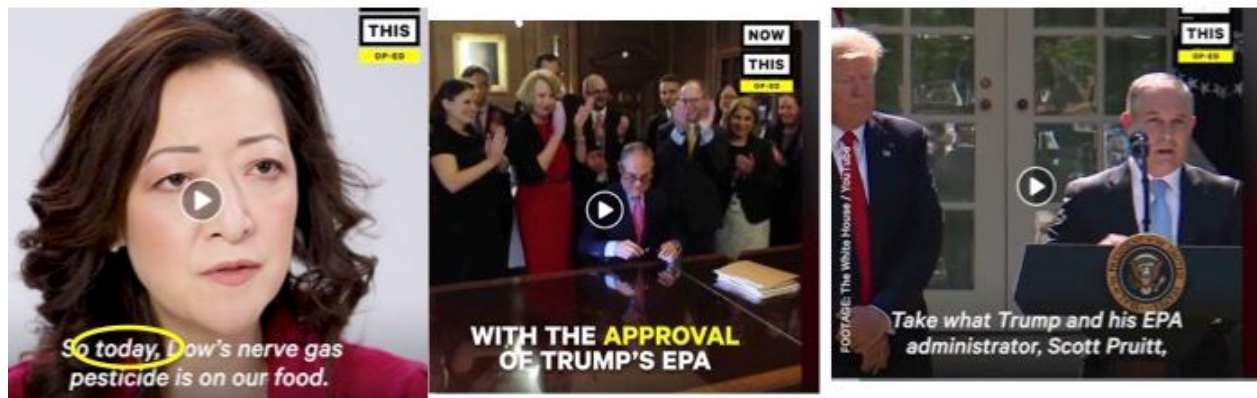


doesn't say that really makes the scare.

In the mood for a trick? You don't have to wait long. Early in the video, we see three frames that imply that EPA Commissioner Scott Pruitt (who is now gone) recently approved chlorpyrifos and now we are being bombarded with a new chemical that also happens to be a nerve gas.

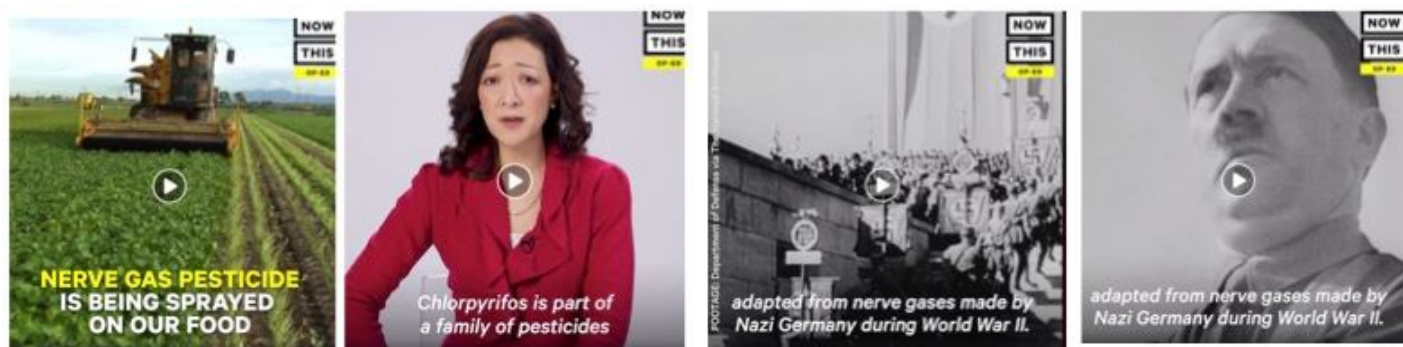


"So, **today**, Dow's nerve gas pesticide is on our food."

Rhea Suh

Today? This is intentionally misleading. Chlorpyrifos has been around since 1965, is currently used on about 50 different crops. Yes, today some of it is on our food, just like the 19,345 days before today.

Next, the propaganda kicks into high gear. It's Nazi comparison time!



1

2

3

4

So, the "new" nerve gas isn't really new after all. It's pretty much the same (Frame 3) as something that was used before. Suh says:

"...chlorpyrifos is adapted from nerve gases made by Nazi Germany during World War II."

This phrase "adapted from" will most certainly be interpreted by some (many? most?) viewers to mean that chlorpyrifos is more or less indistinguishable from Sarin, the nerve gas that was first made in Nazi Germany. This is a gigantic lie. Although chlorpyrifos, Sarin, and VX (the worst of them) all act by the same mechanism - inhibition of the enzyme acetylcholinesterase in neural synapses - the difference in potency between the chemical weapons and the pesticide is enormous (Table 1). VX, the granddaddy of neurotoxins is only 10-times more toxic than Sarin, but Sarin is hundreds of times more toxic than chlorpyrifos. You cannot compare the two. Sarin is a very good chemical weapon. Chlorpyrifos is not. Equating them is like saying that a pebble and a falling boulder will do equal damage to your car because they are both made of rock. Nice touch tossing Hitler in there too.

Chemical	LD ₅₀ rats (mg)	Relative toxicity	Ref.
Chlorpyrifos	95-270	1	a
Sarin	0.1-0.7	385-950	b
VX	0.008-0.19	1,420-11,875	a

Table 1. The relative acute toxicity of chlorpyrifos, Sarin, and VX. The range of LD₅₀ values represents the toxic dose as a function of the method of exposure, for example, given orally, injected, or applied to skin. References: (a) [Drug and Chemical Toxicology](#), (b) [EXTOXNET](#)

And then we get to hear from an "expert."



These two frames above show how desperate NRDC is to make its point. *New York Times* columnist Nicholas Kristof has no scientific or pharmacological training whatsoever (and it shows), yet he continues to write about toxic chemicals (2). The American Council has perennially challenged his silly statements about toxicity in writing (See [Why I Don't Write About Pottery From the Ming Dynasty And Nick Kristoff Shouldn't Write About Science](#)) in a [video](#), and on [Twitter](#), where he recently trumpeted his ignorance in a discussion with ACSH president Hank Campbell and me.

Hank Campbell @HankCampbell · Mar 2
 Sorry, but endocrine disruption is just fancier homeopathy. At least at levels you can ingest them. It is the biological/tox equivalent of a 9/11 Truther scare invented in the 1990s that just won't die.

Nicholas Kristof @NickKristof
 Follow

Replying to @HankCampbell @ACSHorg

You think DES wasn't a problem?

4:58 PM - 2 Mar 2018

Tweet your reply

Josh Bloom @JoshBloomACSH · Mar 3
 Replying to @NickKristof @HankCampbell @ACSHorg
 The fact that you are even comparing a "therapeutic" dose of a very powerful estrogen receptor agonist to a minuscule dose of a very weak one shows that you lack even a basic concept of pharmacology, and should not be writing about it.

If Nick Kristof is the really the science face of NRDC then these guys badly need a facelift. With a forklift. And guess what? That's just the case. The NRDC *doesn't quote a single scientist* in its video, just Krystof. You'd think that a non-profit organization that raised \$177 million (and had a total of \$306 million in assets) in 2016 (Figure 1) might go a little heavier on the science, but I guess they'd rather pay lawyers, history majors, and economists. Perhaps this is why this inane video is so... inane. And why NRDC is far more interested in scaring you than educating you. (3)

		Prior Year	Current Year
Revenue	8 Contributions and grants (Part VIII, line 1h)	127,497,252.	161,593,821.
	9 Program service revenue (Part VIII, line 2g)	1,089,789.	9,255,127.
	10 Investment income (Part VIII, column (A), lines 3, 4, and 7d)	380,773.	5,732,025.
	11 Other revenue (Part VIII, column (A), lines 5, 6d, 8c, 9c, 10c, and 11e)	841,447.	548,191.
	12 Total revenue - add lines 8 through 11 (must equal Part VIII, column (A), line 12)	129,809,261.	177,129,164.

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		Beginning of Current Year	End of Year
Net Assets or Fund Balances	20 Total assets (Part X, line 16)	301,297,674.	366,746,425.
	21 Total liabilities (Part X, line 26)	64,771,046.	60,522,510.
	22 Net assets or fund balances. Subtract line 21 from line 20.	236,526,628.	306,223,915.

Figure 1. Sections of the NRDC 2016 Form 990 showing revenue (\$177 million) and net assets (\$306 million).

If you think the message I'm sending is that chlorpyrifos is harmless you're wrong. It is not. All pesticides are, by definition, toxic. And even though it has been used for a long time this does not necessarily make it safe. There are plenty of other pesticides (permethrin, for example) out there that are less toxic than chlorpyrifos.

Should it be banned? I don't know. It has significant utility in agriculture but a number of studies of varying quality have shown associations between exposure to the chemical and a negative impact of certain measures of neurological function in children. There are also studies that show otherwise. An [article](#) on the FactCheck.org site examines both sides of the story and concludes that there is no easy answer:

Based on the available research, there is evidence to suggest that chlorpyrifos negatively impacts the

development of children. But that research does have some limitations, and whether it is sufficient evidence is debatable.

Vanessa Schipani, FactCheck.org, April 27, 2017

That is real science - a look at the risks and benefits of the chemical with a conclusion that it may be harmful and should be banned or that there is not enough evidence to support a ban. Somewhere in there lies the best answer, but it will not be a clear yes or no.

Do not expect such candor or nuance from a bunch of overpaid lawyers and history majors. Just propaganda.

NOTES:

(1) From Wikipedia: "**Form 990** (officially, the "Return of Organization Exempt From Income Tax") is a United States Internal Revenue Service form that provides the public with financial information about a nonprofit organization. It is often the only source of such information. It is also used by government agencies to prevent organizations from abusing their tax-exempt status."

From the IRS: "All filing organizations ... must list and report compensation paid to the organization's five highest compensated employees with reportable compensation greater than \$100,000 from the organization and related organizations, as well as to its five highest compensated independent contractors to which the organization paid more than \$100,000 for services."

(2) One of Kristof's favorite villains, BPA, (he won't touch cash register receipts because they contain a little) was recently declared to be safe by the FDA after an extensive two-year study in rats. (See [BPA Is Just As Dangerous As It Never Was.](#))

(3) It's nothing short of hilarious that groups like NRDC when they can't argue science with us (and it should be pretty obvious why they can't) that they call us "industry-funded" and "fat cats" when they had \$177 million tossed at them in 2016 - more than 100-times what we got that year. Corporate funding accounts for only 3% of our donations. We're pretty lean, perhaps because we don't have a bunch of lawyers to pay.