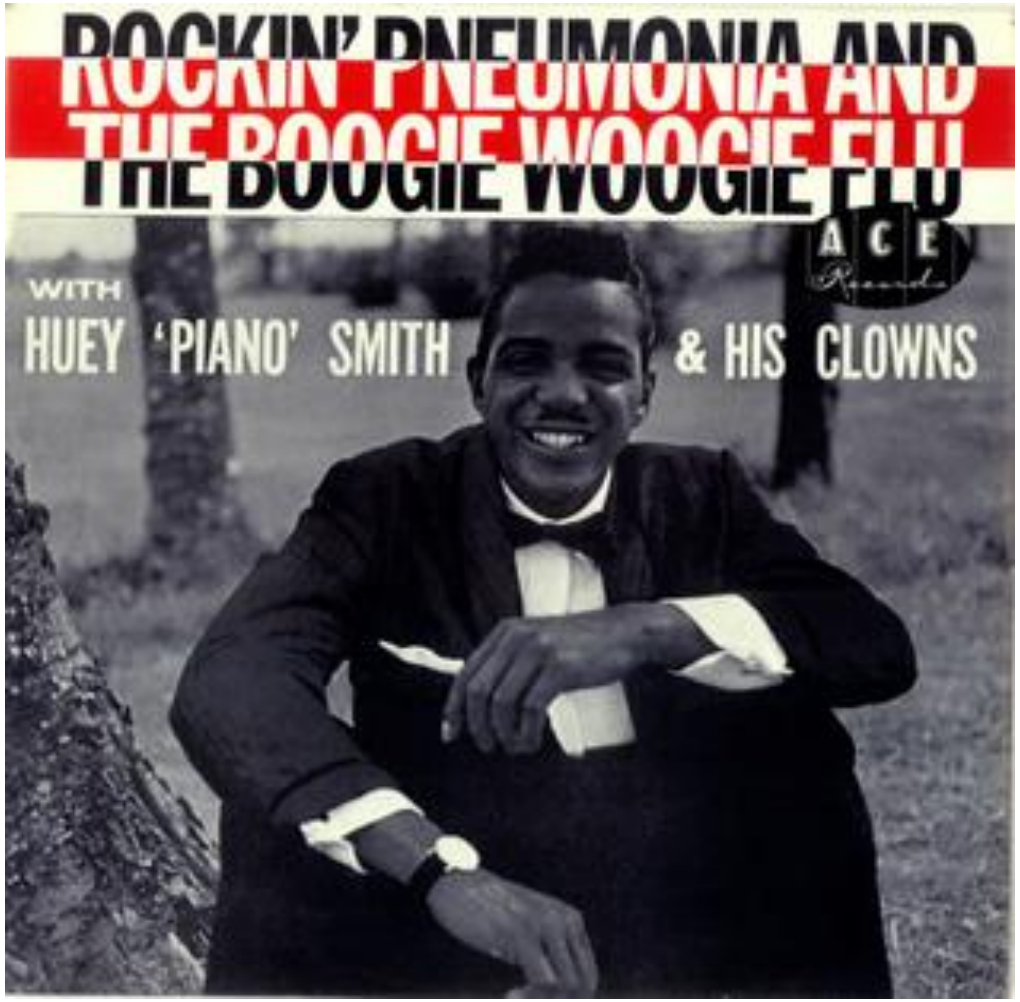
1918, 1957, 2020
Big Pandemics and their Economic, Social and Political Consequences

Niall Ferguson, Hoover Institution, May 20, 2020

Taking you back in time … to August 1957



- "I wanna squeeze her but I'm way too low / I would be runnin' but my feet's too slow / Young man rhythm's got a hold of me too / I got a rockin' pneumonia and a boogie woogie flu. / I want to scream …."—Huey "Piano" Smith and His Clowns.
- The single sold over one million copies, achieving gold disc status, and got to No. 52 in the Billboard chart.

And to October 1957

- What did Eisenhower and Queen Elizabeth II have in common?

And to October 1957

- What did Eisenhower and Queen Elizabeth II have in common?
- They were both vaccinated against influenza A (H2N2) prior to her state visit to the United States.

COVID-19 in historical context

		Start Year	End Year	Lower Est. (1,000)	Avg. Est. (1,000)	Upper Est. (1,000)	Rescaled (1,000)	Population (1,000,000)	Percentage of world population
1	Plague of Justinian	541	542	40,000	70,000	100,000	2,516,136	213	32.86%
2	Black Death	1331	1353	50,000	125,000	200,000	2,434,803	392	31.89%
3	Antonine Plague	165	180	5,000	7,500	10,000	283,355	202	3.71%
4	Cocoliztli Epidemic	1545	1548	5,000	10,000	15,000	165,668	461	2.17%
5	Third plague pandemic	1855	1960	22,000	22,000	22,000	133,173	1,263	1.74%
6	Spanish flu	1918	1920	39,000	39,000	39,000	129,205	2,307	1.69%
7	Smallpox epidemic	1520	1520	5,000	6,500	8,000	107,684	461	1.41%
8	Japanese smallpox epidemic	735	737	2,000	2,000	2,000	67,690	226	0.88%
9	HIV/AIDS	1920	2020	25,000	30,000	35,000	61,768	3,712	0.81%
10	Third Plague	1885	1885	12,000	12,000	12,000	55,439	1,654	0.73%
11	Plague of Cyprian	250	266	1,000	1,000	1,000	37,227	205	0.49%
12	Cocoliztli Epidemic of 1576	1576	1580	2,000	2,250	2,500	31,045	554	0.41%
13	Persian Plague	1772	1772	2,000	2,000	2,000	15,444	990	0.20%
14	Italian plague	1629	1631	280	640	1,000	8,831	554	0.12%
15	Plague of Athens	-429	-426	5	53	100	8,102	50	0.11%
16	Encephalitis lethargica pandemic	1915	1926	1,500	1,500	1,500	6,930	1,654	0.09%
17	Third cholera pandemic	1852	1860	1,000	1,000	1,000	6,053	1,263	0.08%
18	Russian flu	1889	1890	1,000	1,000	1,000	4,620	1,654	0.06%
19	Sixth cholera pandemic	1899	1923	800	800	800	3,696	1,654	0.05%
20	Plague of Sheroe	627	628	100	100	100	3,594	213	0.05%
21	Asian flu	1957	1958	700	1,100	1,500	2,852	2,948	0.04%
35	COVID-19 (current as of 05/01/2020)	2019	?	297	310	323	310	7,643	0.0041%

Cirillo and Taleb (2020), with amended figures in red

Is this 1918-19? Surely not

- The Imperial College epidemiologists saw 2.2m as a possible worst case for U.S. mortality in 2020 without social distancing and lockdowns, but I find it hard to believe that SARS-CoV-2 is as dangerous as the 1918-19 Spanish influenza.
- That would mean a worldwide death toll of up to 160m, and a U.S. excess death toll of **1.76m**.

	1918-19	*Percentages of population*	*2020*
World population	1,900,000,000	100%	7,794,798,739
Mortality	39,000,000	2.05%	159,998,500
United States	103,208,000	100%	330,527,774
Infected	30,239,944	29.3%	96,844,638
Deaths	675,000	0.65%	2,161,715
Excess deaths	550,000	0.53%	1,761,397
Implied IFR	2.23%		
IFR based on excess deaths	1.82%		
Sources: Barro et al. (2020)			
Brainard and Siegler (2002)			

What about 1957-58?

- The excess death toll was around 1.1m worldwide, including around up to 116,000 in the U.S.
- “The global mortality rate of the 1957–1959 influenza pandemic was moderate relative to that of the 1918 pandemic but was approximately 10-fold greater than that of the 2009 pandemic.”
- Scaled up to 2020, here’s what that would mean: **130,000-215,143** additional dead Americans, again without social distancing and lockdowns.

	1957-58	*Percentages of population / infected*	*2020*
World population	2,857,662,910	100	7,794,798,739
Mortality min.	700,000	0.02%	1,909,378
Mortality max.	1,500,000	0.05%	4,091,525
United States	177,751,483	100	330,527,774
Infected	44,437,871	25.00%	82,631,944
Excess deaths min.	70,000	0.04%	**130,165**
Excess deaths max.	115,700	0.07%	**215,143**
IFR min.	0.16%		
IFR max.	0.26%		
Sources: Glezen at al. (1996)			
Henderson et al. (2009)			
Viboud et al. (2016)			
https://www.cdc.gov/flu/pandemic-resources/1957-1958-pandemic.html			

Viboud et al. (2016)

Like COVID-19, the 1957 “Asian influenza” also went around the world, but mostly by boat not plane

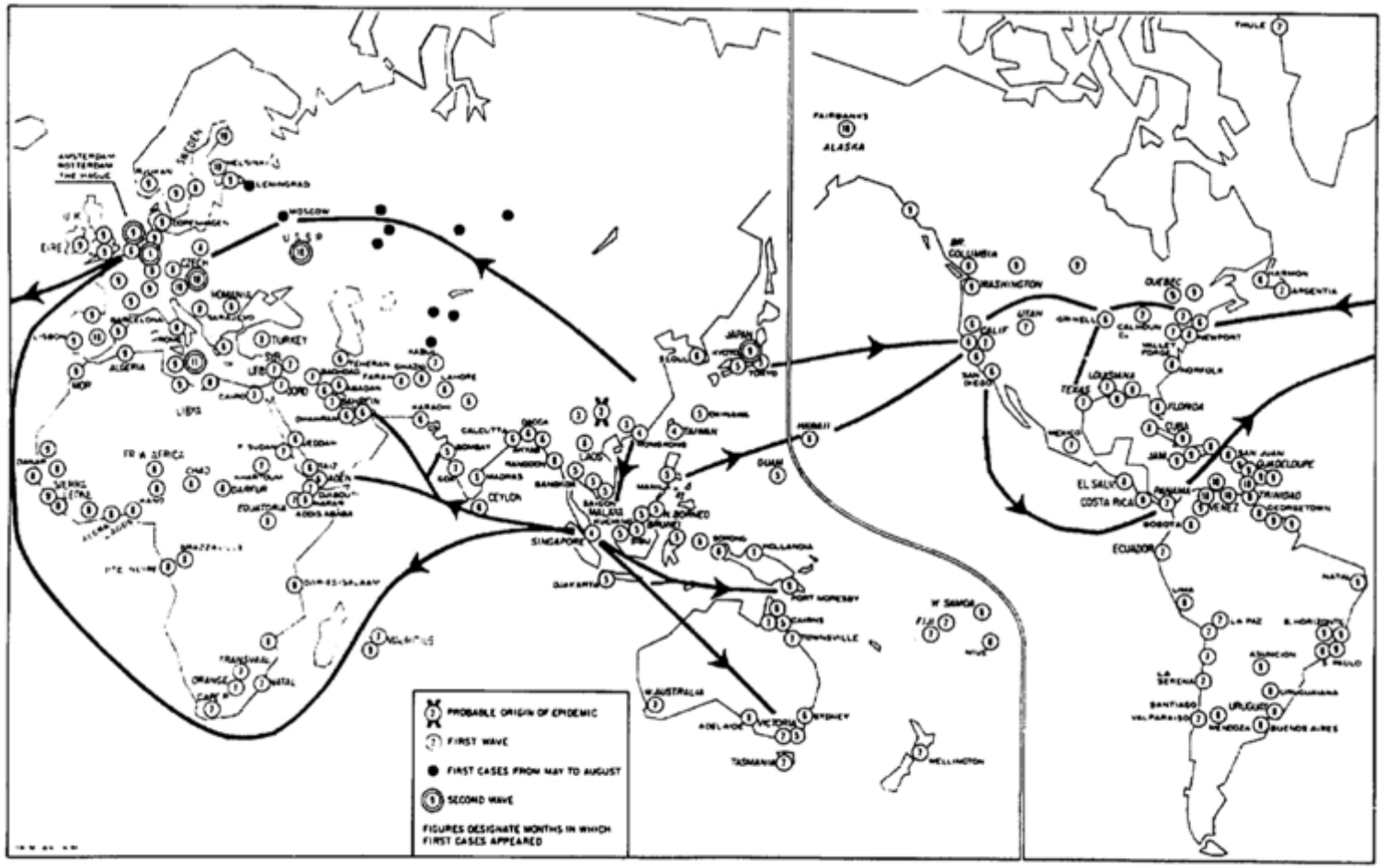
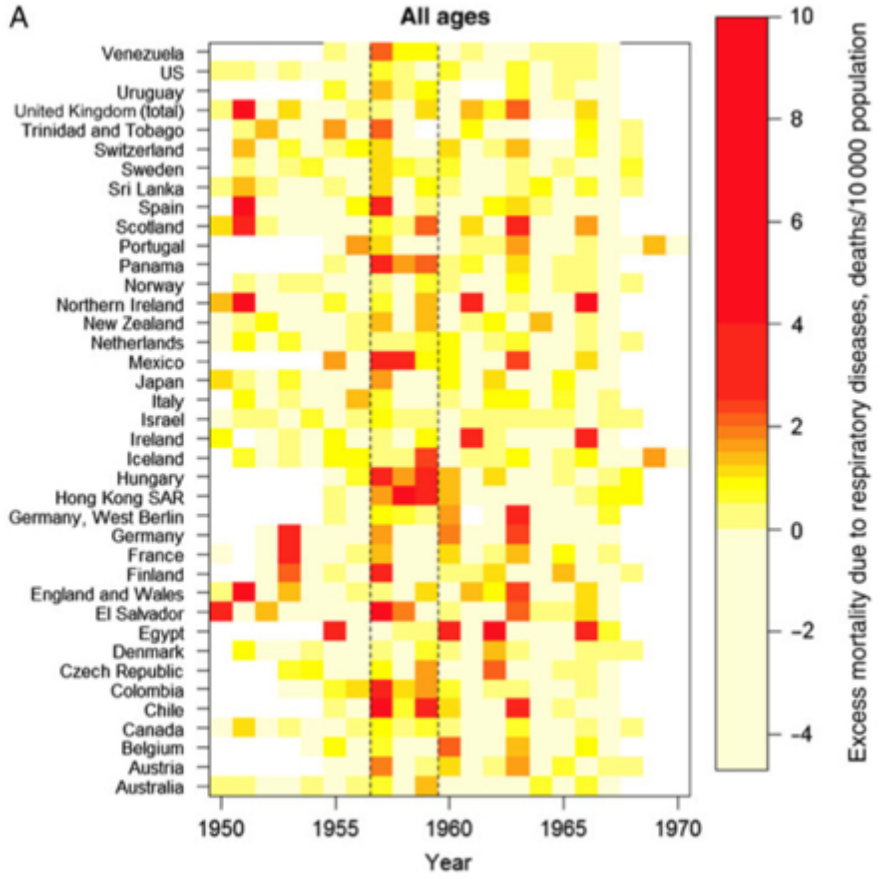


FIG. 1. Progress of Asian influenza pandemic, February, 1957 to January, 1958.

Worldwide, the 1957-58 flu killed around 1.1 million people

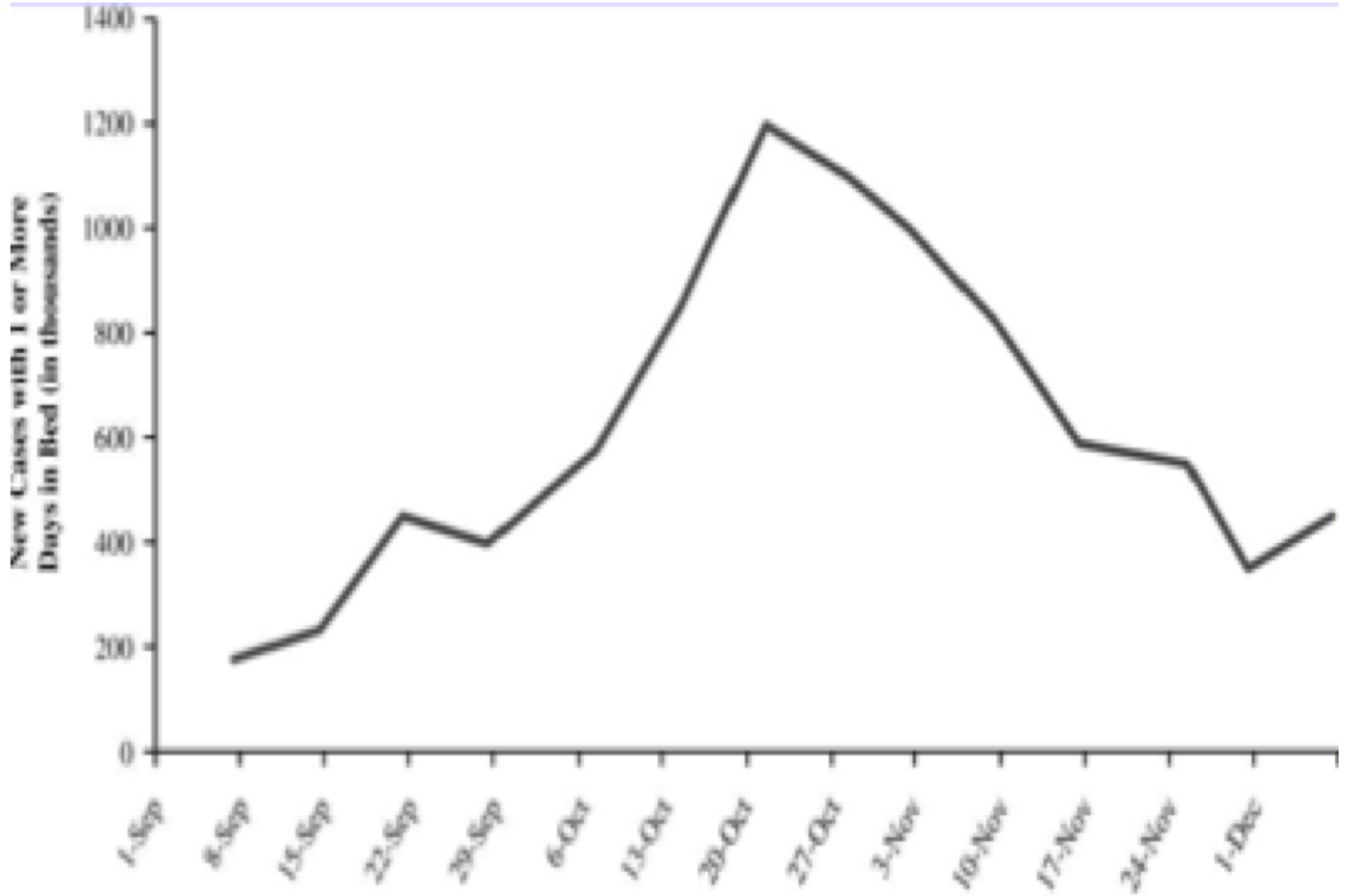


Country-specific influenza-related excess mortality rates from respiratory causes, 1950–1970

Viboud et al. (2016)

The Asian flu struck the U.S. in the fall

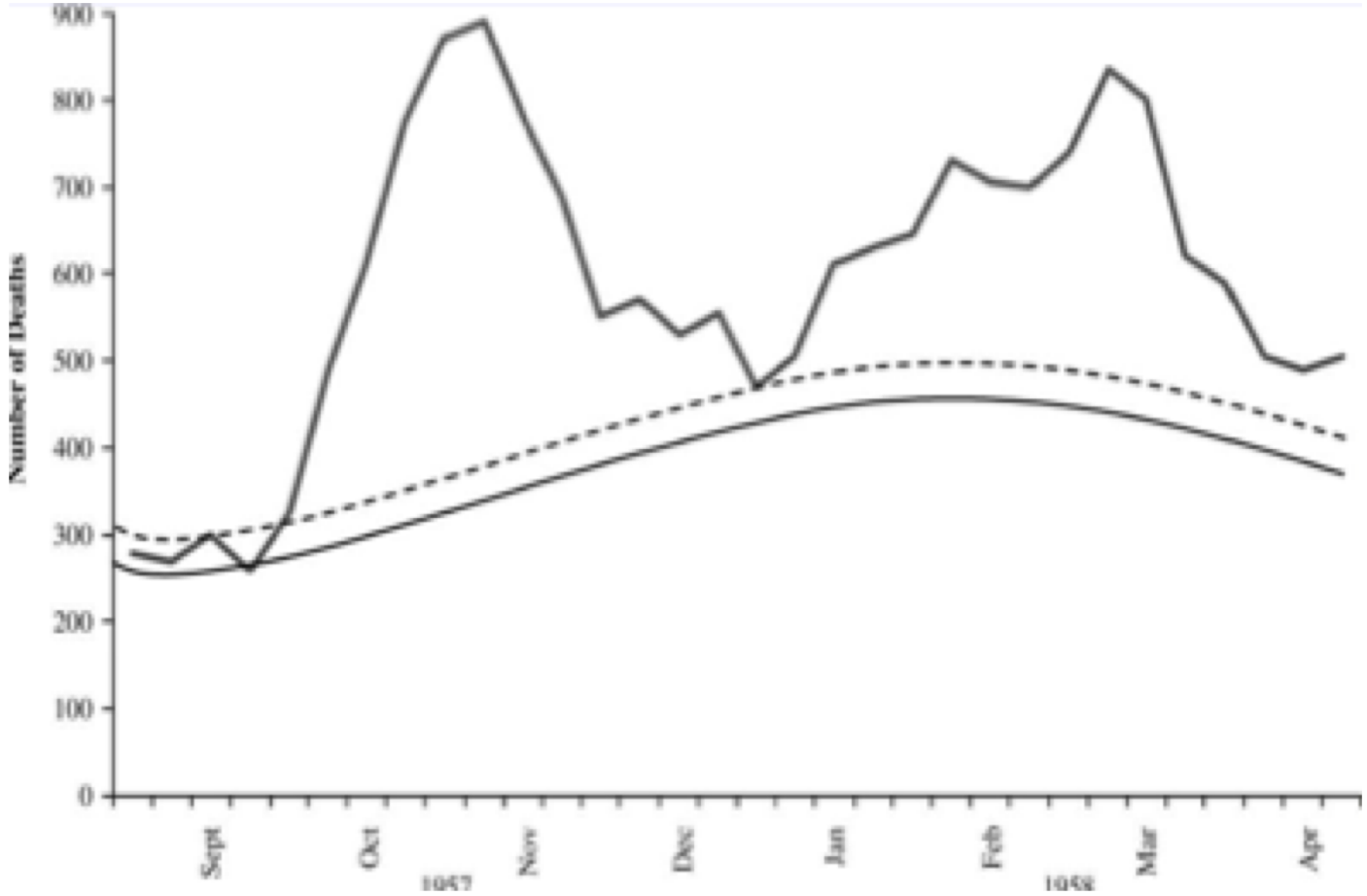
New respiratory cases as reported through the National Health Survey, September-December 1957



Henderson et al. (2009)

But struck again in January and February 1958

Weekly pneumonia and influenza deaths in 108 Cities, September 1957-April 1958



Henderson et al. (2009)

And again in 1959-60

It was a nationwide pandemic

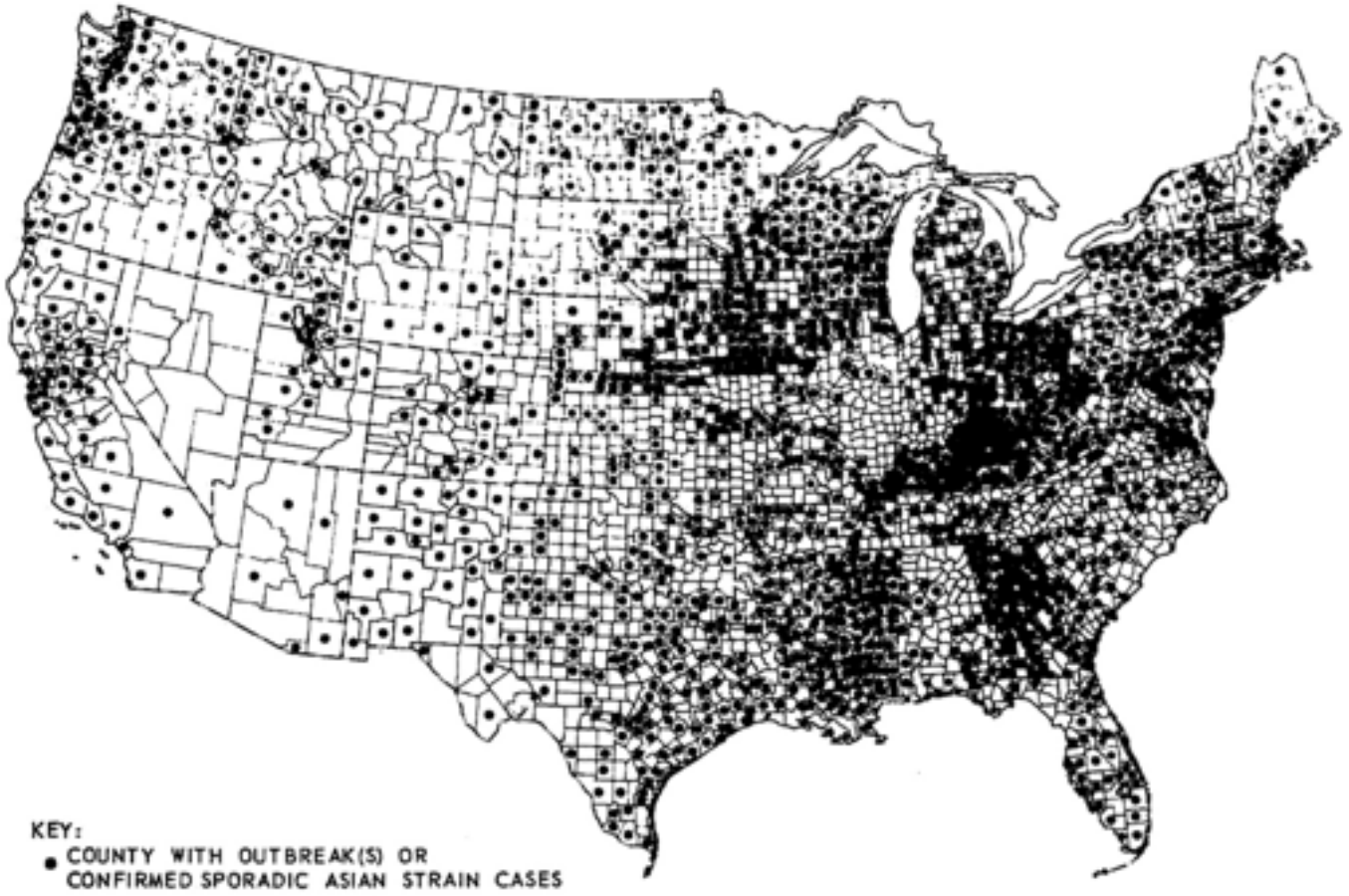


FIG. 3. Geographic spread of Asian influenza by county through December 16, 1957.

Teenagers had the highest *relative* excess death rate

TABLE 2

Pneumonia-influenza excess death rates per 100,000 during three epidemic periods United States by age and sex

Age Group	Sex	Expected				Excess				Per cent excess*			
		1957-58		1960 Jan-Mar	1963 Jan-Mar	1957-58		1960 Jan-Mar	1963 Jan-Mar	1957-58		1960 Jan-Mar	1963 Jan-Mar
		Oct-Dec	Jan-Mar			Oct-Dec	Jan-Mar			Oct-Dec	Jan-Mar		
All ages	M	9.0	11.1	11.2	11.5	5.1	4.6	8.7	7.0	89	42	78	61
	F	6.5	8.4	8.5	8.8	5.6	3.0	6.1	5.6	86	36	71	63
	Totals	7.8	9.7	9.9	10.1	6.8	3.8	7.4	6.3	88	39	75	62
Under 1	M	80.4	99.2	95.8	90.6	13.9	6.4	11.5	5.9	17	6	12	7
	F	64.7	80.2	77.2	72.8	9.1	5.7	3.8	1.4	14	7	5	2
	Totals	72.7	89.8	86.7	81.9	11.6	6.0	7.7	3.7	16	7	9	5
1-4	M	4.6	5.4	5.2	4.8	3.0	0.2	1.4	1.7	66	3	26	35
	F	4.1	4.7	4.5	4.2	3.1	1.4	1 8	1.8	77	31	40	43
	Totals	4.3	5.1	4 9	4.5	3.1	0.8	1.6	1.7	71	16	33	39
5-14	M	0.6	0.8	0.8	0.7	1.4	0 0	0 4	0.1	223	5	47	18
	F	0.6	0.7	0.7	0.7	1.4	0.3	0.3	0.2	232	37	43	37
	Totals	0.6	0.8	0.7	0.7	1.4	0.1	0.3	0.2	227	20	45	27
15-19	M	0.7	0.8	0.8	0.8	2.2	0 3	0.6	0.4	329	34	79	53
	F	0.5	0.6	0.6	0.6	2 9	0.2	0.7	0.3	549	38	118	55
	Totals	0.6	0.7	0 7	0.7	2.5	0.2	0.7	0.4	433	36	97	55
20-44	M	1.5	1.8	1.7	1.7	2.5	1.0	1.9	0.9	163	58	109	53
	F	1.0	1.3	1.3	1.3	2.8	0 7	1.5	0.9	277	55	120	69
	Totals	1.3	1.5	1.5	1.5	2.7	0.9	1.7	0 9	209	56	114	60
45-64	M	8.0	9.4	9.4	9.4	11.8	7 0	11.1	8.0	148	74	118	85
	F	3 5	4 4	4.5	4.6	6.1	3.1	5.2	4.5	174	71	116	97
	Totals	5.7	6.8	6.9	7.0	8.9	5.0	8.0	6.2	156	73	117	89
65-74	M	29.4	35.2	37.4	39.2	40.3	24.1	46.9	30.3	137	67	126	77
	F	14.8	19.3	19.4	19.7	17.5	10.1	21.1	15.4	118	53	108	78
	Totals	21.5	27.2	27.8	28 6	28.2	16.7	33.1	22.1	130	61	119	77
75 and over	M	108.6	134.5	139.3	145.6	60.1	55.1	118.2	108.6	55	41	85	74
	F	81.1	104 7	107.3	111.2	44.5	35.5	89.1	82.8	55	37	83	74
	Totals	93.1	117.6	121.0	126.3	51.3	45.7	101.6	93.7	55	39	84	74

* Per cent excess is computed on basis of excess and expected values to two decimal places.

- Although the highest excess death rates were in the age groups under 5, 65-74 and 75 years and over, and although two around two thirds of excess deaths were of people older than 65, the relative excess death rate was over four times the expected rate in the 15-19-year age group.
- In other words, contemporaries would have anticipated higher mortality amongst the elderly at the time of year the Asian Flu struck; they would not have anticipated it amongst teenagers.
- The highest attack (i.e., infection) rates were in the age groups from school-age children to young adults up to 35 or 40 years of age. Adults over 65 years of age accounted for 60% of influenza deaths, but that was an abnormally low share. In 1960 they represented fully 80% of all excess pneumonia and influenza deaths.

Serfling, Sherman and Houseworth (1967); Henderson et al. (2009)

This was because teenage life was one big superspreader event

Boy Scout sub-camp at the 1957 Jamboree at Valley Forge

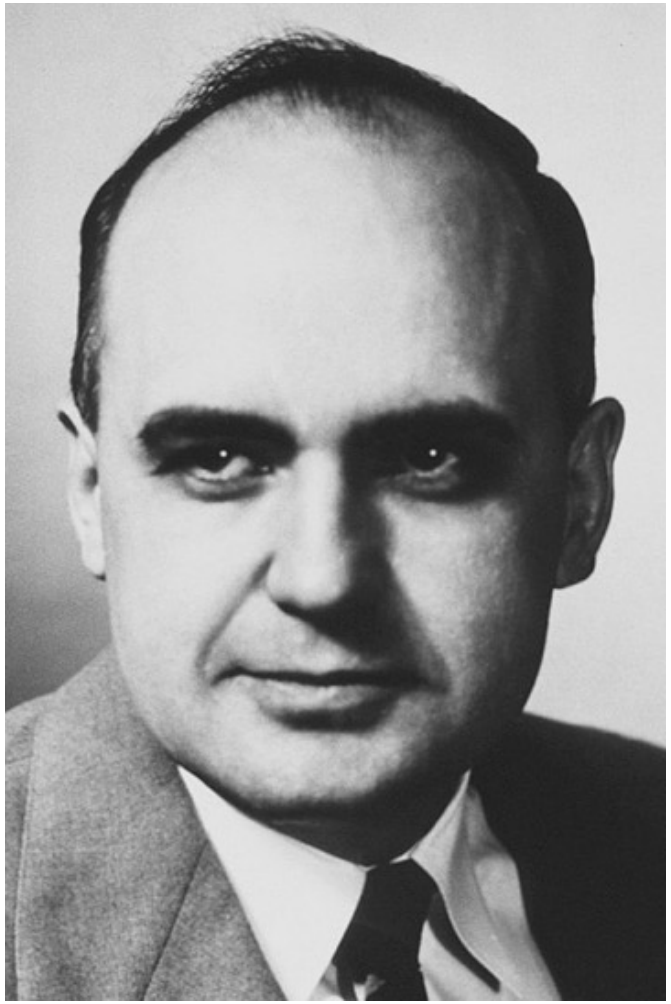
The public health response

- “Measures were generally not taken to close schools, restrict travel, close borders, or recommend wearing masks.
- “Quarantine was not considered to be an effective mitigation strategy and was ‘obviously useless because of the large number of travelers and the frequency of mild or inapparent cases.’ …
- “In early October, the Nassau County Health Commissioner in New York stated that ‘public schools should stay open even in an epidemic’ and that ‘children would get sick just as easily out of school.’ …
- “ASTHO encouraged home care for uncomplicated influenza cases to reduce the hospital burden and recommended limitations on hospital admissions to the sickest patients. … most were advised simply to stay home, rest, and drink plenty of water and fruit juices.
- “Hospital admissions did increase, but in the 3 cities that we reviewed—Pittsburgh, Baltimore, and New York hospitals had a surge capacity sufficient to handle the patient load.”—Henderson et al. (2009)

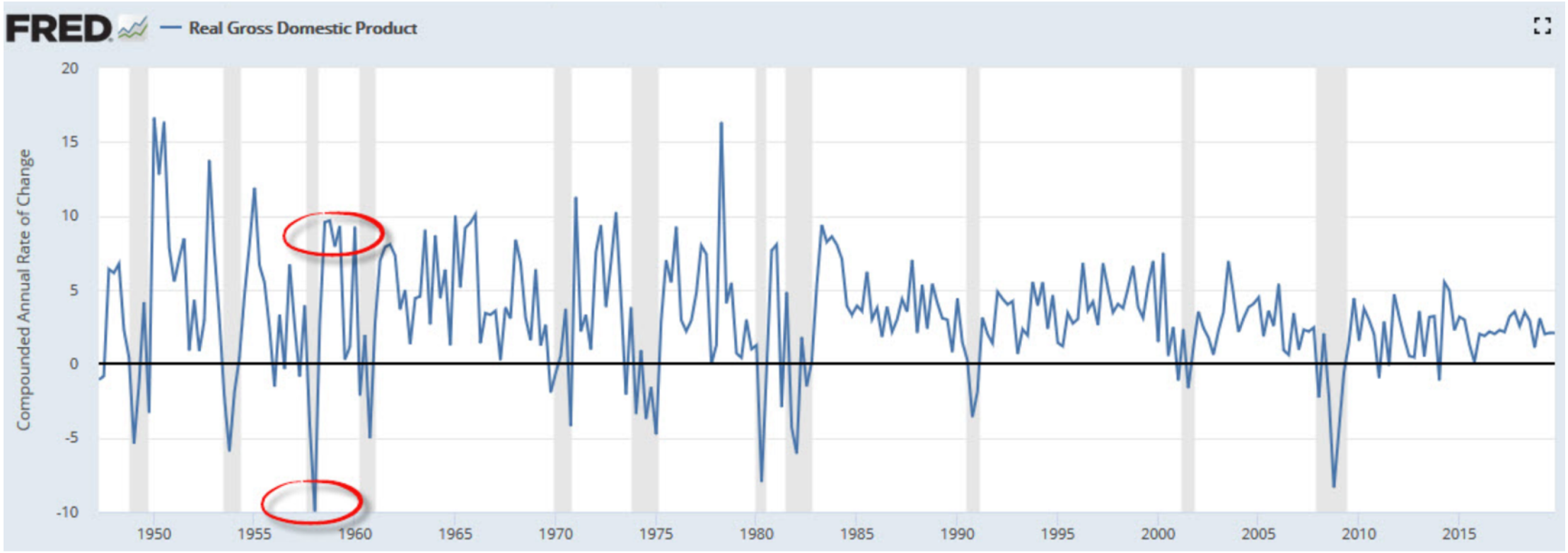
- Special meeting of the Association of State and Territorial Health Officers (ASTHO) in Washington, DC, on August 27-28.
- ASTHO pointed out that “[p]revention, which in the absence of effective means to stop the spread of infection[,] resolves itself into an immunization program.”

The race for a vaccine

- U.S. received its first influenza specimens from Hong Kong on May 13 and Maurice Hilleman definitively identified the new strain on May 22.
- Public Health Service released the first cultures of the Asian influenza virus to manufacturers even before Hilleman had finished his analysis.
- Trials were conducted in early July with 700 subjects (CDC personnel in Montgomery and Atlanta; Atlanta federal penitentiary).
- On July 26 doctors at Fort Ord in California began to inoculate recruits to the military. Next in line were doctors, nurses and other health care workers—not to mention the President and the Queen.
- Surgeon General Leroy Burney announced on August 15 that vaccine was to be allocated to states according to population size, and it was to be distributed by the manufacturers through their customary commercial networks.
- By the late summer, six companies were producing a vaccine, including Merck, Sharp and Dohme. The vaccine was packaged as a single 1.0-ml dose.
- Approximately 4 million doses were released in August, 9 million in September, and 17 million in October.
- Effectiveness was found to range from 53% to 60% in studies conducted during the outbreak.

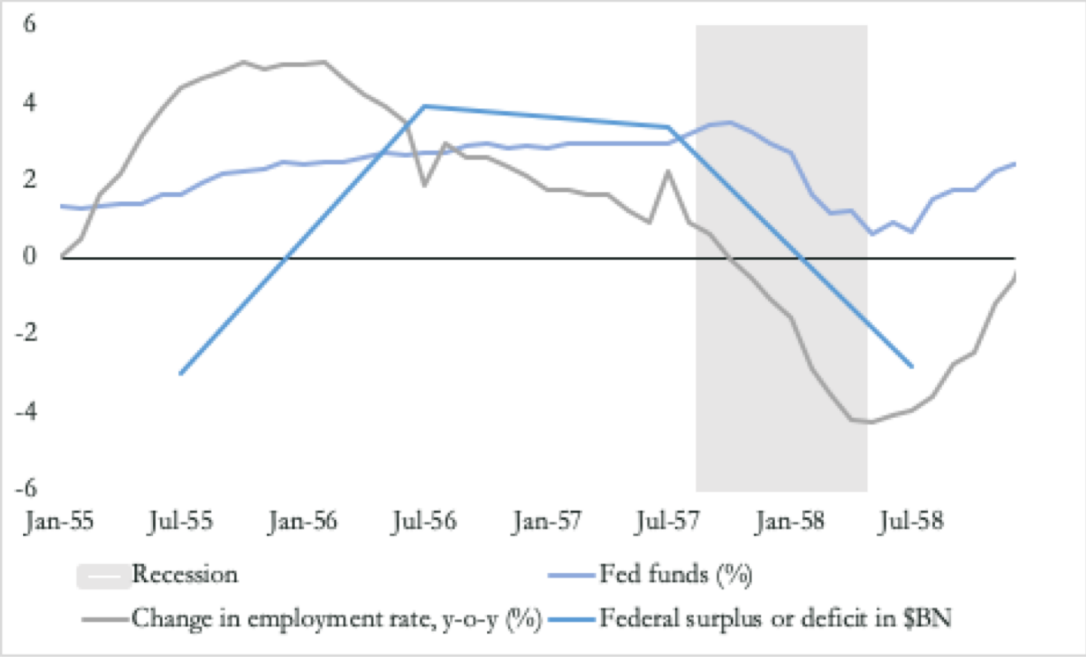


Did the pandemic cause a recession?



Marginal Revolution

U.S. economic indicators, 1955-1958

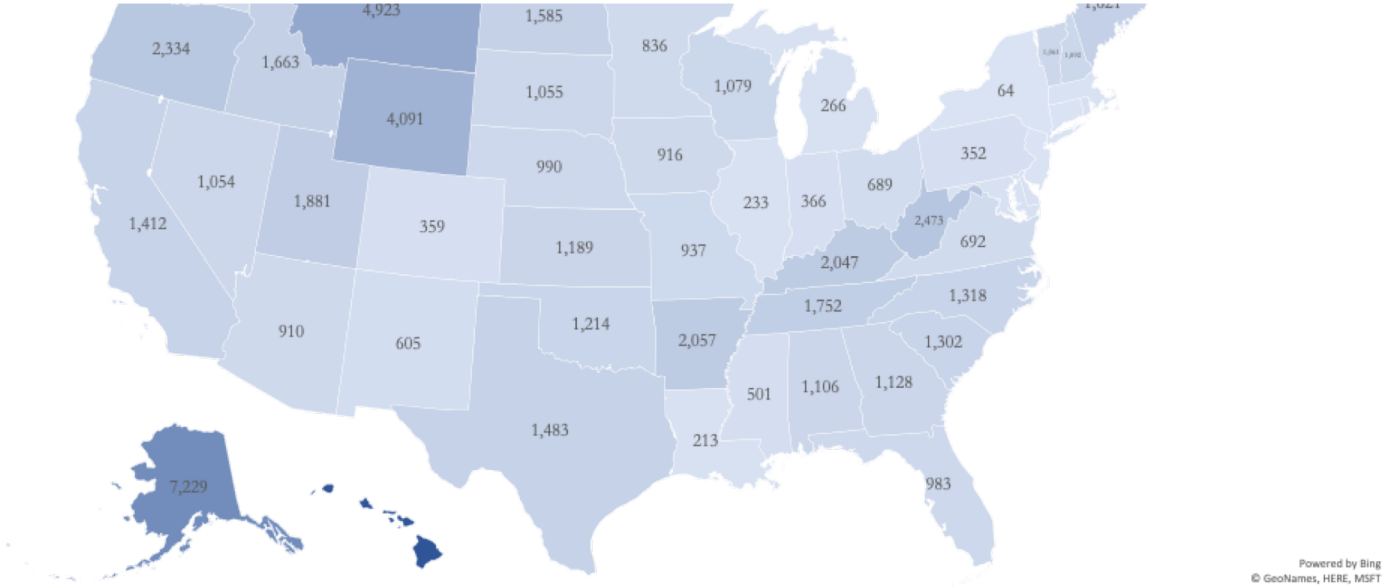


- Proximate causes of the 1957-58 recession were rising market interest rates, which the Fed had half-heartedly followed, and federal defense cuts.
- The CBO describes it as an event that "might not be distinguishable from the normal variation in economic activity"—had it not occurred during the 1957-58 recession.
- August 1958 Federal Reserve review of the recession did not even mention the pandemic as a potential contributing factor to the downturn, and noted that restaurants, bars, and malls were some of the least impacted industries.
- "Data on telephone workers in 36 cities showed that the epidemic peaked during the week ending October 19 with an excess absenteeism rate of only 2.7%. In the cities tracked, excess absenteeism during each city's peak week varied from 3.0% to 8.0%."—Henderson et al. (2009)

FRED

It’s hard to believe Americans in 1957 would have stood for this

Unemployment Fatality Ratio: number of initial state unemployment claims since March 14, 2020, per one COVID-19 death in state



Greenmantle

Political “consequences”

President (second midterm year)	Senate seats lost	House seats lost
Grant (1874)	-10	-93
Cleveland (1894)	-4	-127
Wilson (1918)	-5	-22
Roosevelt (1938)	-7	-72
Truman (1950)	-5	-28
Eisenhower (1958)	-13	-48
Nixon (1974)	-4	-48
Reagan (1986)	-8	-5
Bush (2006)	-6	-30
Obama (2014)	-9	-13

Looking back without anger

- ”From one watching the pandemic from very close range, though, it was a transiently disturbing event for the population, albeit stressful for schools and health clinics and disruptive to school football schedules.”—D. A. Henderson in Henderson et al. (2009), p. 272.
- “For those who grew up in the 1930s and 1940s, there was nothing unusual about finding yourself threatened by contagious disease. Mumps, measles, chicken pox, and German measles swept through entire schools and towns; I had all four. Polio took a heavy annual toll, leaving thousands of people (mostly children) paralyzed or dead. There were no vaccines. Growing up meant running an unavoidable gauntlet of infectious disease. For college students in 1957, the Asian flu was a familiar hurdle on the road to adulthood.”—Clark Whelton, “Say Your Prayers and Take Your Chances: Remembering the 1957 Asian Flu Pandemic,” City Journal, March 13, 2020.

Clark Whelton, back row, third from the right

Then …


25¢
MAD
No. 30
DEC. 54
Write-in Candidate for President
ALFRED E. NEUMAN
says
"WHAT—ME WORRY?"

Then … and now

Earth Day: Greta Thunberg calls for 'new path' after pandemic

Climate activist says Covid-19 outbreak shows change can happen when we listen to scientists

- Coronavirus - latest updates
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▲ Greta Thunberg in videolink conversation with Johan Rockström to mark the 50th anniversary of Earth Day. Photograph: Jessica Gow/EPA

Greta Thunberg has urged people around the world to take a new path after the coronavirus pandemic, which she said proved "our society is not sustainable".