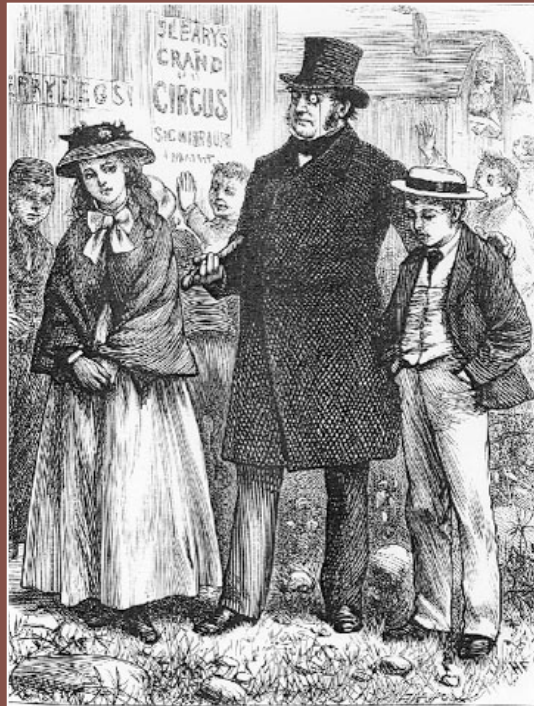


Citizen Science

A Study of People,
Expertise and
Sustainable Development

Alan Irwin



HARD TIMES.

BOOK THE FIRST. SOWING.

Now, what I want is Facts... Facts alone are wanted in life. Plant nothing else, and root out everything else. You can only form minds of reasoning animals upon Facts: nothing else will ever be of any service to them.

-Thomas Gradgrind

“The future belongs to science and those who make friends with science.” -Nehru

- What role does the ordinary citizen play in the progress of technology?
- How do we integrate science into the ordinary citizen's life?

“We are barraged with new ‘information’ about developments in science and technology which might affect our lives and also, of course, with exhortations about what different social groups would like about those developments.”



Global Warming

Cell Phone Radiation

Swine Flu

The Association of Scientific Workers

- “a technically-literate population is essential for future workforce requirements.”
- “no man can be considered cultured who makes no serious attempt to understand and appreciate the broad principles of science.”
- “without a much broader knowledge of science, democracy cannot be effective...”

The British Royal Society

“better public understanding of science can be a major element in promoting national prosperity, in raising the quality of public and private decision making and in enriching the life of the individual... Improving the public understanding of science is an investment in the future, not a luxury to be indulged in if and when resources allow.



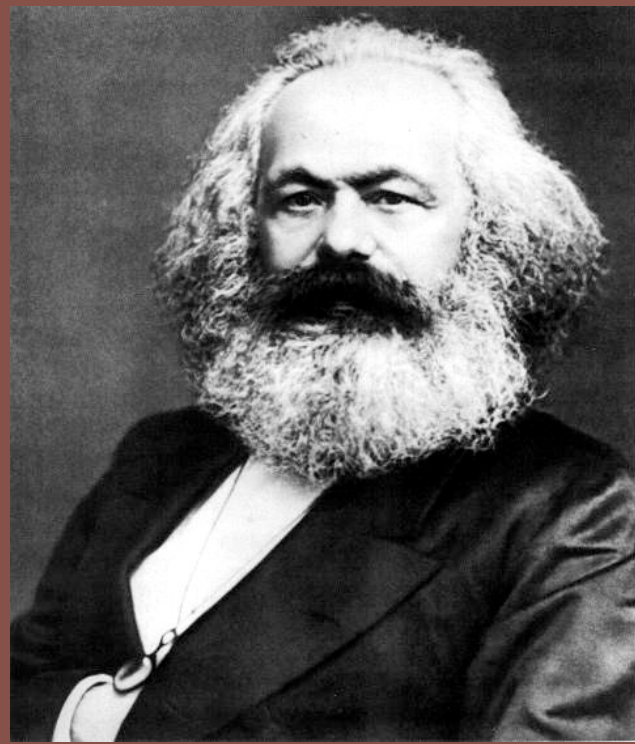
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Manchester Mechanics' Institute , Cooper Street 1825

Carnegie Mellon University, 2009

Education or Indoctrination?

The Flip Side



“Labor [is]...
subsumed under the
total process of the
machinery itself, as if
itself only a link of the
system”

-Karl Marx

The Flip Side (con...)

“The words of knowledge are opaque, controlled by the masters of the technological system and the variety of specialists who inform them. The technological aesthetic is unreadable to the layman, but is embodied in words of knowledge that say “ you shall adjust”

-Stephen Hill, The Tragedy of Technology

Reality Check

- Every citizen is not always going to be up to date on the latest scientific discovery
- There are plenty of examples of regular citizens who engage in science and are denied legitimacy.

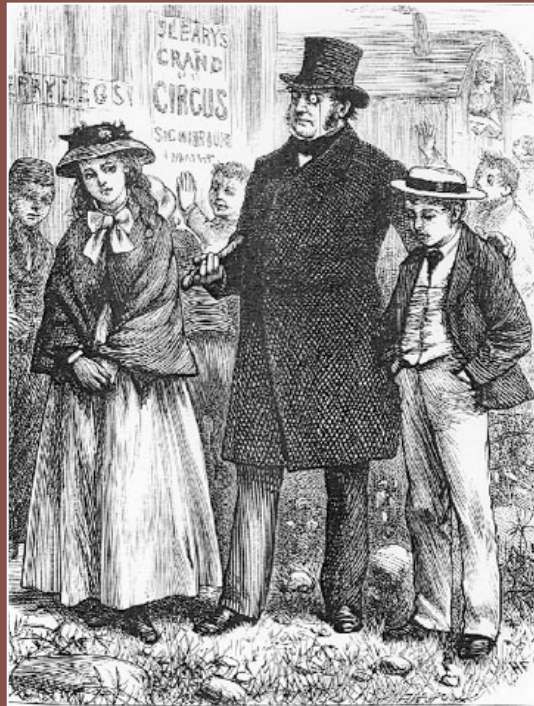
"Citizen Science" in Action



Sixth Effects of airdous
Explosions at 24 miles
(Agent Orange) ration.

“Citizen Science” in Action

- Reluctance to accept accounts.
- Reports are determined “Anecdotal”
- Due to the resource imbalance, they are unable to offer “expert” testimony.



HARD TIMES.

BOOK THE FIRST. SOWING.

Noish, what id can teist Fat the . Fact s va one
a re a w s o n t e d c h i f e o p l a n t a n d h i n t h e l s e ,
f i g u r e s , t a n o t a l v e h y e t p i n o p e s e . h o f o c a r d
t h e y f o u n t ; a n d d s o i f m e a s o u r i c h g a t n a m a l s
t h o u s a n d s a n o t s i n g e l s e p o w i l d e v e n b e e f
t h e m s e a r i d e t o w h e m a l l u p t o g e t h e r !

-Thomas Gradgrind

The Takeaway

- The relationship between science and society is a complex one.
- Scientific knowledge should not be abused to indoctrinate or manipulate.
- People *can* “make friends with science” and should play a roll in the progress of technology

Questions?

What is the role of Science in our Society?

- Creates a better informed citizenry!
- Education can make people more enthusiastic about science!
- Science is progress! People educated in science will lead the future!