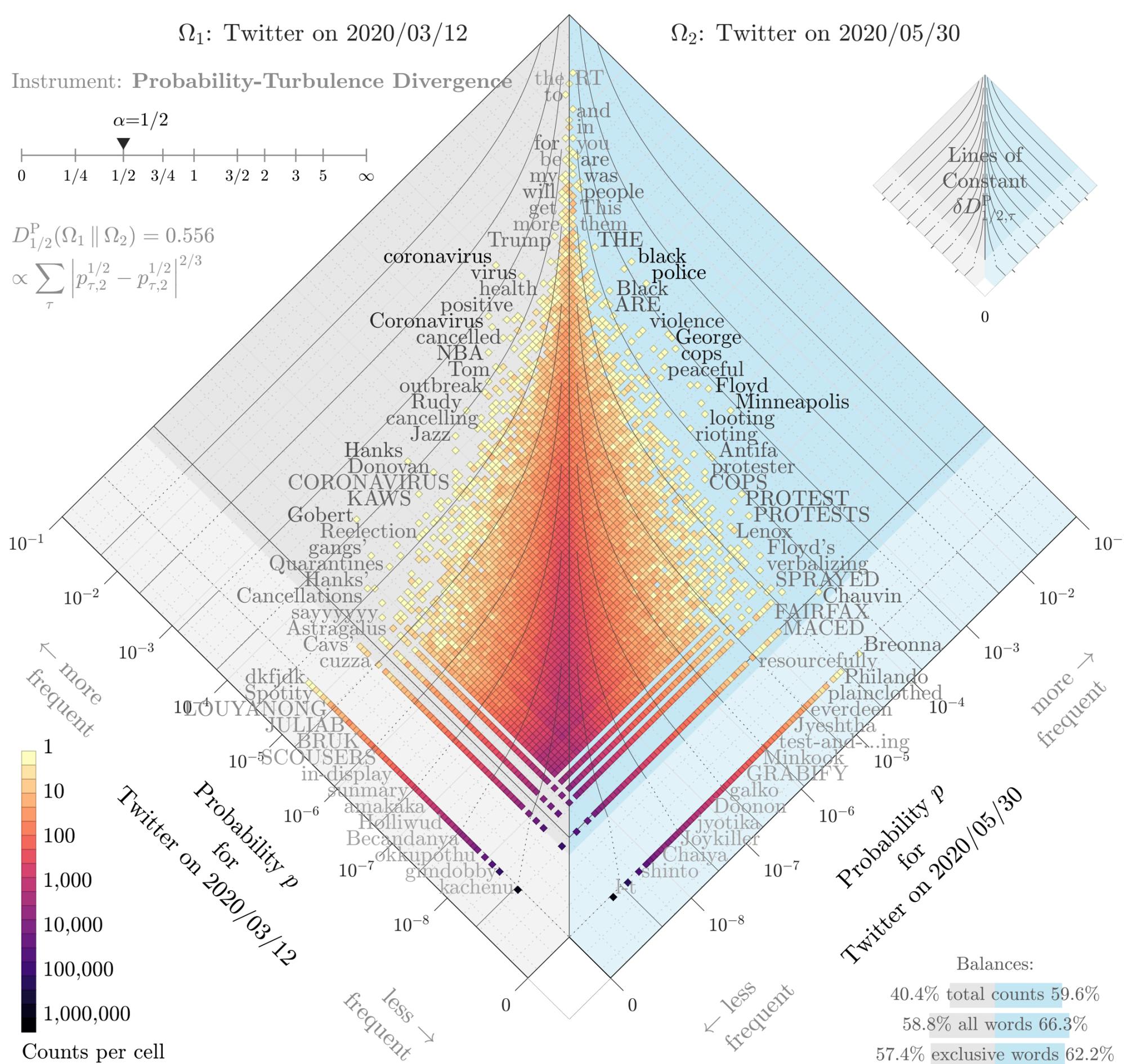
Instrument: Probability-Turbulence Divergence

$\alpha=1/2$



$$D_{1/2}^P(\Omega_1 \parallel \Omega_2) = 0.556$$

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



Balances:  
 40.4% total counts 59.6%  
 58.8% all words 66.3%  
 57.4% exclusive words 62.2%

51.3%—48.7%

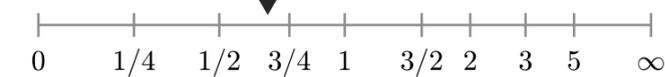


$\Omega_1$ : Twitter on 2020/03/12

$\Omega_2$ : Twitter on 2020/05/30

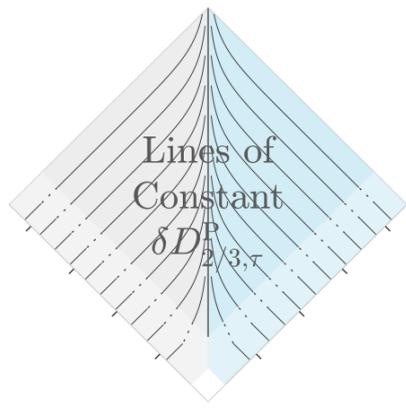
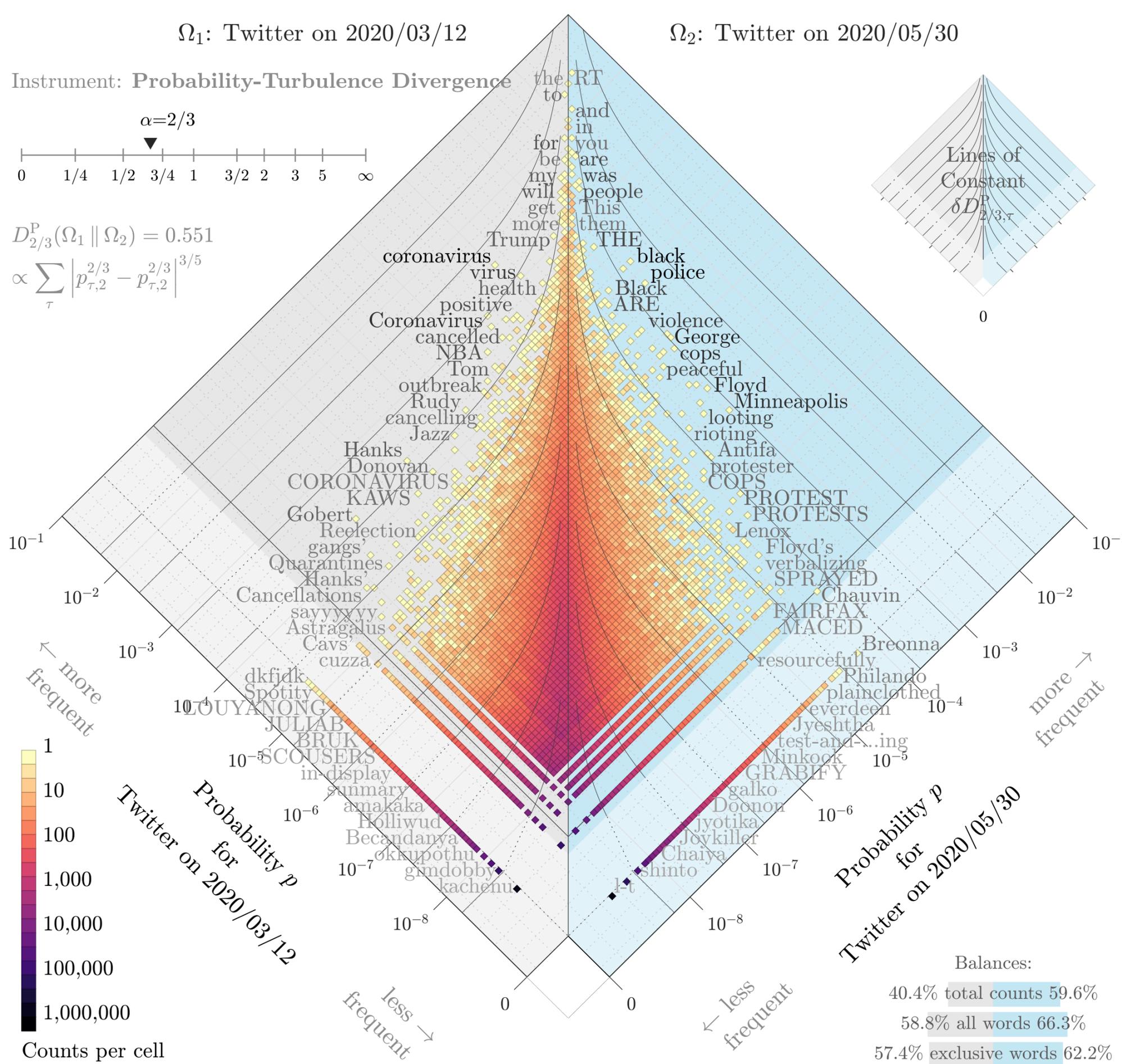
Instrument: **Probability-Turbulence Divergence**

$\alpha=2/3$

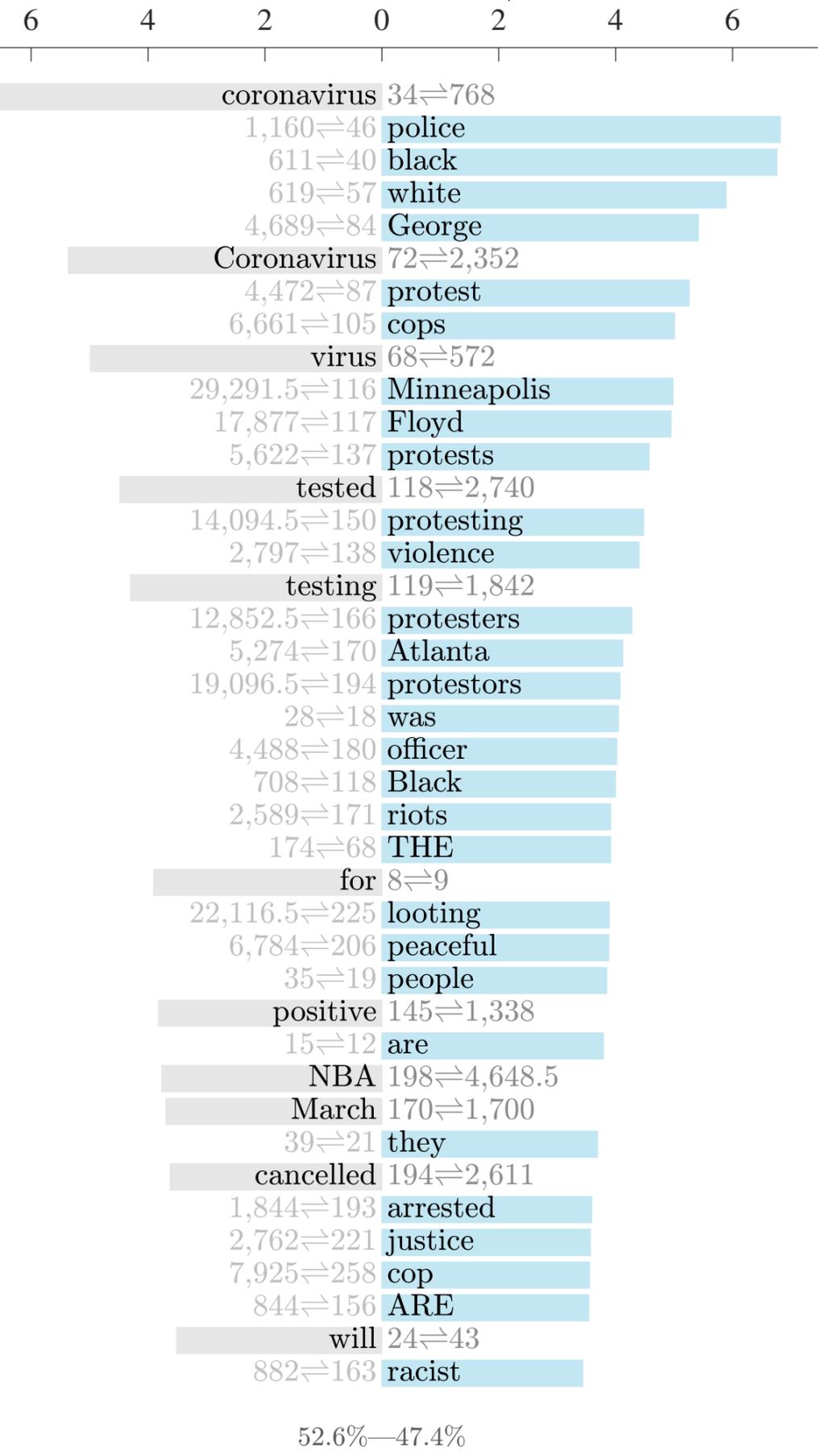


$$D_{2/3}^P(\Omega_1 \parallel \Omega_2) = 0.551$$

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



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



Balances:  
 40.4% total counts 59.6%  
 58.8% all words 66.3%  
 57.4% exclusive words 62.2%

52.6%—47.4%







$\Omega_1$ : Twitter on 2020/03/12

$\Omega_2$ : Twitter on 2020/05/30

Divergence contribution  $\delta D_{1,\tau}^P$  (%)

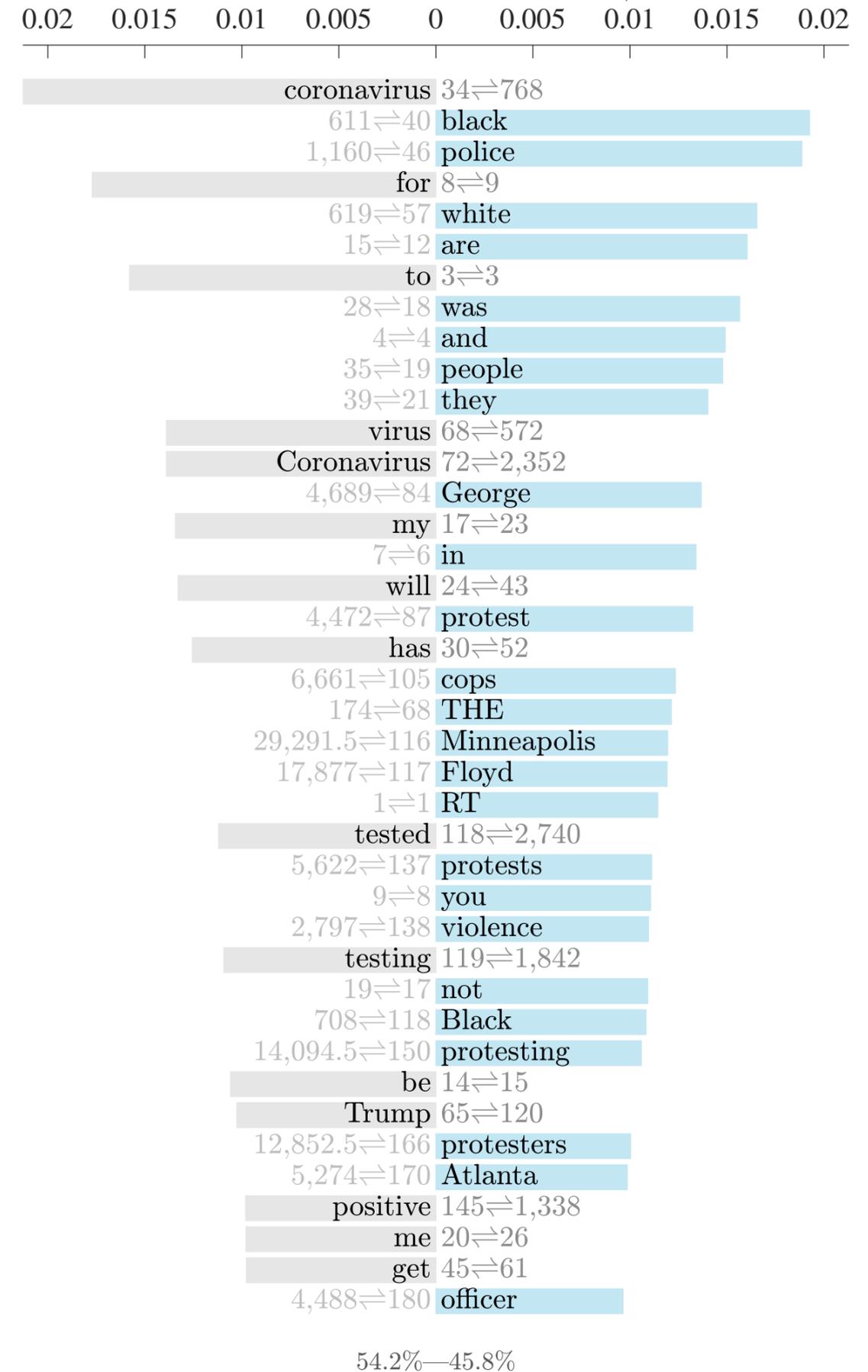
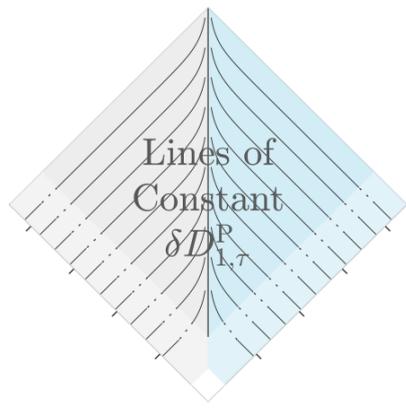
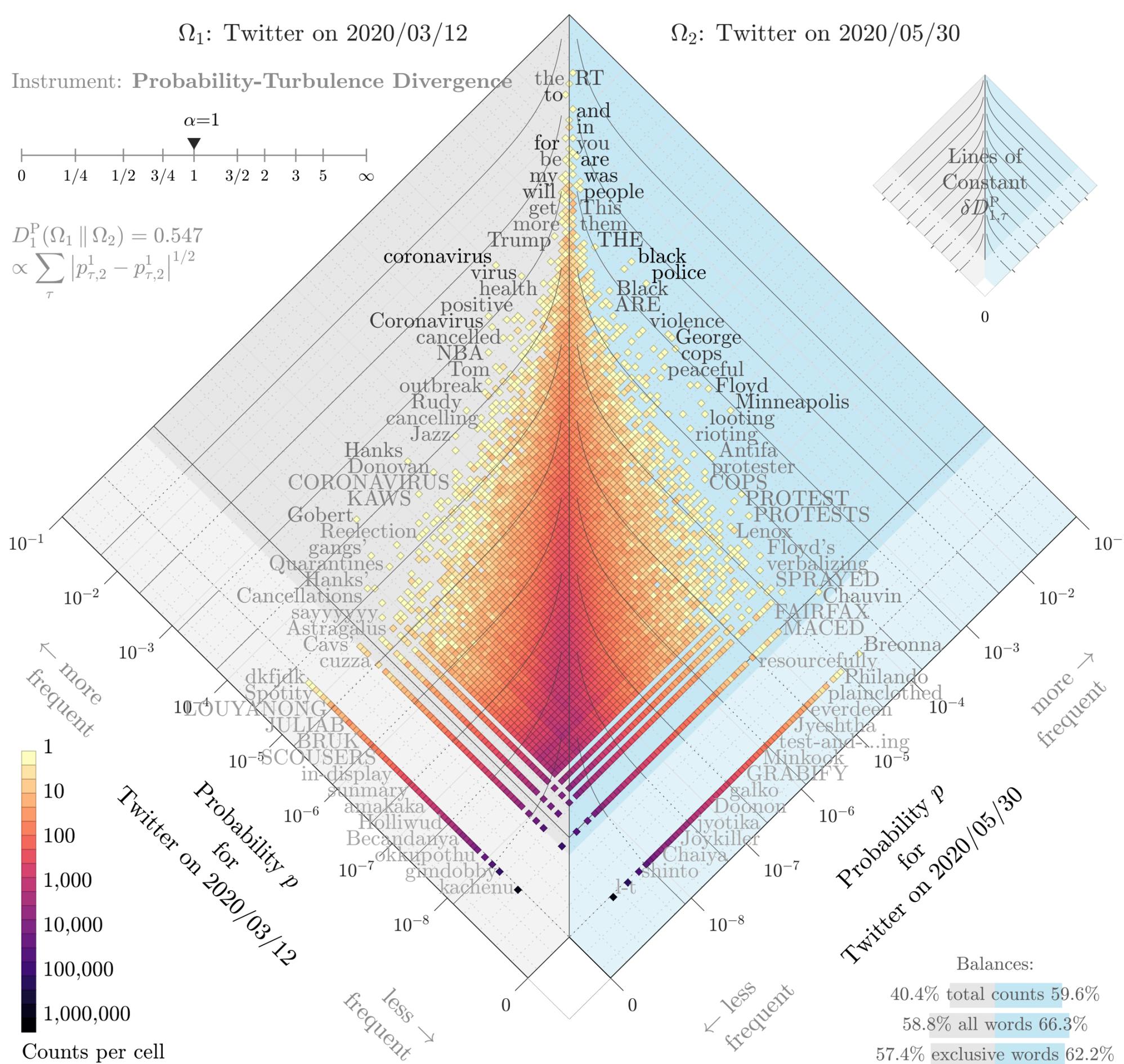
Instrument: **Probability-Turbulence Divergence**

$\alpha=1$



$$D_1^P(\Omega_1 \parallel \Omega_2) = 0.547$$

$$\propto \sum_{\tau} |p_{\tau,2}^1 - p_{\tau,2}^2|^{1/2}$$



Balances:  
 40.4% total counts 59.6%  
 58.8% all words 66.3%  
 57.4% exclusive words 62.2%

54.2%—45.8%

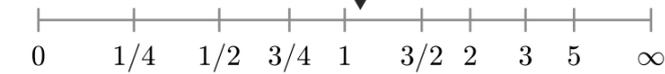
$\Omega_1$ : Twitter on 2020/03/12

$\Omega_2$ : Twitter on 2020/05/30

Divergence contribution  $\delta D_{13/12,\tau}^P(\%)$

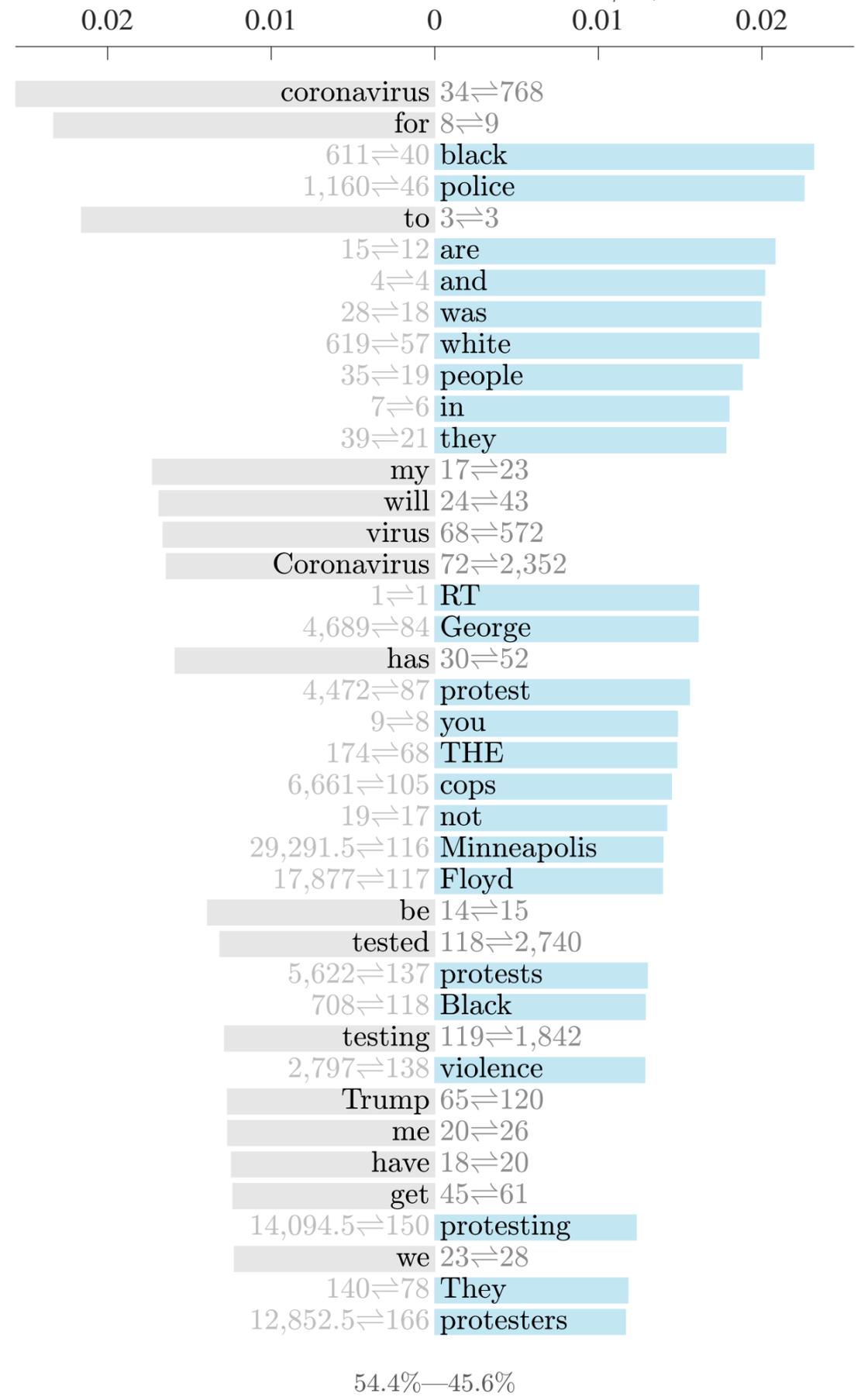
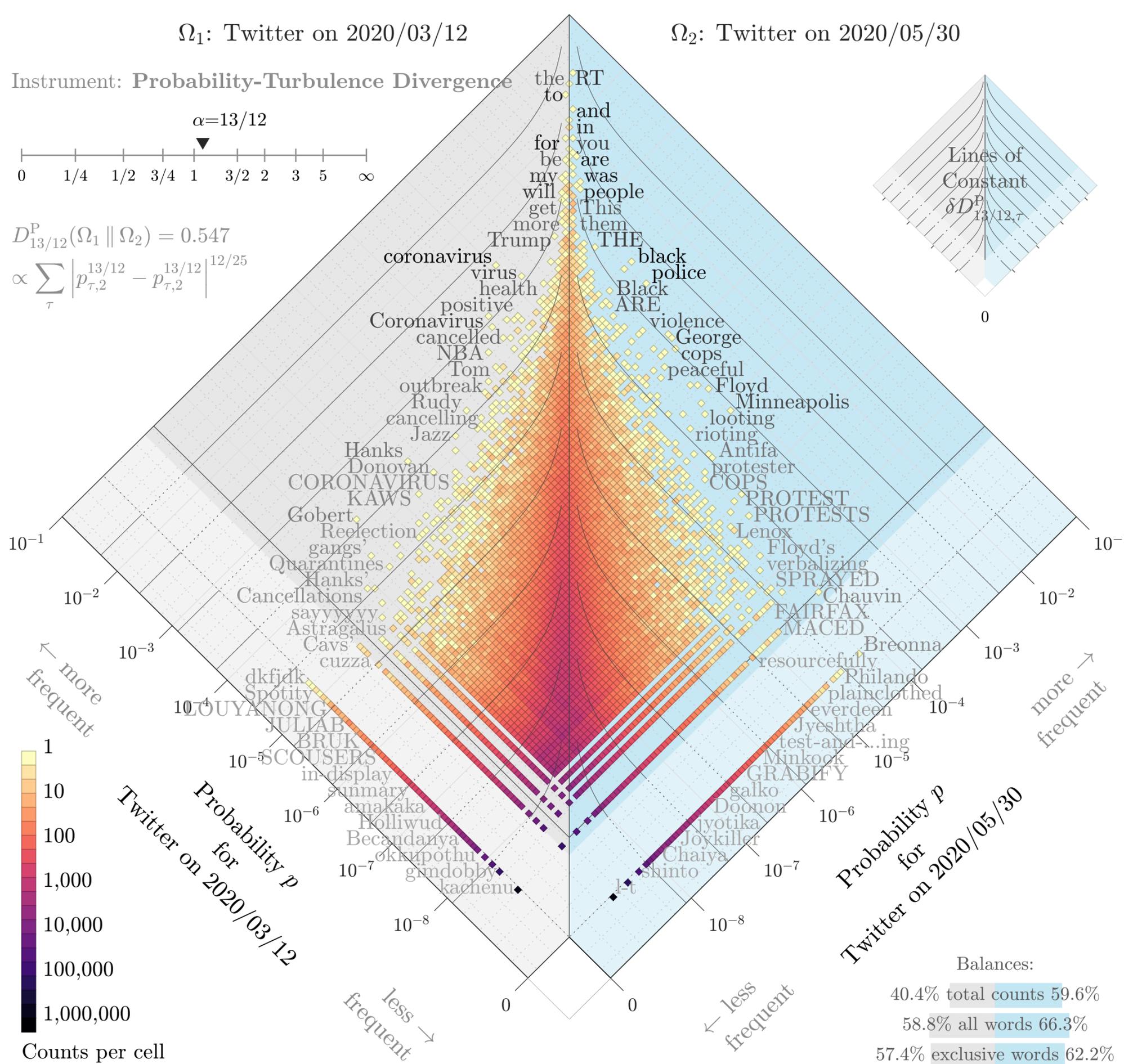
Instrument: Probability-Turbulence Divergence

$\alpha=13/12$



$$D_{13/12}^P(\Omega_1 \parallel \Omega_2) = 0.547$$

$$\propto \sum_{\tau} \left| p_{\tau,2}^{13/12} - p_{\tau,2} \right|^{12/25}$$



54.4%—45.6%

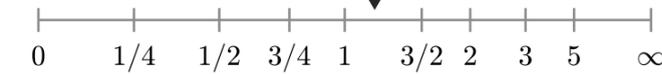
$\Omega_1$ : Twitter on 2020/03/12

$\Omega_2$ : Twitter on 2020/05/30

Divergence contribution  $\delta D_{7/6,\tau}^P$  (%)

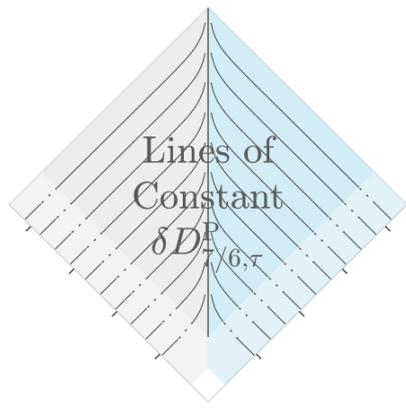
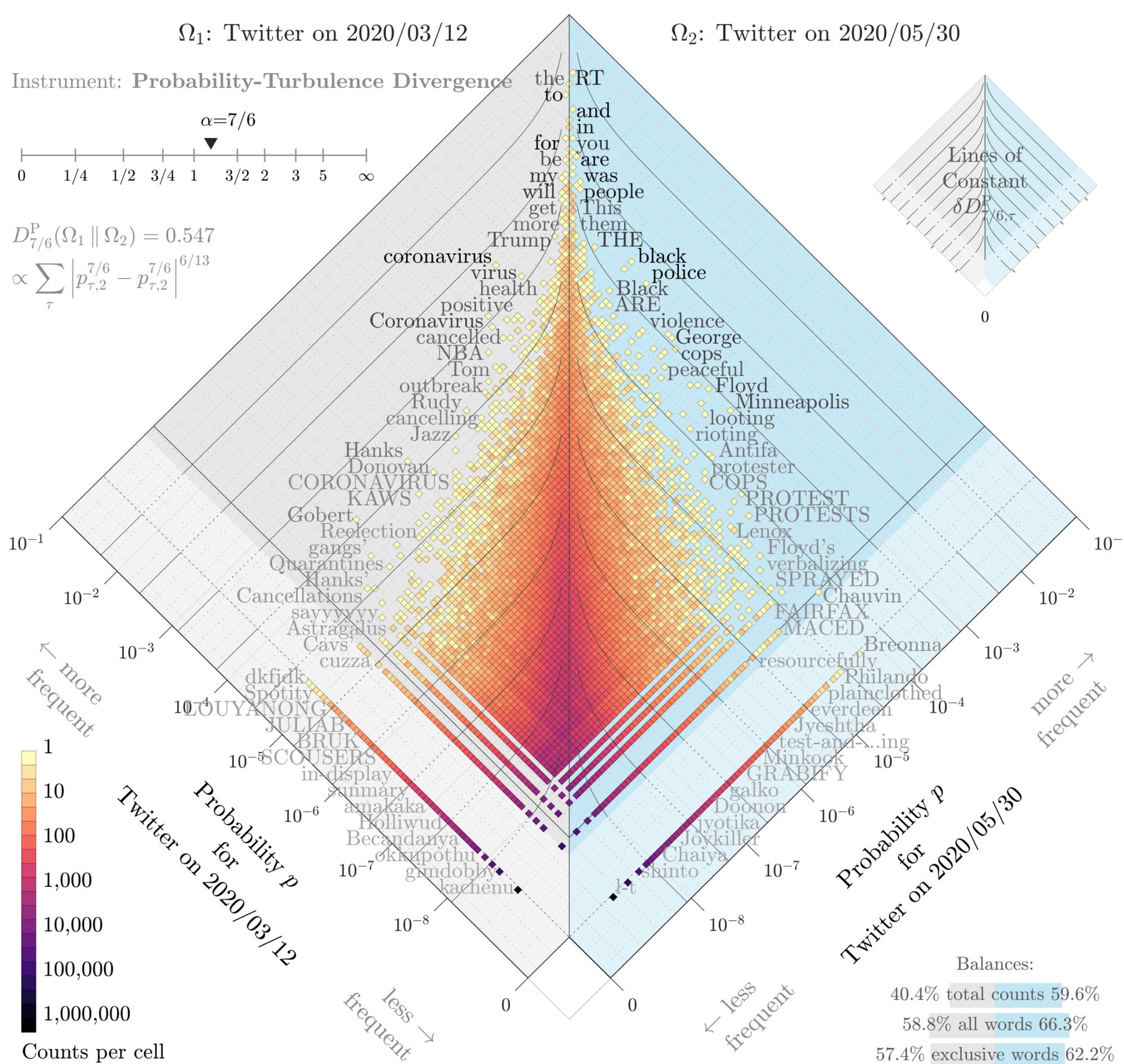
Instrument: Probability-Turbulence Divergence

$\alpha=7/6$

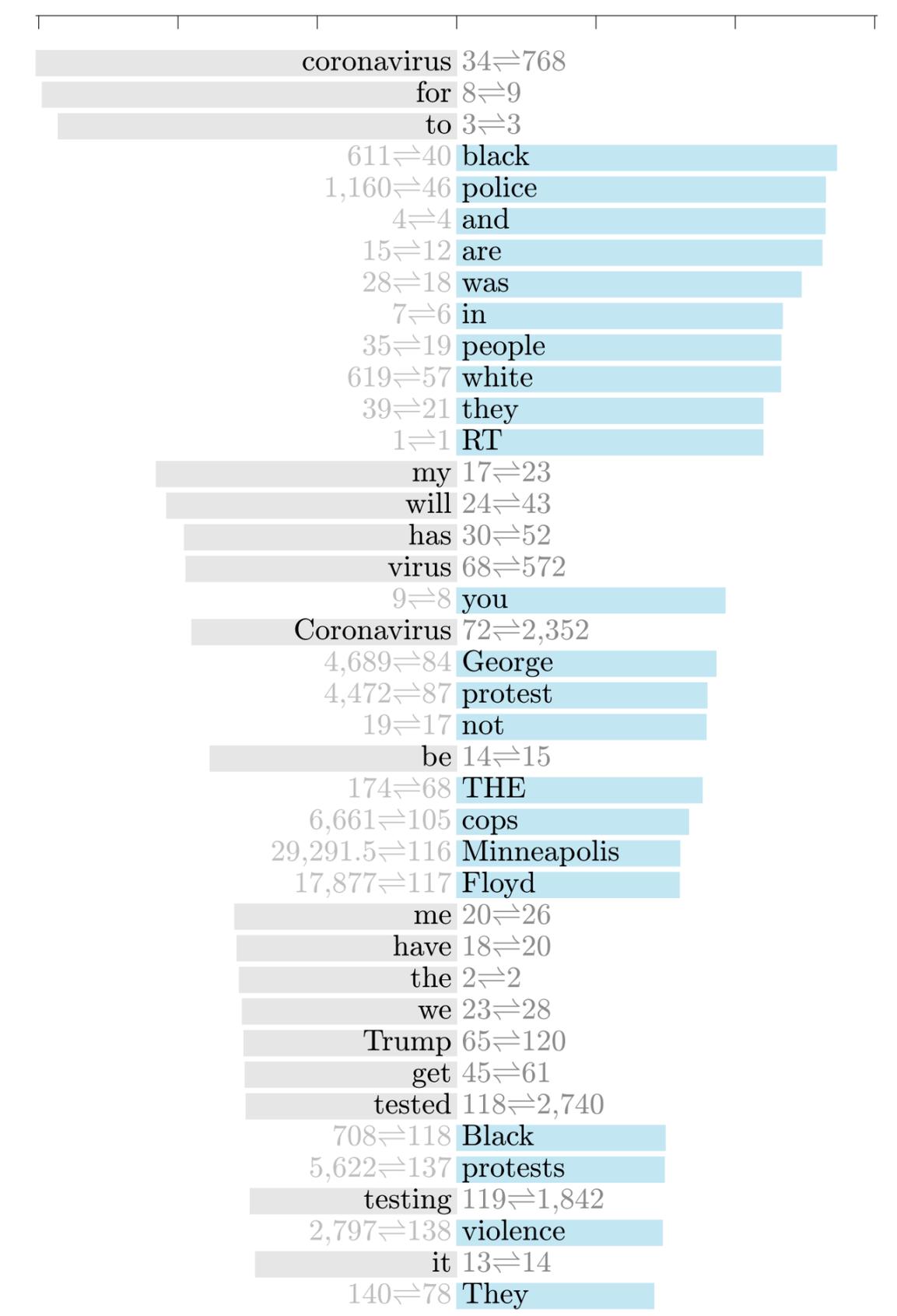


$$D_{7/6}^P(\Omega_1 \parallel \Omega_2) = 0.547$$

$$\propto \sum_{\tau} \left| p_{\tau,2}^{7/6} - p_{\tau,2}^{7/6} \right|^{6/13}$$



0.03 0.02 0.01 0 0.01 0.02 0.03



Balances:  
 40.4% total counts 59.6%  
 58.8% all words 66.3%  
 57.4% exclusive words 62.2%

54.6%—45.4%





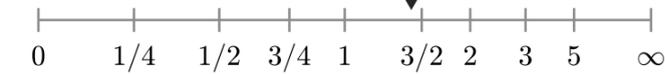
$\Omega_1$ : Twitter on 2020/03/12

$\Omega_2$ : Twitter on 2020/05/30

Divergence contribution  $\delta D_{17/12,\tau}^P(\%)$

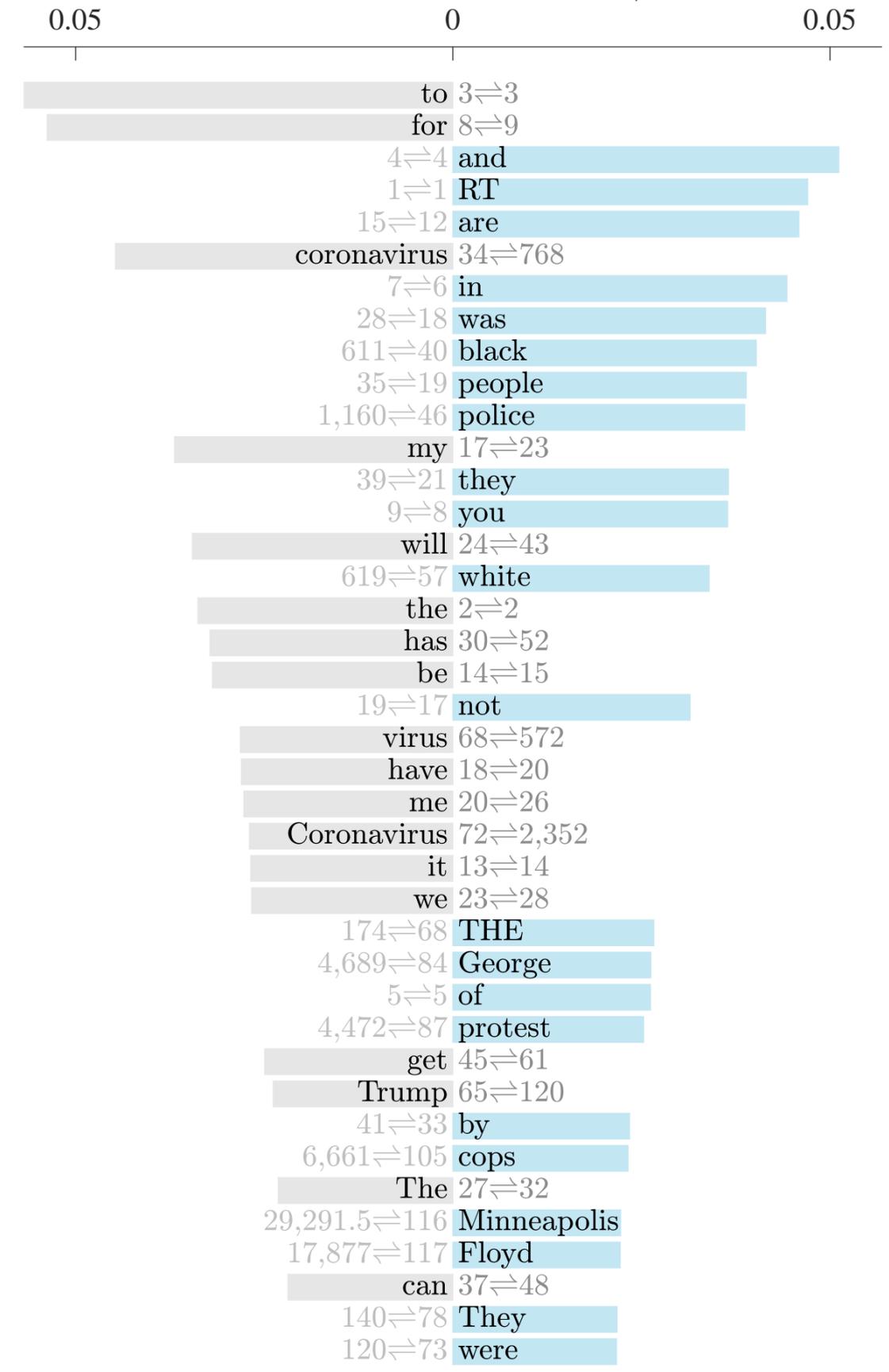
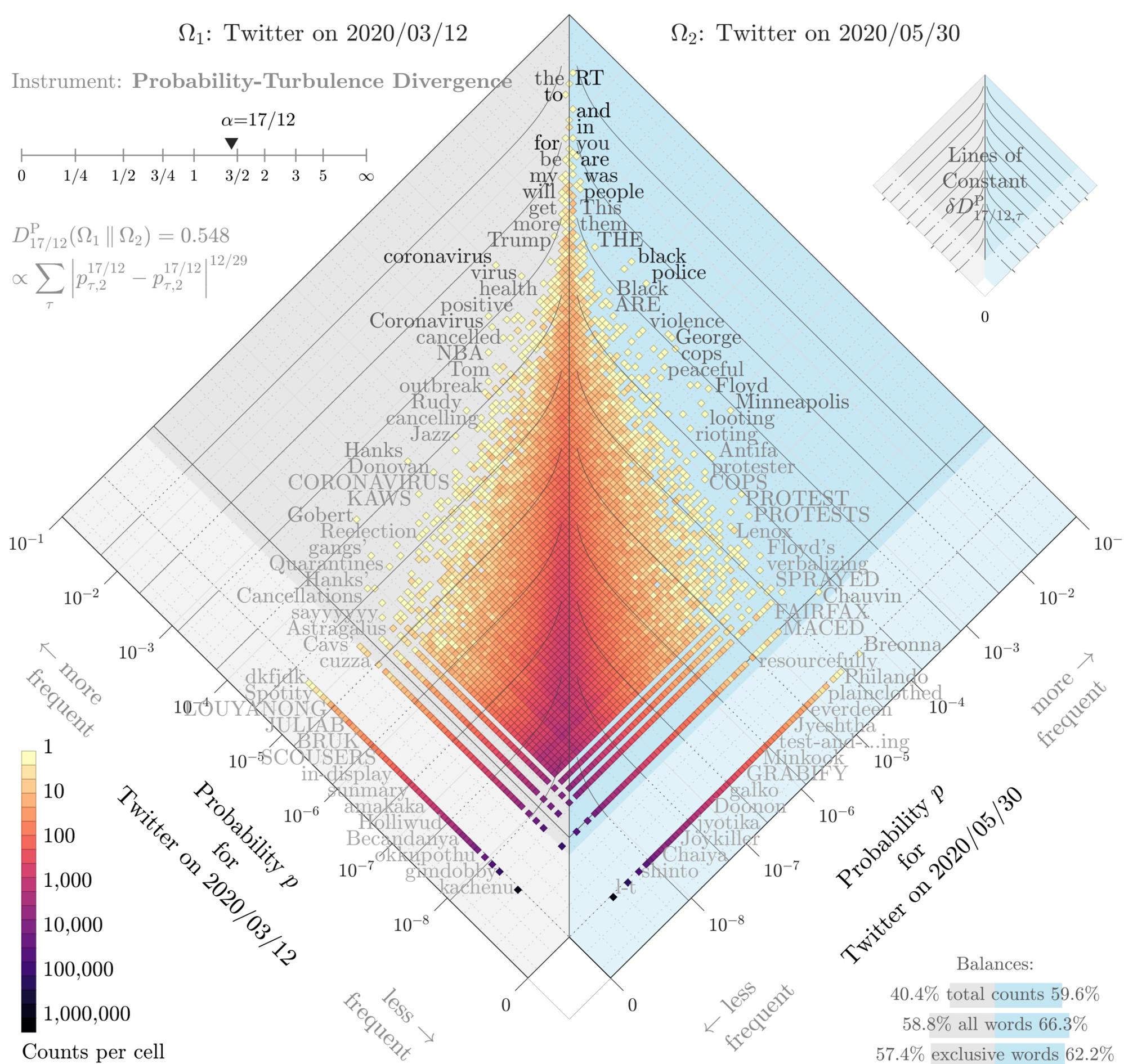
Instrument: Probability-Turbulence Divergence

$\alpha=17/12$



$$D_{17/12}^P(\Omega_1 \parallel \Omega_2) = 0.548$$

$$\propto \sum_{\tau} \left| p_{\tau,2}^{17/12} - p_{\tau,2}^{17/12} \right|^{12/29}$$



Balances:  
 40.4% total counts 59.6%  
 58.8% all words 66.3%  
 57.4% exclusive words 62.2%

54.9%—45.1%

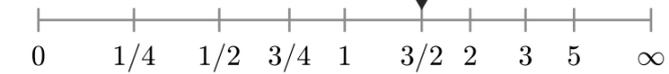
$\Omega_1$ : Twitter on 2020/03/12

$\Omega_2$ : Twitter on 2020/05/30

Divergence contribution  $\delta D_{3/2,\tau}^P$  (%)

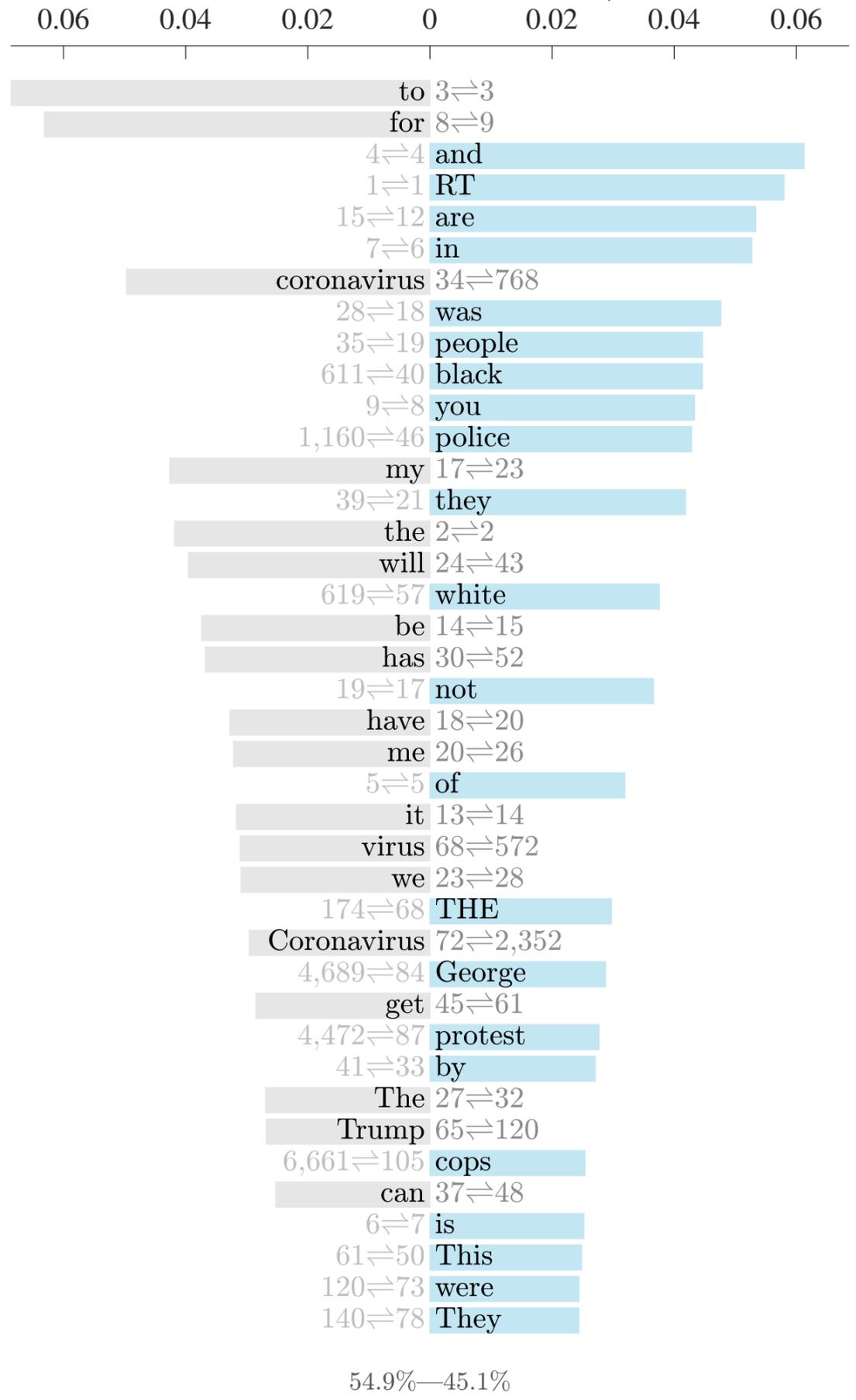
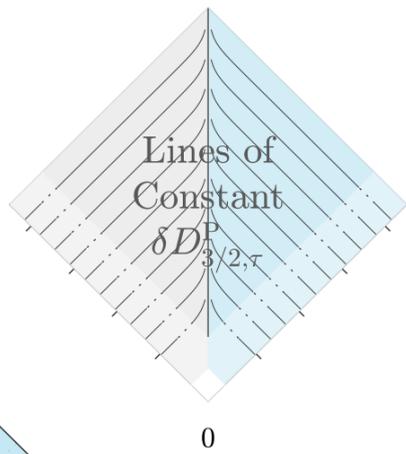
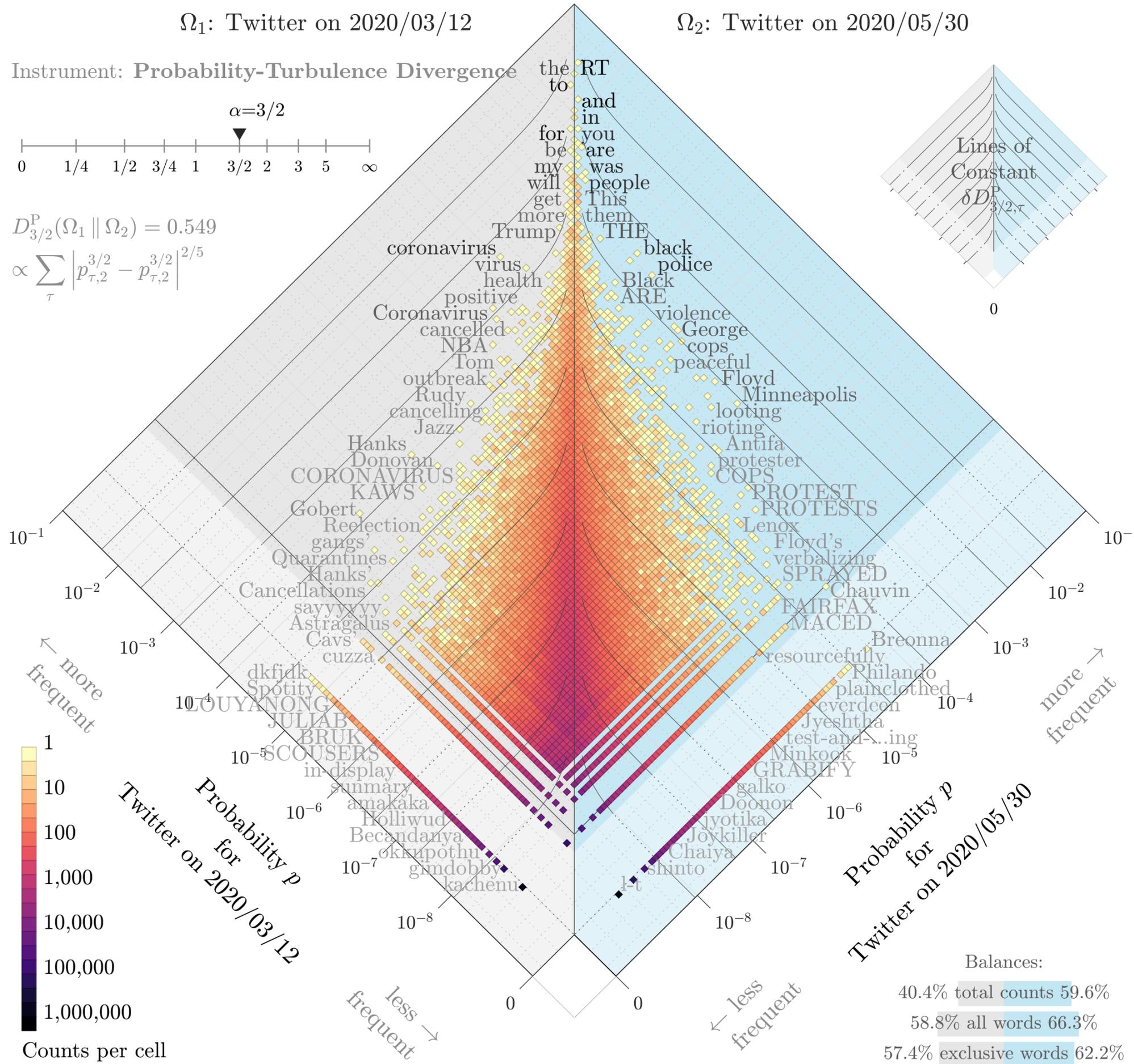
Instrument: Probability-Turbulence Divergence

$\alpha=3/2$



$$D_{3/2}^P(\Omega_1 \parallel \Omega_2) = 0.549$$

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



54.9%—45.1%

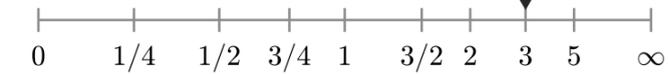


$\Omega_1$ : Twitter on 2020/03/12

$\Omega_2$ : Twitter on 2020/05/30

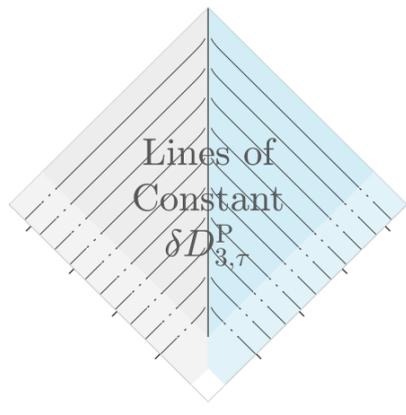
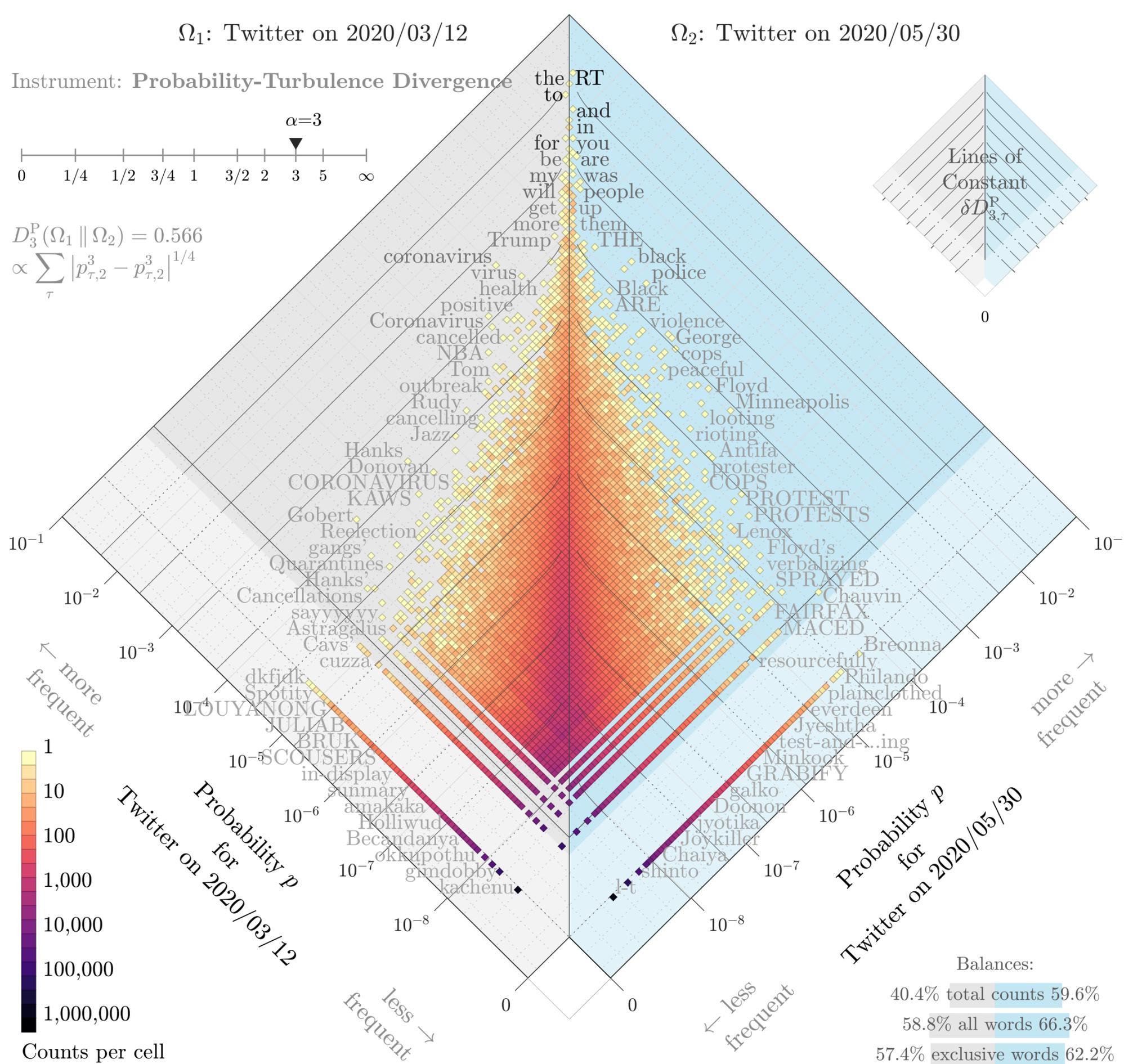
Instrument: **Probability-Turbulence Divergence**

$\alpha=3$

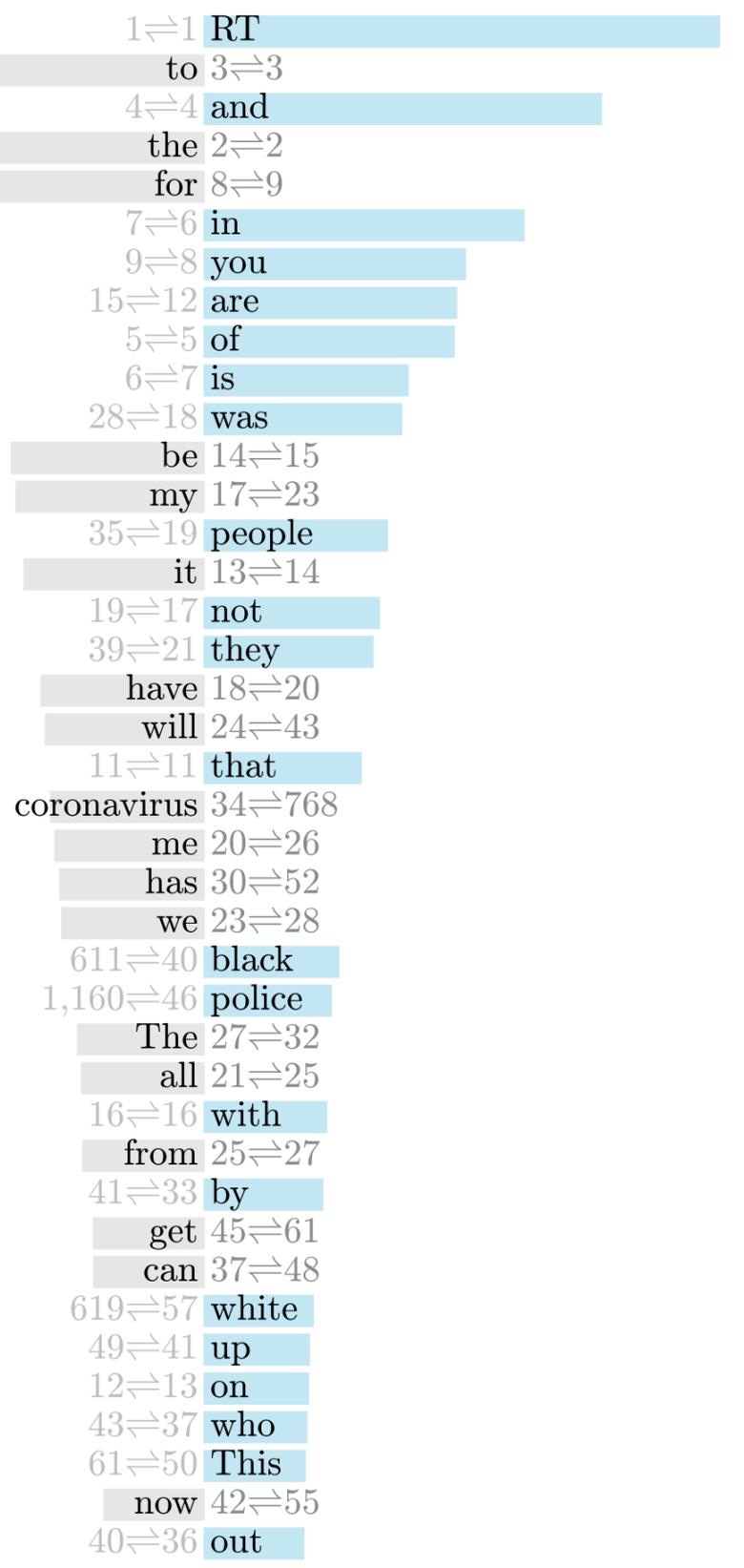


$$D_3^P(\Omega_1 \parallel \Omega_2) = 0.566$$

$$\propto \sum_{\tau} |p_{\tau,2}^3 - p_{\tau,1}^3|^{1/4}$$



Divergence contribution  $\delta D_{3,\tau}^P$  (%)



Balances:

40.4% total counts 59.6%

58.8% all words 66.3%

57.4% exclusive words 62.2%

54.2%—45.8%



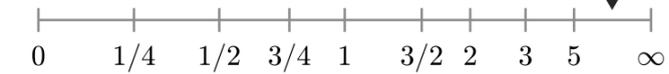
$\Omega_1$ : Twitter on 2020/03/12

$\Omega_2$ : Twitter on 2020/05/30

Divergence contribution  $\delta D_{10,\tau}^P(\%)$

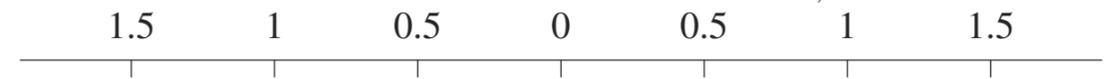
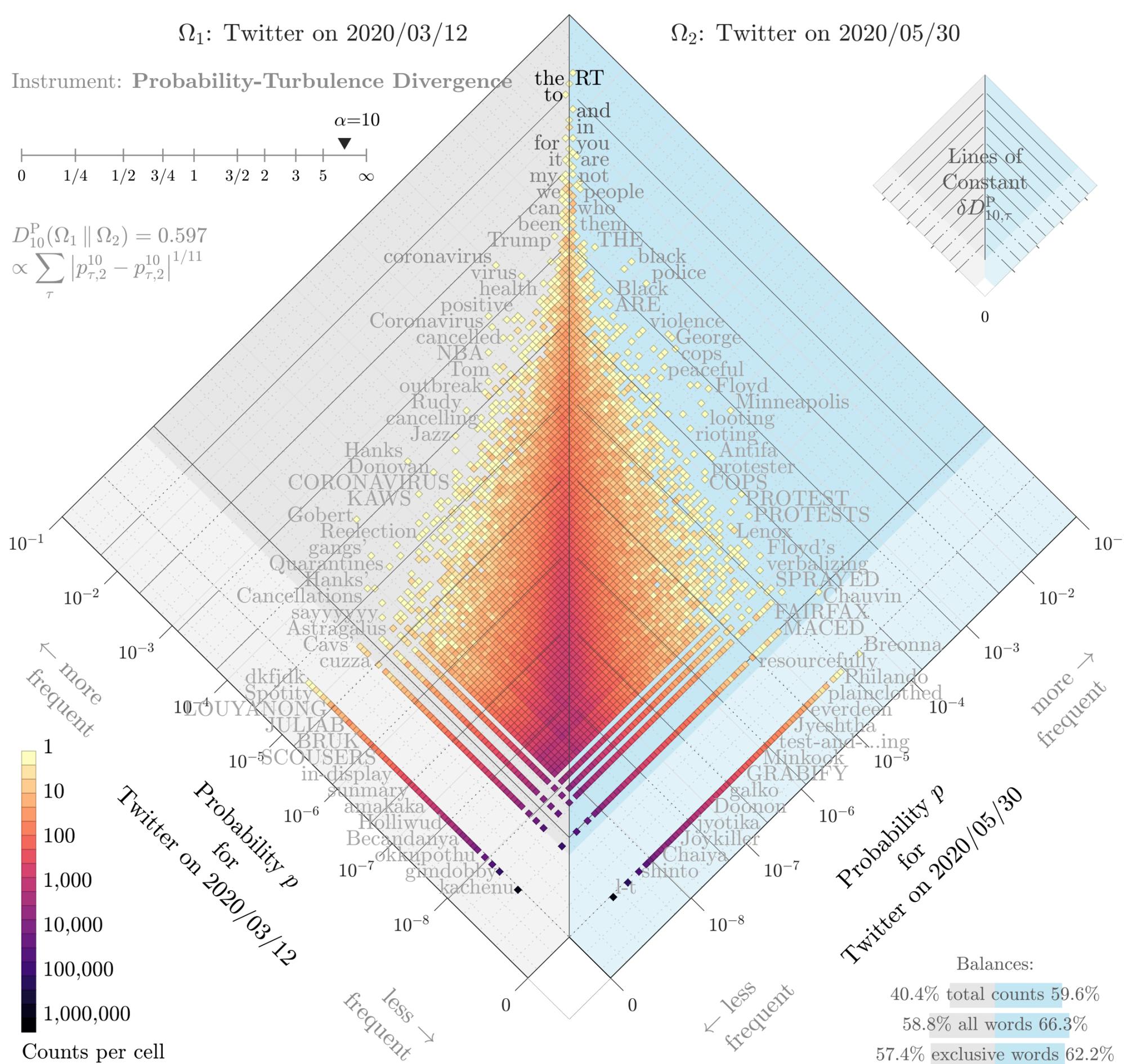
Instrument: **Probability-Turbulence Divergence**

$\alpha=10$



$$D_{10}^P(\Omega_1 \parallel \Omega_2) = 0.597$$

$$\propto \sum_{\tau} |p_{\tau,2}^{10} - p_{\tau,1}^{10}|^{1/11}$$



Rank	Word	Contribution (%)
1	RT	1.5
2	the	1.4
3	to	1.3
4	and	1.1
5	of	1.0
6	in	0.9
7	for	0.8
8	is	0.7
9	you	0.6
10	are	0.5
11	that	0.4
12	it	0.3
13	be	0.2
14	on	0.1
15	this	0.0
16	not	-0.1
17	my	-0.2
18	was	-0.3
19	have	-0.4
20	with	-0.5
21	people	-0.6
22	me	-0.7
23	they	-0.8
24	we	-0.9
25	will	-1.0
26	all	-1.1
27	from	-1.2
28	The	-1.3
29	has	-1.4
30	coronavirus	-1.5
31	your	0.1
32	by	0.2
33	but	0.3
34	as	0.4
35	about	0.5
36	like	0.6
37	out	0.7
38	can	0.8
39	who	0.9
40	black	1.0

Balances:  
 40.4% total counts 59.6%  
 58.8% all words 66.3%  
 57.4% exclusive words 62.2%

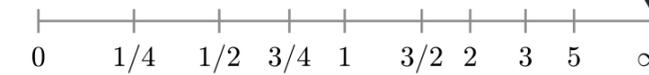
$\Omega_1$ : Twitter on 2020/03/12

$\Omega_2$ : Twitter on 2020/05/30

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

Instrument: Probability-Turbulence Divergence

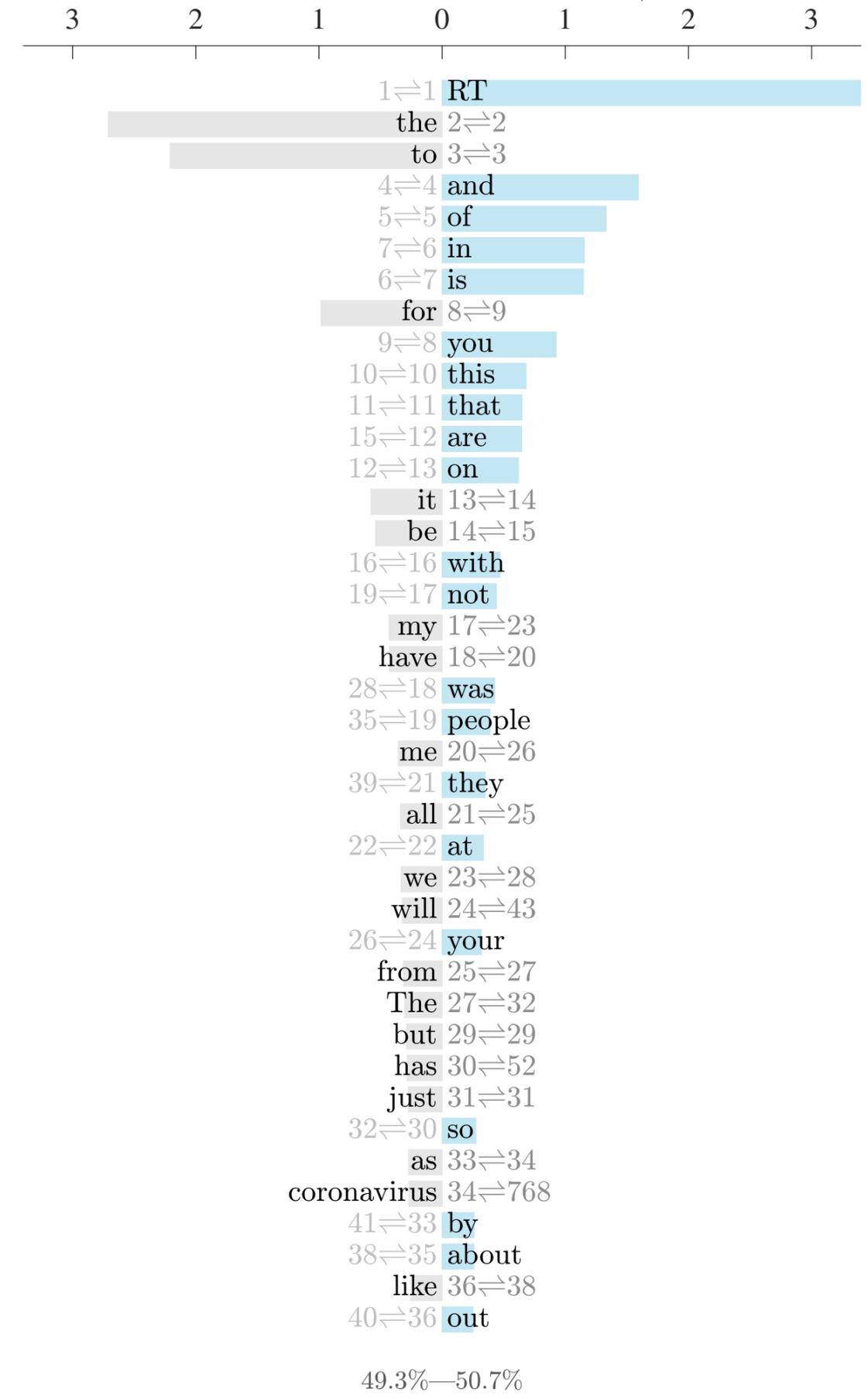
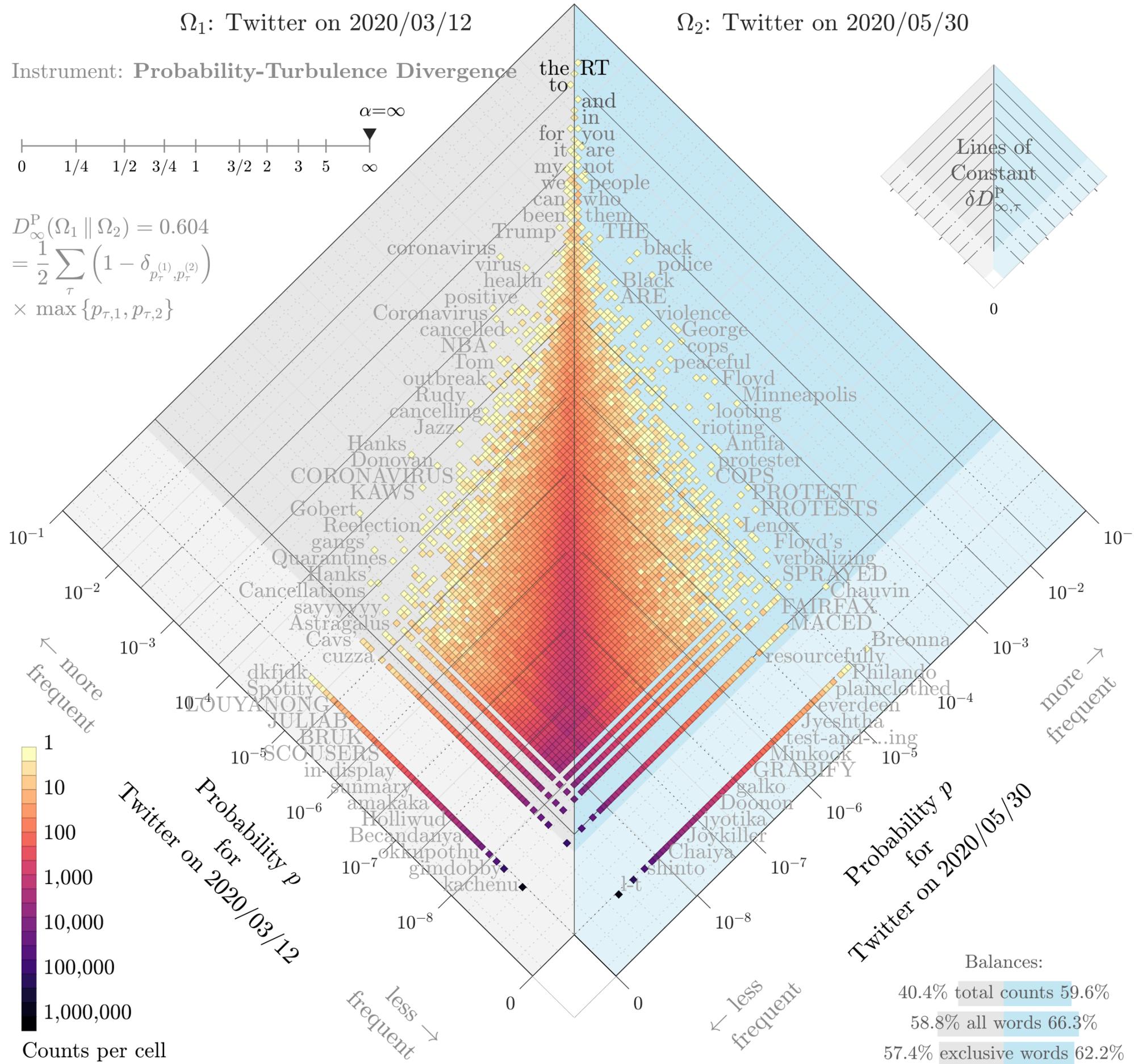
$\alpha = \infty$



$$D_{\infty}^P(\Omega_1 \parallel \Omega_2) = 0.604$$

$$= \frac{1}{2} \sum_{\tau} \left( 1 - \delta_{p_{\tau}^{(1)}, p_{\tau}^{(2)}} \right)$$

$$\times \max \{ p_{\tau,1}, p_{\tau,2} \}$$



Balances:  
 40.4% total counts 59.6%  
 58.8% all words 66.3%  
 57.4% exclusive words 62.2%

49.3%—50.7%