

# The many disasters of the COVID-19 pandemic

Last updated: 2022/11/02, 22:00:25 EDT

Principles of Complex Systems, Vols. 1, 2, & 3D  
CSYS/MATH 300, 303, & 394, 2022–2023 | @pocsvox

Prof. Peter Sheridan Dodds | @peterdodds

Computational Story Lab | Vermont Complex Systems Center  
Santa Fe Institute | University of Vermont



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Epidemiology

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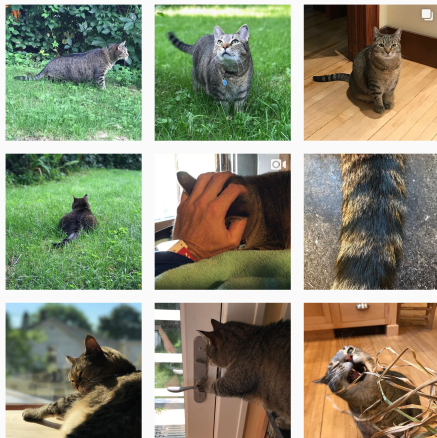
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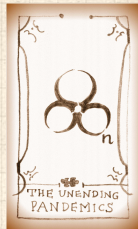




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 On Instagram at [pratchett\\_the\\_cat](https://www.instagram.com/pratchett_the_cat) 

# Outline

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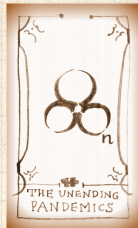
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# First: The Truth

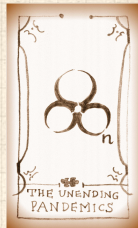
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COVID-19 is a conspiracy



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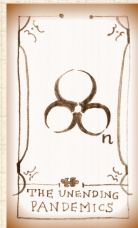
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COVID-19 is a conspiracy

 It's not a real contagion.



# First: The Truth

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## COVID-19 is a conspiracy

🧱 It's not a real contagion.

🧱 Contagion: *con* = 'with' + *tangere* 'to touch.'



# First: The Truth

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## COVID-19 is a conspiracy



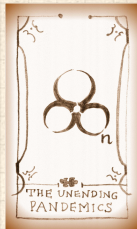
It's not a real contagion.



Contagion: *con* = 'with' + *tangere* 'to touch.'



Conspiracy: *con* = 'with' + *tangere* 'to breathe.'





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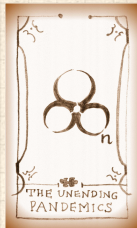
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## COVID-19 is a conspiracy

- It's not a real contagion.
- Contagion: *con* = 'with' + *tangere* 'to touch.'
- Conspiracy: *con* = 'with' + *tangere* 'to breathe.'
- WHO declares COVID-19 transmission may be via airborne particles in ...



# First: The Truth

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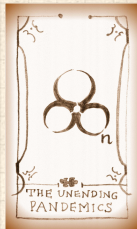
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## COVID-19 is a conspiracy

- It's not a real contagion.
- Contagion: *con* = 'with' + *tangere* 'to touch.'
- Conspiracy: *con* = 'with' + *tangere* 'to breathe.'
- WHO declares COVID-19 transmission may be via airborne particles in ... May, 2021 [↗](#) after long resisting doing so [↗](#)



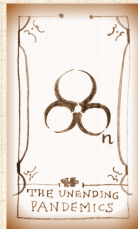


2020-01-14: WHO tweeted: 

"Preliminary investigations conducted by the Chinese authorities have found no clear evidence of human-to-human transmission of the novel #coronavirus."



2020-03-30: WHO Official Defends Guidance: 'We're Not Seeing' Airborne Transmission 




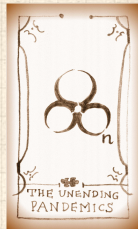
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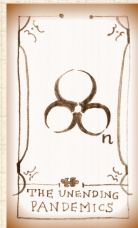
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 Dis + Aster = Bad Star = Astrological Ill Fate.

 If the heavens are a clockwork, then all was foretold.



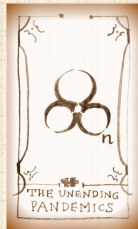
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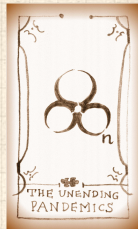
- Dis + Aster = Bad Star = Astrological Ill Fate.
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- But we know there are different timelines available.






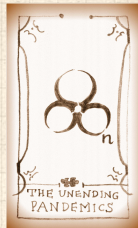
## The whole concept of 'disaster' is a disaster:

- Dis + Aster = Bad Star = Astrological Ill Fate.
- If the heavens are a clockwork, then all was foretold.
- The stars and planets are the shadowy cabal.
- But we know there are different timelines available.
- Fate is a sometimes food, and there is only the story of fate. (more later in PoCS, Vol. 1).





Journal entry, 2020/02/11:

 Coronavirus



Journal entry, 2020/02/11:

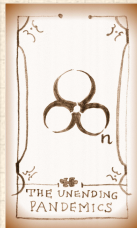
 Coronavirus

 The idiocy about  $R_0$  continues.



Journal entry, 2020/02/11:


- 📦 Coronavirus
- 📦 The idiocy about  $R_0$  continues.
- 📦 Unbelievably believably bad science.





Journal entry, 2020/02/21:

## Twitter DMs to a colleague:

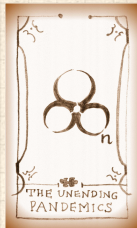
 Okay: The scientists studying pandemics need to be able to present some kind set of numbers that show how bad things are. The whole  $R_0$  disaster has been waiting to happen because people have been ... lazily having fun with math models? Unconcerned about how to communicate vital scientific information? Stupid? I don't know. Maybe a radar plot visualization. I don't know.

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Journal entry, 2020/02/21:

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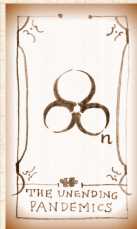
🧱 "When these three boundaries are crossed, we are in trouble"

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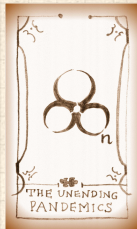
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"When these three boundaries are crossed, we are in trouble"

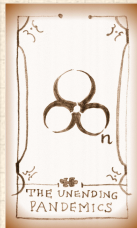
Measles has an  $R_0$  of 20. We should all have it. Of course, there's no f\*\*king time scale for  $R_0$  so we don't know when that happens.



Journal entry, 2020/02/21, cont.:

Twitter DMs to a colleague:

 One of the core pieces we had in our old paper:  
"What is N?"

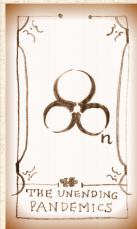




Journal entry, 2020/02/21, cont.:

## Twitter DMs to a colleague:

- One of the core pieces we had in our old paper:  
"What is N?"
- And rare events matter so, so much. I keep seeing  
new countries report their first case.

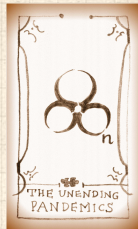




Journal entry, 2020/02/21, cont.:

## Twitter DMs to a colleague:

- One of the core pieces we had in our old paper: "What is N?"
- And rare events matter so, so much. I keep seeing new countries report their first case.
- South Korea with the church. WaPo says cases are "soaring" there. I haven't seen the numbers.



# What is haPpeNing?

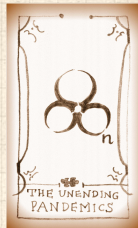
On March 11, within about 15 minutes after 9 pm  
US EST:

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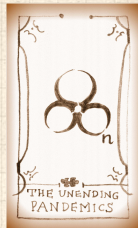
1. Tom Hanks and Rita Wilson announced that they had tested positive for COVID-19.

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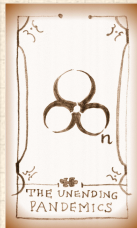
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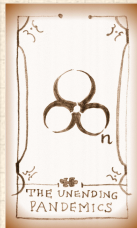
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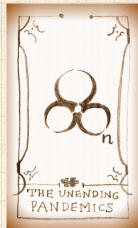
1. Tom Hanks and Rita Wilson announced that they had tested positive for COVID-19.
2. The National Basketball Association put its season on hold indefinitely due to the COVID-19 pandemic.
3. Trump gave an Oval Office Address during which the Dow Jones Industrial Average futures dropped.
4. Also: former US vice presidential candidate Sarah Palin was appearing on the popular Fox TV show "The Masked Singer" performing Sir Mix-A-Lot's "Baby Got Back" in a bear costume.

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2020/03/15, journal entry:

## They look like us now

 What must be done, and must have been done from the start:

## In general for pandemics:

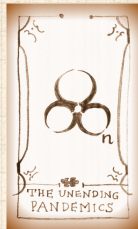
-  Limit contact, groups, travel.
-  Wear masks, PPE.
-  Don't breathe other people's air, don't lick surfaces.

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2020/03/15, journal entry:

## They look like us now 📺

- 🧱 What must be done, and must have been done from the start:
- 🧱 Test everyone.

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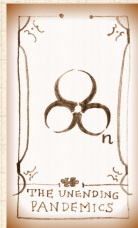
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2020/03/15, journal entry:

## They look like us now

-  What must be done, and must have been done from the start:
-  Test everyone.
-  We need sunlight, we need knowledge.

## In general for pandemics:

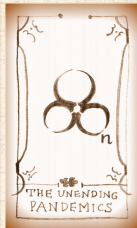
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2020/03/15, journal entry:

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- 🧱 What must be done, and must have been done from the start:
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- 🧱 We need sunlight, we need knowledge.
- 🧱 And we needed to be prepared.

## In general for pandemics:

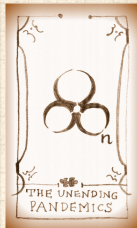
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

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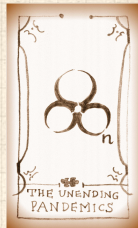
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## “Narrative Epidemiology” through TV Tropes:

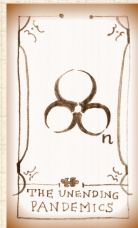
 The virus as this season’s Big Bad  and a Complete Monster 











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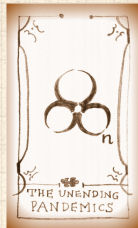
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 Ignore the Scientists 













## "Narrative Epidemiology" through TV Tropes:

-  The virus as this season's Big Bad  and a Complete Monster 
-  Ignore the Scientists 
-  Asymptomatic spreaders: The Virus  looks like us now 















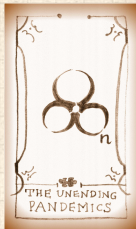
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-  Failure to act as one against a remorseless unified foe: Let’s Split Up, Gang 

















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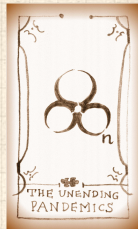
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
















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-  The virus as this season's Big Bad  and a Complete Monster 
-  Ignore the Scientists 
-  Asymptomatic spreaders: The Virus  looks like us now 
-  Failure to act as one against a remorseless unified foe: Let's Split Up, Gang 
-  Vaccine as a silver bullet 
-  Bill Gates created the virus and wants to put chips in your head: Poison-and-Cure Gambit 




















## "Narrative Epidemiology" through TV Tropes:

-  The virus as this season's Big Bad  and a Complete Monster 
-  Ignore the Scientists 
-  Asymptomatic spreaders: The Virus  looks like us now 
-  Failure to act as one against a remorseless unified foe: Let's Split Up, Gang 
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-  Fundamental problem: We much prefer stories of individuals, not systems.



# Story versus the Virus

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Narrative  
Epidemiology

The dashboards  
are all wrong

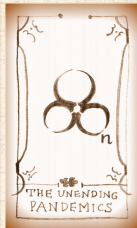
The peril

Journal entry, 2020/03/21:

The complete incompetence of Trump, our doom

Washington Post article, March 20 

*Azar couldn't get through to Trump to speak with him about the virus until Jan. 18, according to two senior administration officials. When he reached Trump by phone, the president interjected to ask about vaping and when flavored vaping products would be back on the market, the senior administration officials said.*





# Story versus the Virus

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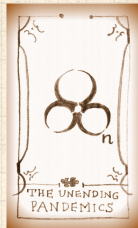
The peril

Journal entry, 2020/03/21, cont.:

*On Feb. 25, Nancy Messonnier, a senior CDC official, sounded perhaps the most significant public alarm to that point, when she told reporters that the coronavirus was likely to spread within communities in the United States and that disruptions to daily life could be "severe." Trump called Azar on his way back from a trip to India and complained that Messonnier was scaring the stock markets, according to two senior administration officials.*



Like life, death finds a way.





# Mismeasurement of Death


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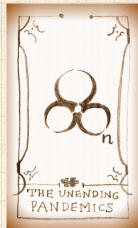
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System failure—things fall apart

 We couldn't and still can't count cases and deaths properly.



# Mismeasurement of Death

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## System failure—things fall apart

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# Mismeasurement of Death

The PoCSverse  
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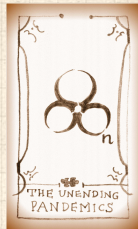
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# Mismeasurement of Death

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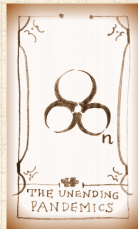
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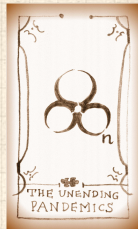
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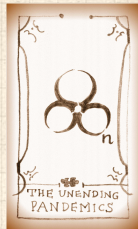
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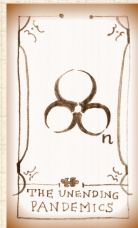
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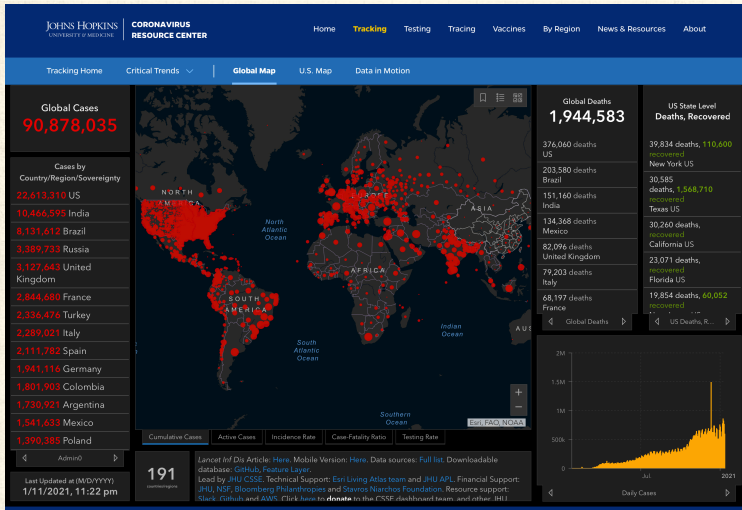
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- 🧱 Excess deaths in the US have run at about 35% more than reported COVID deaths.
- 🧱 Estimate: Over 500,000 excess deaths in the US from March 15 to December 31, 2020.



# Eight significant digits, no errors:

January 11, 2020, Johns Hopkins:



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<https://www.ft.com>

# January 7, 2020, Financial Times, beautiful, misleading:

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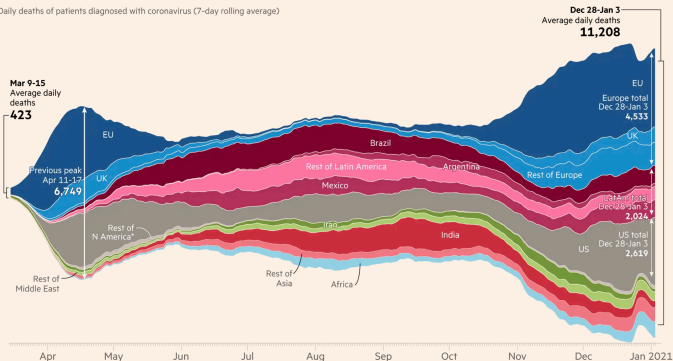
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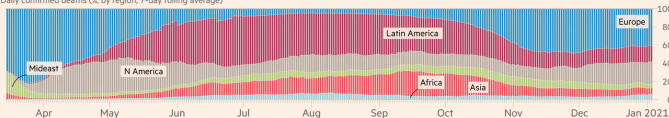


## Covid-19's soaring death toll dwarfs figures from first wave

Daily deaths of patients diagnosed with coronavirus (7-day rolling average)



Daily confirmed deaths (% by region, 7-day rolling average)



FT graphic: Steven Bernard / @sdbernard

Source: FT analysis of data from WHO, Covid Tracking Project, Johns Hopkins University, and the U.S. Centers for Disease Control and Prevention. Public Health Agency.

# Eventually: time series with excess deaths:

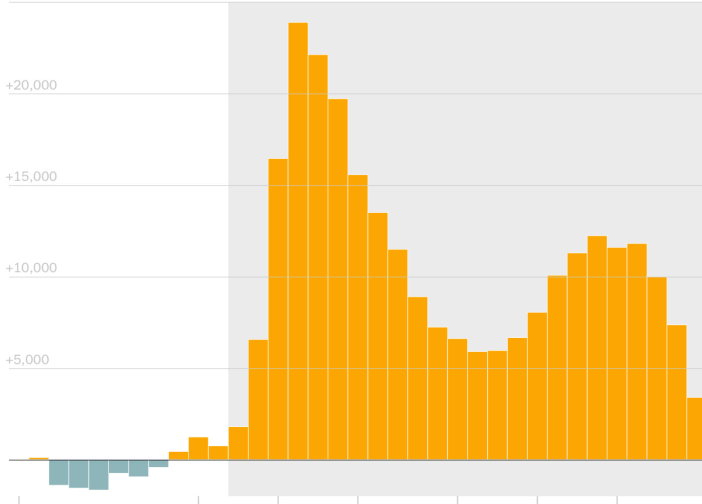
September 20, New York Times:

## U.S. Deaths Above or Below Normal

257,900 excess deaths from March 15 to Aug. 29

+25,000 weekly deaths

Recent weeks are likely undercounts.



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# Financial Times:

## January 7, 2020, Financial Times:


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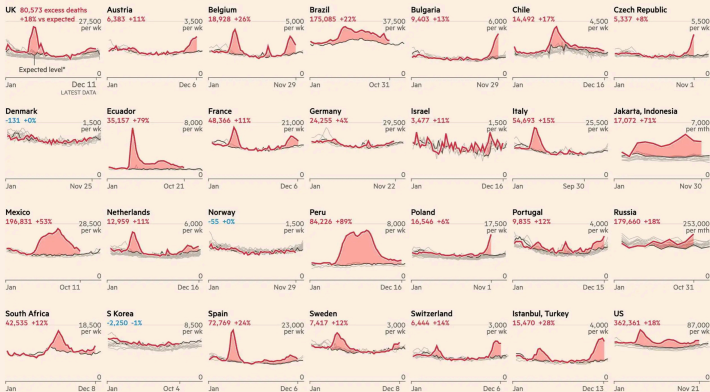
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Death rates have climbed far above historical averages in many countries that have faced Covid-19 outbreaks

Number of deaths per week from all causes, 2020 vs recent years:  Shading indicates total excess deaths since 100 confirmed cases in the country

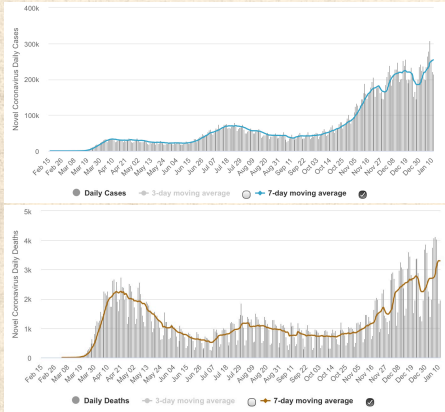


\*Adjusted for trend over recent years  
Sources: FT analysis of mortality data from individual countries and the Human Mortality Database. Data updated December 22  
FT graphic: John Burn-Murdoch / @burnmurdoch  
© FT



# The humans:

## Timely delivery of Stimulus Packages for the Virus and SIR models:



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Vacations + fatigue + stories.



# The failure of epidemiological models

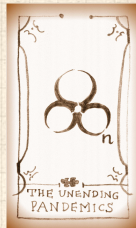
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 Farr's model : Normal distribution for case load.





# The failure of epidemiological models


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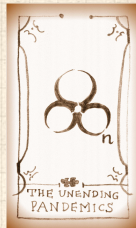
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# The failure of epidemiological models


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 Non-mechanistic, farcical.







# The failure of epidemiological models


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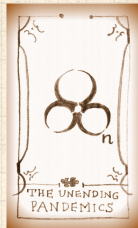
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 Farr's model : Normal distribution for case load.

 Farr's Law!

 Non-mechanistic, farcical.

 Sigmoid functions appear everywhere and are easily produced by gimmick models.



# Mass negligent geronticide:

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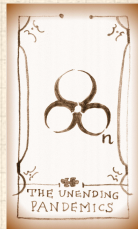
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## Emergence of differential age mortality:

- Older people are not economically important.
- Shutting down society will ...



# Why not let it rip?


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Especially early on, but throughout:

 "It's no worse than the flu."

"Flatten the curve"

