

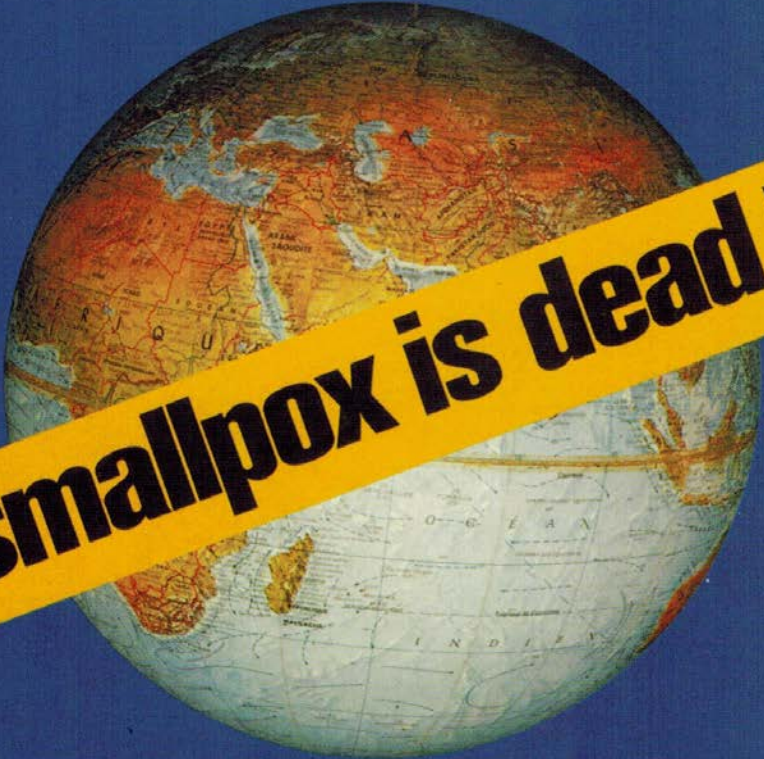
Smallpox Eradication

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A globe is centered in the image, showing the continents of Africa, Europe, and Asia. A bright yellow banner with black text is draped diagonally across the globe from the bottom left to the top right. The globe has a textured, slightly aged appearance with some orange and red hues on the landmasses.

smallpox is dead!

Smallpox Eradication

- Smallpox was declared eradicated from the world on October 12, 1979
- Less than 13 years after the WHO programme was initiated.
- A wonderful success for humanity as whole.

- How did this come about, given the culturally very different attitudes and theories about the disease?
- How should we understand this event philosophically, sociologically, politically?
- Central questions:
 - Choice – how free?
 - Education – How effective, enough time?

- My initial interest stems from east - west and modern science - traditional knowledge issues, but interesting from a policy point of view.
- Understanding this is still in flux and far from complete.

The WHO achievement involves:

- modern (western, northern) science
- traditional (local, indigenous) knowledge
- class war
- imperialism
- cold war
- technological advances
- coercion
- genuine world cooperation

Understanding may be important for future projects: AIDS, polio, etc. and perhaps current vaccine issues in Ontario.

Framework (a priori)

- Eradication of smallpox was a great achievement
- Human wellbeing mattered utmost
- Respect for all adult humans required (democracy)
- Best policy determined by best theory
- Rejection of relativism – cognitive & moral
- These will not all survive

The Disease

- Smallpox is a virus (variola major, varioula minor)
- Killed several million each year (more than war); often left survivors disfigured, blind.
- Variolation (inoculation): pox matter introduced into body of a healthy person who then acquires immunity.
- Jenner (late 18th C): vaccination uses a similar virus (cowpox) to achieve immunity. (cow = vacca).
- Death rates:
 - 30-50% from the disease (if contracted)
 - 2% from variolation
 - 0.0002% from vaccine
- My focus is on India where half the deaths occurred.

Sitala Mata

- Hindu goddess of smallpox
 - Smallpox seen as a blessing (ie, a divine intervention)
- Basket of seeds on her head, which can fall on people
 - Survive, if seeds washed with water carried in her arms
 - Die, if she uses broom
 - Many variations on this
- Appeals for help are made to Sitala
 - Ritual prayers during variolation
 - Inflicted person viewed as the goddess incarnate
 - Sitala is both the cause and the cure
 - Note the parallel to variolation



“Modernization”

- Sitala Mata worship and variolation were both in common practice in India since 16th c.
- The practice of variolation spread throughout Europe. (In UK called “grafting.”)
- Britain outlawed variolation in 1865 in India (as they did in the UK) and made vaccination compulsory.
- Resistance in India was extensive and often violent (as it was in UK).

- Defending variolation seen as anti-colonial, hence good. (In UK, the poor used variolation; forced vaccination was seen as anti-poor.)
- Educated and politically powerful Indians (eg, Nehru) – before and after independence – favoured vaccination.
- After independence modernization could be linked to USSR, not to the old colonial European masters.
- Variolation was outlawed by new Indian government again and vaccination made compulsory, but still resistance remained.

Traditional Knowledge

One way of thinking about Sitila-variola is in terms of traditional knowledge (= local knowledge or indigenous knowledge)

It is often defined as: knowledge (or beliefs) based on the social, physical, and spiritual understandings which have informed a people's survival and contributed to their sense of being in the world.

Contrast: “Modern, Western, Northern science”

Quick Questions

- Is the Sitala-variolation theory pseudo-science?
 - Not obviously, since variolation is empirically very successful, more so than the older Madhava humor theory.
- Were there associated technological advances?
 - Yes, variolation was a clear success.
 - And improvements were being made (dried scabs used).
 - Jenner followed variolation methods to administer cowpox.
- Are all theories on a par (relativism)?
 - No, the germ theory of disease is certainly superior to the Sitala Mata theory.

Why Reasonable?

- Variolation fits in with general cultural beliefs, ie Hinduism.
- It is very successful. Variolation deaths are only 1 in 50, whereas smallpox deaths (if contracted) are 1/3 to 1/2.
- The difference between variolation's 1 in 50 deaths vs vaccination's 1 in 5000 deaths is not that evident when dealing with small samples (a typical village), especially when people are dying of many other things, anyway.

Conditions in 1967

- But are we right to uphold the following principle?
Science Policy should be determined by the best scientific theory. (Ignore social factors, since they vary from one society to another. The solution must be universal.)
- Good news
 - Smallpox is a human disease – no animal reservoir, unlike malaria
 - Effective vaccine existed
 - No cultural impediments, unlike venereal disease, leprosy, etc.
- Thus, it looked promising, unlike the earlier failed malaria and yellow fever programmes.

Eradication Plan

- Jenner proposed eradication in 1801
- Nothing serious suggested until 1950s
- USSR proposed eradication at 11th World Health Assembly, 1958 (and donated most vaccines in the early years)
- Other countries joined in
- Eradication programme initiated by WHO, January 1, 1967

Implementation

- Initial plan (1967):
 - mass vaccination
 - herd immunity
 - this largely failed
- New strategy adopted by 1970
 - surveillance and control

Tactics

- A change of tactic was crucial: from complete vaccination of everyone to the strategy of surveillance and control.
- The use of force – at a time of no outbreak – was a disastrous policy.
- But during epidemics, the general population was much more receptive to vaccination. “Never let a crisis go to waste.”
- This was highly successful.
- It was a victory of reason + political force over a reasonable population. The better theory won, but not by rational persuasion.

New Icon

A change of iconography, from Sitala (both cause and cure) to a demon (wholly evil); the cure is in the bifurcated needle.



Class War

- Another way of thinking about things is in terms of class conflict.
- British government made variolation illegal in the UK and India in the mid-19 c.
 - Serious, sometimes violent resistance by British working class & rural peasantry, which saw it as an attack on them.
 - Eventually they were won over to vaccination.
 - Serious, sometimes violent resistance of the subject Indians, who saw it as an attack on them by British Imperialists.
- Indian government (after independence in 1948) made variolation illegal and joined the smallpox eradication programme (1967), making vaccination compulsory.
 - Still, there was serious, sometimes violent resistance by Indian peasants, who saw it as an attack on the poor.



The Cow-Pock — or — the Wonderful Effects of the New Inoculation! — Pubd June 10. 1805. by H. Thompson & James Drost.
vide. the Publications of the Anti-Vaccine Society.

Class Allies

- In many societies there is an educated or scientific elite, a ruling class, and the general population (and others, eg, a religious elite).
- They can be in harmony or hostile to one another.
 - In the West, there is complete harmony in physics
 - Mixed in biology, many in the public reject Darwin
 - In India, the scientific and political classes favoured vaccination (with good reason).
 - The general population favoured the Sitala theory (also with good reason).

Outlook

- Liberal outlook:
 - Free choice, as far as possible
 - No Force, as far as possible
 - Education, so people make better choices
- Smallpox was a challenge to this.
 - No time to educate the world (2,000,000 a year die)
 - Success requires universal compliance
 - Upshot: force sometimes required

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