

1

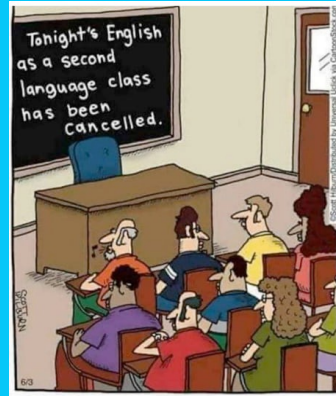
Un gráfico (bien hecho)
dice más
que mil palabras

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Laboratorio 4 | Abril de 2023

Departamento de Física
.UBAexactas

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#1 Conocer a tu audiencia



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¿A quién le hablo?

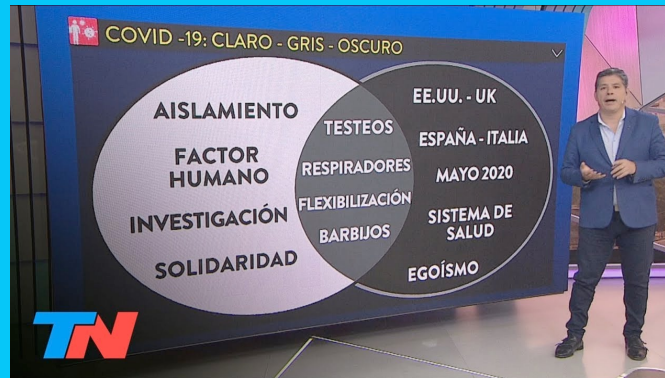
Colegas de otras disciplinas
 Colegas de mi misma disciplinas
 Periodistas científicos
 Público en general
 Estudiantes
 ...

¿Por qué medio?

Charlas en congresos científicos
 Posters en congresos científicos
 Publicaciones científicas
 Clases
 Publicaciones en medios
 ...

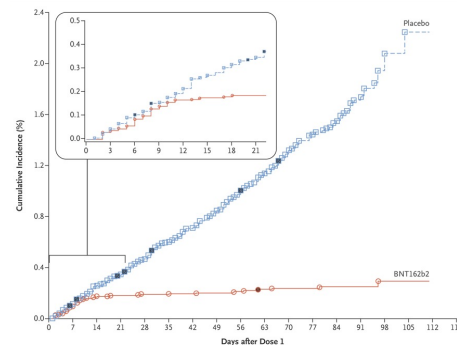
4

#2 Definir un mensaje claro



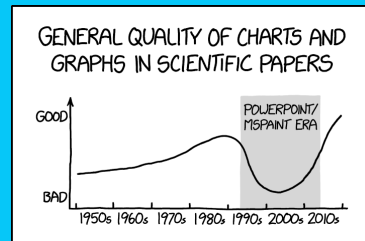
5

Escribir en una **oración** (sujeto y predicado)
enunciando la **conclusión** (conectada en los datos)

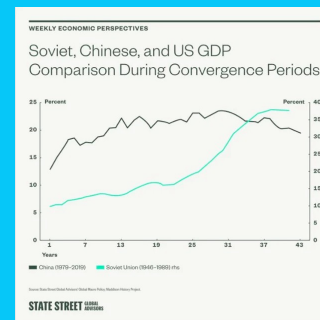


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#3 Usar herramientas adecuadas (y no abusar de ellas)



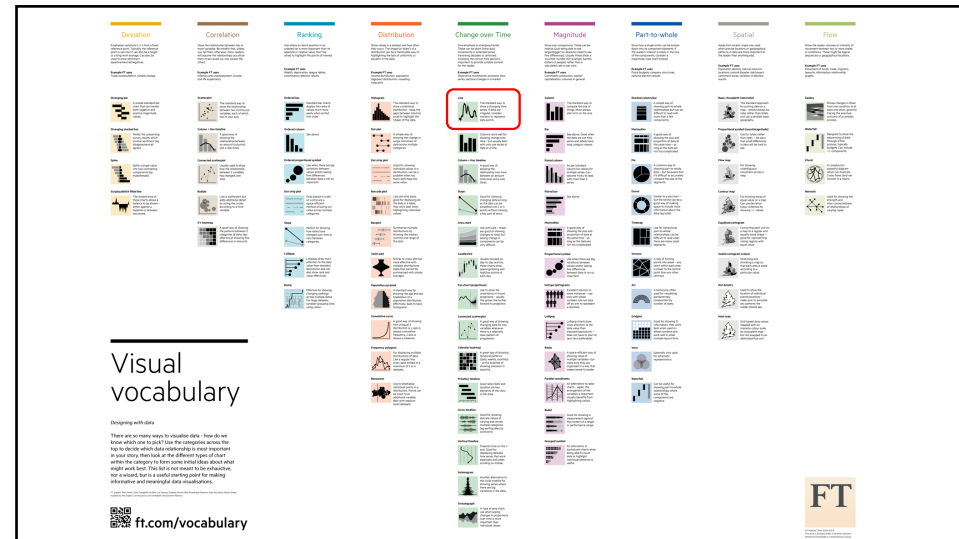
<https://xkcd.com/1945/>



7

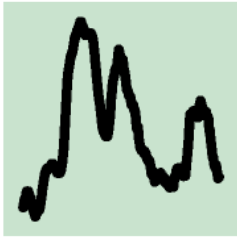


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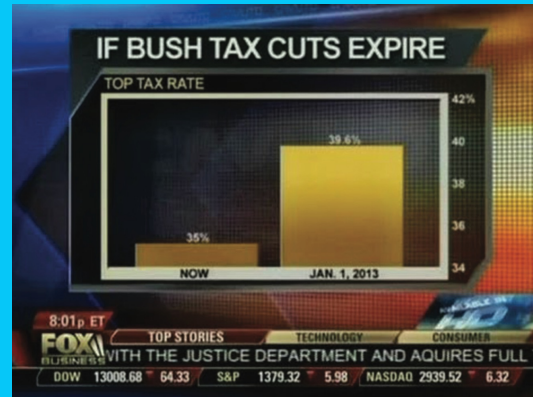
Line



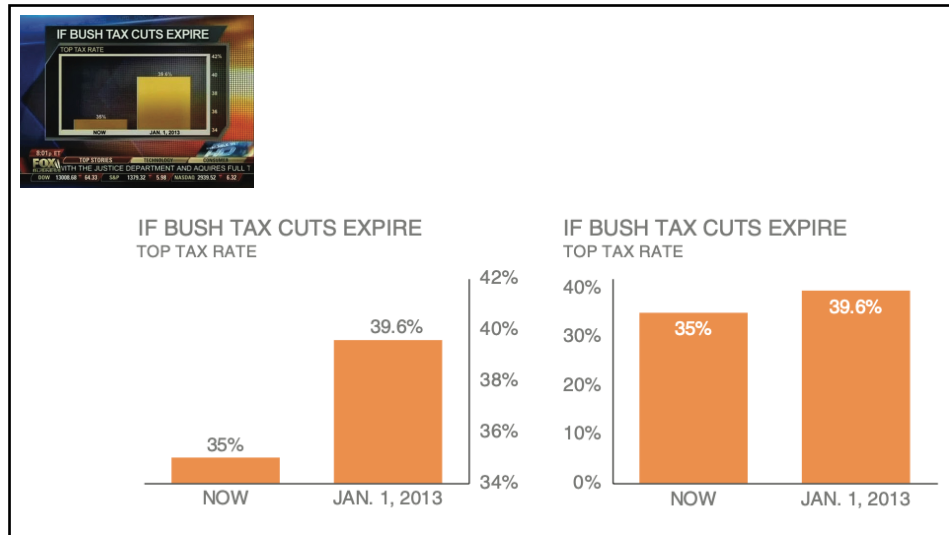
The standard way to show a changing time series. If data are irregular, consider markers to represent data points.

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#4 Graficar los datos fielmente



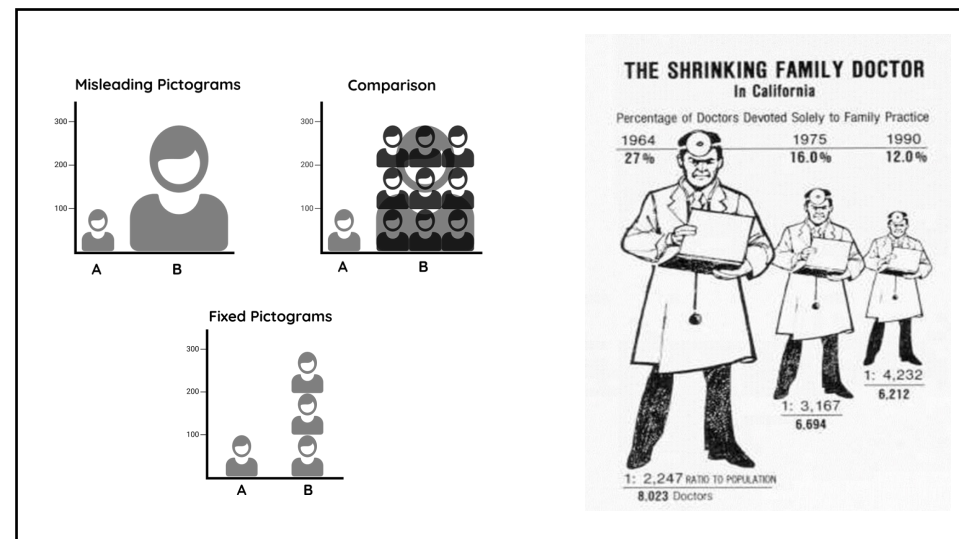
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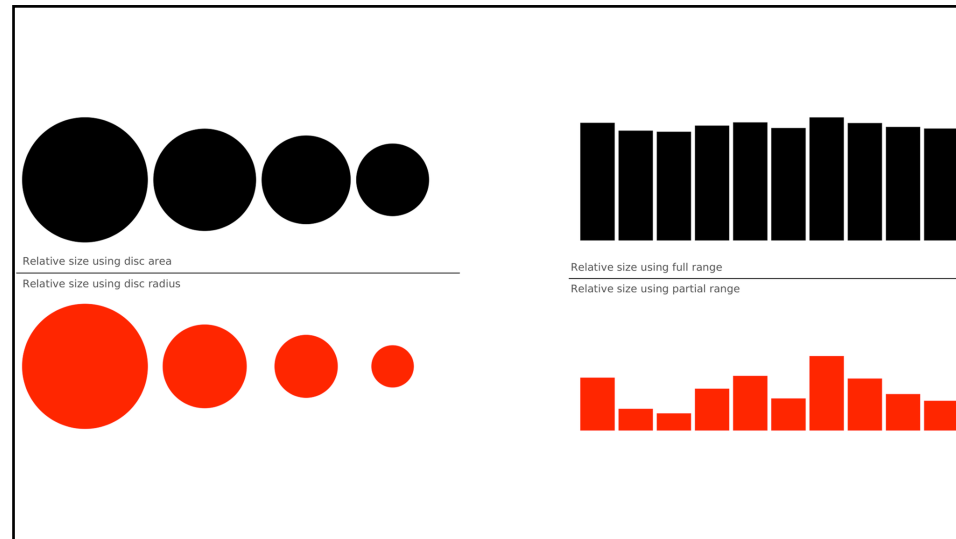
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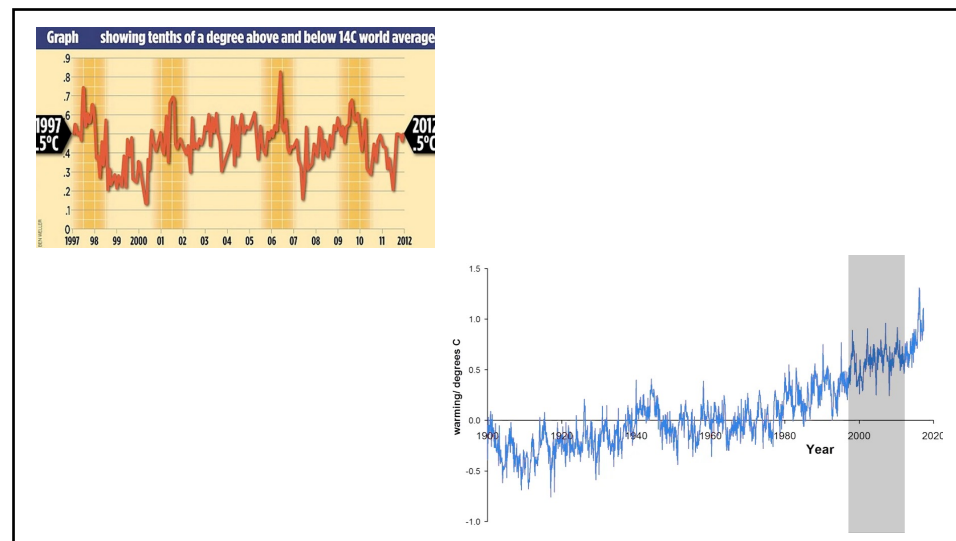
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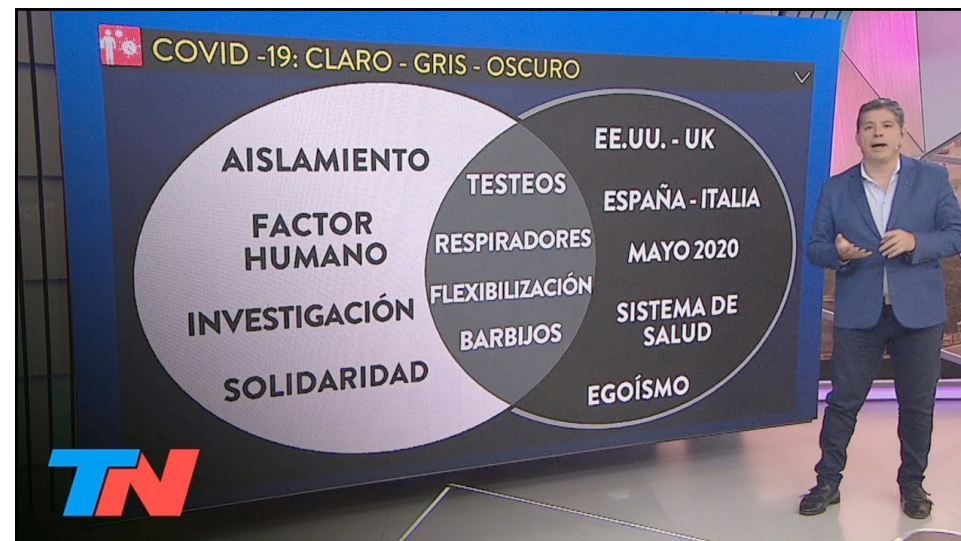


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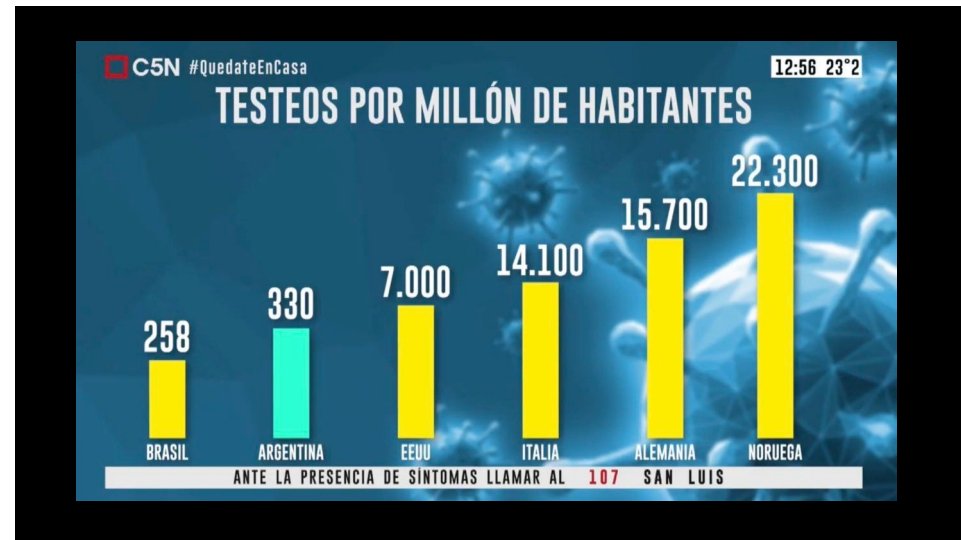
#5 Tener consistencia interna



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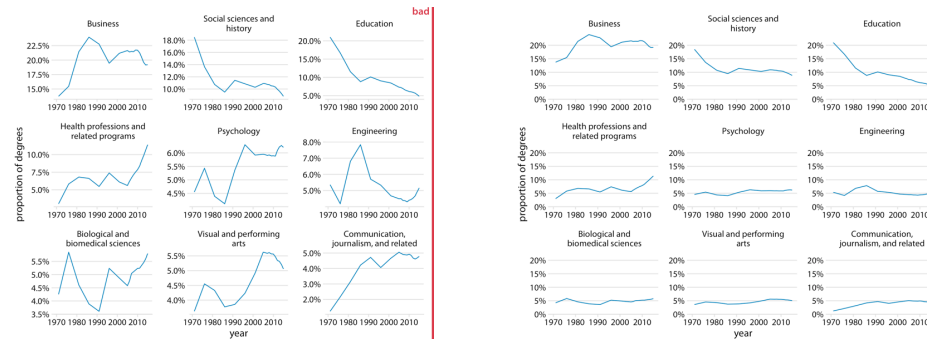


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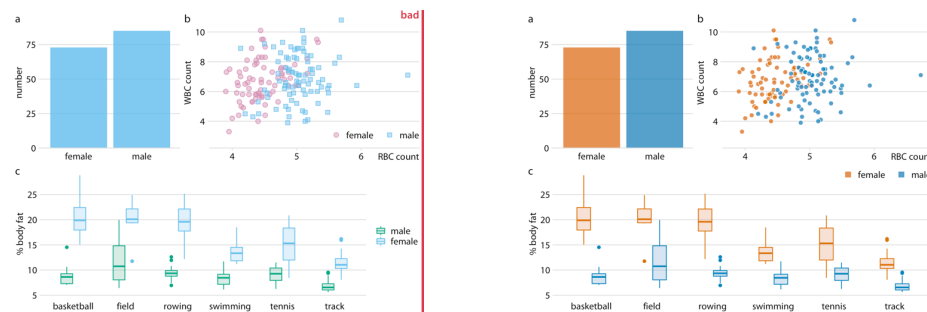
20

Antes y después



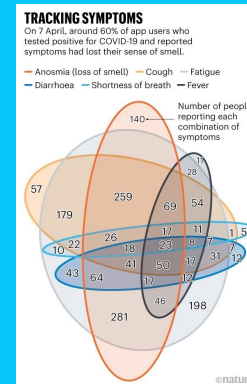
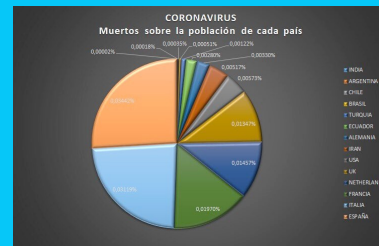
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Antes y después



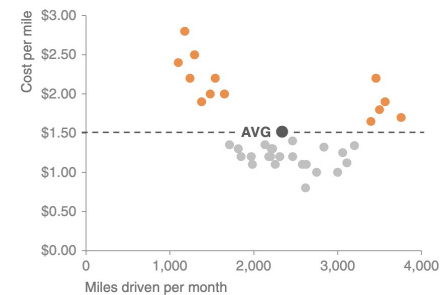
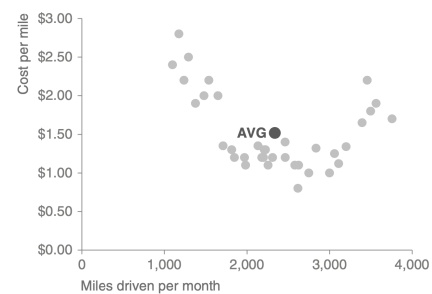
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#6 Simplificar y jerarquizar



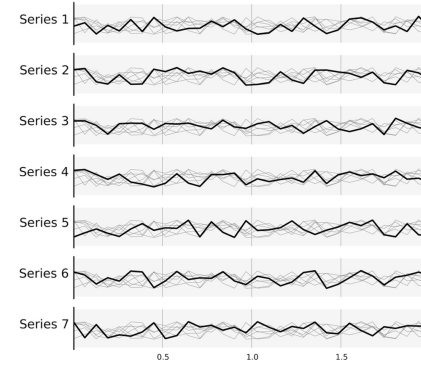
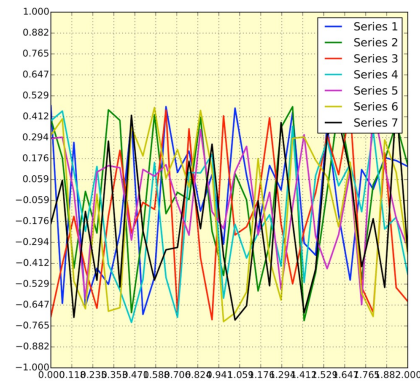
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Antes y después



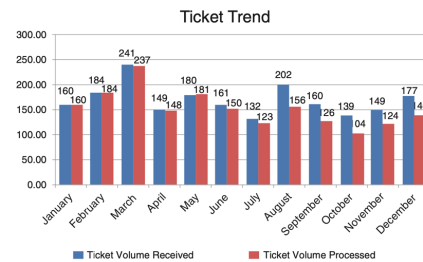
24

Antes y después

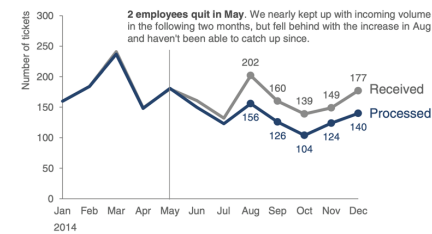


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Antes y después

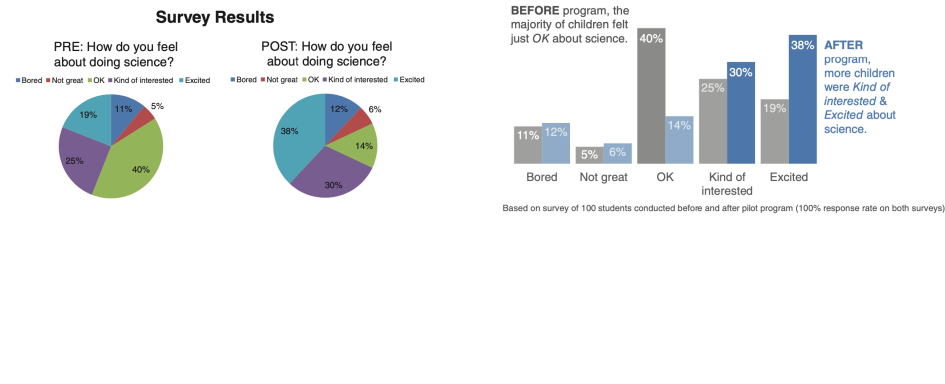


Ticket volume over time



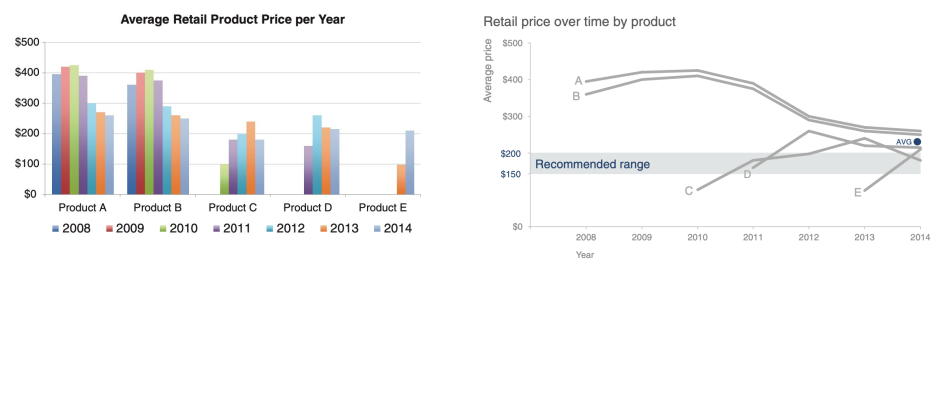
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Antes y después



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Antes y después



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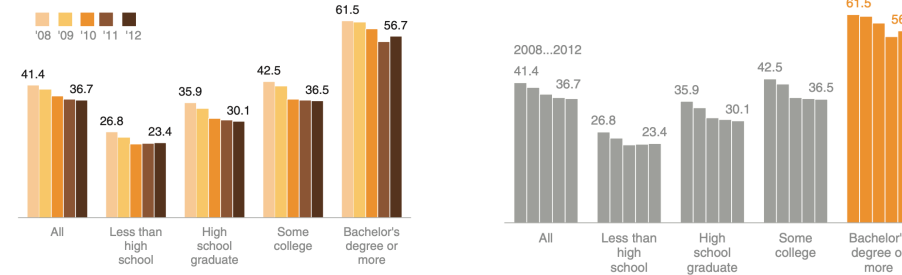
Antes y después



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Antes y después

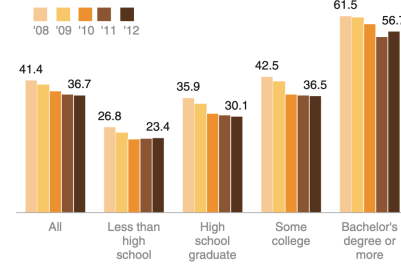
Number of newly married adults per 1,000 marriage eligible adults



30

Antes y después, después

Number of newly married adults per 1,000 marriage eligible adults



Bachelor's degree or more 62

Some college 43
High school grad 36
Less than high school 27

2008 2009 2010 2011 2012

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#7 Escribir un pie de figura informativo

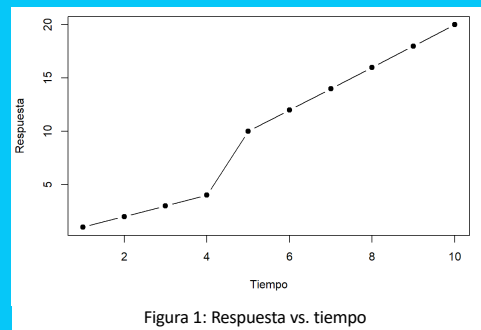
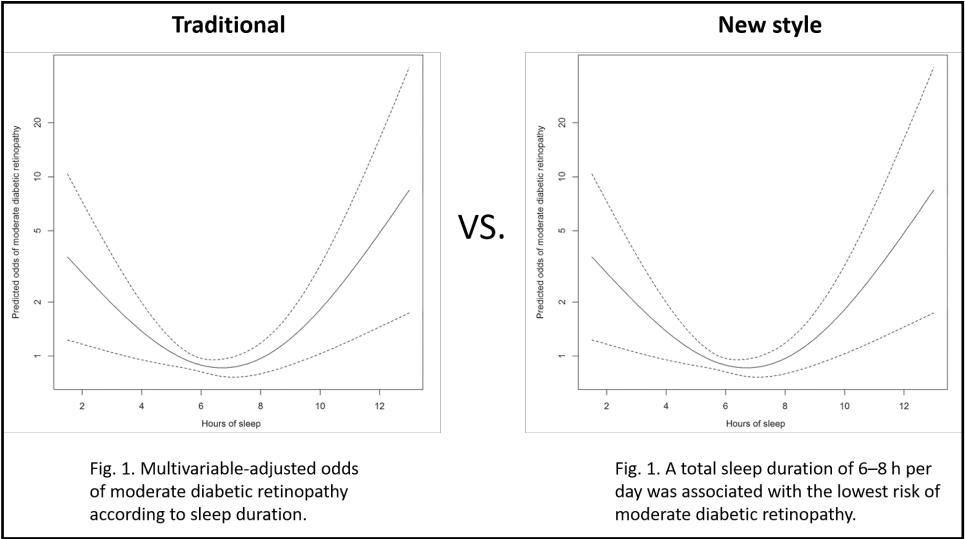
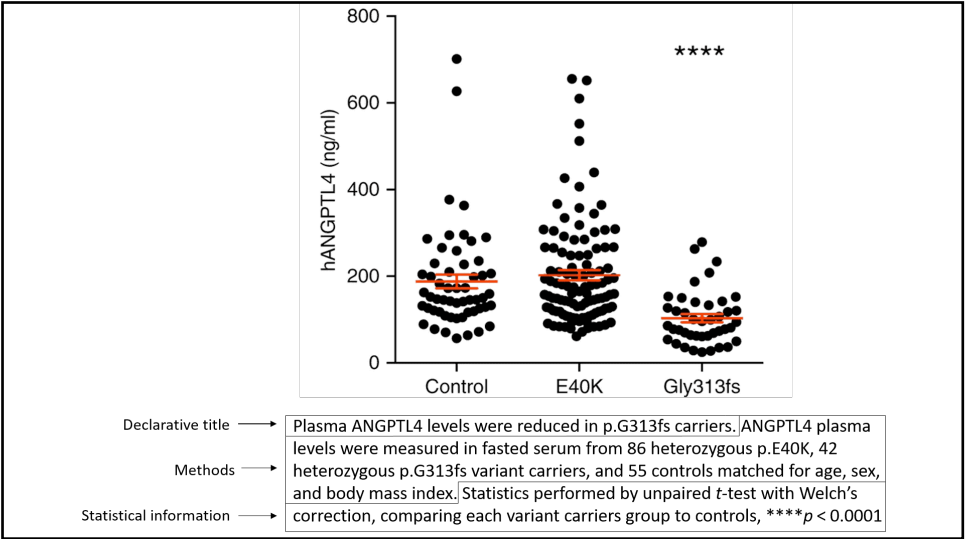


Figura 1: Respuesta vs. tiempo

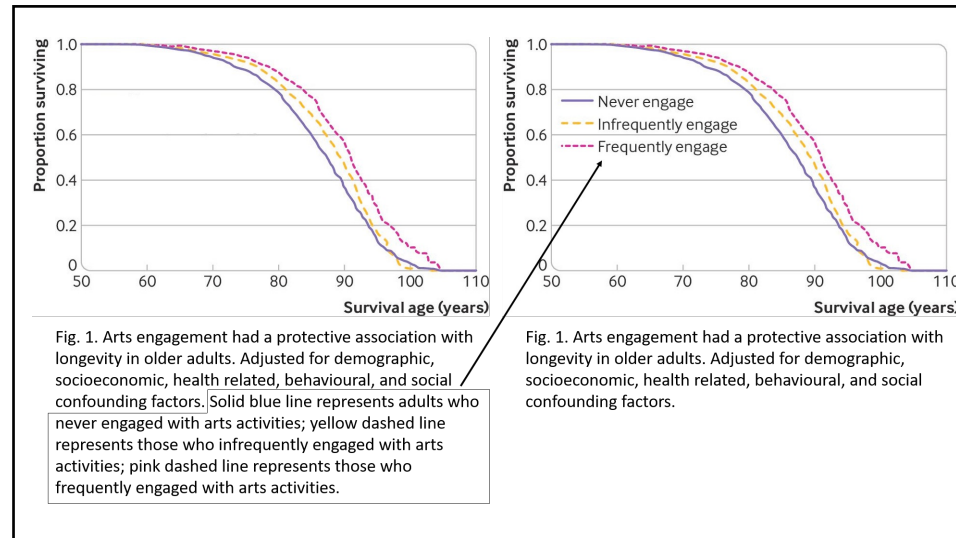
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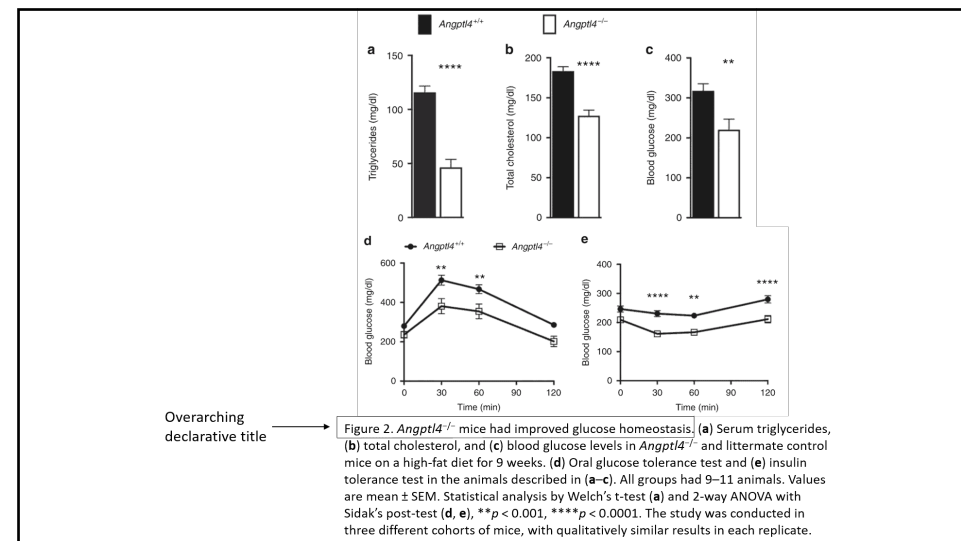
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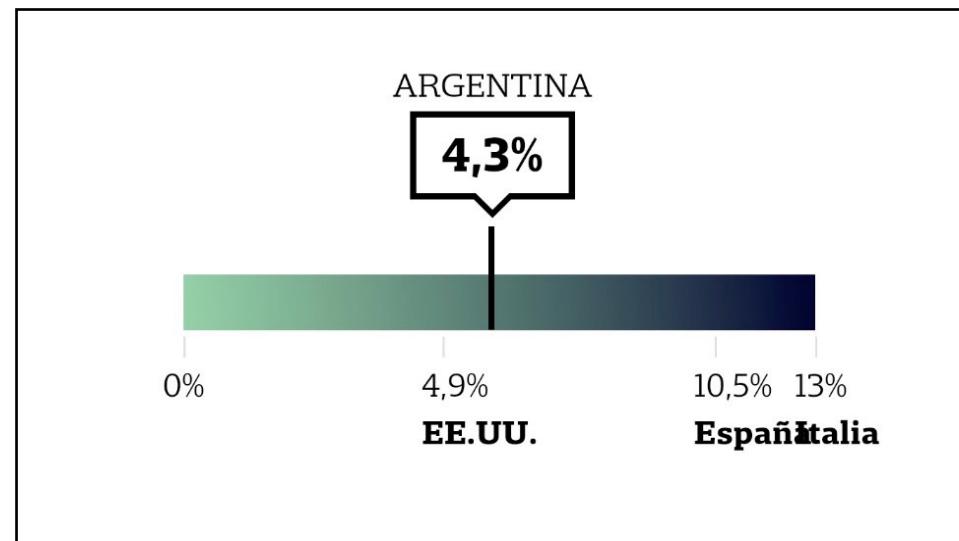
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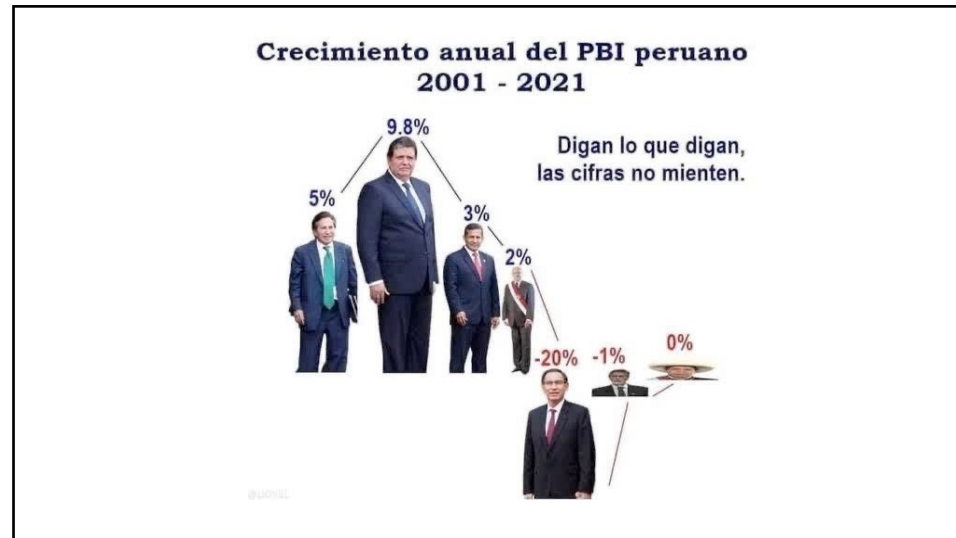
36

Más ejemplos

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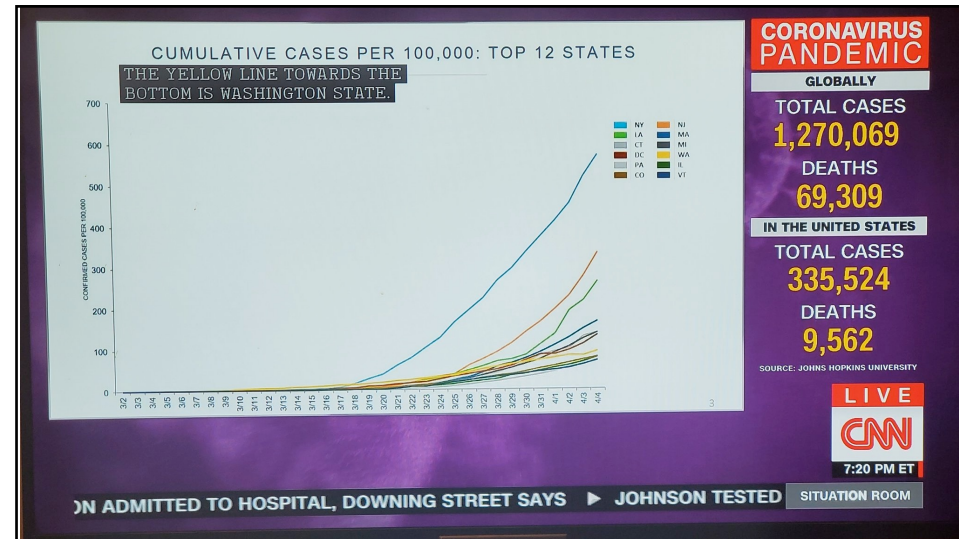
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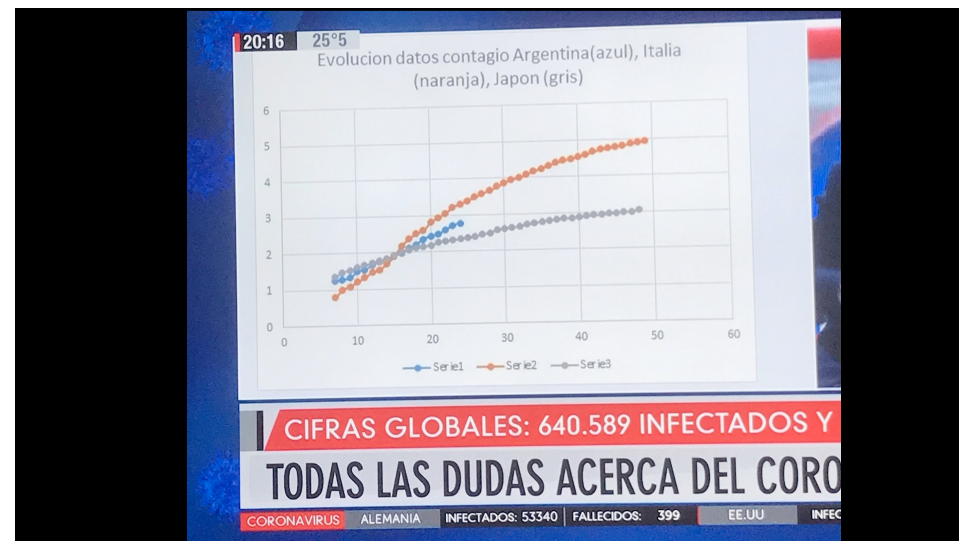
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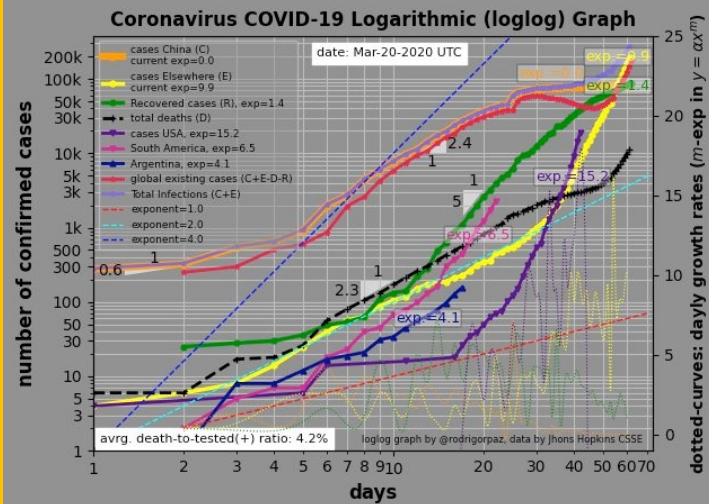


42

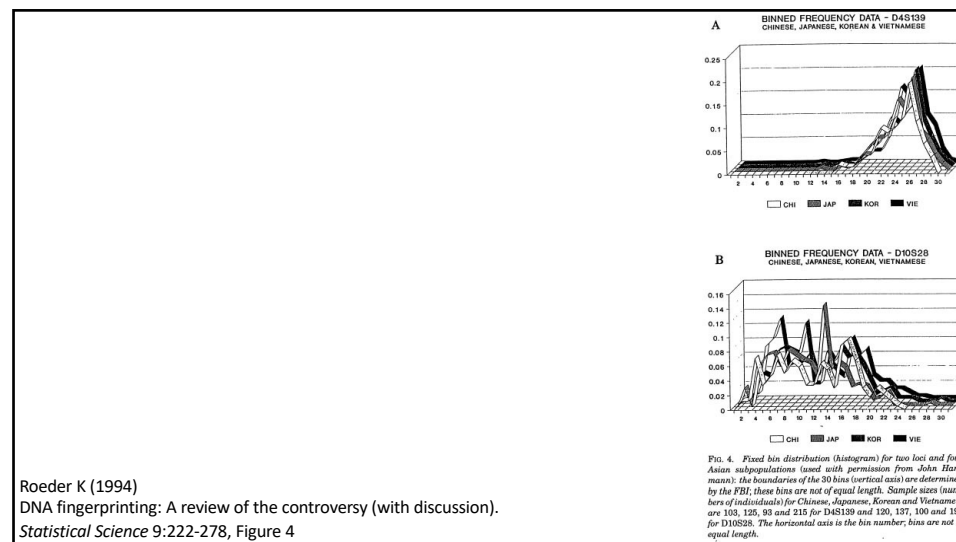
Este gráfico indica el porcentaje de infectados NUEVOS de #COVID19 cada día sobre el TOTAL de infectados en España
#sePuede



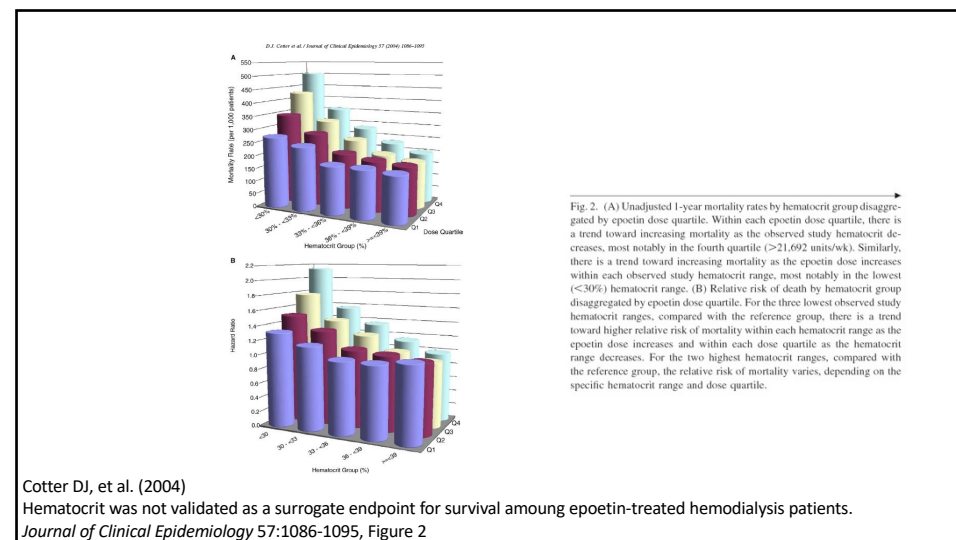
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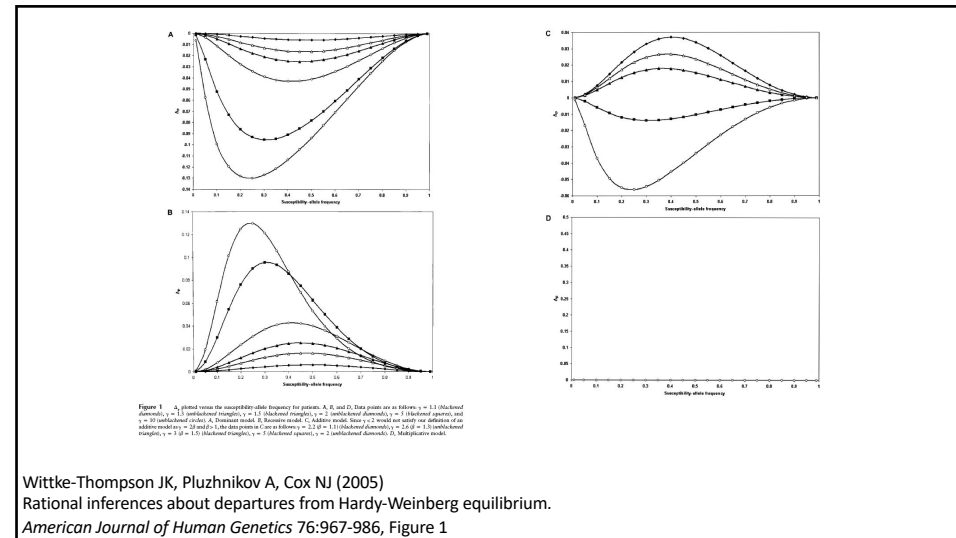
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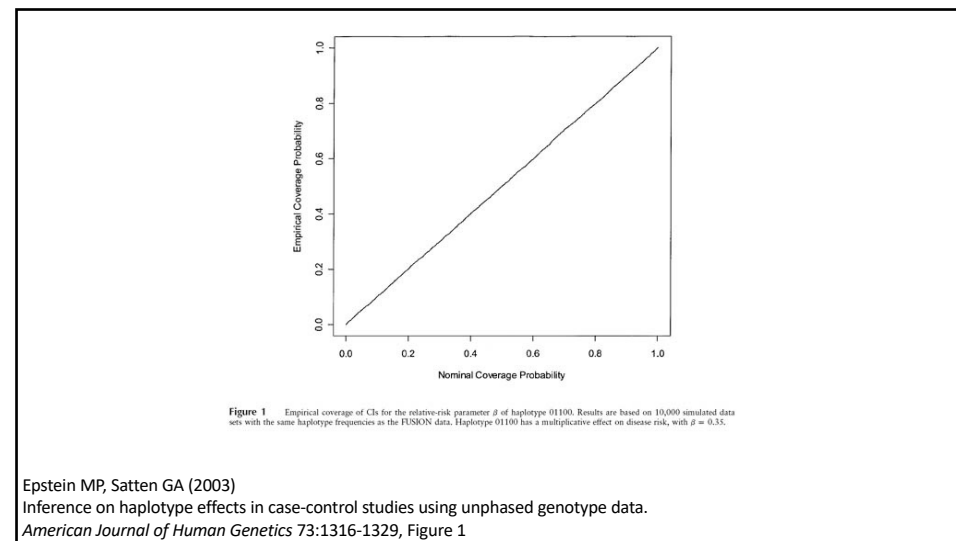
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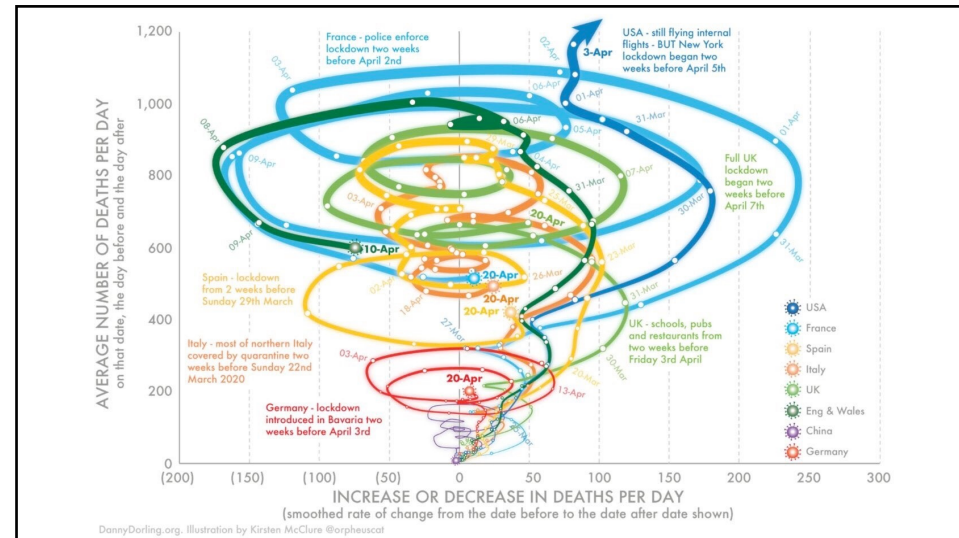
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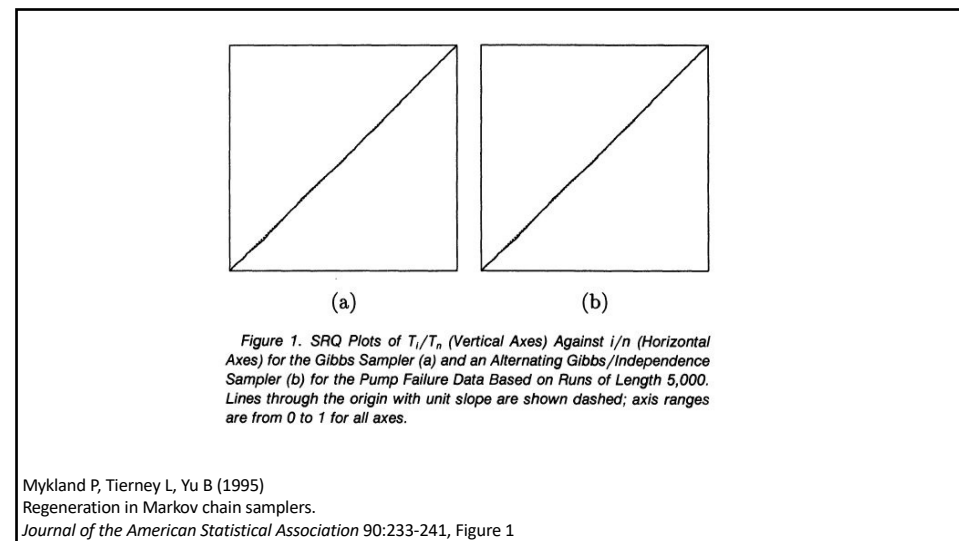
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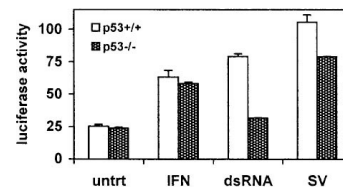


FIG. 4. ISG15 promoter activity mimics endogenous ISG15 mRNA regulation by p53, dsRNA, and virus. Cells (6×10^5 HCT 116) were seeded in 32-mm plates and allowed to attach overnight. Cells were transfected with 500 ng of pGL3-ISG15-Luc, 50 ng of pRL-null (Promega), and 450 ng of pcDNA3 for carrier DNA by using Lipofectamine Plus (Life Technologies) following the manufacturer's instructions. Twenty-four hours posttransfection, the medium was aspirated and replaced with medium containing either 1,000 U of IFN- α /ml, 50 μ g of dsRNA/ml, or Sendai virus (multiplicity of infection, 10). Cells were incubated for 12 h and then lysed, and luciferase assays were performed. Luciferase activity was assessed on 20 μ l of each lysate as directed by the supplier (Dual Luciferase Kit, Promega) using a TD 20/20 luminometer (Turner Designs). Luciferase activity is presented as the ratio of firefly activity to renilla activity to control for differences in transfection efficiency. Each data point is the mean of triplicate samples \pm the standard error; the data presented are representative of four independent experiments.

Hummer BT, Li XL, Hassel BA (2001)
 Role for p53 in gene induction by double-stranded RNA.
J Virol 75:7774-7777, Figure 4

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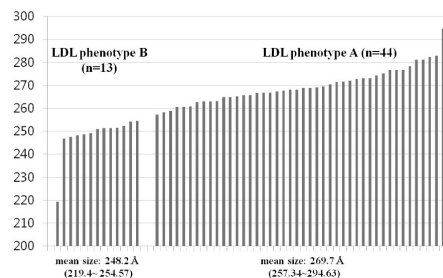
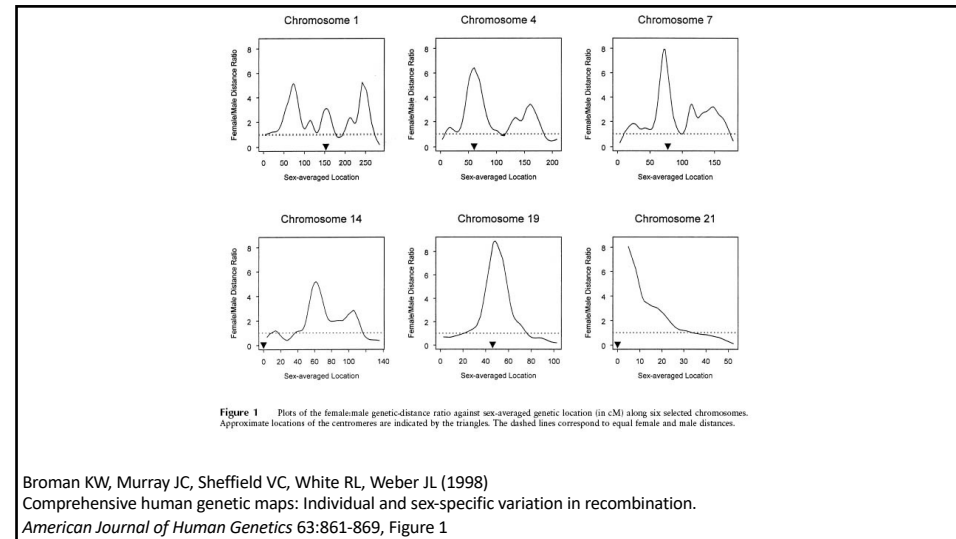


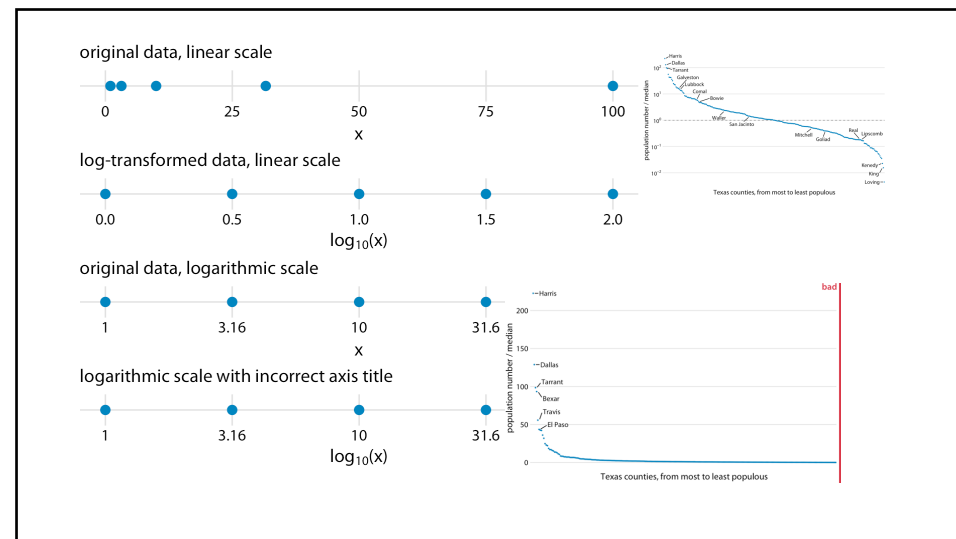
Fig. 1. Distribution of low-density lipoprotein (LDL) particle size in all study subjects (LDL phenotypes A and B). *LDL phenotype A group* (mean size: 269.7 Å, $n = 44$), subjects with buoyant-mode profiles [peak LDL particle diameter ≥ 264 Å] including intermediate LDL subclass pattern [$256 \text{ Å} \leq$ peak LDL particle diameter $\leq 263 \text{ Å}$]; *LDL phenotype B group* (mean size: 248.2 Å, $n = 13$), subjects with dense-mode profiles [peak LDL particle diameter $\leq 255 \text{ Å}$].

Kim OY, et al. (2012)
 Higher levels of serum triglyceride and dietary carbohydrate intake are associated with smaller LDL particle size in healthy Korean women.
Nutrition Research and Practice 6:120-125, Figure 1

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- #1 Conocer a tu audiencia
- #2 Definir un mensaje claro
- #3 Usar herramientas adecuadas
(y no abusar de ellas)
- #4 Graficar los datos fielmente
- #5 Tener consistencia interna
- #6 Simplificar y jerarquizar
- #7 Escribir un pie de figura informativo

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¿Cuál es el mensaje
que querés transmitir?

¿Cómo es la mejor manera
de hacerlo fiel a los datos?

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Referencias

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4161295/>

<https://clauswilke.com/dataviz/>

<https://ft.com/vocabulary>

<https://www.internationalscienceediting.com/how-to-write-a-figure-caption/>

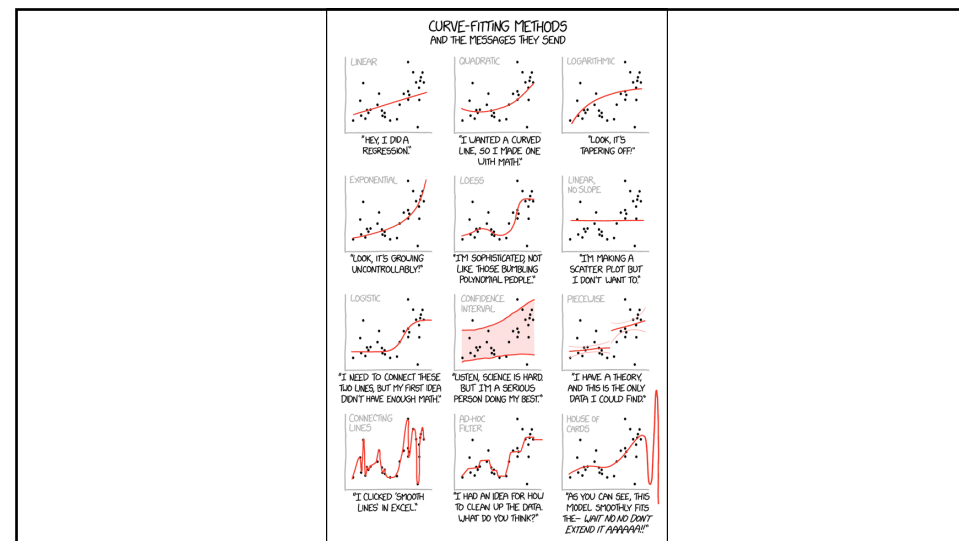
https://www.biostat.wisc.edu/~kbroman/topten_worstgraphs/

How to Lie with Statistics (Darrell Huff)

Story telling with data (Cole Nussbaumer Knaflic)

...

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