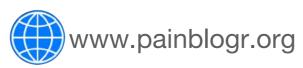
Become



with gganimate

Peter Kamerman



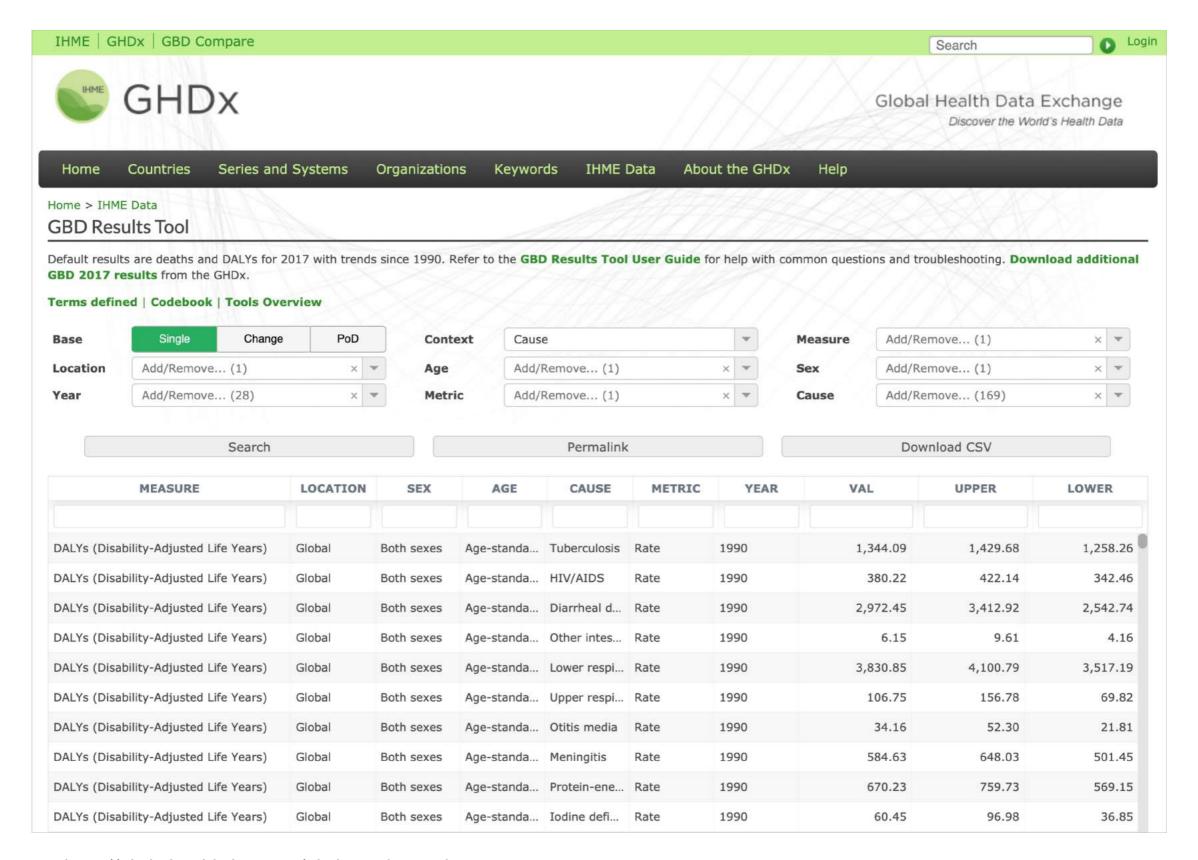




The template

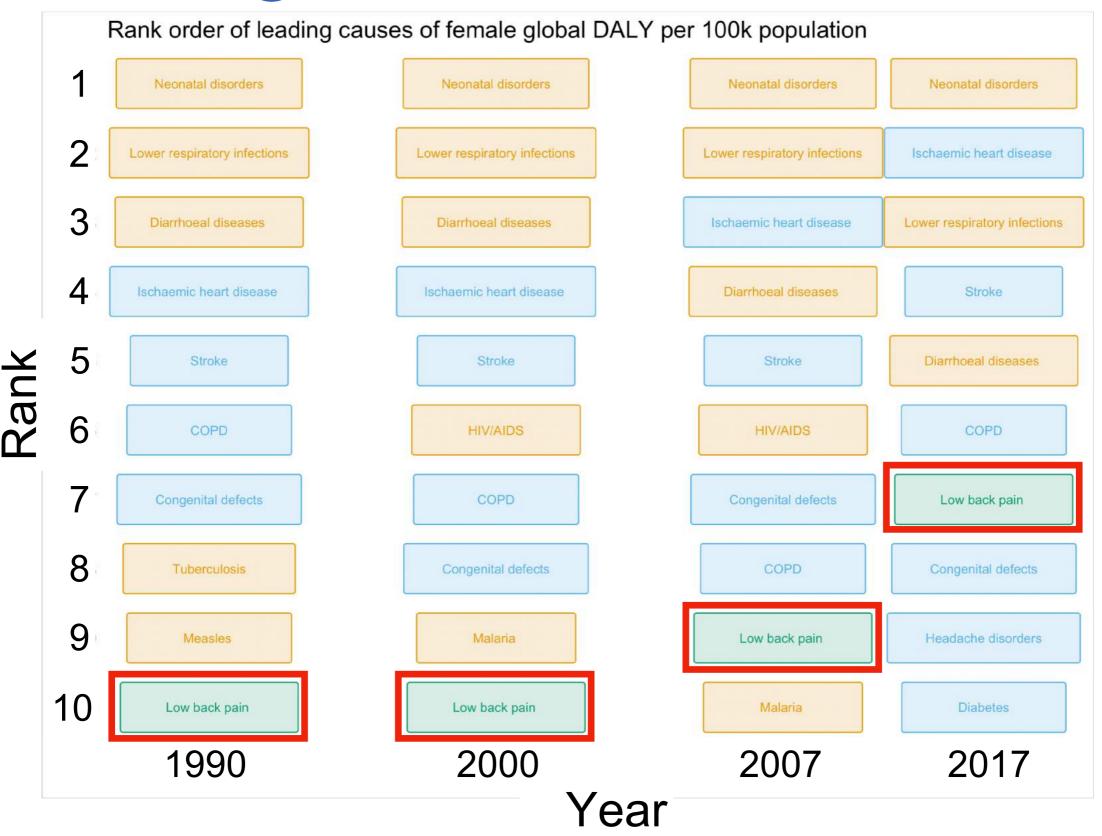
Leading causes 1990	Leading causes 2007	Mean percentage change in number of DALYs, 1990-2007	Mean percentage change in age-standardised DALY rate, 1990–2007		Leading causes 2017	Mean percentage change in number of DALYs, 2007-17	Mean percentage change in age-standardised DALY rate, 2007-17
1 Neonatal disorders	1 Neonatal disorders	-17-3	-17-8		1 Neonatal disorders	-18-2	-21.9
2 Lower respiratory infections	2 Lower respiratory infect	-39-6	-42.0	·	2 Ischaemic heart disease	17.0	-10-4
3 Diarrhoeal diseases	3 HIV/AIDS	610-7	483-0		3 Stroke	13.6	-12.5
4 Stroke	4 Ischaemic heart disease	14.9	-23.6		4 Lower respiratory infections	-26.8	-33.6
5 Ischaemic heart disease	5 Diarrhoeal diseases	-40.8	-44-2		5 Diarrhoeal diseases	-27.8	-35.5
6 Congenital defects	6 Stroke	8-4	-26.5		6 CODD	21-2	-6.3
7 COPD	7 Malaria	28-6	23-2	1.	7 Low back pain	17.3	-2.7
8 Measles	8 COPD	-1.3	-32.7		, LOW BUCK PUIT	15.3	0.7
9 Tuberculosis		-12.8	-15.6	1/	9 Diabetes	29.5	1.9
10 Malaria	10 Low back pain	29.8	-7.6		10 Congenital defects	-9.6	-14.8
11 Low back pain	11 Fleatache disorders	34.0	-0.1		11 Depressive disorders	14.1	-3.1
11 LOW back pairi	12 Diabetes	60.3	10-4		12 HIV/AIDS	-53-9	-58.8
13 Dietary iron deficiency	13 Depressive disorders	32-2	-3.0		`13 Malaria	-35·4	-40-2
14 Maternal disorders	14 Tuberculosis	-25.0	-40-9] .	14 Dietary iron deficiency	-5.0	-14.6
15 Protein-energy malnutrition	15 Dietary iron deficiency	0.3	-18-8		15 Alzheimer's disease	36.1	-0.9
16 Road injuries	16 Road injuries	-1.6	-20.5		16 Road injuries	-4.8	-17-2
17 Depressive disorders	17 Maternal disorders	-21.7	-38-7	1 1./	17 Other musculoskeletal	21.0	0.9
18 Meningitis	18 Anxiety disorders	33.0	0.6		18 Breast cancer	24.4	-1.4
19 Diabetes	19 Other musculoskeletal	49.7	7.0		19 Age-related hearing loss	25.7	0-2
20 Self-harm	20 Breast cancer	35-9	-8.1	1	`20 Tuberculosis	-20-6	-32-2
21 Drowning	21 Chronic kidney disease	22.4	-11-0	1-/	21 Anxiety disorders	12.4	-1.9
22 Asthma	22 Alzheimer's disease	52.1	-6.1		- 22 Chronic kidney disease	21.5	-2.4
23 Chronic kidney disease	23 Age-related hearing loss	44.9	0.7		23 Neck pain	20.8	-1.5
24 Anxiety disorders	24 Neck pain	45.7	0.8		24 Blindness & vision impairment	22.6	-2.1
25 Tetanus	25 Blindness & vision impairment	41.8	-0.6		25 Falls	24.4	0.3
26 Breast cancer	26 Meningitis	-23.0	-27-0		26 Cirrhosis	9.4	-11-2
27 Falls	27 Self-harm	-21.9	-39.8		27 Lung cancer	31.7	1.4
28 Cirrhosis	28 Falls	19-2	-12-9		28 Gynaecological diseases	10-2	-2.4
29 Other musculoskeletal	29 Protein-energy malnutrition	-39-8	-40-9	1././	29 Maternal disorders	-24·1	-30-3
30 Blindness & vision impairment	30 Cirrhosis	16.6	-16-6		30 Asthma	9.7	-8.2
31 Age-related hearing loss	31 Gynaecological diseases			1	31 Self-harm		
32 Neck pain	32 Asthma			1	`-34 Meningitis		
33 Alzheimer's disease	33 Lung cancer			/	`37 Protein-energy malnutrition	Communica	able, maternal,
34 Gynaecological diseases	34 Measles			*****	- 52 Drowning	neonatal, ar	nd nutritional disease
36 HIV/AIDS	37 Drowning]]]]]]	· 64 Measles	Non-comm	unicable diseases
43 Lung cancer	'74 Tetanus					Injuries	

The data source



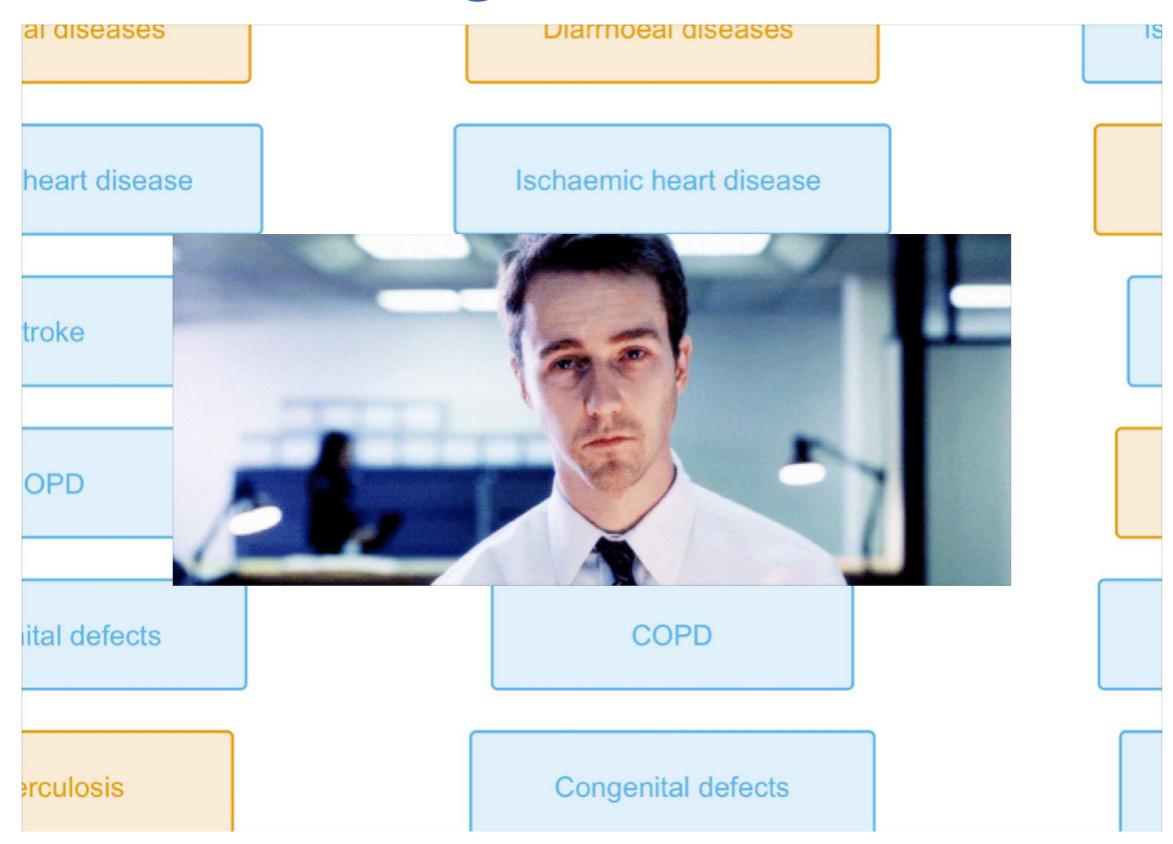
Source: http://ghdx.healthdata.org/gbd-results-tool

What I got



Source: GBD 2017 DALYs and HALE Collaborators. *Lancet* **392**:1859–1922, 2018. doi: <u>10.1016/S0140-6736(18)32335-3</u>

...was boring



Source: picgifs.com (Fight Club)

Adding some action

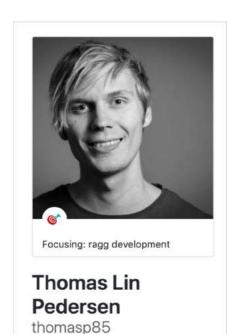
[∞]gganimate

build passing build passing CRAN 1.0.2 - 25 days ago downloads 8848/month coverage 30%

gganimate extends the grammar of graphics as implemented by ggplot2 to include the description of animation. It does this by providing a range of new grammar classes that can be added to the plot

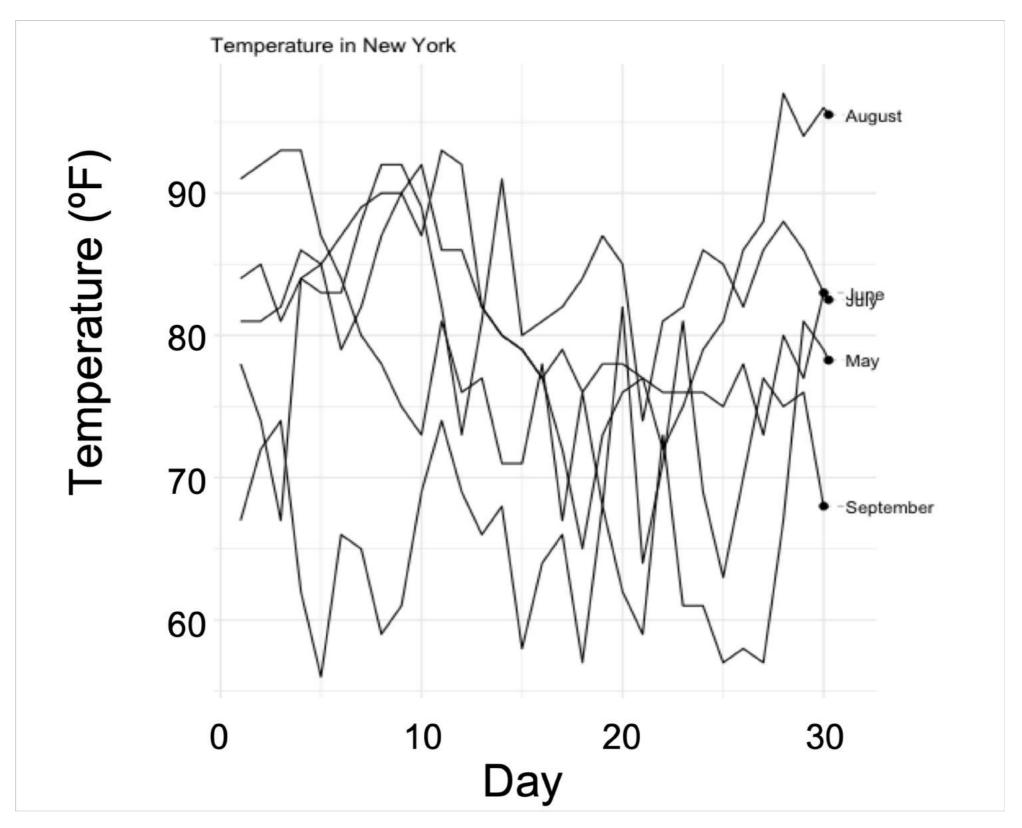


- transition_*()
- view_*()
- shadow_*()
- enter_*() / exit_*()
- ease_aes()





transition_reveal



transition_reveal + ggrepel

Line plot + points

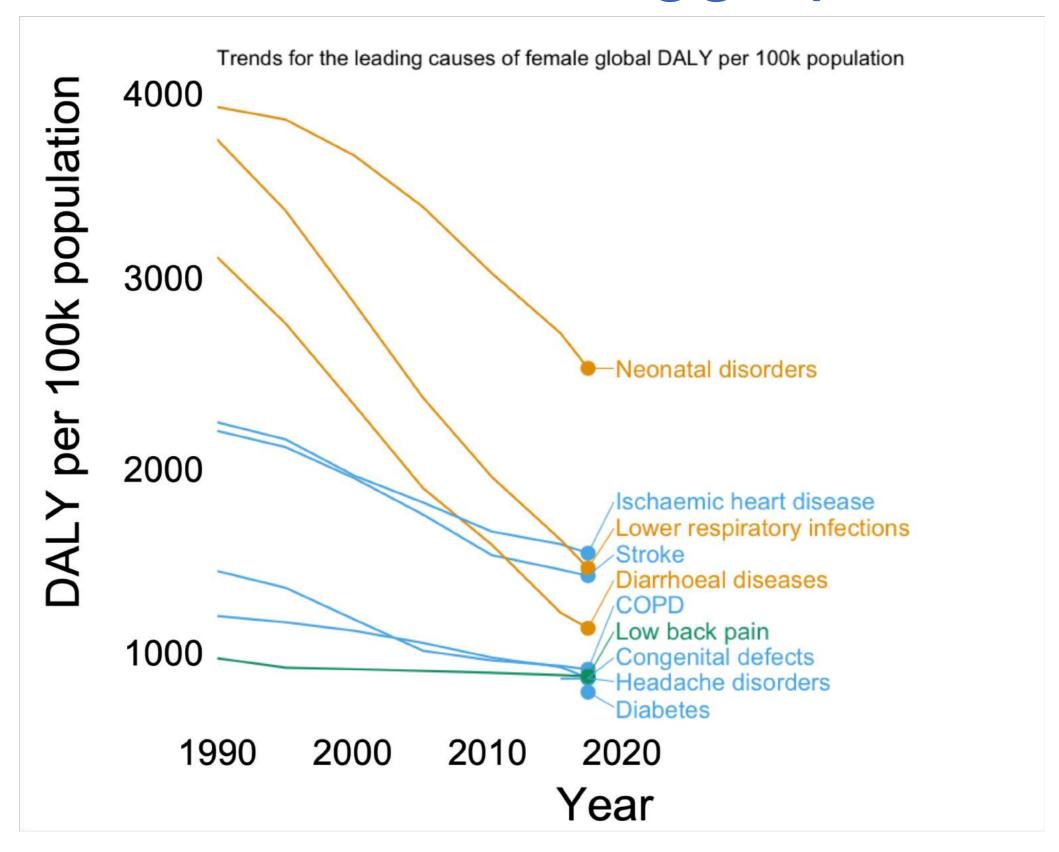
Repelling labels

```
<- ggplot(data = data) +
aes(x = year)
    y = val,
    group = cause) +
geom_line(aes(colour = colour),
           size = 1) +
geom_point(aes(fill = colour,
                colour = colour),
            size = 6) +
 geom_text_repel(aes(label = cause,
                     colour = colour),
                 size = 8
                 hjust = 0,
                 direction = 'y',
                 nudge_x = 2) +
 scale_colour_manual(values = pal) +
 scale_x_continuous(limits = c(1990, 2045),
                    expand = c(0, 0),
                    breaks = c(1990, 2000, 2010, 2020)) +
 labs(subtitle = 'Trends for the leading causes of female
     x = 'Year',
      y = 'DALY per 100k population') +
theme_minimal(base_size = 20) +
theme(legend.position = 'none',
       panel.grid = element_blank())
```

transition_reveal + ggrepel

```
p1 /
     P1_reveal
                <- pl + transition_reveal(along = year)
                   animate( P1_reveal
                           res = 72
                           width = 800,
                           height = 700,
                           nframe = 100,
                           end_pause = 50,
                           duration = 20
```

transition_reveal + ggrepel







Scripts and data to reproduce animated plots kamermanpr/satRday2019