

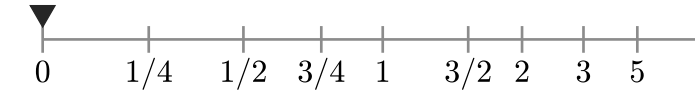
Ω_1 : Baby boy names in 1968

Ω_2 : Baby boy names in 2018

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

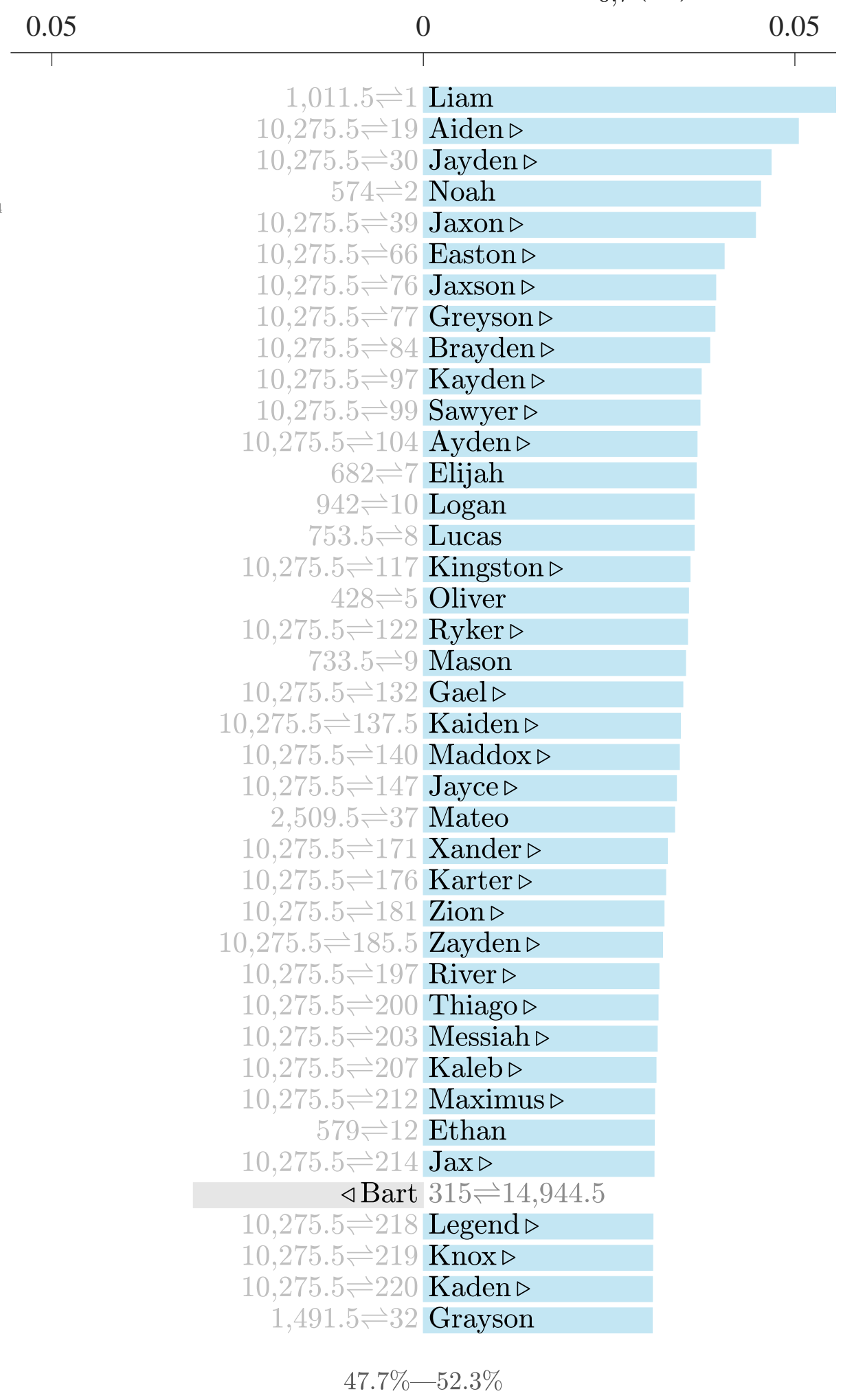
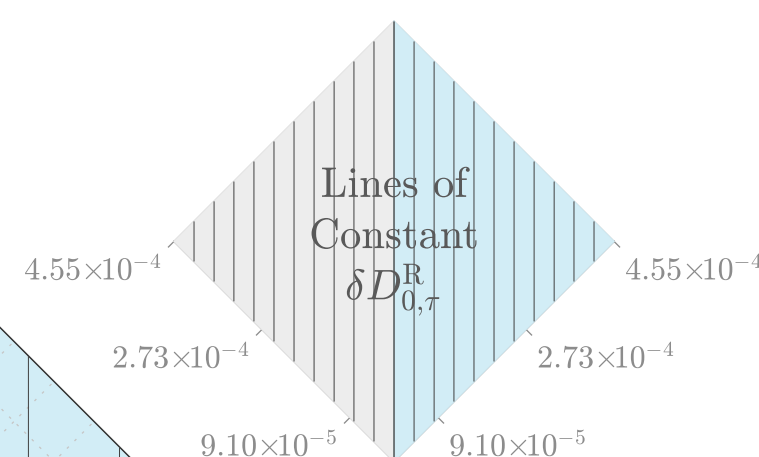
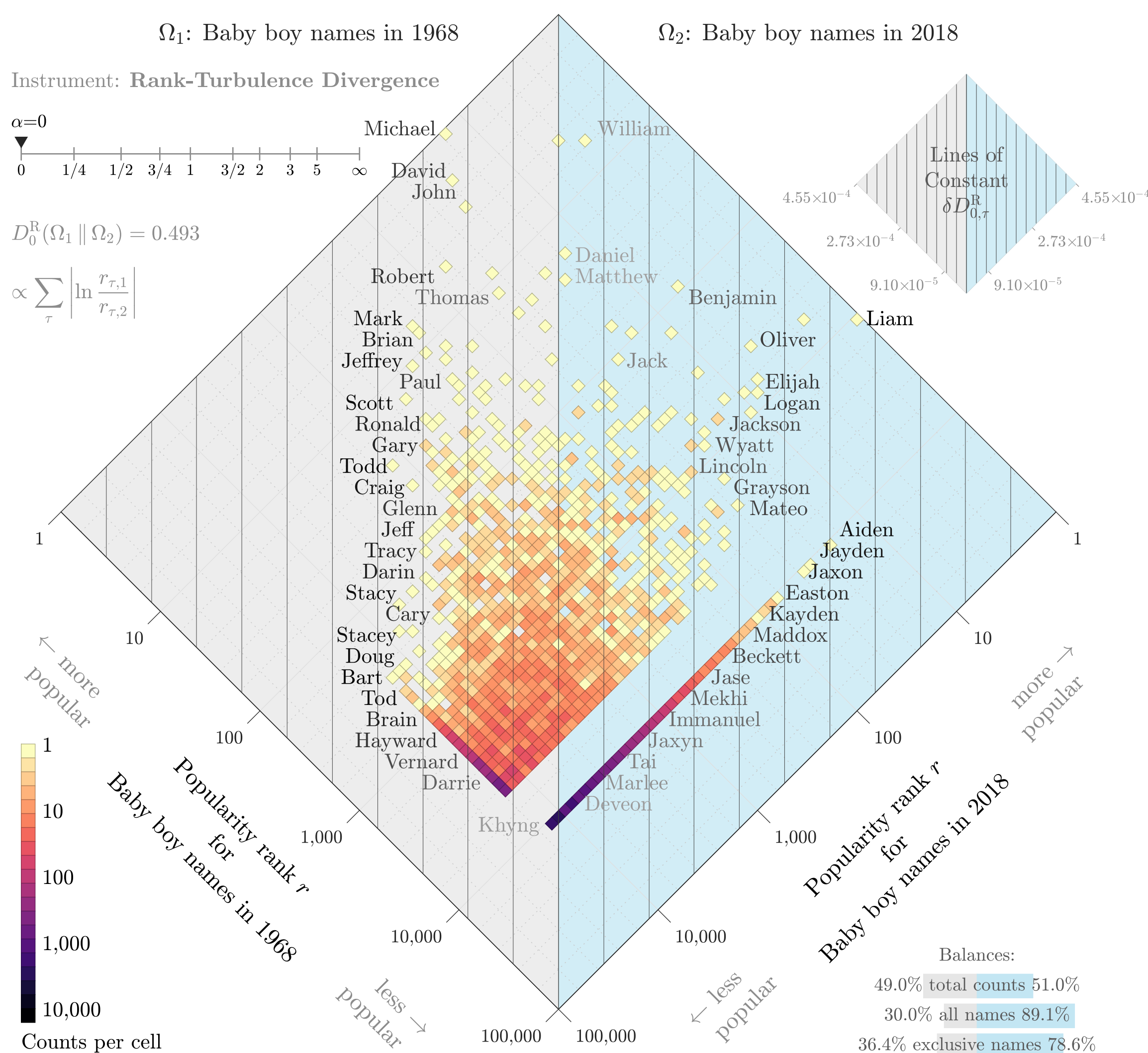
Instrument: Rank-Turbulence Divergence

$\alpha=0$



$D_0^R(\Omega_1 \parallel \Omega_2) = 0.493$

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



Balances:
 49.0% total counts 51.0%
 30.0% all names 89.1%
 36.4% exclusive names 78.6%

47.7%—52.3%

Ω_1 : Baby boy names in 1968

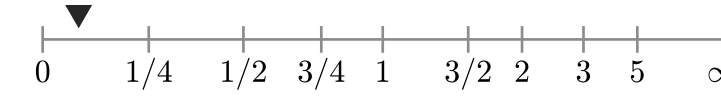
Ω_2 : Baby boy names in 2018

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

0.06 0.04 0.02 0 0.02 0.04 0.06

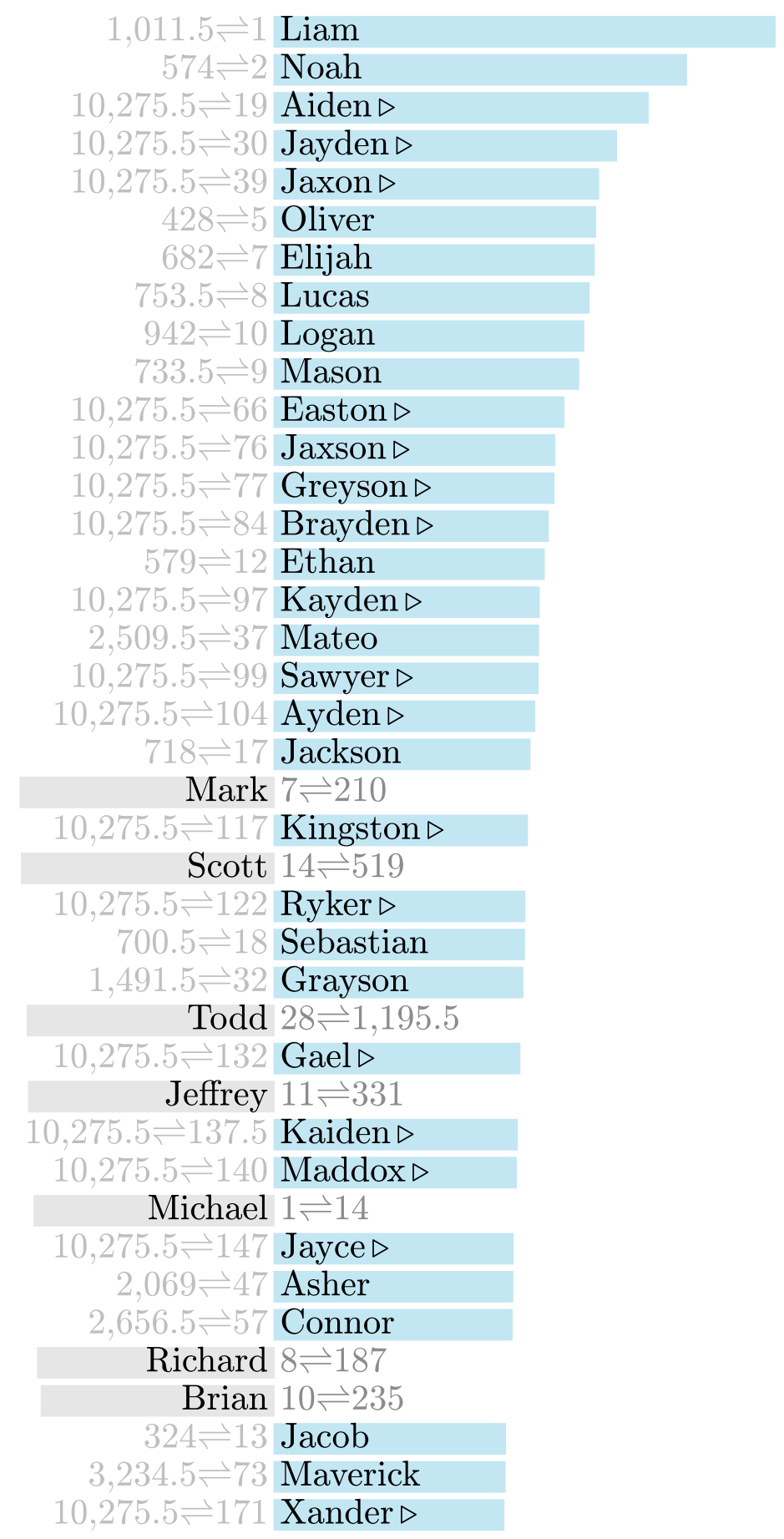
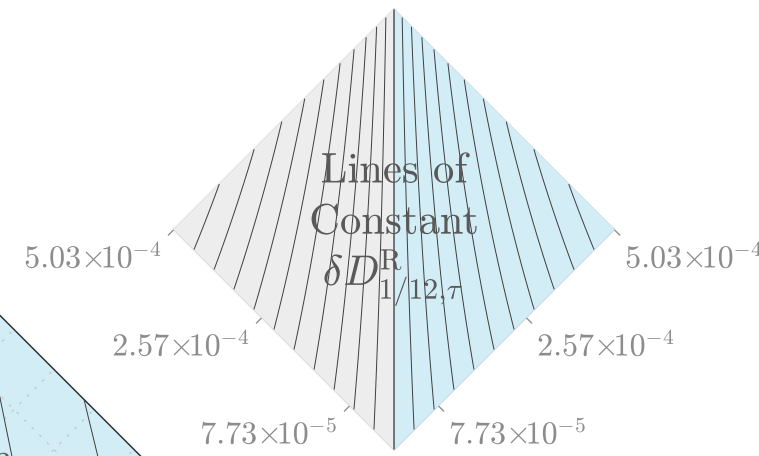
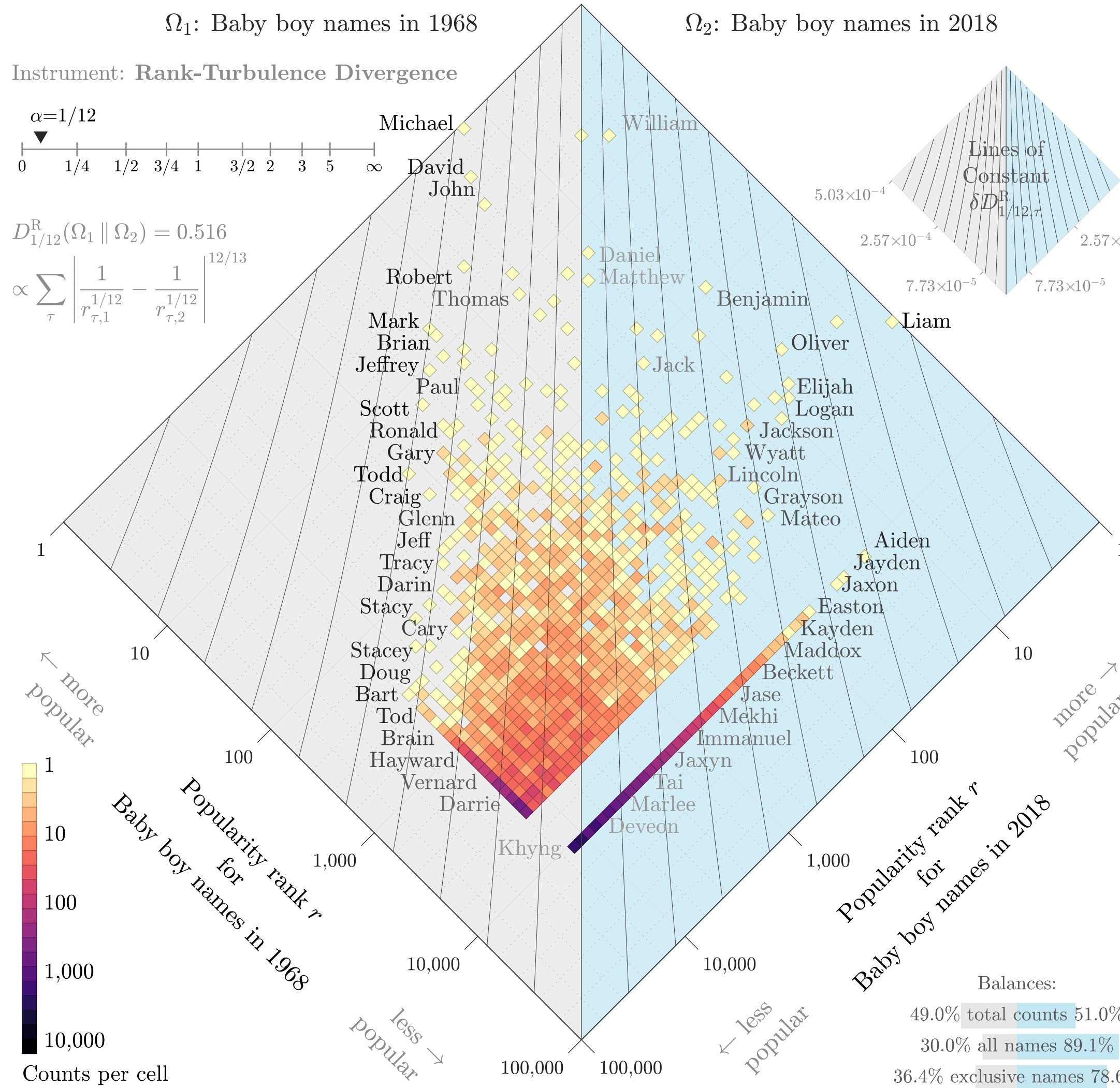
Instrument: Rank-Turbulence Divergence

$\alpha=1/12$



$D_{1/12}^R(\Omega_1 \parallel \Omega_2) = 0.516$

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



Balances:
49.0% total counts 51.0%
30.0% all names 89.1%
36.4% exclusive names 78.6%

47.5%—52.5%

Ω_1 : Baby boy names in 1968

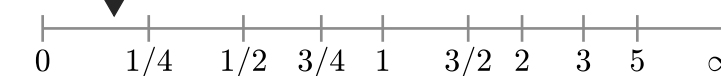
Ω_2 : Baby boy names in 2018

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

Instrument: Rank-Turbulence Divergence

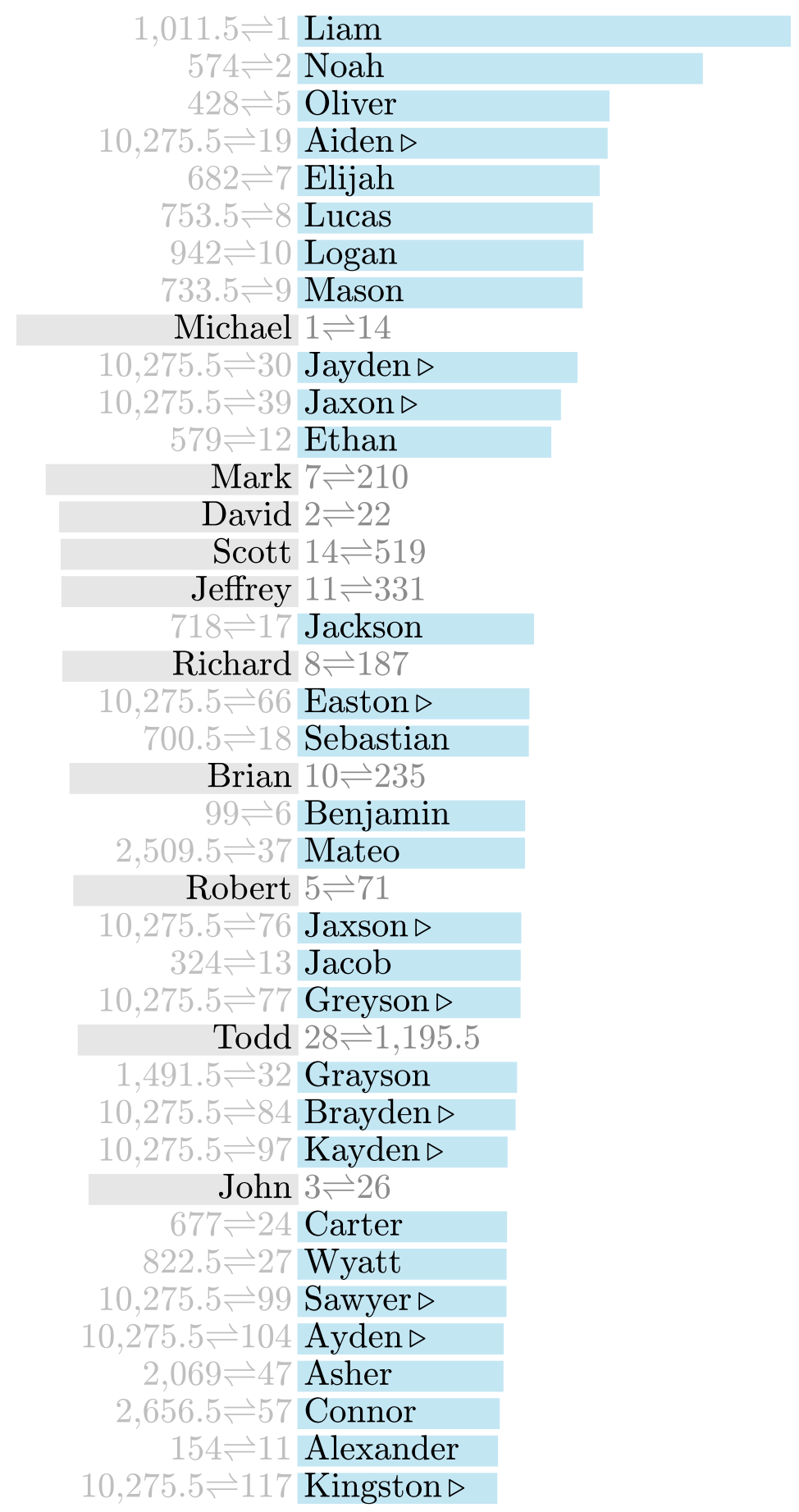
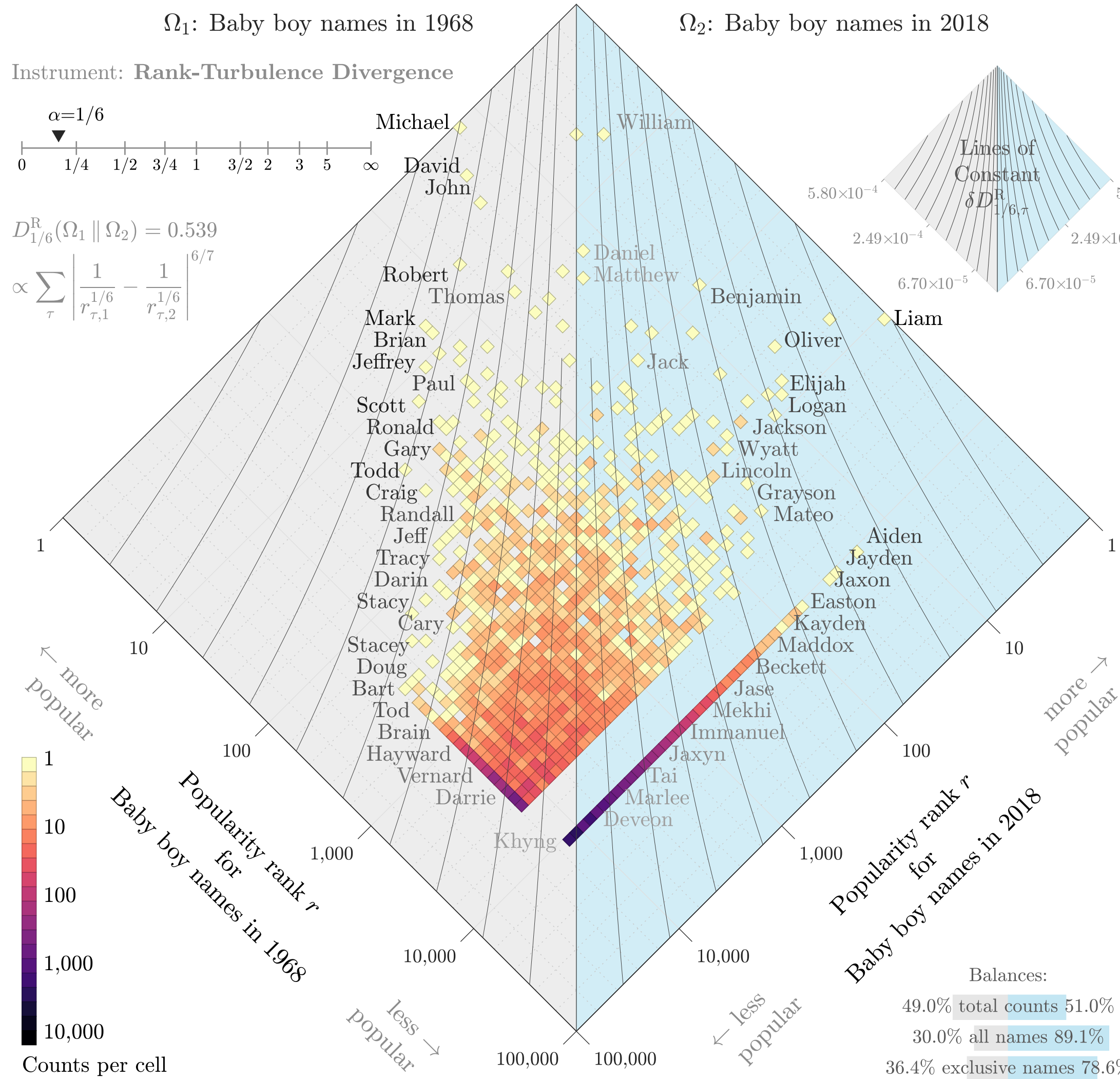
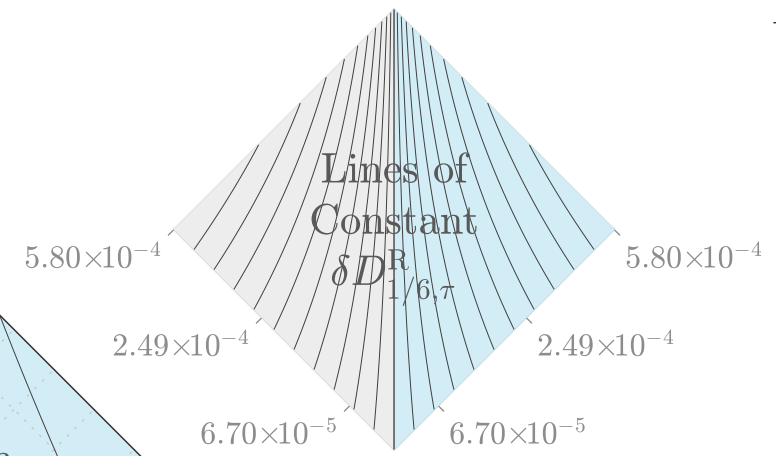
0.08 0.06 0.04 0.02 0 0.02 0.04 0.06 0.08

$\alpha=1/6$



$$D_{1/6}^R(\Omega_1 \parallel \Omega_2) = 0.539$$

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



Balances:
 49.0% total counts 51.0%
 30.0% all names 89.1%
 36.4% exclusive names 78.6%

47.4%—52.6%

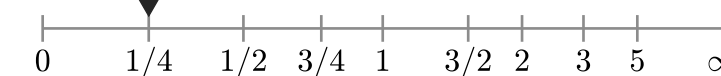
Ω_1 : Baby boy names in 1968

Ω_2 : Baby boy names in 2018

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

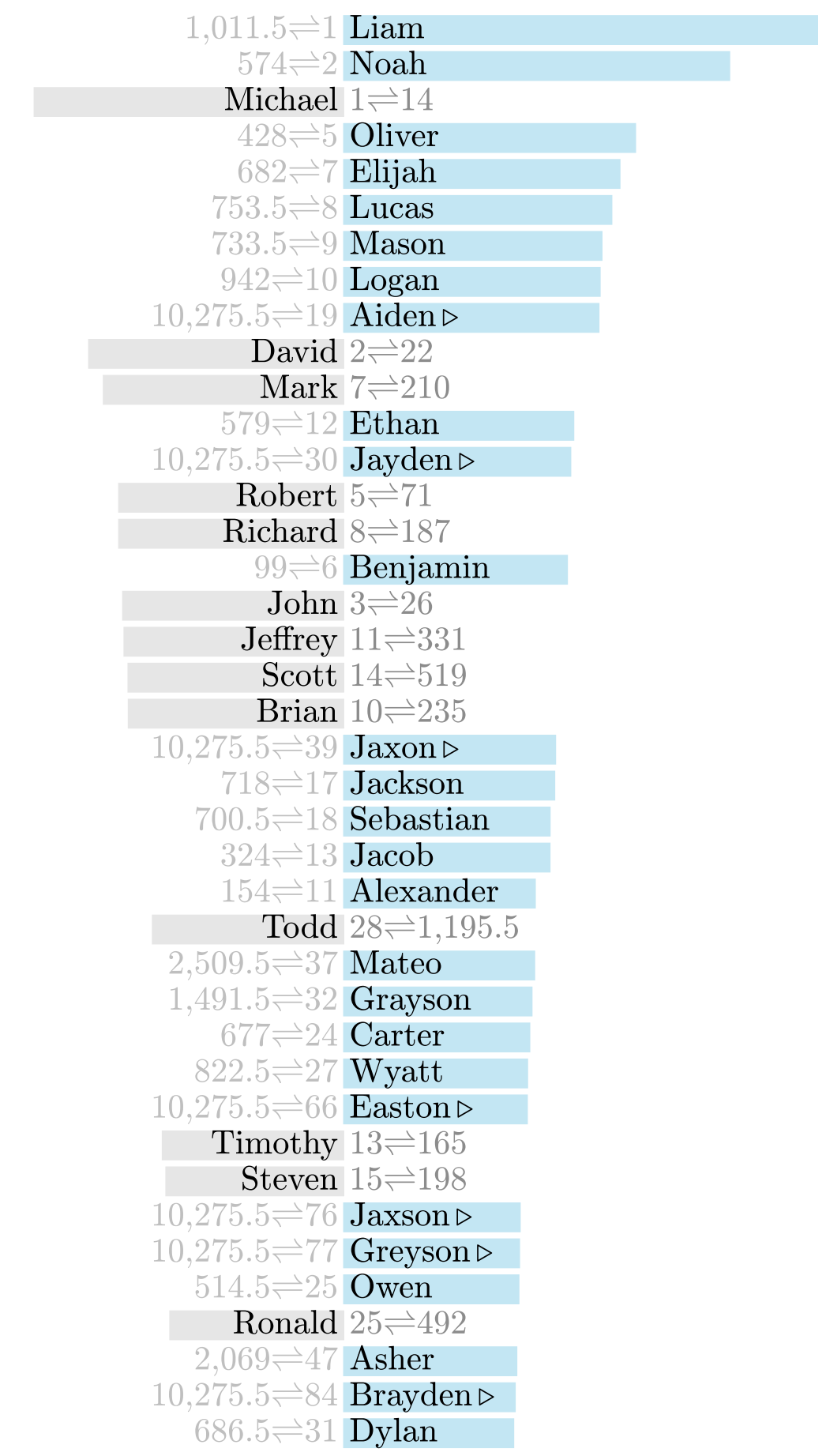
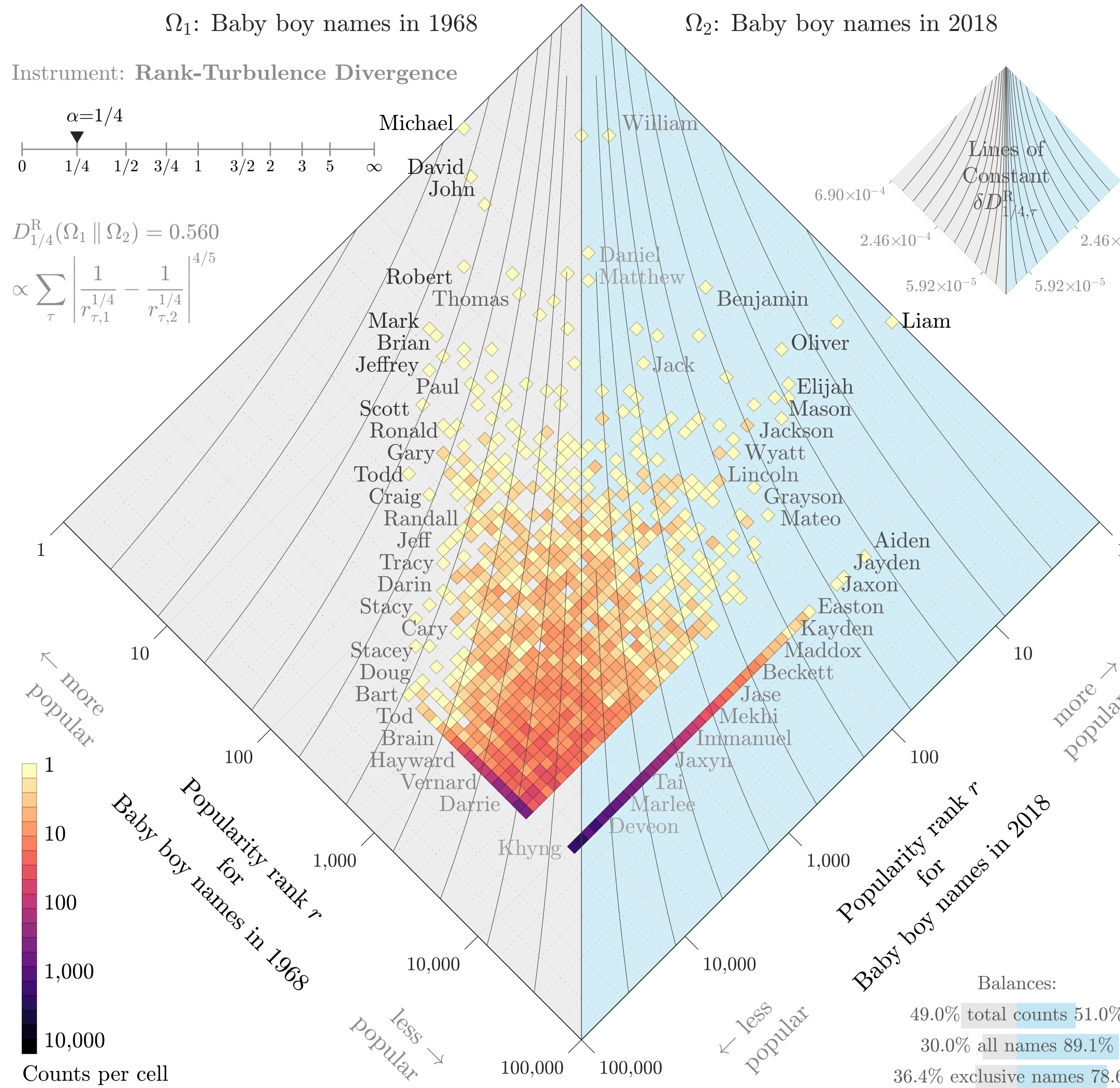
Instrument: Rank-Turbulence Divergence

$\alpha=1/4$



$$D_{1/4}^R(\Omega_1 \parallel \Omega_2) = 0.560$$

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



Balances:
 49.0% total counts 51.0%
 30.0% all names 89.1%
 36.4% exclusive names 78.6%

47.3%—52.7%

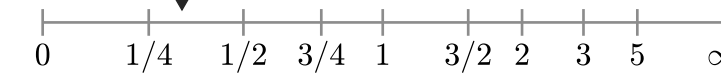
Ω_1 : Baby boy names in 1968

Ω_2 : Baby boy names in 2018

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

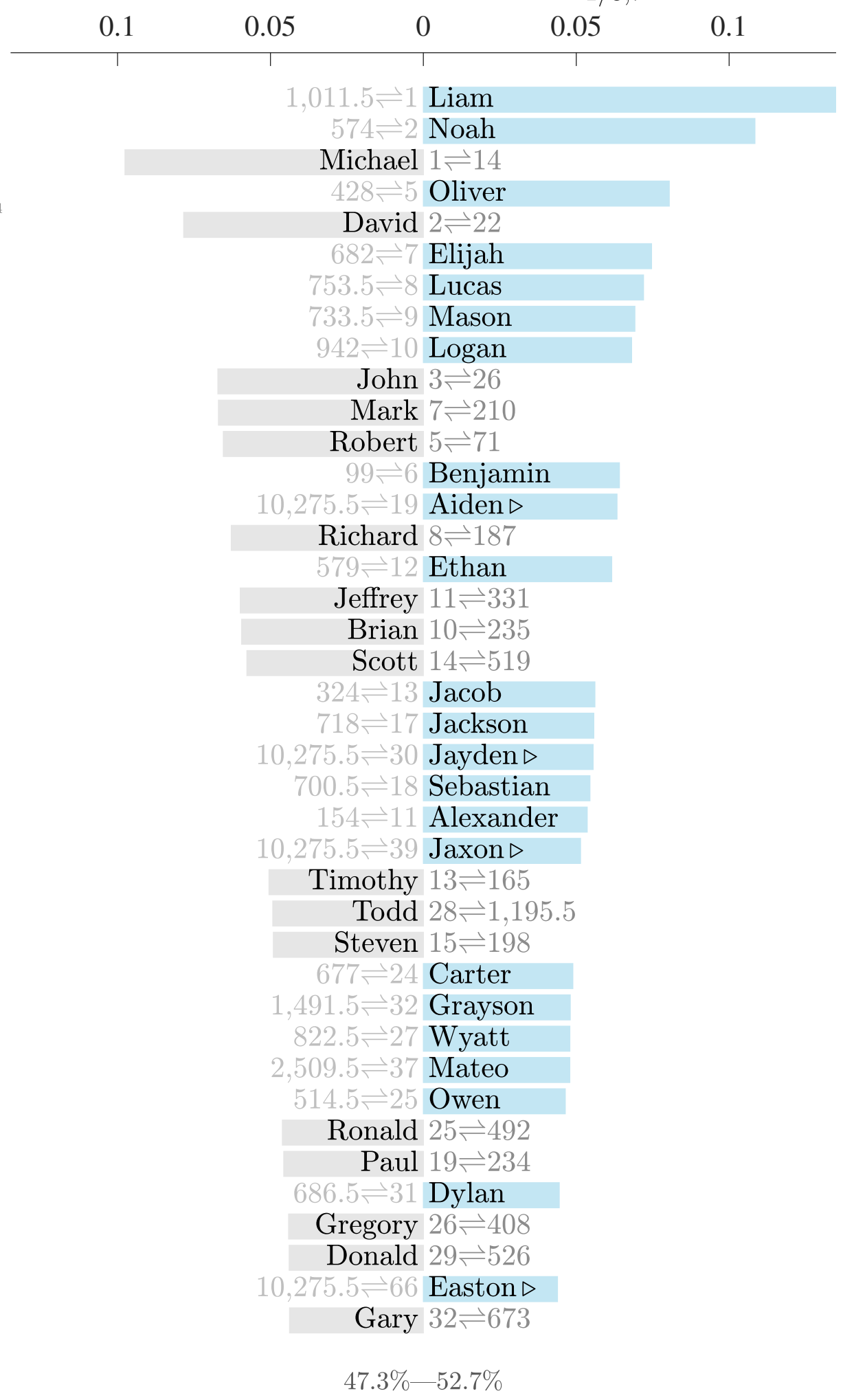
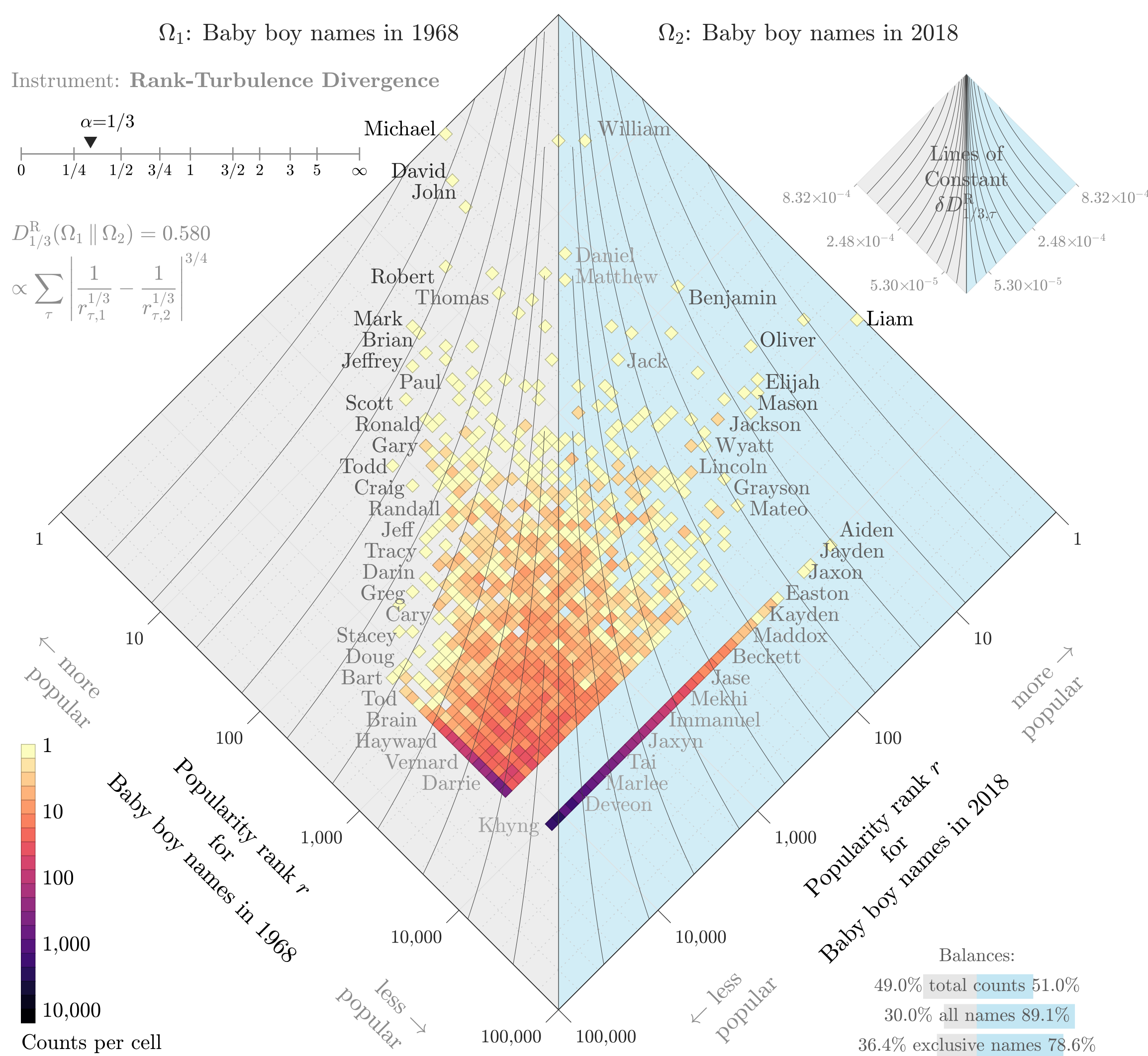
Instrument: Rank-Turbulence Divergence

$\alpha=1/3$



$$D_{1/3}^R(\Omega_1 \parallel \Omega_2) = 0.580$$

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



Balances:
 49.0% total counts 51.0%
 30.0% all names 89.1%
 36.4% exclusive names 78.6%

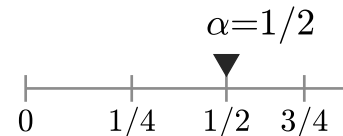
47.3%—52.7%

Ω_1 : Baby boy names in 1968

Ω_2 : Baby boy names in 2018

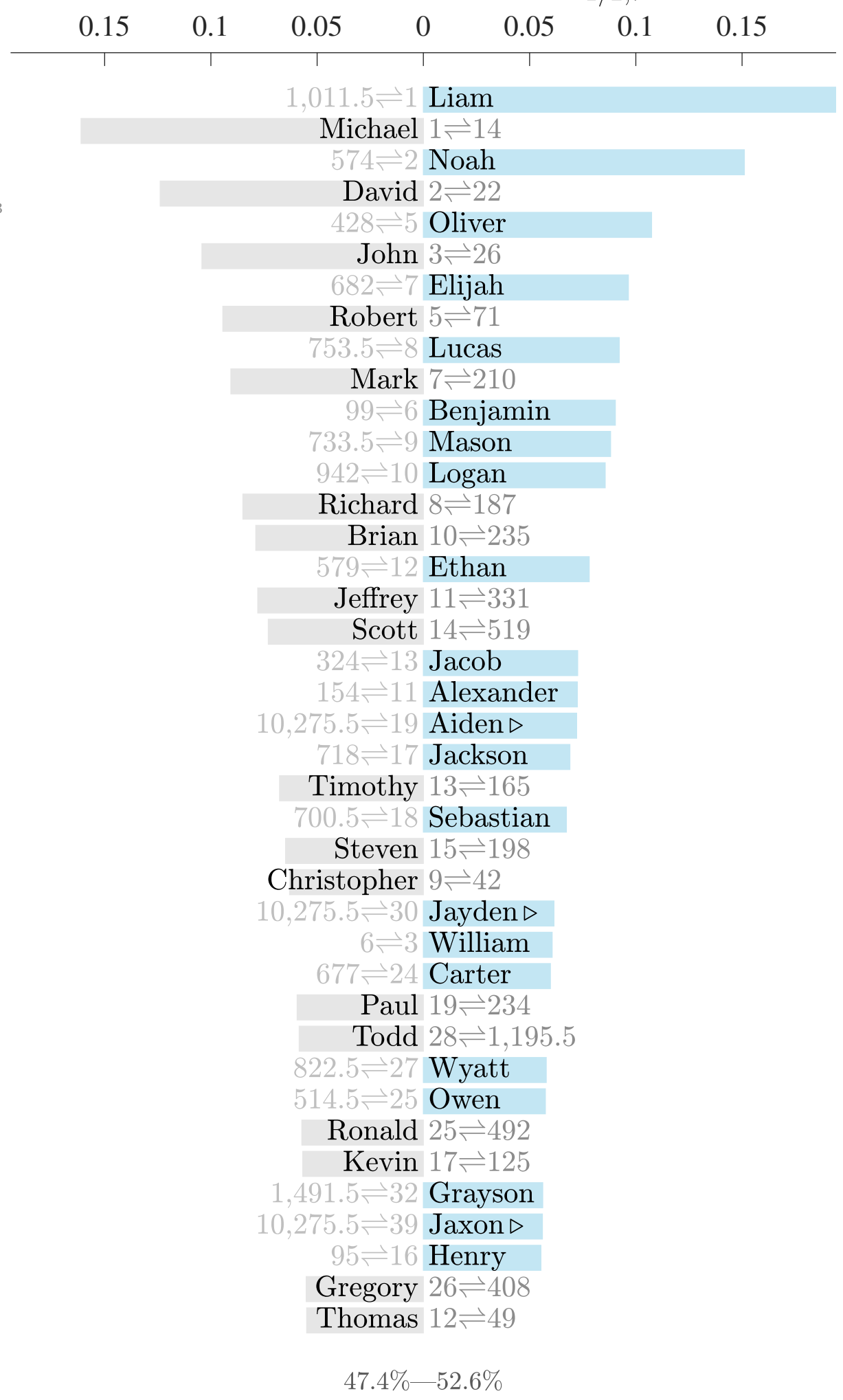
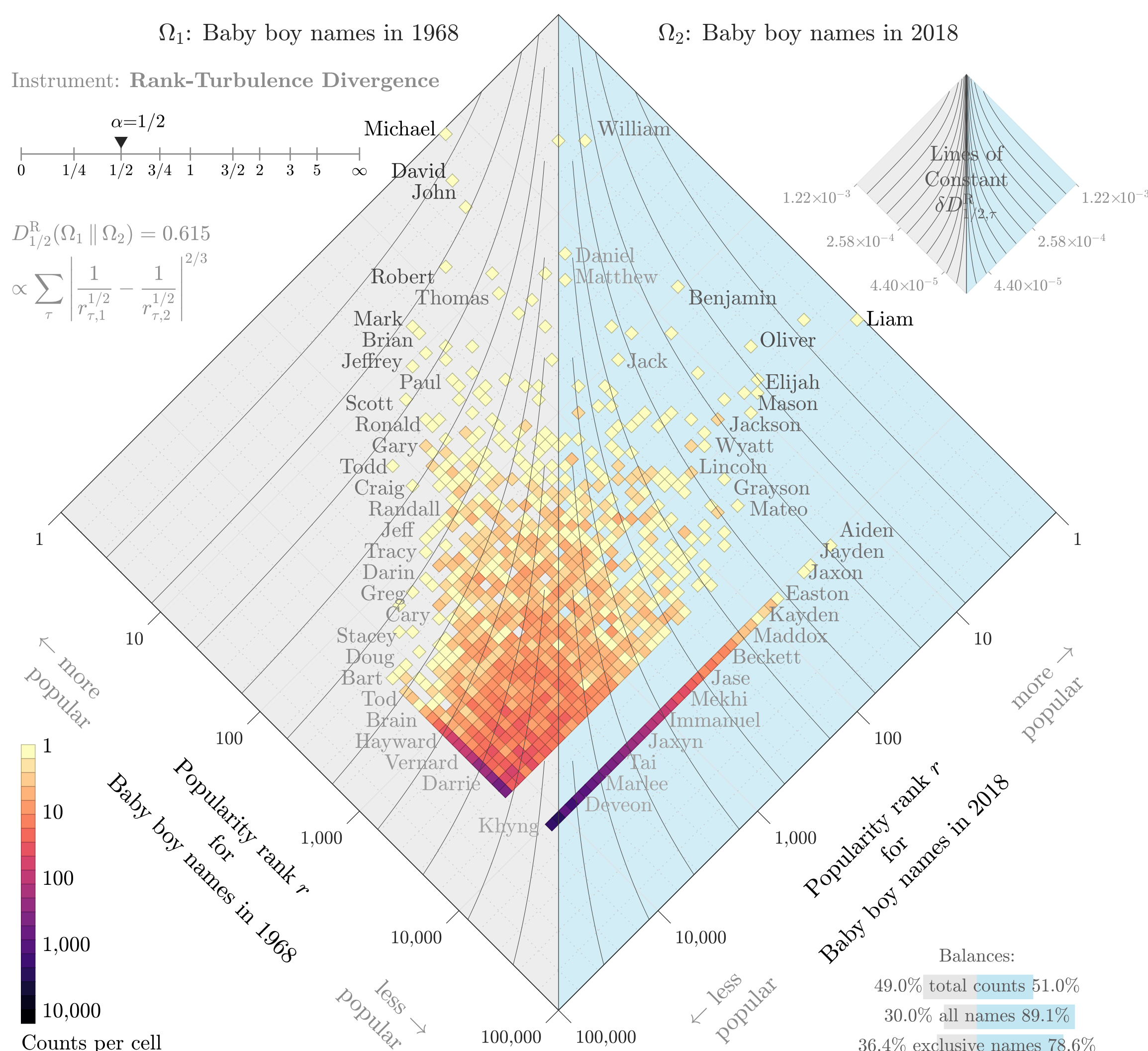
Divergence contribution $\delta D_{1/2,\tau}^R$ (%)

Instrument: Rank-Turbulence Divergence



$$D_{1/2}^R(\Omega_1 \parallel \Omega_2) = 0.615$$

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



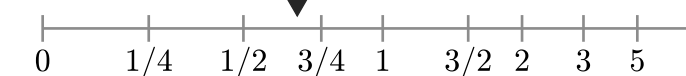
Ω_1 : Baby boy names in 1968

Ω_2 : Baby boy names in 2018

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

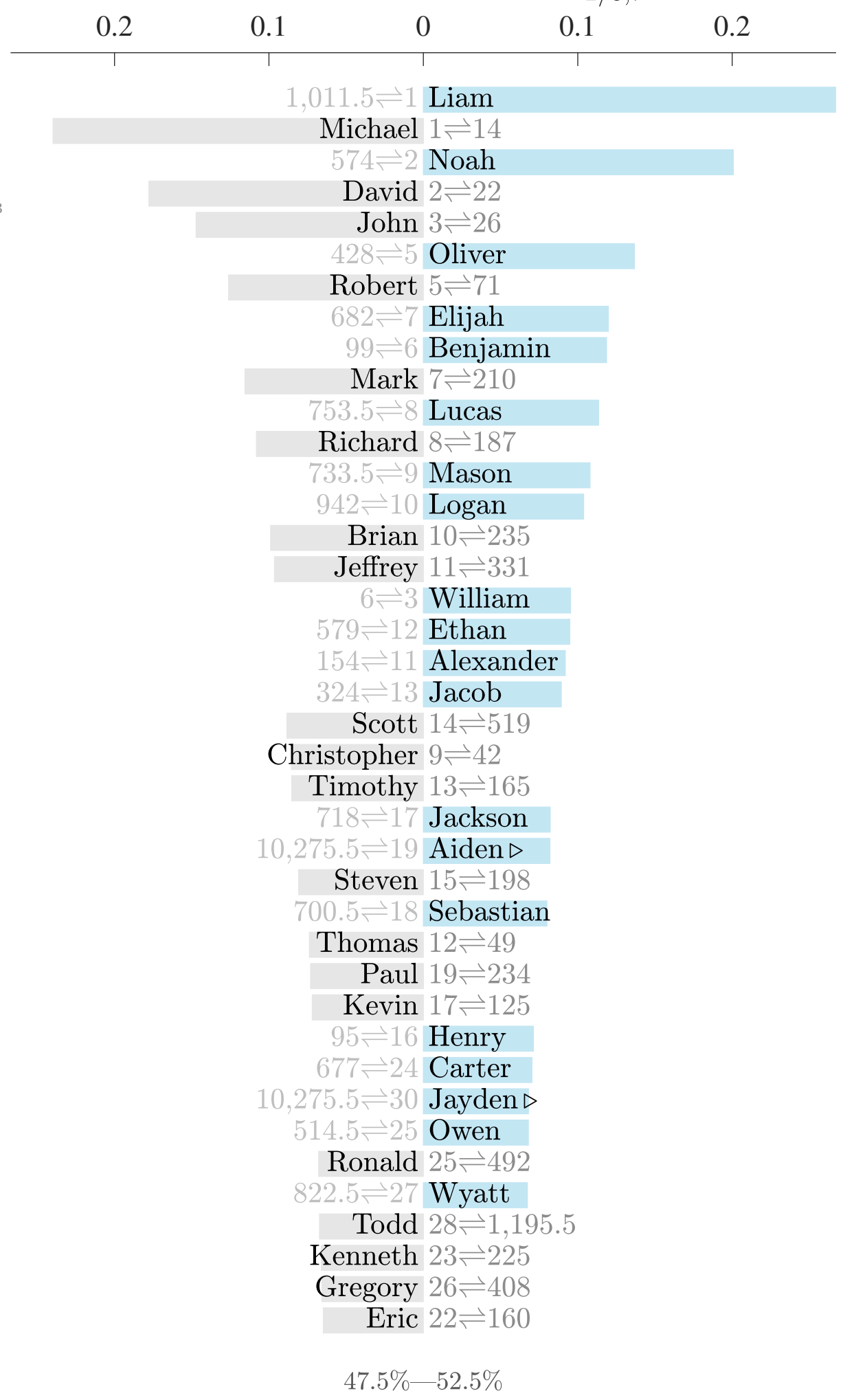
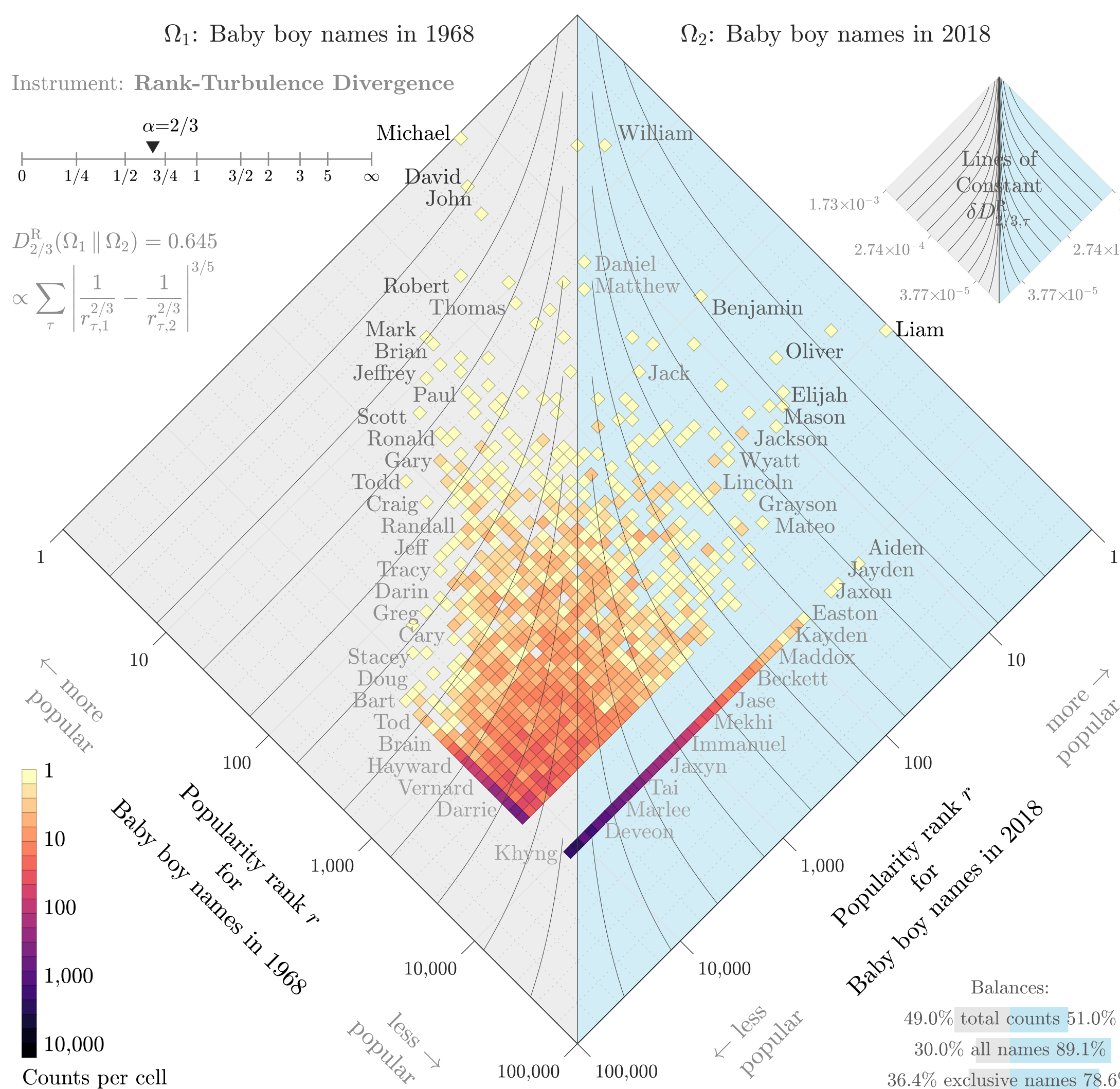
Instrument: Rank-Turbulence Divergence

$\alpha=2/3$



$$D_{2/3}^R(\Omega_1 \parallel \Omega_2) = 0.645$$

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

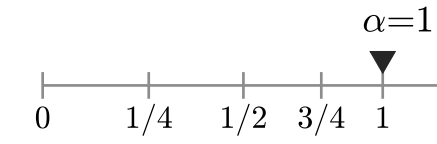


Ω_1 : Baby boy names in 1968

Ω_2 : Baby boy names in 2018

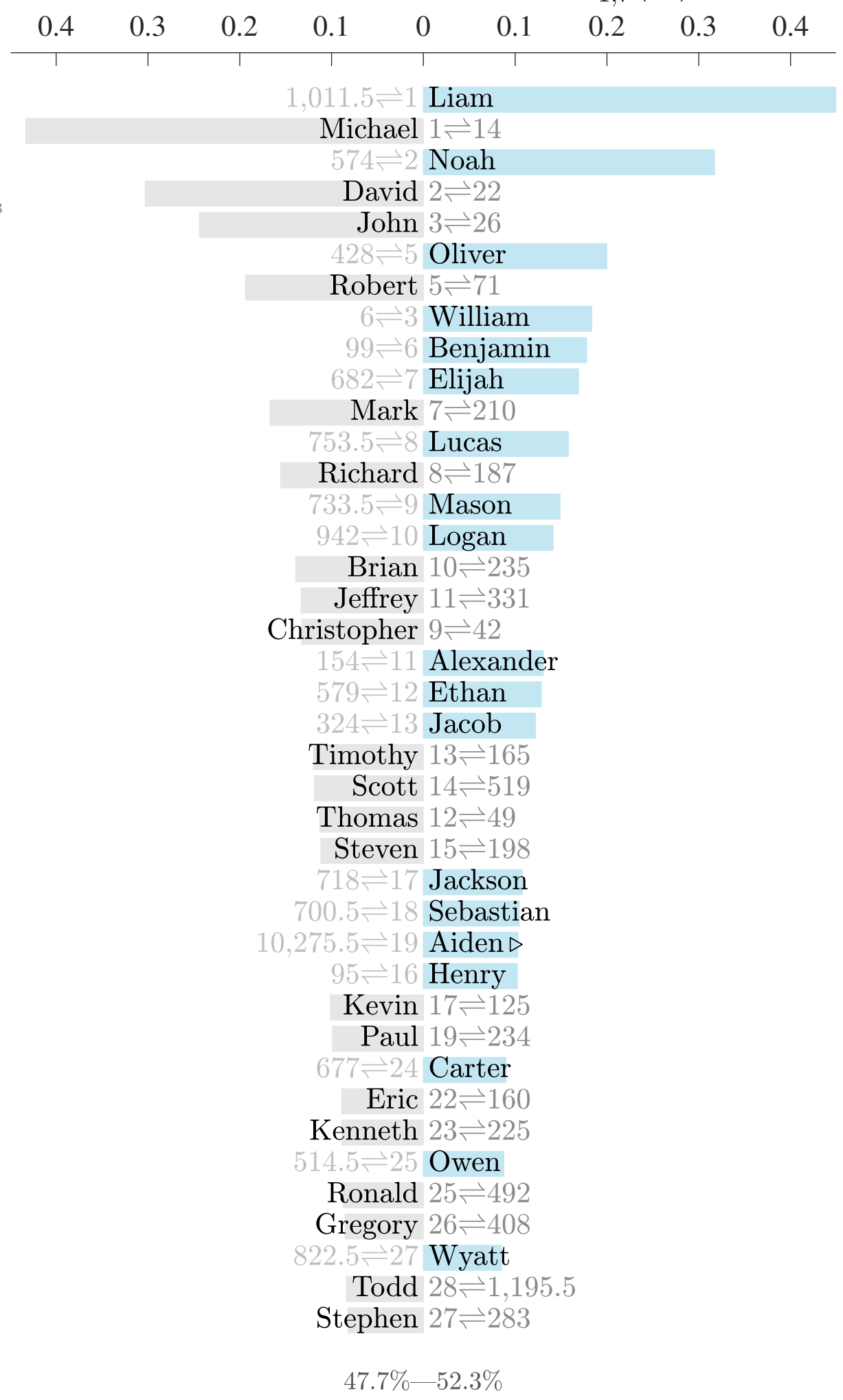
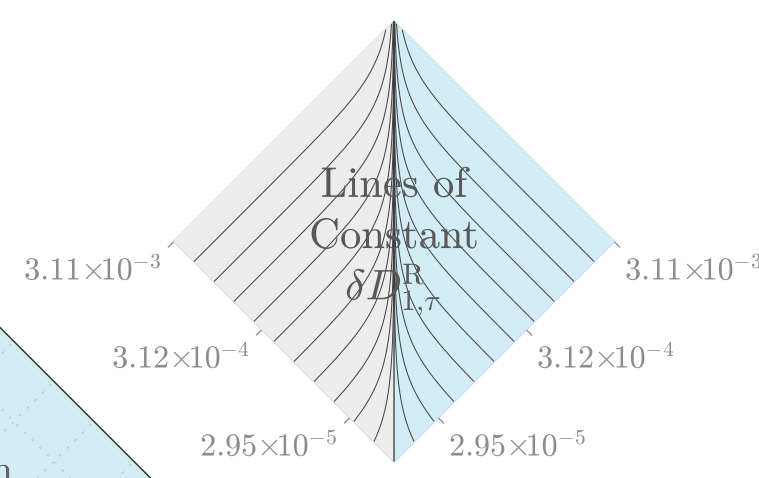
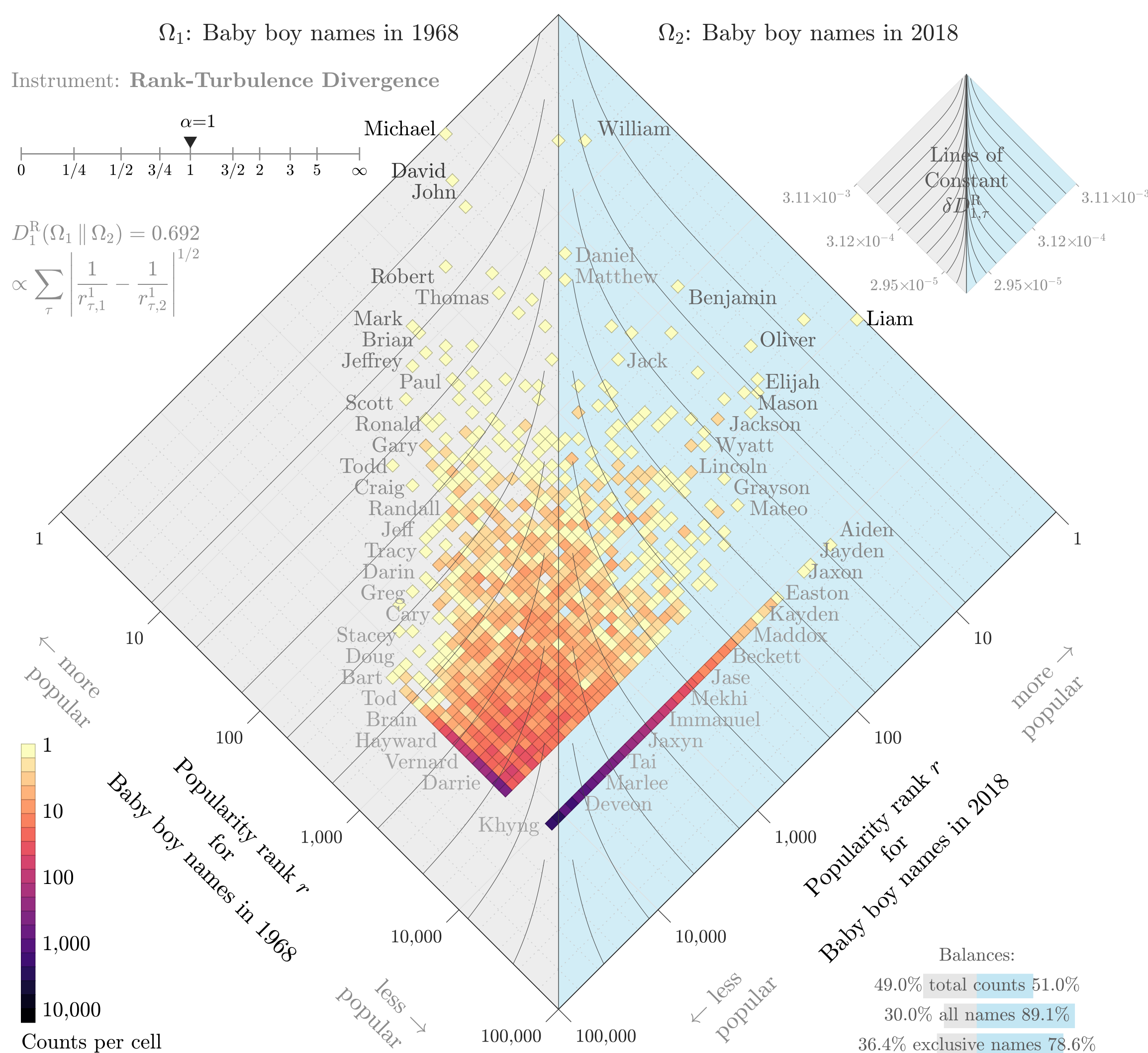
Divergence contribution $\delta D_{1,\tau}^R$ (%)

Instrument: Rank-Turbulence Divergence



$$D_1^R(\Omega_1 \parallel \Omega_2) = 0.692$$

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



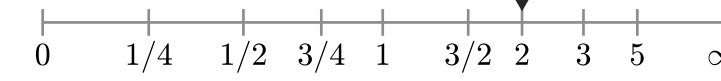
Ω_1 : Baby boy names in 1968

Ω_2 : Baby boy names in 2018

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

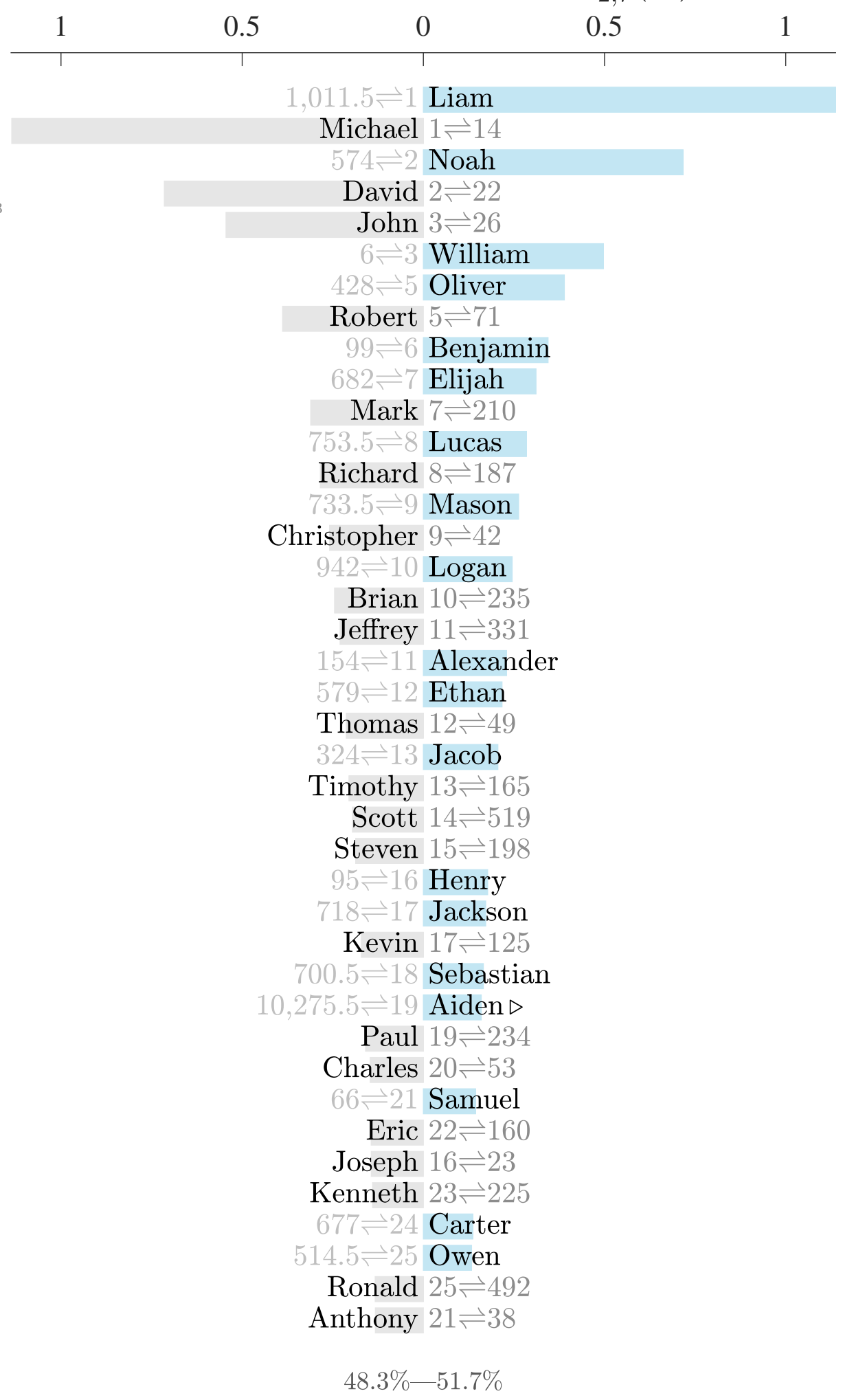
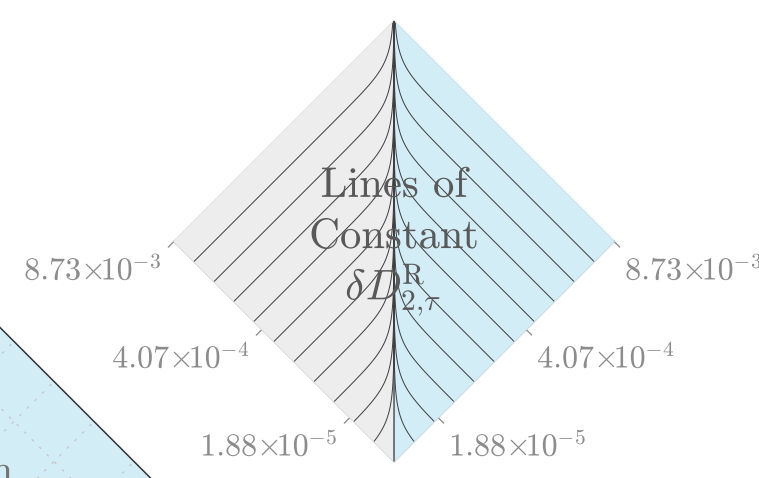
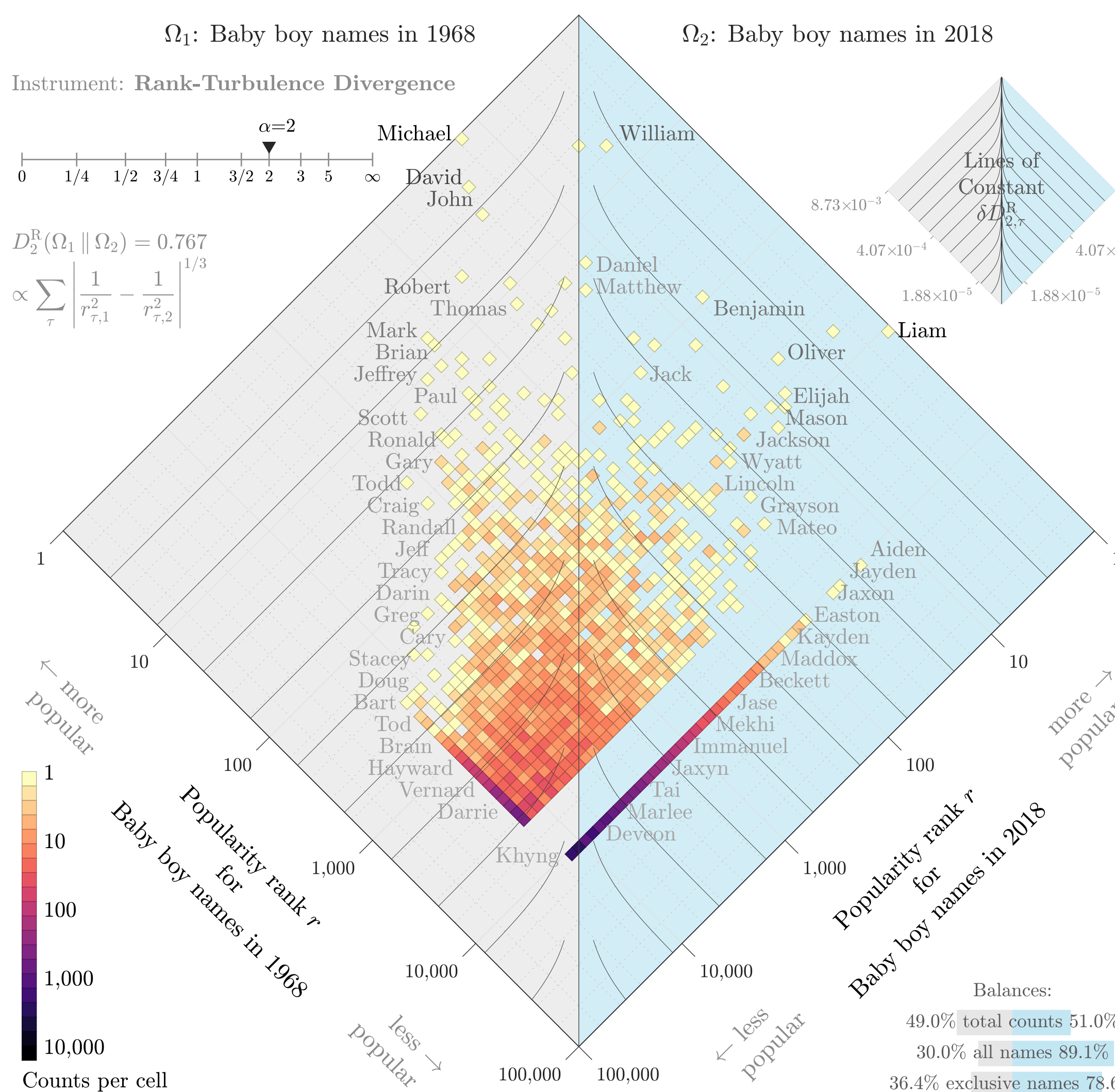
Instrument: Rank-Turbulence Divergence

$\alpha=2$



$$D_2^R(\Omega_1 \parallel \Omega_2) = 0.767$$

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



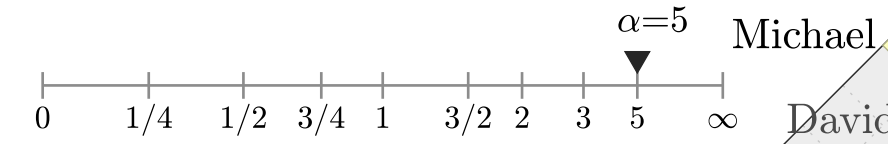
Balances:
49.0% total counts 51.0%
30.0% all names 89.1%
36.4% exclusive names 78.6%

Ω_1 : Baby boy names in 1968

Ω_2 : Baby boy names in 2018

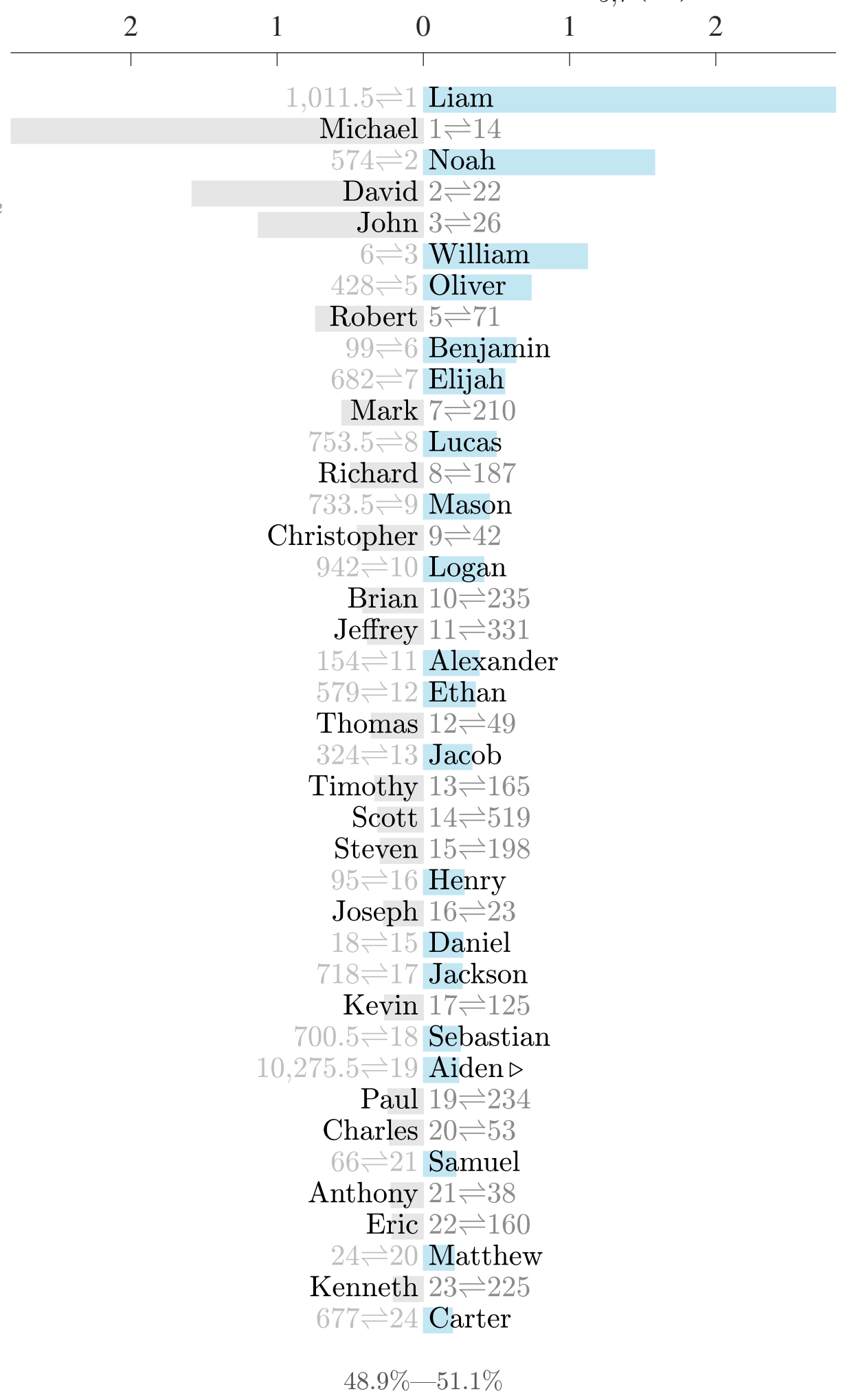
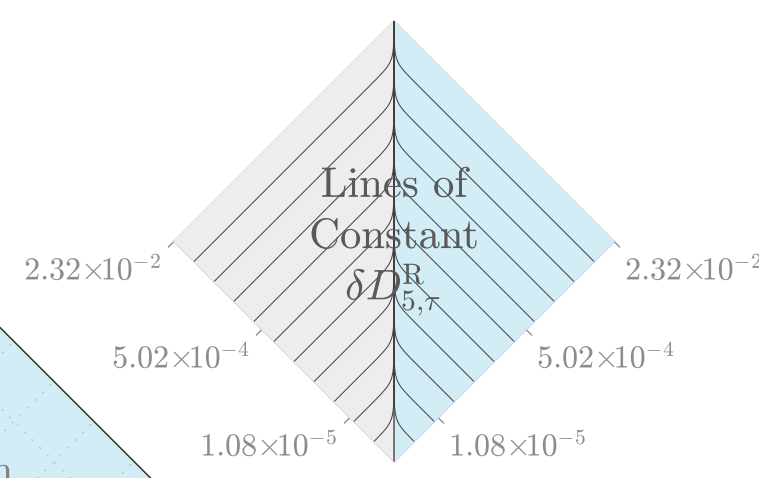
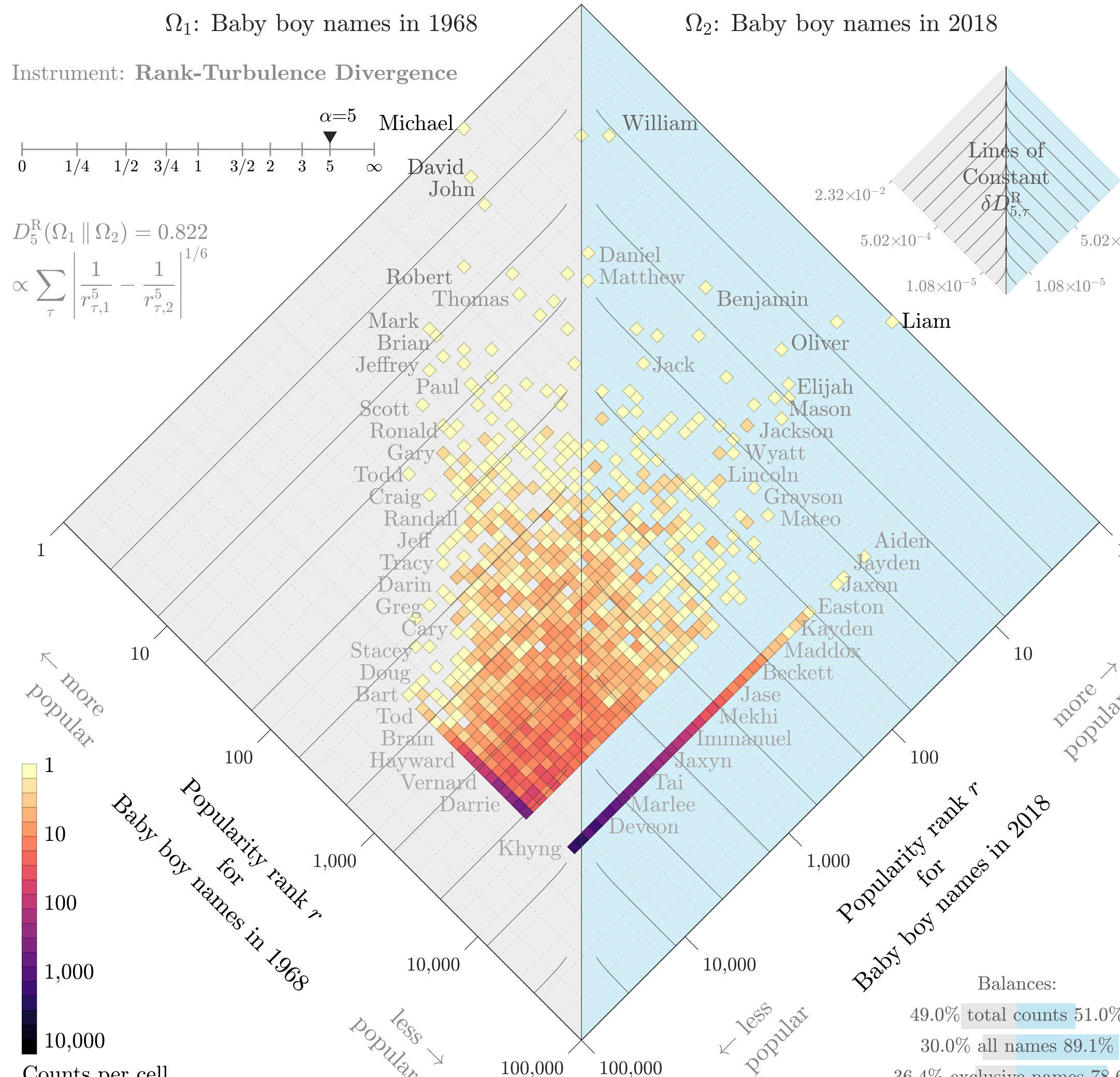
Divergence contribution $\delta D_{5,\tau}^R$ (%)

Instrument: Rank-Turbulence Divergence



$$D_5^R(\Omega_1 \parallel \Omega_2) = 0.822$$

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



Ω_1 : Baby boy names in 1968

Ω_2 : Baby boy names in 2018

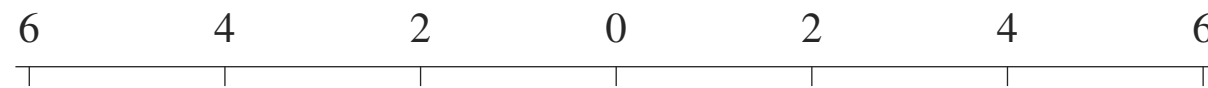
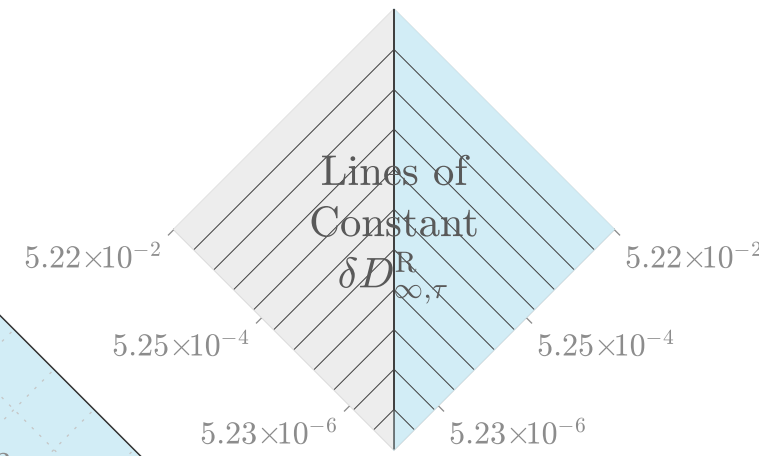
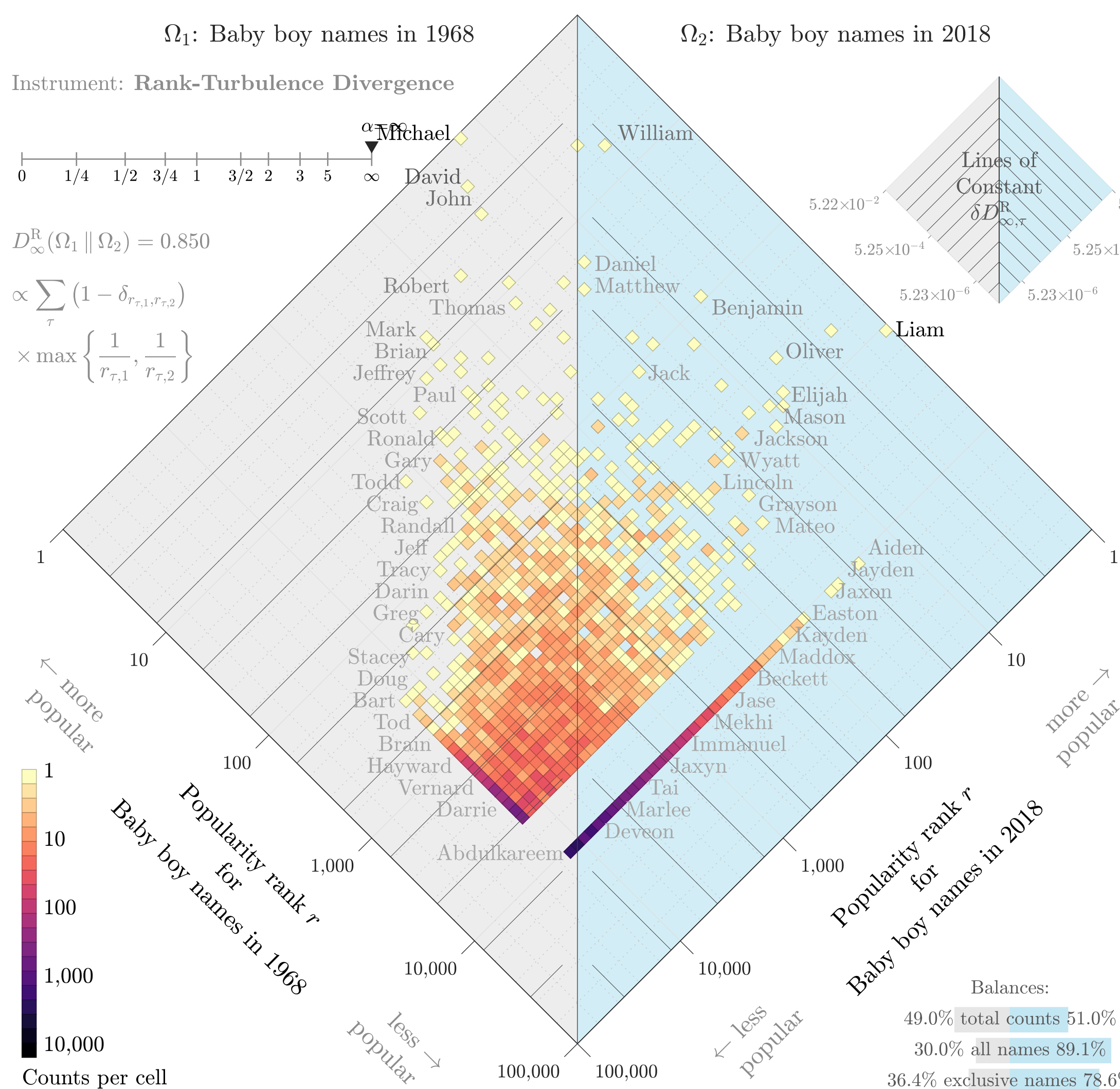
Divergence contribution $\delta D_{\infty, \tau}^R$ (%)

Instrument: Rank-Turbulence Divergence



$$D_{\infty}^R(\Omega_1 \parallel \Omega_2) = 0.850$$

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



Michael	1 \rightleftharpoons 14
1,011.5	1 \rightleftharpoons 1
David	2 \rightleftharpoons 22
574	2 \rightleftharpoons 2
John	3 \rightleftharpoons 26
6	3 \rightleftharpoons 3
Robert	5 \rightleftharpoons 71
428	5 \rightleftharpoons 5
99	6 \rightleftharpoons 6
Mark	7 \rightleftharpoons 210
682	7 \rightleftharpoons 7
Richard	8 \rightleftharpoons 187
753.5	8 \rightleftharpoons 8
Christopher	9 \rightleftharpoons 42
733.5	9 \rightleftharpoons 9
Brian	10 \rightleftharpoons 235
942	10 \rightleftharpoons 10
Jeffrey	11 \rightleftharpoons 331
154	11 \rightleftharpoons 11
Thomas	12 \rightleftharpoons 49
579	12 \rightleftharpoons 12
Timothy	13 \rightleftharpoons 165
324	13 \rightleftharpoons 13
Scott	14 \rightleftharpoons 519
Steven	15 \rightleftharpoons 198
18	15 \rightleftharpoons 15
Joseph	16 \rightleftharpoons 23
95	16 \rightleftharpoons 16
Kevin	17 \rightleftharpoons 125
718	17 \rightleftharpoons 17
700.5	18 \rightleftharpoons 18
Paul	19 \rightleftharpoons 234
10,275.5	19 \rightleftharpoons 19
Charles	20 \rightleftharpoons 53
24	20 \rightleftharpoons 20
Anthony	21 \rightleftharpoons 38
66	21 \rightleftharpoons 21
Eric	22 \rightleftharpoons 160
Kenneth	23 \rightleftharpoons 225
677	24 \rightleftharpoons 24

Balances:
 49.0% total counts 51.0%
 30.0% all names 89.1%
 36.4% exclusive names 78.6%

49.5%—50.5%