Public Policy Course

Understanding & Explaining Bread Mold on a Yak:

An invitation to social policy innovation and discovery through the successful articulation of community solutions

April 4, 2020


THAT'S ODD... MY NECK SUDDENLY FEELS BETTER...
EARLY ACUPUNCTURE

Solutions and Discovery: Worlds Apart

- *"Interestingly historical records and folklore refer to ancient Chinese and primitive peoples successfully treating infections and boils with warm soil and molds scraped from cheeses, and in England, bread poultices were the home remedy for these up until penicillin became available.*

- *"**Unfortunately, no one made the connection**"*

The Great Recession of 2008

- "***In January 2009, in the final days of the Bush Administration, Dick Cheney sat down for an interview with the Associated Press. He was asked why the administration had failed to foresee the biggest financial crisis since the Great Depression."***
- ***"Nobody was smart enough to figure it out…. I don't think anybody saw it coming."***

Crisis Economics, Nouriel Roubini, 2010

The Great Recession of 2008

- "When the bubble breaks, everyone says: "Who could have predicted it?" I was at a meeting at Davos … I and a couple of other colleagues explained how the bubble had developed… a chorus of central bankers in the front row chimed in "**No one predicted it**"….. That claim was immediately challenged by the same small band that had been predicting the bubble for seven years. But the bankers were in a sense right: ***no one with credibility in their circle*** challenged the prevailing view but there was a tautology: no one challenging the prevailing view would be treated as credible. Sharing similar views was part of being socially and intellectually acceptable."

Joseph Stiglitz – Nobel Laureate – Freefall- 2010, p.253 and author of the famous '1%' article in Vanity Fair that became the theme of the Occupy movement.

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- A History Lesson (a pertinent one)
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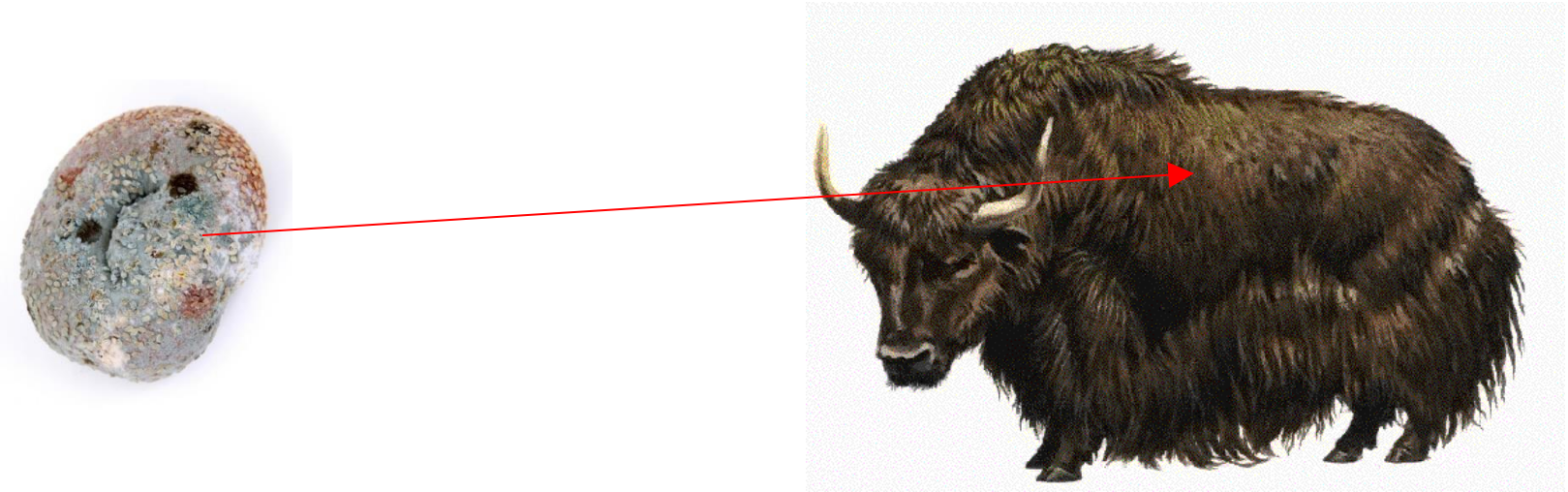
The Nature of Discovery

- Long before the modern discovery of penicillin, indigenous societies used bread molds to treat infections on animals.

The Nature of Discovery

- Application of bread molds on infected yak wounds was a common sight prior to what is considered the actual scientific discovery of penicillin, which was attributed to Alexander Fleming in 1929.



Nature of Discovery

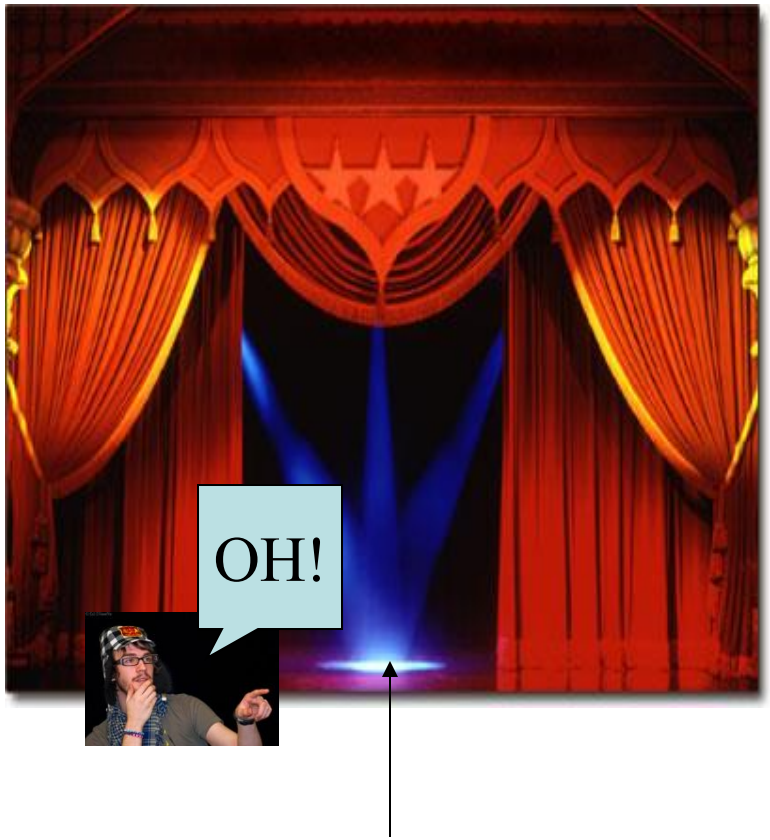
- Sometimes, solutions and discoveries are worlds apart.
- In the case of penicillin, it was "in use" long before it had a name or a known inventor. But its discovery was attributed to Alexander Fleming revealing much about the rules of discovery.

PENICILLIN!

Nature of Discovery

- The modern discovery of penicillin illustrates society's refusal to recognize innovation and discovery until it is precisely articulated in mainstream language as part of an 'intelligible' architecture with alternative solutions and an optimum environment.

- Without these ingredients, discovery and innovation is often viewed as failure or a curiosity.



Discovery to Invention

When presenting an idea to the world, we risk rejection of that idea because it seems:

- imprecise
- inarticulate (in comparison to mainstream language)
- lacking apparent architecture
- without a substitute solution; and
- without an apparent optimum environment

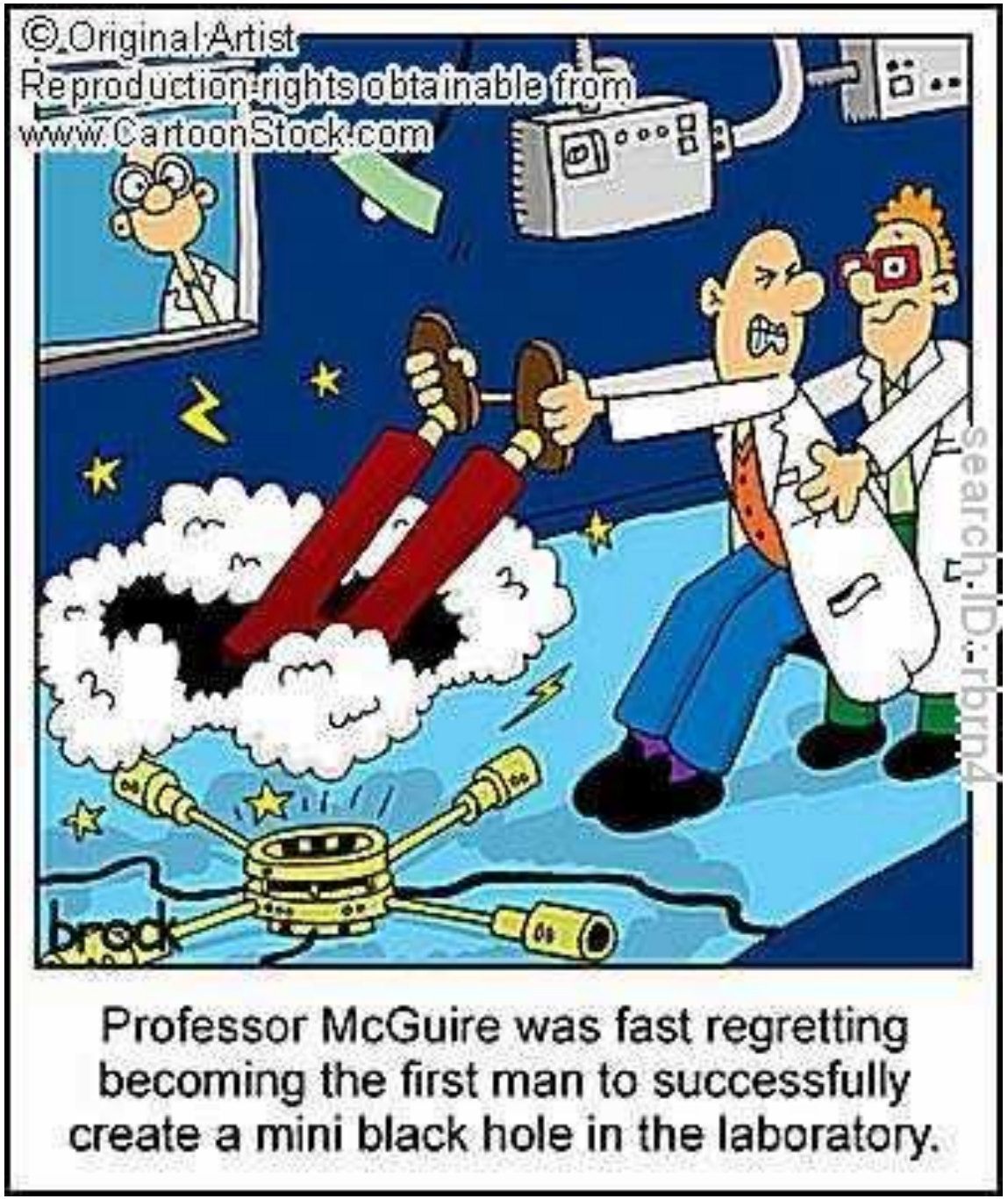
Discovery to Invention

The penicillin example is important for social policy because when groups offer solutions that are not presented in the accepted (political) format, those solutions are not understood by policy developers and decision makers.

Discovery to Invention

- Innovation and discovery in social policy will be seen with the same lens as that ‘mold on the yak’ - unintelligible solutions with no connection to wider society.

It may not sound fair. . .but it’s true.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Professor McGuire was fast regretting becoming the first man to successfully create a mini black hole in the laboratory.

Invention to Household Name

- It is the job of social policy analysts and community members to take community solutions – seen with the same lens as ‘mold on a yak’, and convert these solutions into precise, intelligible solutions with appropriate social policy ‘architecture’, alternative or ‘substitute’ solutions and an optimum community environment.

Invention to Household Name

- It will be easier for a social policy analyst to understand community solutions if they are presented in social policy language.
- The scientific community won't allow a discovery to be recognized until it's established on its own terms. Social policy analysts are similarly discriminating.
- This is how social policy is like mold on a yak.

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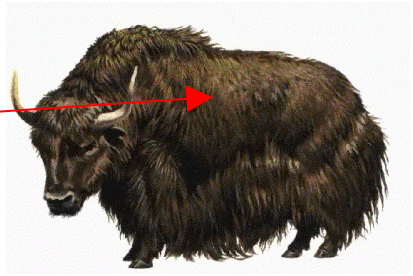


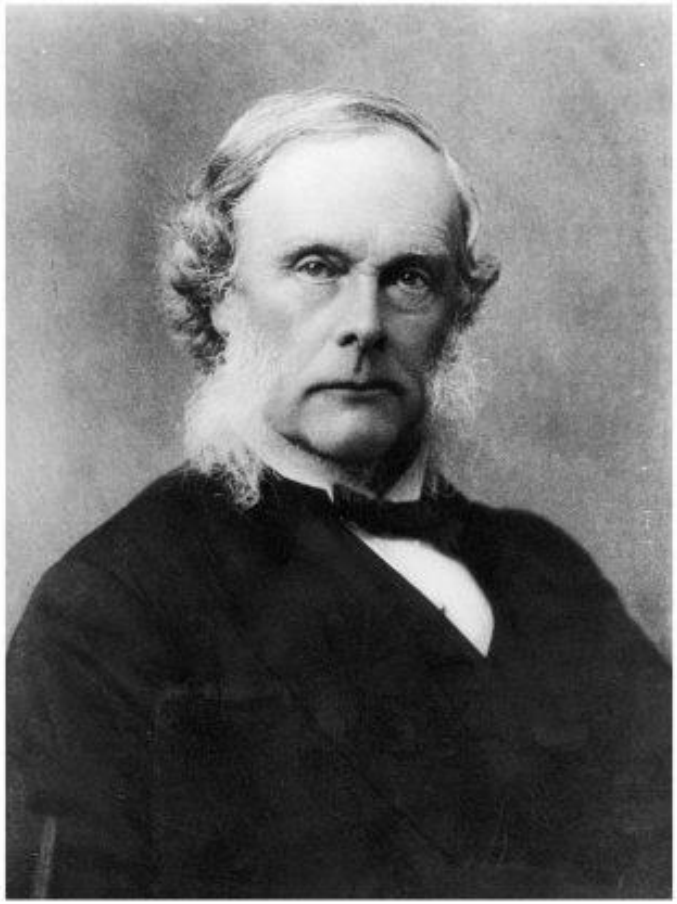
What's the difference between the discovery of penicillin and bread mold on a yak?

A History Lesson:

- Many ancient cultures, including the ancient Greeks and ancient Indians already used molds and other plants to treat infection.
- There are also records of Tibetans applying bread mold to wounds of yaks.

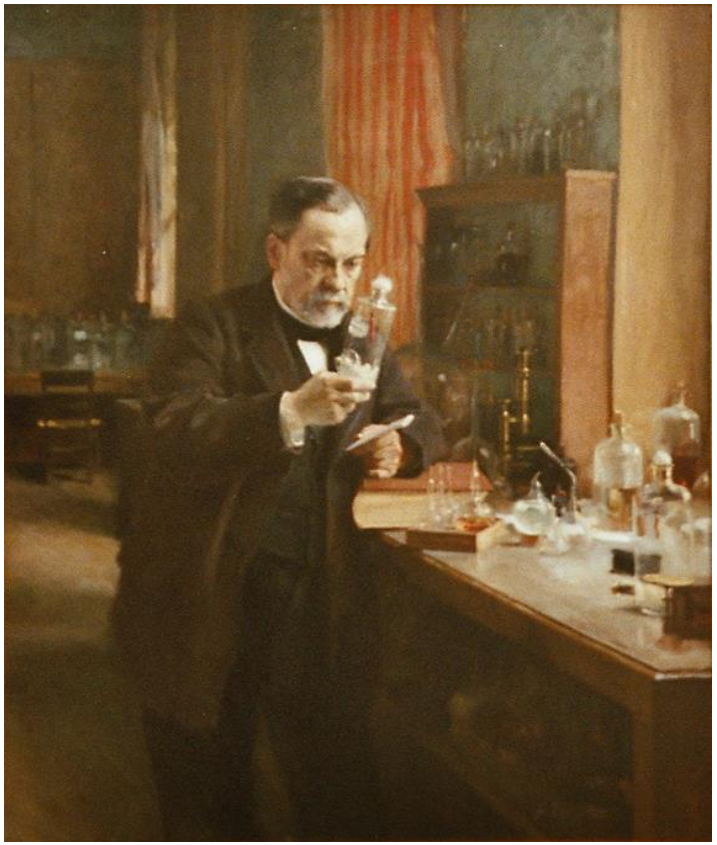
1871 - England

Joseph Lister, an English surgeon and the father of modern antiseptics, described urine samples contaminated with mold as not allowing the growth of bacteria. He also described the antibacterial action on human tissue on what he called Penicillium Glaucum.



1877 -France

- Louis Pasteur and Jules Francois Joubert observed that cultures of the anthrax bacilli, when contaminated with molds, became inhibited. Some references say that Pasteur identified the strain as Penicillium notatum.



1920 -Belgium

- Andre Gratia and Sara Dath observed a fungal contamination in one of their cultures inhibiting the growth of the bacterium. They identified this as Penicillium and presented their observations in a paper. Little attention was paid.

1929 -Scotland

- Fleming found an inhibition of bacterial growth around a contaminant blue-green mold on a culture. The mold was releasing a substance that inhibited bacterial growth.
- He grew a pure culture and discovered it was Penicillium notatum.
- He later named it “penicillin”.

Fleming

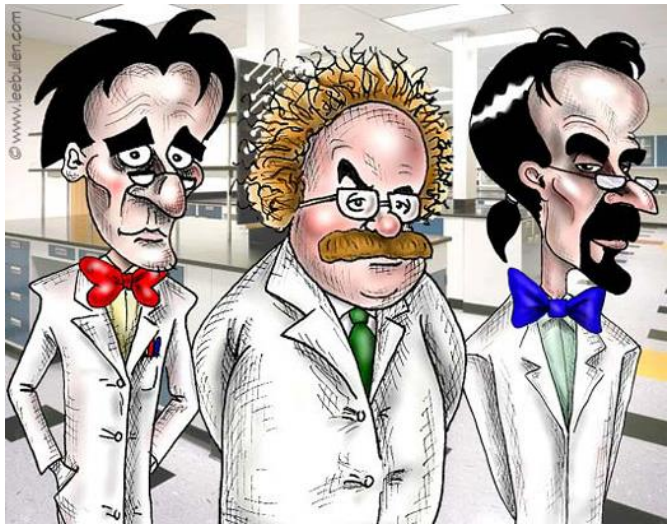
- Fleming was well-known and a reputation as a brilliant researcher, and a careless lab technician.
- He often forgot cultures that he worked on, and his lab was usually in chaos.
- After a long holiday, Fleming noticed culture dishes were contaminated with a fungus so he threw the dishes in disinfectant.
- He retrieved some of the unsubmerged dishes when he noticed a zone around an invading fungus where the bacteria could not grow.

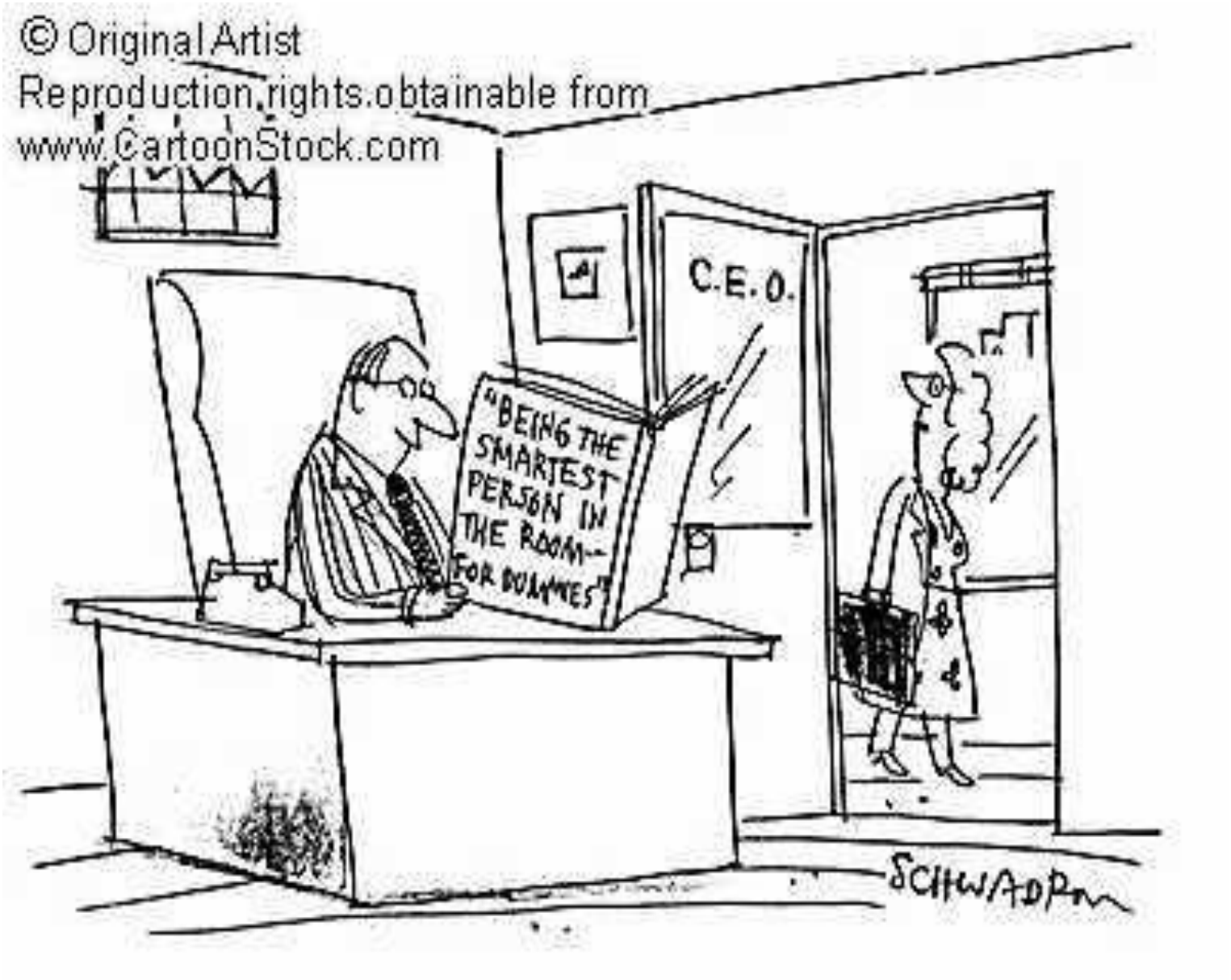
Fleming

- Fleming proceeded to isolate an extract from the mold, identified it as being from the Penicillium genus, and named the agent penicillin.

Say it right!

- Scientific rules of evidence and grammar are strictly adhered to even when previous discovery in another form is apparent.
- Even though Fleming was a member of his own scientific community in the U.K of the 1920's, the prevailing medical establishment did not accept that his findings had resulted in the cure they had long sought.

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C.E.O.
"BEING THE SMARTEST PERSON IN THE ROOM-- FOR DUMMIES"
SCHWADRON

Say it right!

- There were six keys to the scientific discovery of penicillin that resulted in its world wide acceptance as a major breakthrough in the years from 1928 to 1945:

The Six Keys:

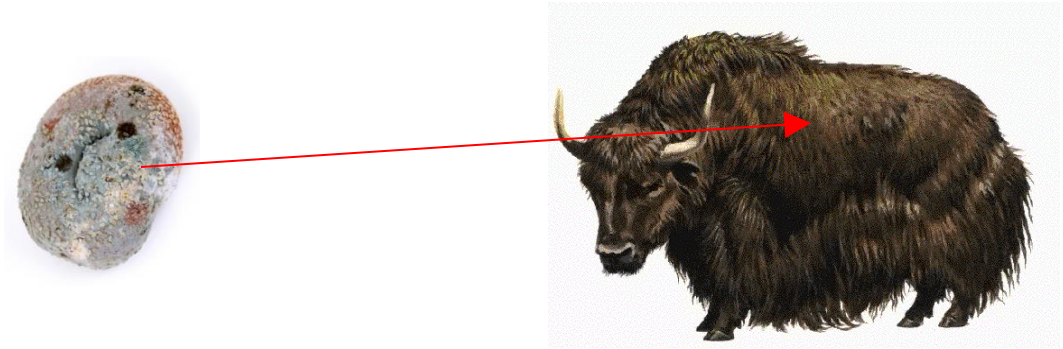
1. Isolation and identification of the mold that restricted or killed the bacteria.
2. Reliable reproduction of the mold
3. Successful creation of optimum dosage
4. Reproduction in isolation from other harmful byproducts
5. Mass production of penicillin as a medicine; and
6. Successful development of substitute organic and synthetic therapies.

The Six Keys in Folk Medicine:

1. Isolated the material to be used (the bread mold)
2. Found a way to reliably reproduce it (growing bread and other molds and allowing them to go moldy)
3. Developed an optimum dosage (fixing a pre-determined mold on the infection)
4. Reduced exposure to harmful by-products (e.g. soaking in date wine)
5. Mass produced the mold (e.g. through manufacture of cheeses and breads); and
6. Relentlessly experimented with various molds, methods, dosages, and coverage in order to gain maximum therapeutic results.

What's the Difference????

- How is the scientific discovery of penicillin different than the folk medicine discovery that mold could cure an infected yak?
- Why were there no multiple Nobel Prize winners among peasants applying bread molds to wounded yaks?



Six important differences

1. The precise written language of science was used
2. The availability of technology to isolate and mass produce successfully.
3. The availability of medical science for the purposes of a precise diagnosis and a proper regimen of care and recovery; and
4. The extension into other therapies resulting in alternatives to penicillin (e.g. erythromycin)
5. Emergent alternative power elites
6. Indigenous societies not part of a “discovery” culture – they weren’t trying !!!!

Discovery to Invention in Social Policy

- Is it possible that our communities have real solutions that governments can't hear?

The answer is "Yes"

Discovery to Invention in Social Policy

- Is it possible that societies can persist in a wrong direction when the key to their prosperity is plain to see?

The answer again is "Yes"

Discovery to Invention in Social Policy

- Good careful writing and speech is important
- Power and money is important: there is much vested in the mainstream (dominant) paradigm
- Control of the discourse lies with the privileged, not the poor.
- Intellectual capital is important in taking discovery 'to scale' for widespread implementation.
- Are you really trying to connect?

Discovery to Invention in Social Policy

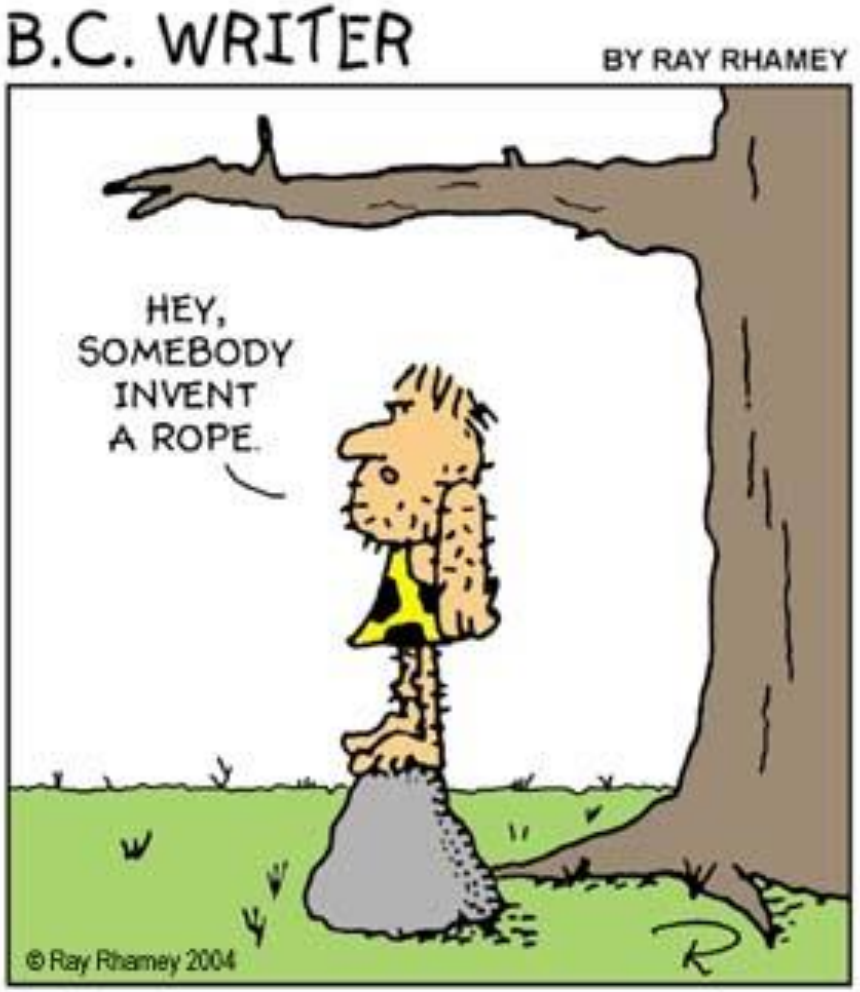
- Like the 'penicillin analogue' which illustrates how the right answer can be ignored until its presented in conventional terms. . . So too must proposed social policy be presented in the conventional way.

Discovery to Invention in Social Policy

- Poorly articulated ideas won't be heard.
- Their 'discoveries' of solutions are often expressed in language that is analogous to folk medicine.

Discovery to Invention in Social Policy

- When the discovery is first remade by governments in the more articulate language of policy in a form amenable to the implementation of policy change, the positive change is often initially rejected as unworkable.



Discovery to Invention in Social Policy

- Community solutions are seen by policymakers like anthropologists and doctors saw the placing of a bread mold on a yak - something possibly interesting, quaint, superstitious and the poorly articulated ideas of low income benefit recipient.

Discovery to Invention in Social Policy

- What may be seen as the garbled prose of low income community members can seldom be re-articulated successfully in a form that translates into plausible policy change despite the desire of improved societal participation.

Discovery to Invention in Social Policy

- It is important to translate for bureaucrats and politicians the social policy discoveries that work in low income communities in the language of those who are in the position to implement changes.
- Activists need to know that governments will not do the translating on their own - they will only listen when it is placed before them in a language and in a framework where they can hear it.

Importance of Language

- This is exactly what Fleming did in the late twenties when he rediscovered penicillin for the 'nth' time.
- He told the scientific community in their own language.
- The role of the policy researcher is to articulate what has often been discovered many times before.

Importance of Language

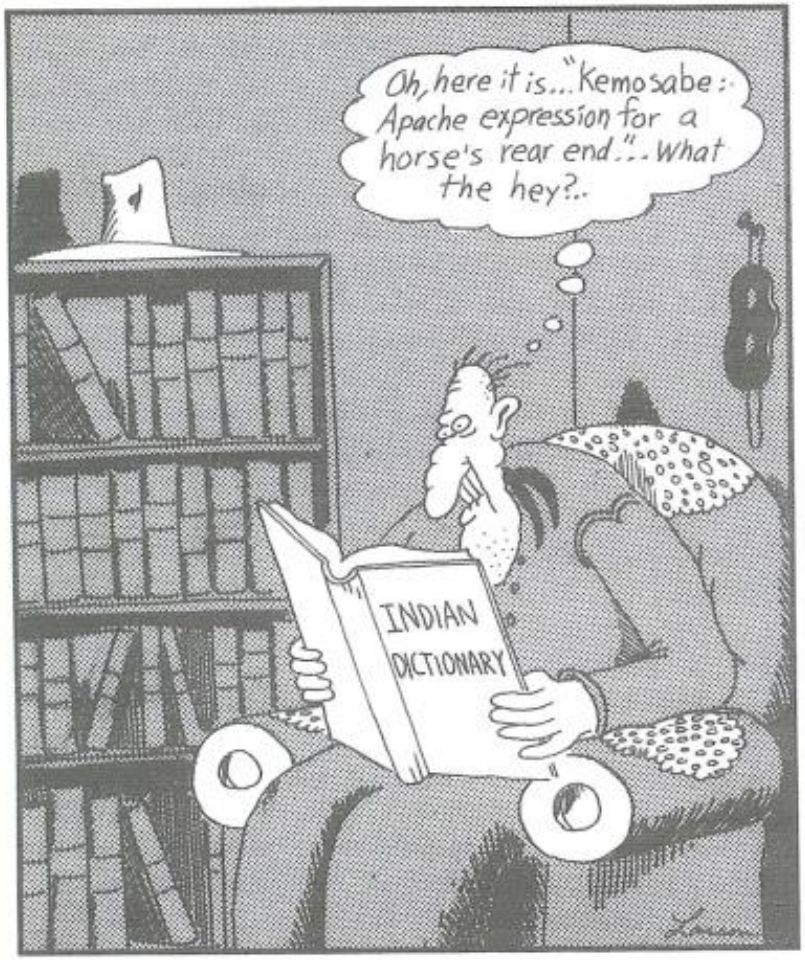
- Policy researchers who purport to articulate the views of community members need to change their goals and persevere with many inarticulate ideas for change.

The Importance of Language

- These ideas , like the discovery of penicillin, may be the "pesky mold in the agar dish" or the "mold on the yak" that can be re-articulated as acceptable policy innovation if properly explained
- …..then re-interpreted in the grammar of the policy professional and ultimately, the politician.

The Importance of Language

- Policy researchers need to continue to re-articulate seemingly rudimentary prose into policy-ready recommendations in a way that connects the complaint and admonition with the palliative and cure….. And ultimately, the dream.



The Lone Ranger, long since retired, makes an unpleasant discovery.

The Importance of Language

- Advocates can therefore no longer simply quote what is often seen as inarticulate speech as 'authentic' and 'moving' and must get on with the job of translating community ideas into publicly acceptable actions and sound policy architecture that promotes the good of civil society.

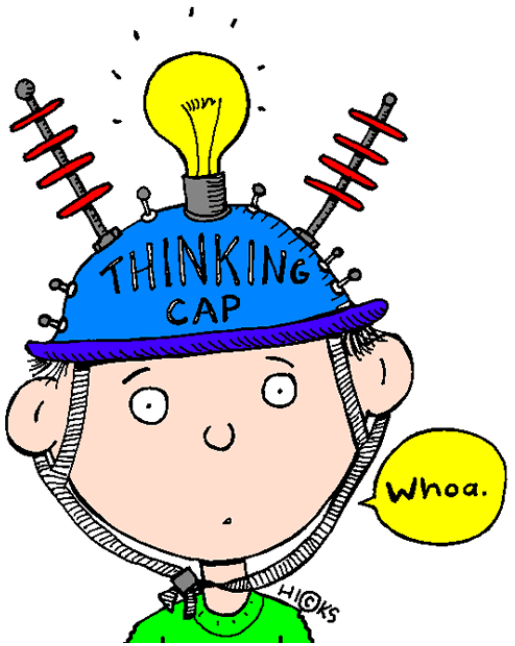
The Importance of Language

- "Unfortunately, no one made the connection"

- The last line of the opening quote recreates the standard lament of the social policy advocate –- but the question must be asked - between what?

The Importance of Language

- Clearly the discovery of the curative power of mold on infection had been made by chance or by design thousands of times before.

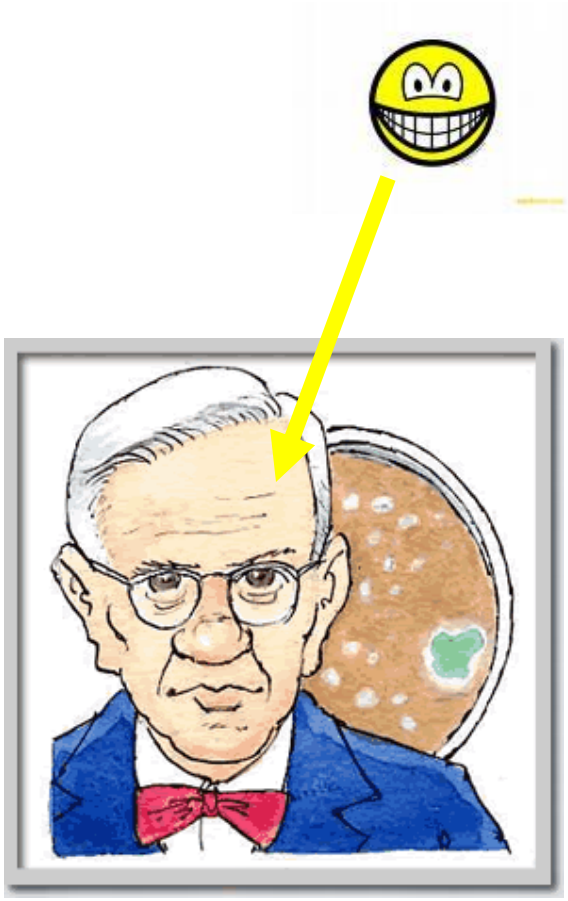


The Importance of Language

- The unfortunate lost connection is the connection between many chance discoveries of the fact of the cure and mainstream realization that the cure could be scientifically discovered and articulated.

The Importance of Language

- Alexander Fleming, either by accident or design, by dint of historical favour or the smile of history, became the right man at the right time with the right language for the right connection to be made between folklore and science.



The Importance of Language

- The role of the community social policy advocate is to do the job of the reluctant Nobel winner (Fleming) and connect the truth of the community to the language of the mainstream community.
- It is only in this way that the truths spoken by community members will become the obvious curatives - discovered as truths by civil society