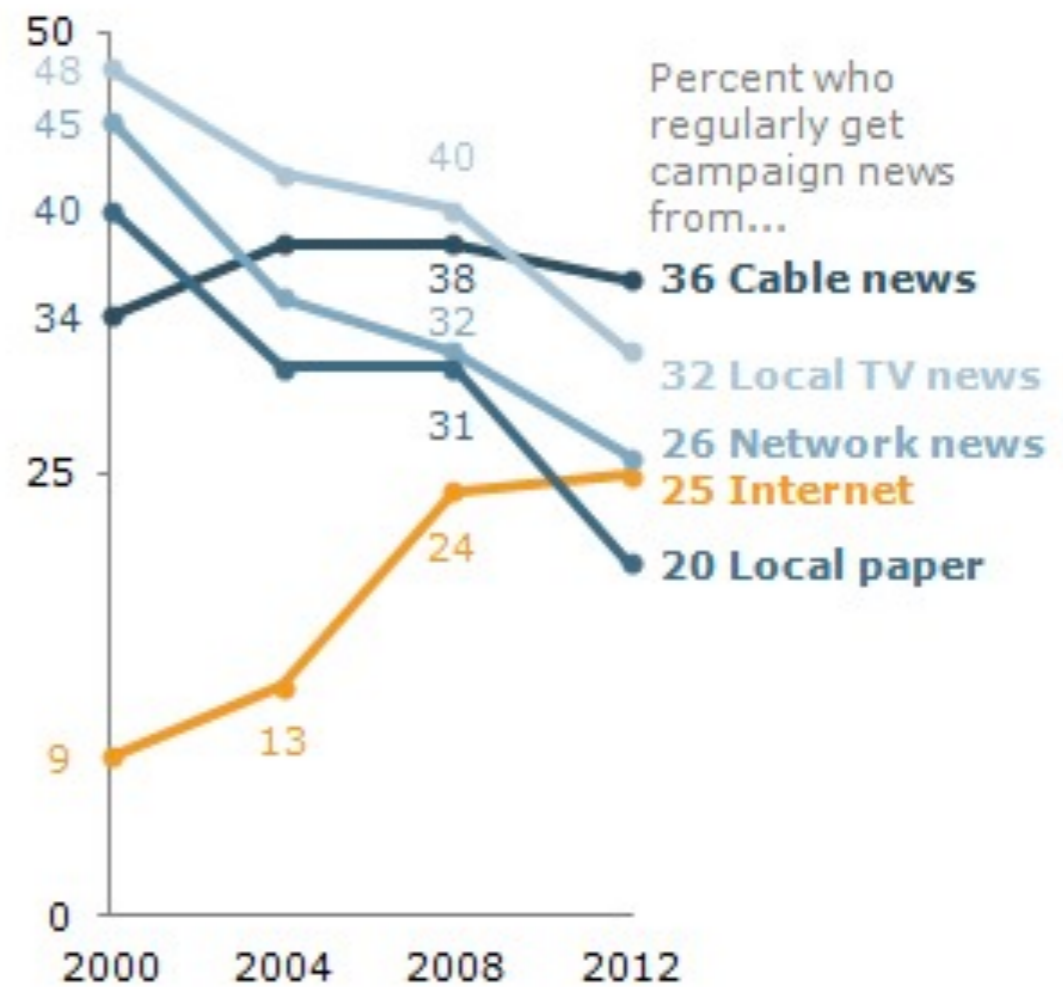


scientific revolution

History of Information
Feb 9, 2012

aob

Campaign News Sources: Internet, Cable Flat, Others Decline



PEW RESEARCH CENTER Jan. 4-8, 2012.

scientific *revolution*

putting the press in its place

"The Scientific Revolution outshines everything since the rise of Christianity and reduces the Renaissance and Reformation to the rank of mere episodes, mere internal displacements within the system of medieval Christianity."

--Herbert Butterfield,
The Origins of Modern Science, 1300-1800, 1948

Claude Allegre, former director of the Institute for the Study of the Earth, University of Paris; J. Scott Armstrong, cofounder of the Journal of Forecasting and the International Journal of Forecasting; Jan Breslow, head of the Laboratory of Biochemical Genetics and Metabolism, Rockefeller University; Roger Cohen, fellow, American Physical Society; Edward David, member, National Academy of Engineering and National Academy of Sciences; William Happer, professor of physics, Princeton; Michael Kelly, professor of technology, University of Cambridge, U.K.; William Kininmonth, former head of climate research at the Australian Bureau of Meteorology; Richard Lindzen, professor of atmospheric sciences, MIT; James McGrath, professor of chemistry, Virginia Technical University; Rodney Nichols, former president and CEO of the New York Academy of Sciences; Burt Rutan, aerospace engineer, designer of Voyager and SpaceShipOne; Harrison H. Schmitt, Apollo 17 astronaut and former U.S. senator; Nir Shaviv, professor of astrophysics, Hebrew University, Jerusalem; Henk Tennekes, former director, Royal Dutch Meteorological Service; Antonio Zichichi, president of the World Federation of Scientists, Geneva.

current concerns

Friday, January 27, 2012 As of 12:00 AM New York 41° | 35°

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No Need to Panic About Global Warming

There's no compelling scientific argument for drastic action to 'decarbonize' the world economy.

Article | Video | Comments (2332)

Email | Print | Save | Like 8k | +1 305 | Tweet 1,821 | A A

Editor's Note: The following has been signed by the 16 scientists listed at the end of the article:

A candidate for public office in any contemporary democracy may have to consider what, if anything, to do about "global warming." Candidates should understand that the oft-repeated claim that nearly all scientists demand that something dramatic be done to stop global warming is not true. In fact, a large and growing number of distinguished scientists and engineers do not agree that drastic actions on global warming are needed.



current concerns



How the case against the MMR vaccine was fixed

Brian Deer, journalist

+ Author Affiliations

briandeer.com

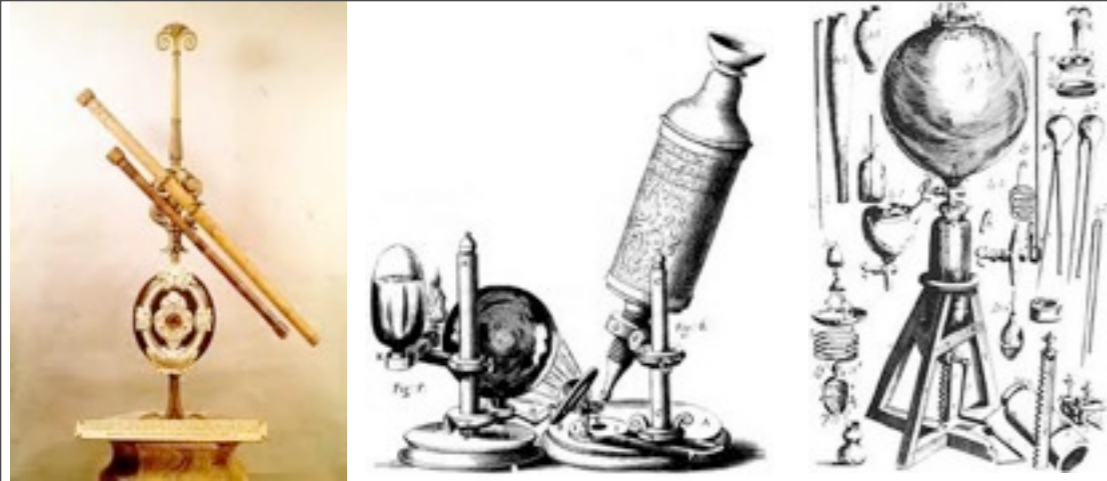
In the first part of a special BMJ series, Brian Deer exposes the bogus data behind claims that launched a worldwide scare over the measles, mumps, and rubella vaccine, and reveals how the appearance of a link with autism was manufactured at a London medical school

When I broke the news to the father of child 11, at first he did not believe me. "Wakefield told us my son was the 13th child they saw," he said, gazing for the first time at the now infamous research paper which linked a purported new syndrome with the measles, mumps, and rubella (MMR) vaccine.¹ "There's only 12 in this."

That paper was published in the *Lancet* on 28 February 1998. It was retracted on 2 February 2010.² Authored by Andrew Wakefield, John Walker-Smith, and 11 others from the Royal Free medical school, London, it reported on 12 developmentally challenged children,³ and triggered a decade long public health scare.

8-Hof112-SR 5





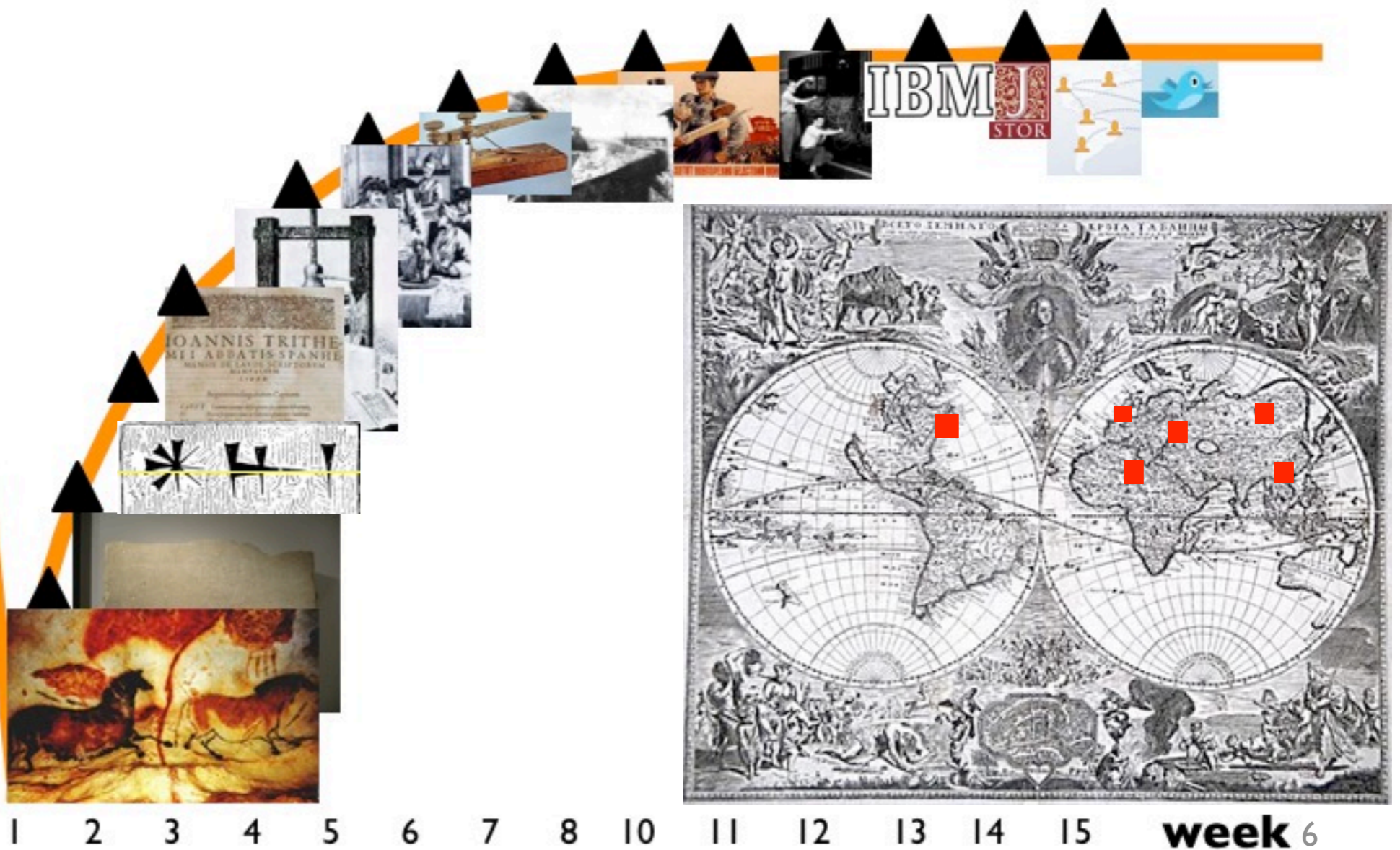
where we are going

becoming modern, going "open"

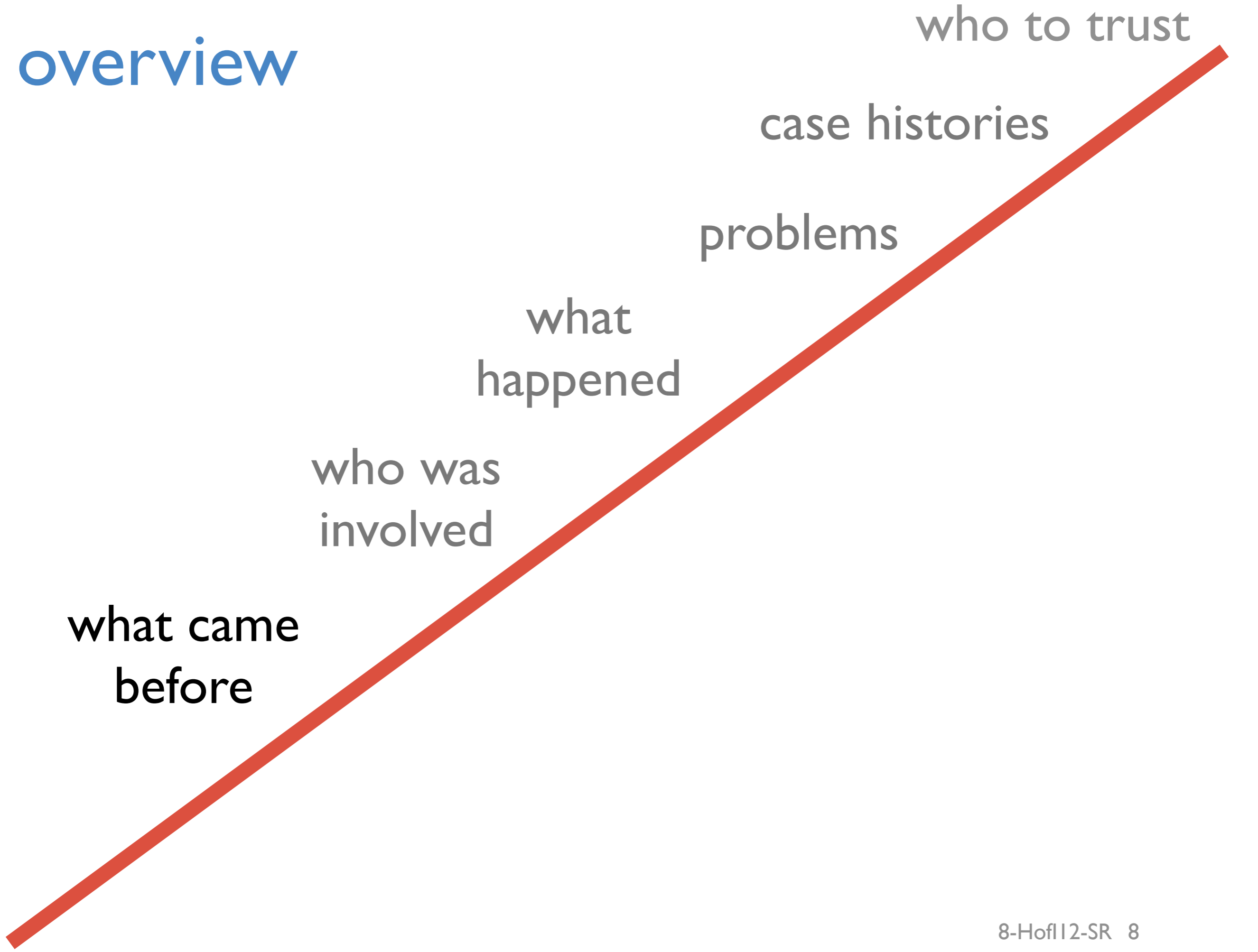
THE HISTORY OF THE Royal-Society OF LONDON, For the Improving of NATURAL KNOWLEDGE. BY THO. SPRAT. LONDON, Printed by T. R. for J. Martyn at the Bell without Temple-Bar, and J. Alldey at the Sign and Crown in Chancery, Printers to the Royal Society. MDCLXVII.

year

- 2012
- 1980
- 1950
- 1900
- 1800
- 1700
- 1600
- 1200
- 600
- 400
- 0
- 500
- 3000
- 5000
- 30,000
- 50,000



overview



who was
involved

what
happened

problems

case histories

who to trust

what came
before

context: political revolution

"Those dreadful revolutions, which cannot be beheld upon Paper, without horror; unless we remember, that they had this one happy effect, to open mens eyes to look out for the true Remedy."

Sprat, History

English Civil War, 1642-1651

death of Charles I


Commonwealth & Protectorate, 1649-1659

Restoration, 1660

return of Charles II

Great Plague, 1665


Fire of London, 1666



"La sange du juste à Londres fera faute
Bruslez par foudre de vingt trois le six,
La dame antique cherra de place haute
De meme sute plusieurs seront occis"

Loose Change
2ND EDITION

recap: almanacks & prophecy



"Sir Thomas Crewe...hath heard at the Committee for examining the burning of the city,that it was done by plots ... it was bragged by several Papists that upon such a day in such a time, we should find the hottest weather that ever was in England; and words of plainer sense" --Pepys, November 2, 1666

"We talked much of Nostradamus his prophecy of these times, and the burning of the City of London, some of whose verses are put into Booker's Almanac this year My Lady Carteret herself did tell us how abundance of pieces of burnt paper were cast by the wind .. .she took one up ... wheron there remained no more nor less than these words: "Time is, it is done" --Pepys, February 3, 1666/7

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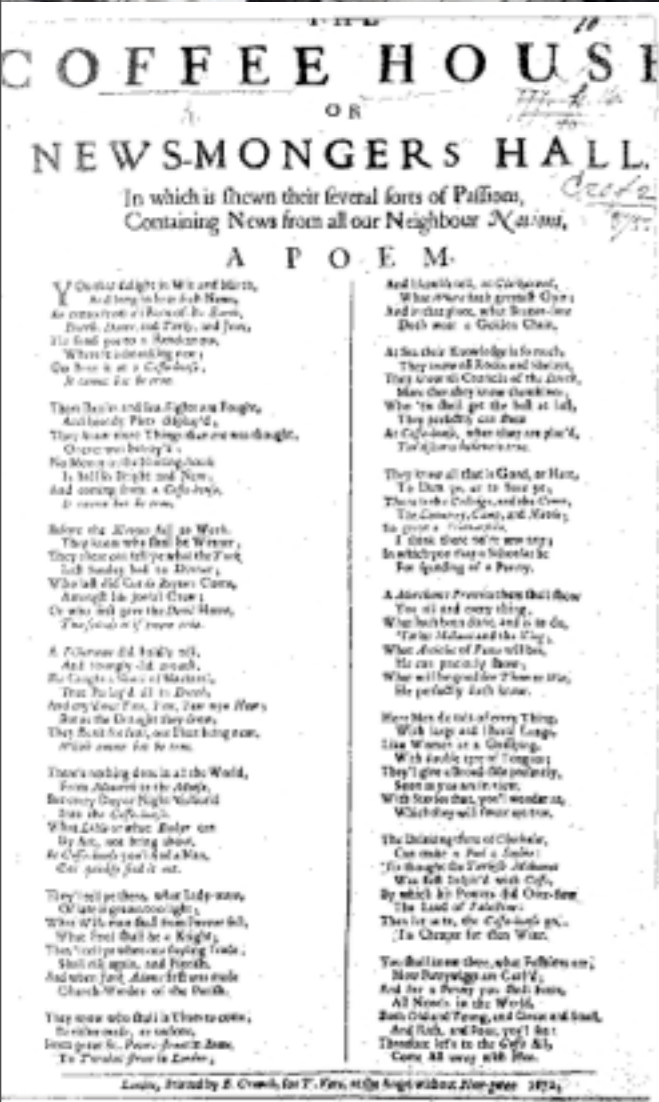


coming up: the public sphere

context: coffee-house society



"I lately dropped into a Coffee-House at
Westminster, ..."



"the bourgeois public sphere"

Jürgen Habermas

an open society?

"the greatest part of the people do not read books, most of them cannot read at all. But they will gather together about one that can read, and listen to an *Obervator* or *Review*"

--Charles Leslie, *The Rehearsal*, 1750

"workmen habitually begin the day by going to coffee-rooms in order to read the latest news"

--César de Saussure,
A Foreign View of England, 1726

context: social revolution

Civility: of conversing in quiet one with another, without being engag'd in the passions, and madness of that dismal Age. And from the Institution of that Assembly, it had been enough, if no other advantage had come, but this: That by this means there was a race of young Men provided, against the next Age, whose minds receiving from them, their first Impressions of sober and generous knowledge, were invincibly arm'd against all the enchantments of Enthusiasm.

... to undercut the arrogance of the teacher and the subservience of the pupil ...

-- Sprat

8-Hof112-SR 13

on the other hand

"I lately dropped into a Coffee-House at *Westminster*, where I found the Room hung around with ... Elixirs, Tincture, the *Anodine Fetus*, *English Pills*, Electuaries, and in short, more remedies than I believe there are diseases."

--*Spectator*

"... they will gather together about one that can read, ... where the principles of rebellion are instilled into them."

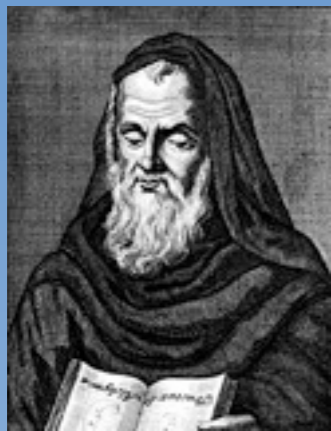
--Charles Leslie, *The Rehearsal*, 1750



engrossing

If any certain remedy should be found out against an Epidemical disease; if it were suffer'd to be ingross'd by one man, there would be great swarms swept away, which otherwise might be easily sav'd. I shall instance in the Sweating-Sickness. The Medicine for it was almost infallible: But, before that could be generally publish'd, it had almost dispeopl'd whole Towns. If the same disease should have return'd, it might have been again as destructive, had not the Lord Bacon taken care, to set down the particular course of Physick for it, in his History of Henry the Seventh, and so put it beyond the possibility of any private man's

proto science



Roger Bacon
c 1220–1229



Francis Bacon
1561–1626

scientific rumblings

Roger Bacon

Francis Bacon, *New Atlantis*

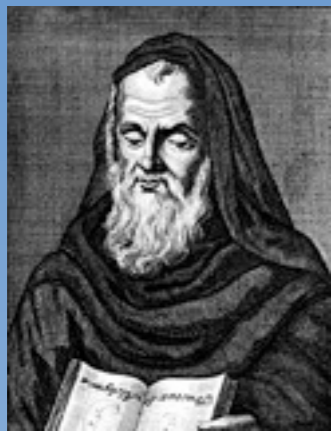
idols of the tribe

idols of the cave

idols of the market place

idols of the theatre

proto science



Roger Bacon
c 1220-1229



Francis Bacon
1561-1626

scientific rumblings

Roger Bacon

Francis Bacon, *New Atlantis*

idols of the tribe

idols of the cave

idols of the market place

idols of the theatre

[Bacon] sought and gather'd for our use the Tru;

....

No, not from Rubens or Vandike;

Much less content himself to make it like

Th' Ideas and the Images which ly

In his own Fancy, or his Memory.

No, he before his sight must place

The Natural and Living Face;

The real Object must command

Each Iudgment of his Eye, and Motion of his Hand.

--Cowley

"To the Royal Society"

their purpose

... is, in short, to make faithful Records, of all the Works of Nature, or Art, which can come within their reach: that so the present Age, and posterity, may be able to put a mark on the Errors, which have been strengthened by long prescription: to restore the Truths, that have lain neglected: ... to separate the knowledge of Nature, from the colours of Rhetorick, the devices of Fancy, or the delightful deceit of Fables.

--Sprat

8-HofII2-SR 17

"Why do we not,
I say, turn
over the living
book of the
world instead
of dead
papers."

John Comenius
(1592-1670)

fables to truth

from **Ptolemy** (c. 100-170)

to

Copernicus, Galileo, Tycho, Kepler, Newton



from **Hippocrates** (460-375 bce), **Galen** (c. 129-216)

Ayurveda, Yellow Emperor's Inner Canon

to

Paracelsus (1493-1541), **Harvey** (1578-1657)

overview



what came
before

who was
involved

what
happened

problems

case histories

who to trust



Gresham College
28 Nov 1660

"Followers of
nature itself
and truth"

-Henry Oldenburg

followers

Boyle (1627-1691)

Wren (1632-1723)

Locke (1632-1704)

Hooke (1635-1703)

Newton (1642-1727)

Halley (1656-1742)

Pepys (1633-1703)

Evelyn (1620-1701)

Wilkins (1614-1672)

Moxon (1627-1691)

Graunt (1620-1674)

Petty (1623-1687) ...

Benjamin Franklin
(1706-1790)

revolutionary beliefs

"oportet praeterea, liberali animo philosophum esse"

--Alcinous (?1 cent CE)

"filosofar vuol esser libero"

-- Galileo

"libertas philosophandi"

--Kepler, Descartes, Spinoza

"information wants to be free"



Nullius in Verba

revolutionary beliefs

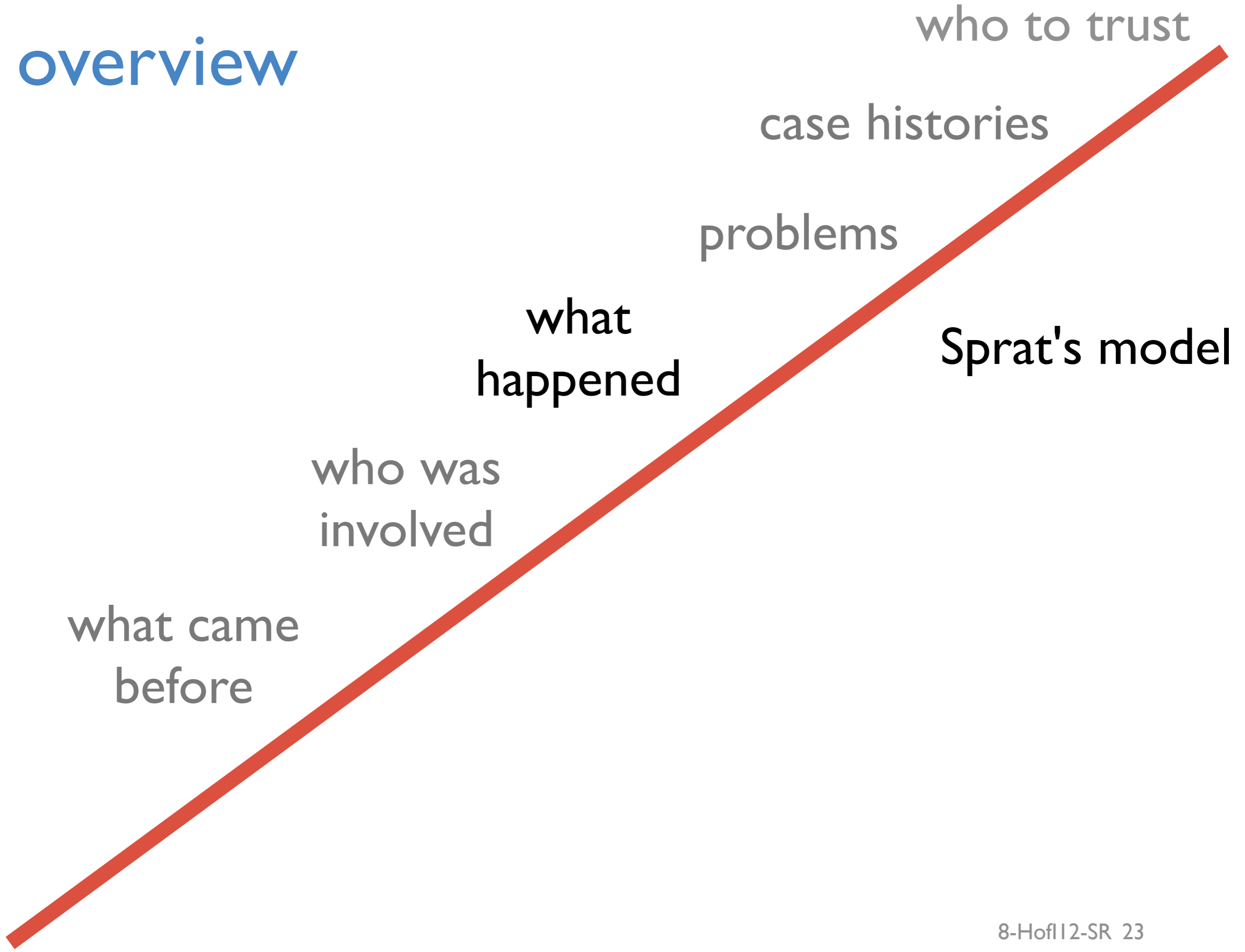
new scientists

"Men did generally think, that no man was fit to meddle in matters of this consequence, but he that had bred himself up in a long course of Discipline for that purpose; that had the habit, the gesture, the look of a Philosopher. Whereas experience on the contrary tells us, **that greater things are produc'd, by the free way, than the formal.**"

-Sprat

8-Hof112-SR 22

overview



Sprat's *model*

"They have labor'd to inlarge it, from being confin'd to the custody of a few; or from servitude to private interests.

"They have striven to preserve it from being over-press'd by a confus'd heap of vain, and useless particulars; or from being straitned and bounded too much up by General Doctrines."

Sprat's *model*

Not so much, by any solemnity of Laws, or ostentation of Ceremonies, as by **solid Practice**, and examples: not, by a glorious pomp of Words; but by the silent, effectual, and unanswerable Arguments of real Productions.

Members ... different Religions, Countries, and Professions ... not to lay the Foundation of an English, Scotch, Irish, Popish, or Protestant Philosophy; but a **Philosophy of Mankind**. ... the Church of England ought not to be apprehensive the general Banck, and Free-Port of the world ... receive strangers from all countries, into its number

observation & experimentation



Robert Hooke
1663–1703

Hooke & Boyle

"Trials in Chymistry, or Mechanicks ...
the right *Art of Experimenting*"

--Sprat



Robert Boyle
1627–1691

justifying technology

"I judged that whatever men's eyes were
in the younger age of the World, our
eyes in this old age of it needed
spectacles"

--Hooke

communication

corresponding secretary

"their intention was more to communicate to each other their discoveries ... some resemblance, to the Academy lately begun at Paris ... to all the learned world they called for aid"

--Sprat



Henry Oldenburg
1619-1677

"publish'd to the world"

cures for sickness

"[Publication] is a most heroick Invention: For by such concealments, there may come very much hurt to mankind. If any certain remedy should be found out against an Epidemical disease; if it were suffer'd to be ingross'd by one man, there would be great swarms swept away, which otherwise might be easily sav'd."

-- Sprat

publication

advertisements, articles, abstracts

"to print a Paper of advertisements... wherein will be contained heads or substance of the inquiries they are most solicitous about, together with the progress they have made and the information they have received from other hands ... a short account of such other philosophicall matters as accidentally occur."

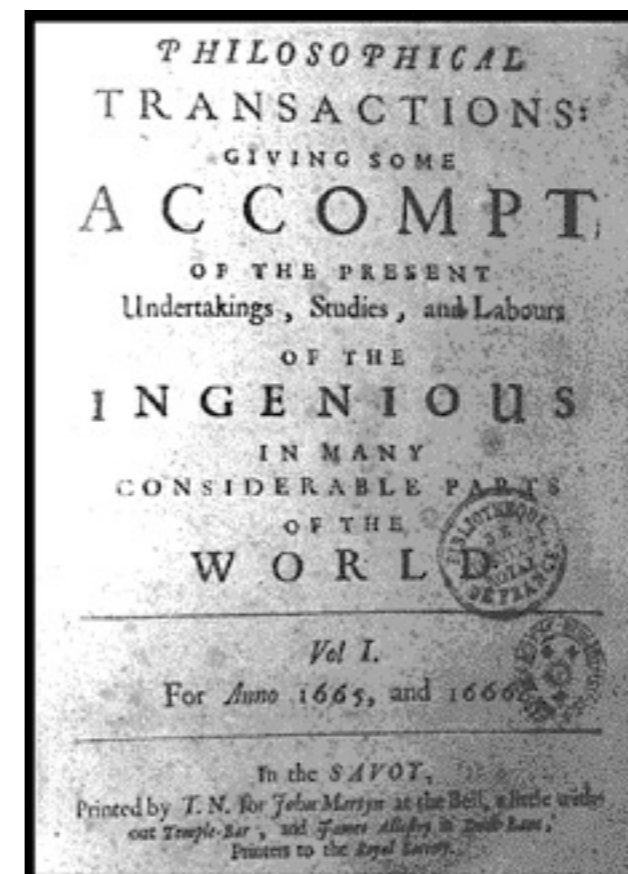
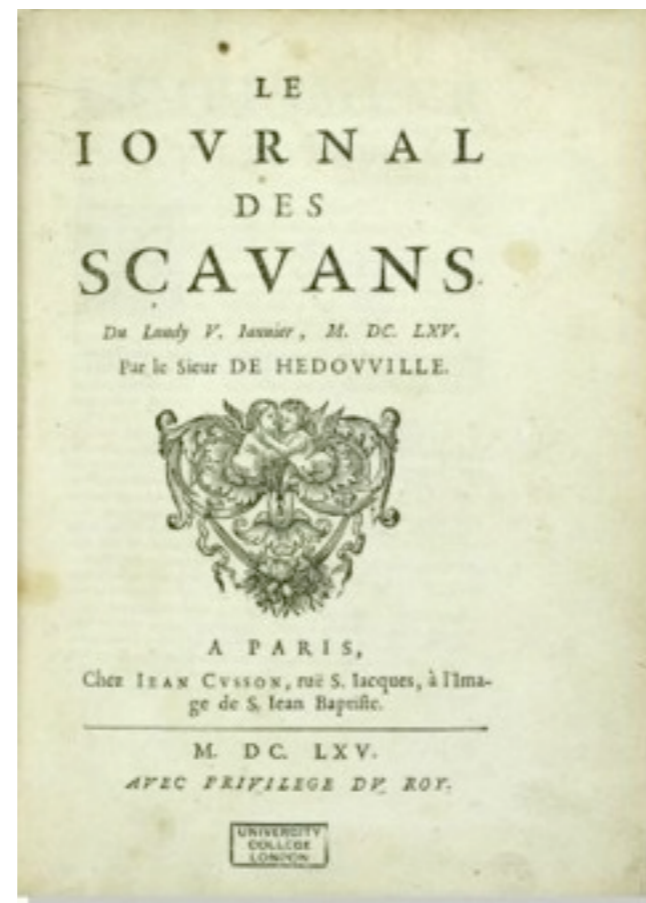
--Robert Hooke

Boyle, random publication v **Hooke**, ordered

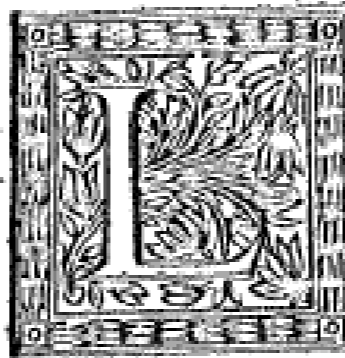
journals

Journal des Scavans, 1665

Philosophical Transactions, 1665



L'IMPRIMEUR AU LECTEUR.



Le dessein de ce Journal estant de faire sçavoir ce qui se passe de nouveau dans la Republique des lettres, il sera composé,

Premierement d'un Catalogue exact des principaux livres qui s'imprimeront dans l'Europe. Et on ne se contentera pas de donner les simples titres, comme ont fait jusques à present la pluspart des Bibliographes: mais de plus on dira de quoy

ils traitent, & à quoy ils peuvent estre utiles.

Secondement, quand il viendra à mourir quelque personne celebra par sa doctrine & par ses ouvrages, on en fera l'Eloge, & on donnera un Catalogue de ce qu'il aura mis au jour, avec les principales circonstances de sa vie.

En troisieme lieu on fera sçavoir les experiences de Physique & de Chymie; qui peuvent servir à expliquer les effets de la Nature: les nouvelles decouvertes qui se font dans les Arts & dans les Sciences, comme les machines & les inventions utiles ou curieuses que peuvent fournir les Mathematiques: les observations du Ciel, celles des Meteores, & ce que l'Anatomie pourra trouver de nouveau dans les animaux.

En quatrieme lieu, les principales decisions des Tribunaux Seculiers & Ecclesiastiques, les censures de Sorbonne & des autres Universtes, tant de ce Royaume que des Pays estrangers.

Enfin, on taschera de faire en sorte qu'il ne se passe rien dans l'Europe digne de la curiosité des Gens de lettres, qu'on ne puisse apprendre par ce Journal.

Le seul denombrement des choses qui le composeront pourroit suffire pour en faire connoistre l'utilité. Mais j'edifieray qu'il sera tres-advantageux à ceux qui entreprendront quelque ouvrage considerable, puis qu'ils pourront s'en servir pour publier leur dessein, & inviter tout le monde à leur communiquer les manuscrits, & les pieces fugitives qui pourront contribuer à la perfection des choses qu'ils auront entreprises.

PHILOSOPHICAL
TRANSACTIONS:
GIVING SOME
ACCOMPT
OF THE PRESENT
Undertakings, Studies, and Labours
OF THE
INGENIOUS
IN MANY
CONSIDERABLE PARTS
OF THE
WORLD



Vol. I.

For Anno 1665, and 1666.

In the SAVOY,
Printed by T. N. for John Martyn at the Bell, a little within
out Temple-Bar, and James Allart in South Lane;

(1)

Numb. 1.

PHILOSOPHICAL TRANSACTIONS.

Munday, March 6. 1665.

The Contents.

An Introduction to this Tract. An Account of the Improvement of Optick Glasses at Rome. Of the Observation made in England, of a Spot in one of the Belts of the Planet Jupiter. Of the motion of the late Comet predicted. The Heads of many New Observations and Experiments, in order to an Experimental History of Cold; together with some Thermometrical Discourses and Experiments. A Relation of a very odd Monstrous Calf. Of a peculiar Lead-Ore in Germany, very useful for Essays. Of an Hungarian Bolus, of the same effect with the Bolus Armenus. Of the New American Whale-fishing about the Bermudas. A Narrative concerning the success of the Pendulum-watches at Sea for the Longitudes; and the Grant of a Patent thereupon. A Catalogue of the Philosophical Books published by Monsieur de Fermat, Counsellour at Tholouse, lately dead.

The Introduction.



Hereas there is nothing more necessary for promoting the improvement of Philosophical Matters, than the communicating to such, as apply their Studies and Endeavours that way, such things as are discovered or put in practise by others; it is therefore thought fit to employ the *Press*, as the most proper way to

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Printers to the Royal Society.

(1)

Numb. 1.

PHILOSOPHICAL TRANSACTIONS.

(10)

An Account of a very odd Monstrous Calf.

By the same Noble person was lately communicated to the *Royal Society* an Account of a very Odd Monstrous Birth, produced at *Limington* in *Hampshire*, where a Butcher, having caused a Cow (which cast her Calf the year before) to be covered, that she might the sooner be fatted, killed her when fat, and opening the Womb, which he found heavy to admiration, saw in it a Calf, which had begun to have hair, whose hinder Leggs had no Joynts, and whose Tongue was, *Cerberus*-like, triple, to each side of his Mouth one, and one in the midst: Between the Fore-leggs and the Hinder-leggs was a great Stone, on which the Calf rid: The *Sternum*, or that part of the Breast, where the Ribs lye, was also perfect Stone; and the Stone, on which it rid, weighed twenty pounds and a half; the outside of the Stone was of Grenish colour, but some small parts being broken off, it appeared a perfect Free-stone. The Stone, according to the Letter of Mr. *David Thomas*, who sent this Account to Mr. *Boyle*, is with Doctor *Haughteyn* of *Salisbury*, to whom he also referreth

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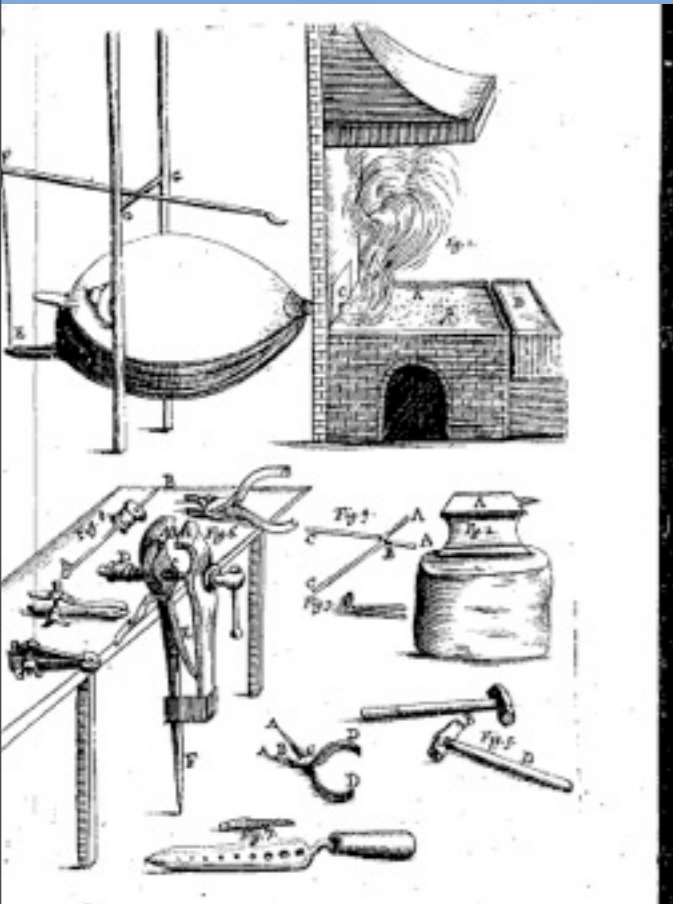
Joseph Moxon
1627-1691

not so philosophical

philosophers, physicians, and mechanics

"this freedom ... which they use in embracing all assistance ... is most advantageous to them"

--Sprat



MECHANICK EXERCISES,

OR,

The Doctrine of

Handy-works.

*Began Jan. 1. 1677. And intended to be
Monthly continued.*

By *Joseph Moxon* Hydrographer to the
Kings most Excellent Majesty.

**

LONDON,

Printed for *Joseph Moxon* at the sign of *Atlas* on
Ludgate-Hill, 1677.



Joseph Moxon
1627-1691

MECHANICK EXERCISES:

Or, the Doctrine of

Handy-works.

Applied to the Art of

Printing.

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EX

P R E F A C E.

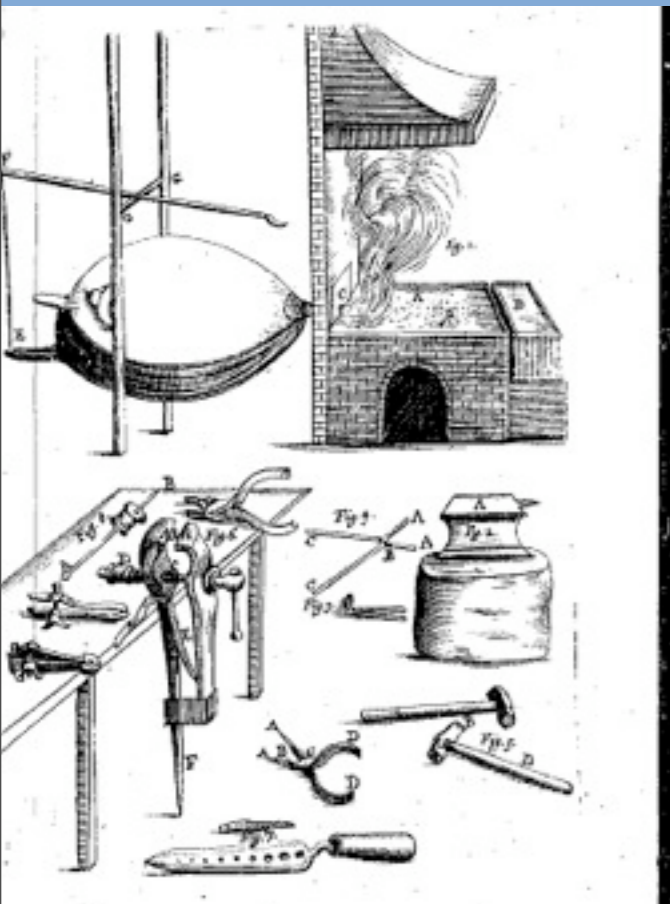
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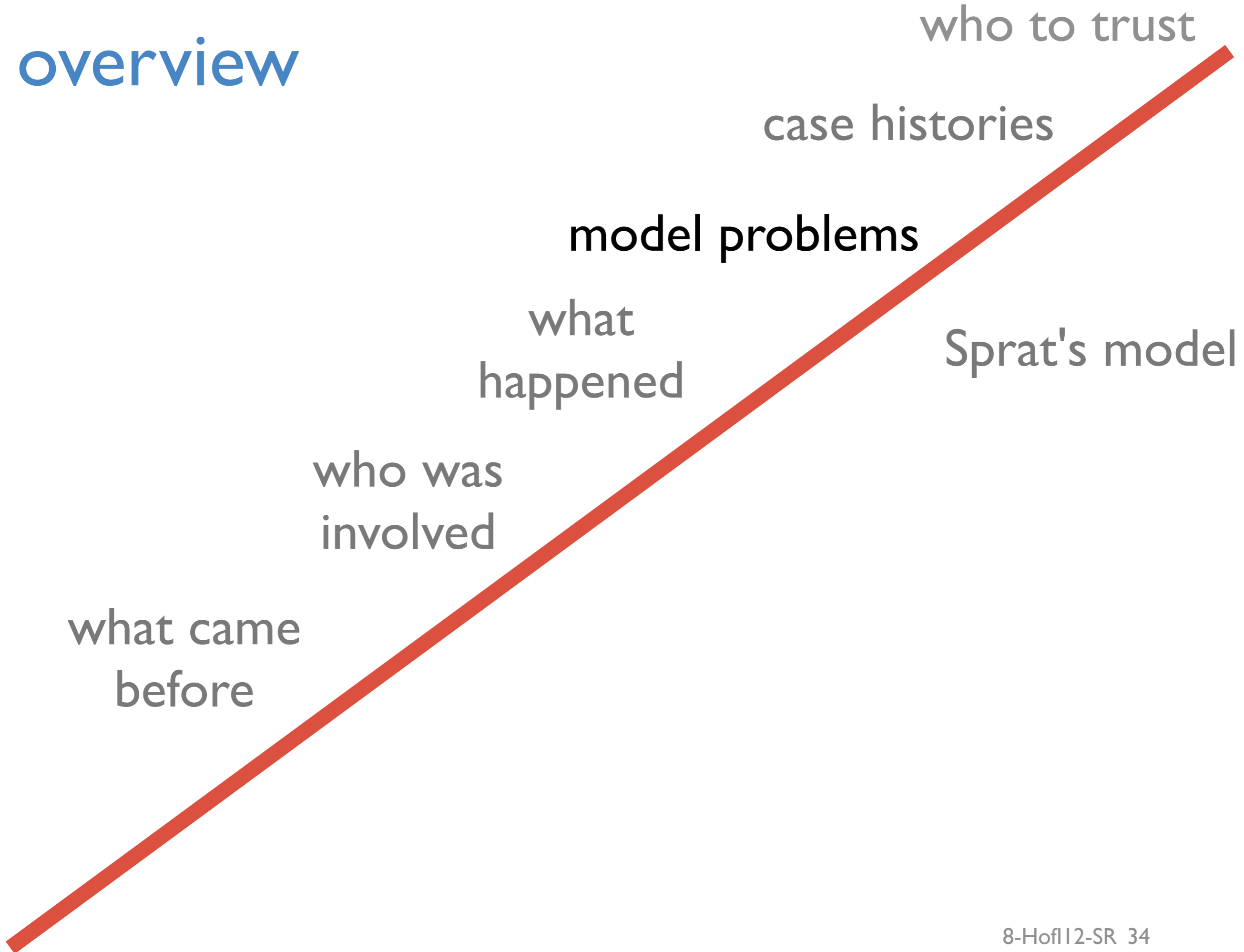
By Josef
K

Printed s

Before I begin with Typographie, I shall say some-what of its Original Invention; I mean here in Europe, not of theirs in China and other Eastern Countries, who (by general assent) have had it for many hundreds of years, though their Invention is very different from ours; they Cutting their Letters upon Blocks in whole Pages or Forms, as among us our Wooden Pictures are Cut; But Printing with single Letters Cast in Mettal, as with us



overview





Samuel Pepys
1663-1703

trouble for the virtuosi

the failed demo

"And thither anon come all the Gresham College, and a great deal of noble company: and the new instrument was brought called the Arched Viall, where, being tuned with lute-strings, and played on with keys like an organ, a piece of parchment is always kept moving; and the strings, which by he keys are pressed down upon it, are grated in imitation of a bow, by the parchment; and so it is intended to resemble several vialls played on with one bow, but so basely and harshley, that it will never do. But, after three hours' stay, it could not be fixed in tune" --Pepys, October 5, 1664



Charles II
1630–1685

trouble for the virtuosi

royal mockery

"the King came and stayed an hour or two laughing at Sir W. Petty, who was there about his boat; and at Gresham College in general; at which poor Petty was, I perceive, at some loss; but did argue discreetly, and bear the unreasonable follies of the King's objections and other bystanders with great discretion; .. but the King ... cried him down with words only. Gresham College he mightily laughed at, for spending time only in weighing of ayre, and doing nothing else since they sat."

--Pepys, February 1, 1663/4
8-HofII2-SR 36



Thomas Shadwell
1642-1692

trouble for the virtuosi

airheads

"I have sent one to weigh Air at the Picque of Teneriff that's the lightest Air. I shall have a considerable Cargo of that Air. Sheerness and the Isle of Dogs Air is the heaviest. Now if I have a mind to take Countrey Air, I send for, may be, forty Gallons of Bury Air, shut all my windows and doors close and let it fly in my Chamber.."

Shadwell, *Virtuoso* 1676

unstoppable

Jonathan Swift, 1725

"Voyage to Laputa"

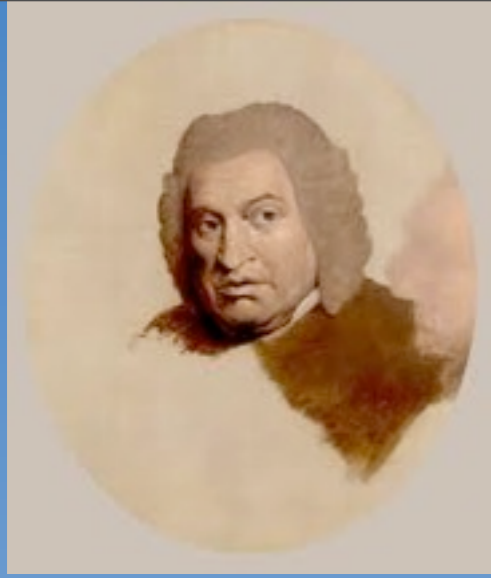
the flapper

the "Academy of Projectors"

objects for words, sunbeams out of cucumbers, food out of excrement, houses built from the top down, pillows out of marble ...



Jonathan Swift
1667-1745



Samuel Johnson
1708–1784

health sciences

dashed hopes

"[T]he time was supposed to be near, when ... health [should] be secured by the universal medicine;

"The society met and parted without any visible diminution of the miseries of life. The gout and stone were still painful."

--Samuel Johnson, *Idler* 1759

EXPERIMENTS
IN
CONSORT
OF THE
FLUCTATION
ARISING
From the Affusion of several
MENSTRUUMS



Upon all sorts of Bodies.
To which is added
The Nature, Causes, and Power
of Mixture.
Exhibited to the Royal Society.

By *NEHEMIAH GREW, M. D.*
and Fellow of the *Royal Society.*

L O N D O N,
Printed for *John Martyn*, Printer to the
Royal Society, at the *Bell* in *S. Pauls*
Church-yard. 1678.

battling books

EXPERIMENTS

IN

CONSORT
OF THE
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MENSTRUUM

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New EXPERIMENTS,
And Useful
OBSERVATIONS
CONCERNING

Sea-Water

MADE

FRESH,

According to the
Patentees Invention :

In a Discourse Humbly Dedicat-
ed to His Majesty the KING
of *Great-Britain*, &c.

By a Fellow of the *Colledge of Phy-*
sicians, and of the *Royal-Society.*

Printed *Anno Dom.* 1683

battling books

EXPERIMENTS

IN

CONSORT
OF THE
FLUCTATION
ARISING

From the Affusion of several
MENSTRUUM

Upon all sorts of Bodies.
To which is added
The Nature, Causes, and Power
of Mixture.

Exhibited to the Royal Society

By NEHEMIAH GREW, M.
and Fellow of the Royal Society.

LONDON,
Printed for John Mattyn, Printer to
Royal Society, at the Bell in S. Pauls
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AN
EXAMINATION

OF
Mr. John Colbatch

HIS
BOOKS, viz.

- I. *Novum Lumen Chirurgicum.*
- II. *Essay of Alkalies and Acids.*
- III. *An Appendix to that Essay.*
- IV. *A Treatise of the Gout.*
- V. *The Doctrin of Acids further Asserted,*
&c.
- VI. *A Relation of a Person Bitten by a Viper,*
&c.

To which is added,
An Answer to Dr. Leigh's Remarks on a Treatise
concerning the Heart of the Blood.

Together with
Remarks on Dr. Leigh's Book intituled *Exercitationes Quing;* Printed at a private Press in Oxford,
without the License of the University.

AS ALSO
A short View of Dr. Leighs Reply to Mr. Colbatch, &c.

By RICHARD BOULTON, of
Brazen-Nose College in OXFORD.

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A Compleat ^{Positive}
TREATISE
OF
URINES,

Shewing the right Method of

Urinal Prognostication,

Far different

From the Common Practice

OF

Quacks and Mountebanks.

By *T. H. ^{UCKS} Pharmacop. Rustican.*

Pro Captu Lectoris habent sua fata libelli.

AN *B no. 1. 2*
ADVERTISEMENT

FROM THE
Society of Chymical Physicians,

TOUCHING
MEDICINES by them prepared, in pursuance of his

Majesties Command,

For the Prevention, and for the Cure of the

P L A G U E.

T Being a matter avowed by the most laborious Physicians residing in this famous City, yet and ever openly acknowledged by their ally in several Princes, who are principally addrest to Galenic Doctrines and Medicines, that Remedies made by Chymical preparation are of greater Efficacy than any other, for preservation from Epidemics, as well as for the Cure of them, and that the most Efficacious, the people use to have recourse unto Chymical Medicines, whereby it is clearly given and granted, that they are the most powerful and efficacious Means, and thereupon have been by their worthy Princes particularly recommended for publick use, in this fatal and despicable Plague of *Pestilential Contagions*. We cannot but with all our hearty congratulations our Brethren, resolving this their forcible and ingenious acknowledgement, writing to let the day, that the unhappy Contagion be resisted and chased, teaching the efficacy of Medicines, in case at an end: In this we look on it as a good Omen towards a more full and free coming over us in the future, even in the most critical time that ill of late have been with us kindred; and it gives hope, that we may one day come to a more brotherly correspondence, and unanimously endeavour to reform and relieve the state of Medicines, both as to Principles and Practice, according to the Chymical and more ancient way.

We therefore, the Society of Chymical Physicians of London, being deeply moved with consideration of the calamity befallen this great City by the Plague, and perceiving it necessary and indispensably obliging the use of those common Galenic Medicines, which have been recommended to the people by whom, here thought fit, in obedience to his Majesties command, to hold several meetings, and have thereupon liberally consulted about the preparation of such Medicines, both Preservatives and Curatives, by Art Chymical, as are not to be made use of by the *Barbers*, but especially do it and bind to the service of the present Plague, which is many things differs from the *Plague of Venice*, or to *Firenza* or *Constantinople* where those Authors lived. Which Medicines so prepared we here offer to our Countrymen, not doubting but that the great God, who hath given us a heart and light to search into the mystery of Nature, and the mysterious nature of Diseases, will be found our wish answer by his special blessing, as to our own knowledge as his own hands, to create the found, and save the sick from this devastating Maladie.

In pursuance whereof, it is thought meet to signify the places, to which all persons concerned may repair and be furnished with the Medicines to be prepared, at reasonable Rates, with Direction how to use them in order to Preservation, and in case of Cure.

Printed at the Heads of

- | | |
|---|--|
| <p>Dr. William Goddard, in St. John's Church-yard
 Dr. Mowbray North in St. Thomas Apostle
 Dr. Edward Boleyn in Thomas Street near Cripplegate
 Dr. Thomas Williams in Tine-Courte Court in Fleet Street</p> | <p>Dr. Edward Manning next door to the Blow Bar at the foot of Ludgate Hill without Ludgate
 Dr. George Thompson next to the Blow Bar Inn without Aldgate
 Dr. Thomas O'Flaherty at his House against St. Clements Church in the Strand
 Dr. Richard Budge in Barbican</p> |
|---|--|

These Places are named, because our Society is not yet provided (as we should fadually receive) of a Publick Dispensary or College, with publick Officers, so where the people might be directed to resort for the Medicines; and there is a necessity of doing sometime incontinently, because of the present distress of his Majesties Subjects.
 Lived at June 1665.

London Printed for John Starcke, and are to be sold at his Shop at the Mitre near Temple-Bar.

AN
ADVERTISEMENT

FROM THE

Society of Chymical Physitians,

TOUCHING

MEDICINES by them prepared, in pursuance of his

Majesties Command,

For the Prevention, and for the Cure of the

PLAGUE

WHICH being a matter soverely to be
regretted, and our open acknowledg-
ment to God, that he has vouchsafed
to give us this opportunity, and
that the other being
wholly in his hands, and granted, that the
same have been by these worthy Persons, particularly
pleas'd: That of *Plague*, *Contagion*. We
nothing do this to be desirable and ingenious
happy. *Contagion* becometh in and chere, though
both, as it is a good thing toward, a more full
with it, so that all of our have been observed
as a more brotherly correspondence, and more
diligent, both as to Principles and Practice, according
to the same, the Society of Chymical Physitians
the charity befalling this great City by the
ing the use of their common *Galenic Medicines*,
have thought fit, in obedience to his Majesties
thority, to be consulted about the preparation of such
medicines, as are necessary for the curing of
this Plague, which is many things differ from the
Athenian-kind. Which Medicines be prepared
in great God, who hath given us a heart and light
and care of diseases, will be found our wish, and
our hands, to keepe the found, and save the sick
In pursuance whereof, it is thought meet to
and be furnished with the Medicines by us prepared
in order to Prevention, and in case of Cure.

- Dr. William Collier, in St. J
Christ Church
- Dr. Mowbray Nodden in St
our Apollo
- Dr. Edward Boleyn in Jona
near Crispington
- Dr. Thomas Williams in Tine
Court in Fleet Street

This Piece, we send, because our Society is not
Colledge, with publick Offices, so as we are not
capable of doing formerly so immediately, bound
Lived at June 1665.

London Printed for John Starke, and are

Certain Necessary
DIRECTIONS;
As well
For the Cure
OF THE
PLAGUE

As for preventing the
INFECTION:
WITH
Many Easie Medicines of small Charge,
very Profitable to his Majesties Subjects.
Set down by the Colledge of Physicians.

By the Kings Majesties special Command.

OXFORD,
Re-Printed by His Majesties appointment
for Richard Davis, by William Hall,
Anno Dom. 1665.

AN
ADVERTISEMENT

FROM THE

Society of Chymical Physitians,

TOUCHING

MEDICINES by them prepared, in pursuance of his

Majesties Command,

For the Prevention, and for the Cure of the

P L A G U E

Being a matter sooted by the
yea and now openly acknowledged
And in Galesick, Dordrecht, and Most
of greater Excellence than any other
then, and that the other being
wholly it is clearly given and granted, that the
upon have been by these worthy Persons (particula-
rly) Thane of *Politeness* Contagions. We
nothing this their to be desirable and ingenious a
happy Centenary be exist in and there, though
look on it as a good thing toward a more full
with a note that all of our have been with
as a more brotherly correspondence, and more
discuss, both as to Philosophical and Public, accord-
We therefore, the Society of Chymical Physitians
the charity befalls this great City by the Fight-
ing the use of their common *Galenical Medicines*,
have thought fit, in obedience to his Majesties
Honorable command about the preparation of such
medicines, as are not accustomed use of *London*
first, which is many things differs from the
Athenian-kind. Which Medicines to prepared in
great God, who hath given us a heart and light to
see our duties, will be found our wish answer to
our prayers, in purchase thereof, it is thought meet to
be furnished with the *Directions* to be used
in order to *Prevention*, and in case of *Cure*.

- Dr. William Collier, in St. J.
- Christ Church.
- Dr. Mowbray Nodden in St.
- our Apollo.
- Dr. Edward Boleyn in James
- over Crispian.
- Dr. Thomas Williams in Two
- Court in Fleet-street.

These Medicines are sold, both at our Society in our
College, with publick Offices, so show the
necessity of doing sometime to be ready,
Lived at June 1665.

London Printed for John Starkey, and are

Certain Necessary
DIRECTIONS;
As well
For the Cure
OF THE
PLAGUE
As for preventing the
INFECTION
WITH
Many Easie Medicines of small
very Profitable to his Majesties Subjects
Set down by the Colledge of Physic

By the Kings Majesties special Comm
OXFORD,
Re-Printed by His Majesties appo
for Richard Davis, by William H
Anno Dom. 1665.

IX

Famous and Effectual **MEDICINE**
TO CURE THE
P L A G U E.

And having (through Gods Blessing) cured these several Persons under written,
(and above fifty more) I thought it my duty to publish it abroad in the World,
for the benefit and good of others: And have put an easie price on the medi-
cines (very little more than what they cost making) for it is my chiefest aim
to do good, and not to get gain: For I thank God I can very well subsist with-
out it, and truly I dare say through Gods blessing, and with careful looking un-
to, not ten in one hundred will miscarry.

The names of those as have been Cured.

- | | | |
|--|--|-------------------------|
| <i>Henry Conder, and five in his Family, being</i> | <i>Four Milk-Women,</i> | |
| <i>in their markets.</i> | <i>Mrs. Jones Daughter</i> | <i>in Cross Garden</i> |
| <i>Rich. Pearce, his Wife and</i> | <i>Mrs. Jones,</i> | |
| <i>his Nurse,</i> | <i>Mrs. Carter,</i> | |
| <i>Mrs. Mansfield,</i> | <i>Mrs. Ashby,</i> | |
| <i>Ann Cole,</i> | <i>Anke. Barber, sold in Great-lan.</i> | |
| <i>Mary Rogers,</i> | <i>John Brown</i> | <i>in Drury Street.</i> |
| <i>Richard Sayer,</i> | <i>Mrs. Corbett,</i> | |
| <i>Ellis. Eylesworth,</i> | <i>May Walker, in North-lane.</i> | |
| <i>Margaret Sanders,</i> | <i>Five more in White-hall-yard in the Strand.</i> | |
| <i>John Sawyer, and his</i> | <i>Six more in Chigwell Alley at Myddleton.</i> | |
| <i>Nurse.</i> | <i>12 more in Church-lane Alley in Fenny-lane.</i> | |

Now followeth the **MEDICINE.**

Tired Powder. If any not infected, and feels themselves ill, then presently let them (with our delay) take
this powder and then to bed and sweat carefully three hours; And if they are dry, make a
Puffin with Sage, or Sorrel, and Dandelion, and to drink freely in their sweat, or after-
wards, and be care after your sweat you keep your self warm: And if any swelling appear,
before of drinking any Beer or Ale, but keep your selves on the above-said Puffin-
drink, or Beer, or Ale boiled with a crust of brown bread, with one blade of Mace and two
Cloves. Put the Powder in a Spoon, with a little Beer or Puffin-drink, and to take it.
All this Powder is excellent good against Small-Pox, Fevers, Agues, and Surfeits; and if it
be for a Child, then take but one half of this Powder.
Then when you are out of your sweat, and well rubbed and dryed, then take a spoonful of
this Cardiac water, if the party be sick, take one spoonful every four hours, if well, do not well it.
And if you find any pain in your head after your sweat, then presently apply one of these
Plasters to your Temples, which will give you both ease and cure, and if your pain continues,
then take every twenty four hours.
And if you find any Blisters in any part of your body, then take some of this Salve out of
the Pot, and spread it on Ships-leather, and then lay it on the Sore or Swelling, which Plaster
will both ripen, break it, and heal it; the first Plaster, keep it on as long as you can, and when
the Sore is broken, then dress it twice every day.
But in case the distemper break out into a Vomiting and Loosness, or Gripping in the Belly,
then take of this Cardiac water every three hours two spoonfuls, until you find ease, and in
case you are a dry, drink Muscad, not too thinn.
Also here is a most easie way water for a sore mouth, either for Canker, Tharsh, or a sore
caused by reason of a Fever, being a little warmed, and with a cloth gable the mouth, and
let one drop or two down.
An infallible Powder for Men, Women, or Children, troaked with Corallion-juice, Pulling-
sickness, or fits of the Mother taken with a little Black Cherry water falling in a morning. If
the Children be very young, then divide the Paper of Powder into three parts, and for mid-
dle aged Children take one half, and for Men and Women the whole Paper.
The Medicines are to be had at Mr. Thomas Starkey, a Book-Binder to Your Majesty, near the Dukes Place,
both by the Church-side wall. At Mr. Hyswells book, near the Gate, Doge in Littlemore-lane, or
at Mr. Hyswells, at the Holy Lamb in Chigwell. At Mr. Gaults, at Trinity-lane, or at
At Mr. Hyswells, in Nine, Cross-street, at Mr. Hyswells, at the Black-spread, or at the West-end

AN
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TOUCHING

MEDICINES by them prepared, in pursuance of his
Majesties Command,
For the Preservation, and for the Cure of the

P L A G U E

WHAT a matter moved by the
yea and now openly acknowledge
that in Calicut, Bombay and Mad
of greater Effectiveness any other
them, and that the other being
wholly in vain given and granted, that the
upon have been by their worthy Patrons (particul
pleas'd) Three of *Philosophical Contagions*. We
nothing this their to be desirable and ingenious
happy Centres, the best in and clear, though
look on it as a good thing toward a more full
with a note that all of our have been with
as a more brotherly correspondence, and
dine, both as to Philosophical and Public, accord
We therefore, the Society of Chymical Physitians
the Calicut befills this great City by the Fight
ing the use of their common *Galena Medicines*,
have thought fit, in obedience to his Majesties
Honourably consider about the preparation of such
medicines, as are not to be used out of London
lest they, which is many things differ from the
Athenian-kind. Which Medicines to be prepared
great God, who hath given us a brain and light
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in some hands, to leave the found, and save the sick
In pursuance whereof, it is thought meet to
and be furnished with the *Directions* to be us'd
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- Christ Church, Oxford.
- Dr. Mowbray Nodden in St.
- our Apollo.
- Dr. Edward Boleyn in James
- over Crispian.
- Dr. Thomas Williams in Two-C
- Court in Fleet-street.

These Papers are bound, bound off our Society in our
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Lived in June 1665.

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eines (very little more then what they cost making)
to do good, and not to get gain: For I thank God I
out it, and truly I dare say through Gods blessing, and
to, not ten in one hundred will miscarry.

- The names of those who have been Cu
ried, and live in his Family, being
- | | |
|-------------------|-------------------|
| Four Milk-women | Four Milk-women |
| Mr. Tom Dugall | Mr. Tom Dugall |
| Mr. Jones | Mr. Jones |
| Mr. Carter | Mr. Carter |
| Mr. Ashby | Mr. Ashby |
| John Barber | John Barber |
| John Brown | John Brown |
| John Green | John Green |
| John White | John White |
| John Black | John Black |
| John Grey | John Grey |
| John Red | John Red |
| John Blue | John Blue |
| John Yellow | John Yellow |
| John Purple | John Purple |
| John Orange | John Orange |
| John Olive | John Olive |
| John Silver | John Silver |
| John Gold | John Gold |
| John Iron | John Iron |
| John Lead | John Lead |
| John Tin | John Tin |
| John Copper | John Copper |
| John Brass | John Brass |
| John Steel | John Steel |
| John Flint | John Flint |
| John Marble | John Marble |
| John Lapis Lazuli | John Lapis Lazuli |
| John Sapphire | John Sapphire |
| John Ruby | John Ruby |
| John Emerald | John Emerald |
| John Topaz | John Topaz |
| John Amethyst | John Amethyst |
| John Garnet | John Garnet |
| John Onyx | John Onyx |
| John Jasper | John Jasper |
| John Agate | John Agate |
| John Obsidian | John Obsidian |
| John Nephrite | John Nephrite |
| John Jade | John Jade |
| John Quartz | John Quartz |
| John Calcite | John Calcite |
| John Dolomite | John Dolomite |
| John Gypsum | John Gypsum |
| John Halite | John Halite |
| John Selenite | John Selenite |
| John Fluorite | John Fluorite |
| John Apatite | John Apatite |
| John Zircon | John Zircon |
| John Spinel | John Spinel |
| John Garnet | John Garnet |
| John Ruby | John Ruby |
| John Emerald | John Emerald |
| John Topaz | John Topaz |
| John Amethyst | John Amethyst |
| John Garnet | John Garnet |
| John Onyx | John Onyx |
| John Jasper | John Jasper |
| John Agate | John Agate |
| John Obsidian | John Obsidian |
| John Nephrite | John Nephrite |
| John Jade | John Jade |
| John Quartz | John Quartz |
| John Calcite | John Calcite |
| John Dolomite | John Dolomite |
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| John Selenite | John Selenite |
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| John Zircon | John Zircon |
| John Spinel | John Spinel |
| John Garnet | John Garnet |
| John Ruby | John Ruby |
| John Emerald | John Emerald |
| John Topaz | John Topaz |
| John Amethyst | John Amethyst |
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A N B no. h. r
ADVERTISEMENT

FROM THE
Society of Chymical Physicians,

TOUCHING
MEDICINES by them prepared, in pursuance

Majesties Command
 For the Prevention, and for the Cure of the

P L A G U E

WHAT being a matter sworn by the
 year and now openly acknowledged
 that in Great Britain, and most
 of greater Effect, than any other
 there, and that the other being
 wholly it is clearly given and granted, that the
 upon have been by their worthy Pastors (particularly
 pleads: That of *Peftilential Contagion*. We
 resulting this their foreshadowed and ingenious
 happy Centenary, to exist in and there, though
 both, as it is a good Omen toward a more full
 with a note that all of our have been ordered
 as a more brotherly correspondence, and
 divine, both as to Philosophical and Public, according
 We therefore, the Society of Chymical Physicians,
 the calamity befalls this great City by the
 ing the use of their common *Galenic Medicines*,
 have thought fit, to oblige, to the Majesty our
 liberally considered about the preparation of such
 kind, as are not accustomed use of *Antiseptic*
 first, which is many things differ from the
 Author's-kind. Which Medicines to prepared
 great God, who hath given us a heart and light
 more of diseases, will be found our wish, as
 more hands, to leave the found, and save the sick
 In pursuance whereof, it is thought meet to
 and be furnished with the *Medicine* to be
 in order to *Prevention*, and in case of *Cure*.

- Dr. William Collier, in St. J.
- Dr. Christopher Clark, in St. J.
- Dr. Matthew Nodden, in St. J.
- Dr. Edward Boleyn, in James
- Dr. Thomas Williams, in St. J.

This Piece, we send, because our Society is not
 Colledge, with publick Offices, so show the
 necessity of being sometimes so indirectly, to be
 Lived at June 1665.

London Printed for John Starke, and are

D

F

Ma

Re

200 246

THE
Surgeons Assistant.

In which is plainly discovered the
True Origin of most Diseases.

Treating particularly of the
Plague, French Pox, Leprosie, &c.

OF
**The Biting of Mad Dogs, and other
 Venemous Creatures.**

A L S O
**A Compleat Treatise of Cancers and
 Gangreens.**

W I T H
**An Enquiry whether they have any alliance
 with Contagious Diseases.**

Their most Easie, and Speedy Method of Cure,
 With diverse Approved Receipts.

By *John Browne*, Sworn Surgeon in Ordinary to his
 late Most Excellent Majesty King *William III.*
 and late Senior Surgeon of *St Thomas Hospital* in
Saunderark.

L O N D O N,
 Printed for *James Knapton*, at the *Crown* in *St Pauls*
Church-yard. MDCCLIII.

Consilium Anti-Pestilientiale:

O R,
Seasonable Advice,

CONCERNING
 Sure, Safe, Specifick, and Experi-
 mented **MEDICINES**, both
 for the *Preservation* from, and
Cure of this Present

PLAGUE.

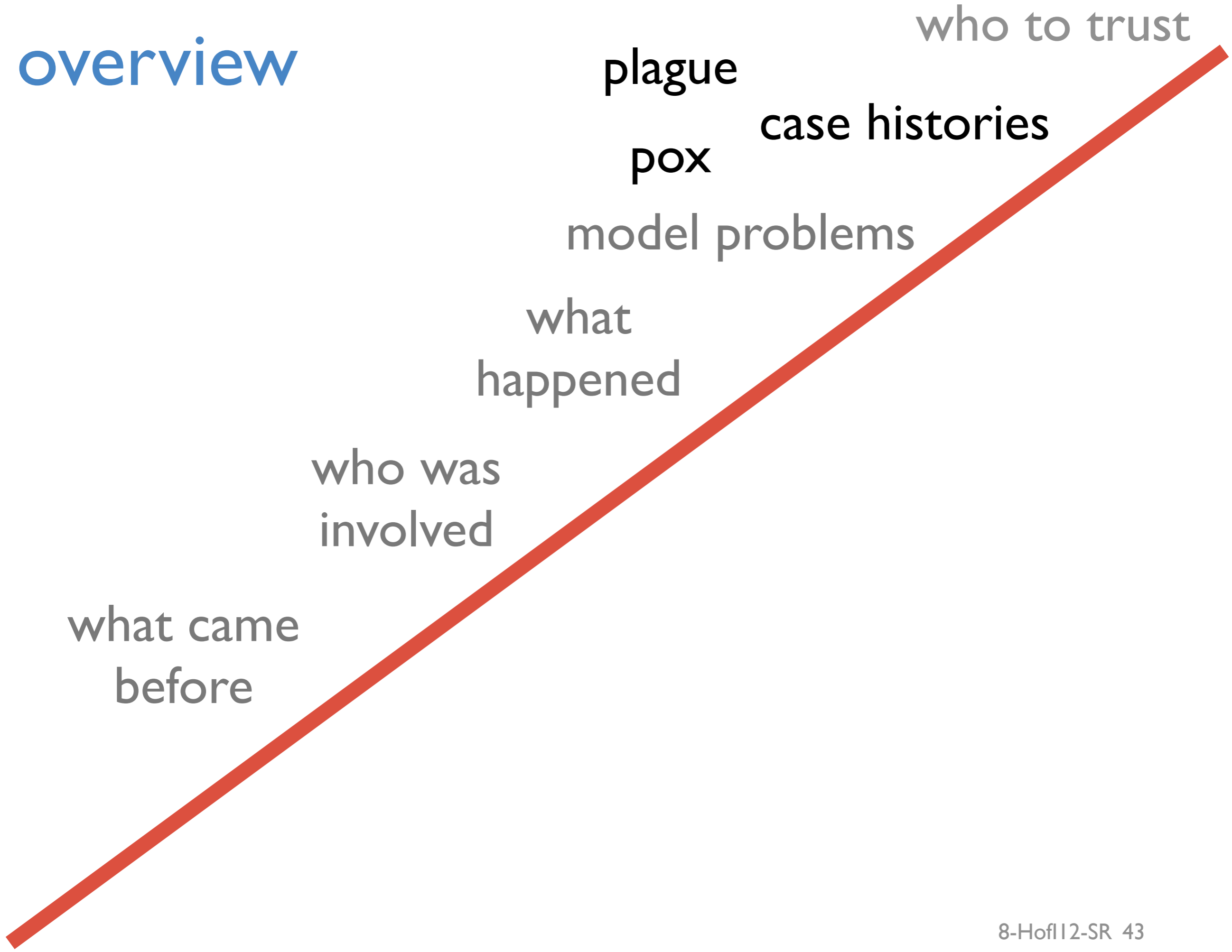
Offered for the Publick Benefit of this
 Afflicted Nation,

B Y
RICHARD BARKER, Med. Lond.

*Gloriam da Deo pro Misericordia,
 & reverere Judicia ejus.*

London. Printed for the Author, Anno 1665.

overview



plague

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case histories

POX

model problems

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before

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what came
before



slow progress

The plague is much in Amsterdam, and we in fears of it here.

Pepys, **Dec.** 31, 1663

The talk upon the 'Change is, that De Ruyter is dead, with fifty men of his own ship, of the plague, at Cales

June 30, 1664

We were told to-day of a Dutch ship ... where all the men were dead of the plague, and the ship cast ashore at Gottenburgh

Sept. 24, 1664

Thence to the Coffee-house ... where all the newes is of the Dutch ... and of the plague growing upon us in this towne

May 24, 1665

Science & Medicine 45



slow progress

The towne grows very sickly, and people to be
afeard of it; there dying this last week of the
plague 112, from 43 the week before. The
Mortality Bill is come to 267; June 29th, 1665
Above 700 died of the plague this week.

July 13, 1665

The sickness is... almost every where, there
dying 1089 of the plague this week.

July 19, 1665

plague years

A
JOURNAL
OF THE
Plague Year:
BEING
Observations or Memorials,
Of the most Remarkable
OCCURRENCES,
As well
PUBLICK as PRIVATE,
Which happened in
L O N D O N
During the last
GREAT VISITATION
In 1665.

Written by a CITIZEN who continued all the
while in London. Never made publick before

L O N D O N:
Printed for E. Nott at the Royal-Exchange; J. Roberts
in Warwick-Lane; A. D: dd without Temple-Bar;
and J. Graves in St. James's-street. 1722.

print: solution or problem?

"Some endavours were used to suppress the printing of such books as terrified the people... these terrors ... led them into a thousand weak, foolish, and wicked things .. running about to fortune tellers ... streets were plastered over with doctors' bills and papers of ignorant fellows, quacking and tampering in physic, and inviting people to come to them for remedies . 'infallible preventive pills against the plague' ... 'Sovereign cordials against the corruption of the air'"

--Defoe, *Journal of the Plague Year*, 1722

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advice of the physician

PROCLAMATION

" 'That no hogs dogs, or cats, ... be kept within any part of the city' ...

"Wherefore were we ordered to kill all the dogs and cats, but because as they were domestic animals, and are apt to run from house to house ...so they are capable of carrying ... infectious streams ... even in their furs and hair ... by the advice of the physician, that all dogs and cats should be immediately killed."

--Defoe, *Plague Years*

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nasty, brutish, and short

smallpox

Queen Anne (1665-1714)

17 pregnancies

3 still births

10 miscarriages

3 died in infancy of **smallpox**

William Duke of Gloucester (1689-1700)



scientific revolution

inoculation

India: 8th century

China: 10th century

Tibet: 11th century

Africa: ?

Turkey: ? 16th century

England, France, US: 18th century

recurring resistance

18th, 19th, 20th, 21st century

inoculation

England, France, US 18th century

England

Lady Mary Wortley Montague

France

Montpellier, but not Paris

US

Onesimus



Lady Mary Wortley
Montague
1689–1762



Voltaire

[François-Marie Arouet]

1694-1778

mad men

"It is whispered in Christian Europe that the English are mad and maniacs: mad because they give their children smallpox to prevent their getting it, and maniacs because they cheerfully communicate to their children a certain and terrible illness with the object of preventing an uncertain one. The English on their side say: 'The other Europeans are cowardly and unnatural: cowardly in that they are afraid of giving a little pain to their children, and unnatural because they expose them to death from smallpox some time in the future.' To judge who is right in this dispute, here is the history of this famous inoculation which is spoken of with such horror outside England."

--Voltaire, *Letters on England*

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"Cotton Mather, you dog, dam you! I'll inoculate you with this; with a pox to you" [note attached to missile]

crossing the Atlantic

Boston outbreak 1721

"Inquiring of my Negro-man, Onesimus, who is a pretty intelligent fellow, whether he had ever had the smallpox, he answered both yes and no. He told me that he had undergone the operation which had given something of the smallpox and would forever preserve him from it, adding that was often used in West Africa."

--Cotton Mather



Cotton Mather
1663-1728



Benjamin Franklin
1706-1790

To the Author of the New-England Courant,
S I R,
Reading in your last a Story concerning Inoculation, with the News of the intended Expedition against the Eastern Indians; they casually lodged together in the same Apartment of my Brain, and by next Morning formed themselves into the following Project.

A Project for reducing the Eastern Indians by Inoculation.

That there be forthwith enlisted a sufficient number of Inoculators, so be commanded by a Major General Inoculator, who in Quality of a Field Officer, may do Duty on Horseback.

That they be compleatly armed with Incision-Lanets, Pandora's-Box, Nut-Shell and Fillet; their Exercise and Discipline to be according the Practice of that able and experienc'd Officer amongst the Turks (our Inoculator General's good Friend and intimate Acquaintance) Capt. General Timonius.

That their Ammunition be of the best Proof, that is, a Composition of Negro Yaws, and constant Small Pox.

That the Inoculators be all Volunteers, who besides their usual Fees, and travelling Charges, may be allowed a Gratuity of 10 l. per Head, of each Indian who survives, conveys and spreads the Infection amongst his Tribe; and of 5 l. per Head for those who blow up too soon (or die) before they reach the Places where Execution is intended.

That in Consideration of the difference of Climate, and other more pressing Occasions, the Timonius directs such Expeditions to be made only in Winter and Spring, ours shall be in Summer, as in all Probability like to do most Execution in that Season.

The three greatest Evils incident to Mankind, are the Sword, Famine and Pestilence. The first, or War, hath been allowed and practis'd by all Nations in all Ages. The second is also made use of to annoy an Enemy; as in the Instance of Blockading, or starving strong Towns: But the doing of Execution by Infection or Pestilence, seems reserved for the Honour of the Inoculator and his Associates. That it is glorious and Lawful we have had it lately sufficient

more
paradox



revolution?



How the case against the MMR vaccine was fixed

Brian Deer, journalist

+ Author Affiliations

briandeer.com

In the first part of a special BMJ series, Brian Deer exposes the bogus data behind claims that launched a worldwide scare over the measles, mumps, and rubella vaccine, and reveals how the appearance of a link with autism was manufactured at a London medical school

When I broke the news to the father of child 11, at first he did not believe me. "Wakefield told us my son was the 13th child they saw," he said, gazing for the first time at the now infamous research paper which linked a purported new syndrome with the measles, mumps, and rubella (MMR) vaccine. ¹ "There's only 12 in this."

That paper was published in the *Lancet* on 28 February 1998. It was retracted on 2 February 2010. ² Authored by Andrew Wakefield, John Walker-Smith, and 11 others from the Royal Free medical school, London, it reported on 12 developmentally challenged children, ³ and triggered a decade long public health scare.

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"**Truth** is not enough for you; you think it matters
who the speaker is and where he comes from."

who to trust?



Cotton Mather

Wonders of the Invisible World, 1693



Benjamin Franklin

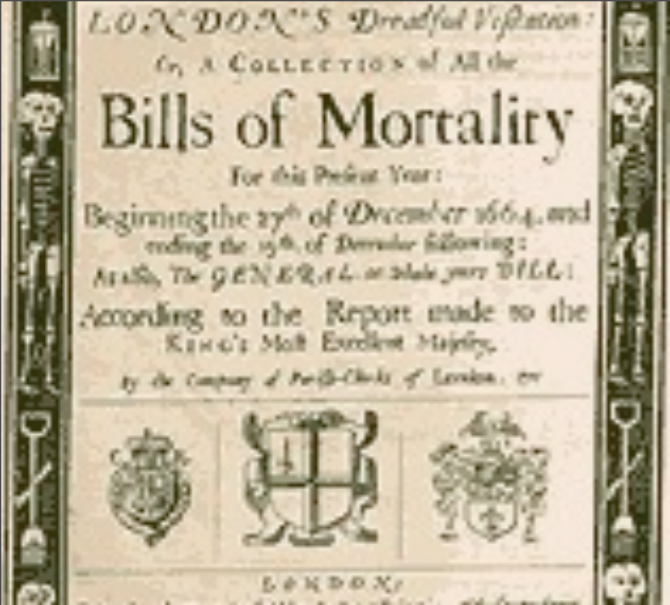
Fellow of the Royal Society

declining scepticism



"In 1736 I lost one of my sons, a fine boy of four years old, by the smallpox taken in the common way. I long regretted bitterly and still regret that I had not given it to him by inoculation. This I mention for the sake of the parents who omit that operation, on the supposition that they should never forgive themselves if a child died under it; **my example showing that the regret may be the same either way, and that, therefore, the safer should be chosen.**"

--Franklin, *Autobiography* 1793



The Mortality Bill is come to 267; June 29th, 1665
 Above 700 died of the plague this week.

July 13, 1665

weight of evidence

A generall Bill for this present year, ending the 19 of December 1665. according to the Report made to the KING'S most Excellent Majestie. By the Company of Parish Clerks of London, &c.

The Diseases and Casualties this year.

Bottie and Stillborne	517	Executed	21	Pallie	30
Aged	1545	Flox and Small Pox	655	Plague	68528
Aque and Peaver	5237	Found dead in Streets, fields, &c.	27	Plasme	6
Apoplex and Suddenly	216	French Pox	86	Plurie	13
Idric	10	Frighted	23	Posioned	6
afind	5	Gout and Sciatica	27	Quinse	35
eeding	16	Grief	46	Rickets	137
oody Flux, Scowering & Flux	187	Gripping in the Guts	1238	Killing of the lights	147
unt and Scalded	8	Hungal & made away themselves	7	ll. pture	14
lenture	3	Headmouldshot & Mealefallen	14	Scurvy	107
ances, Gangrene and Fittula	56	Jaundies	120	Shingles and Swine pox	2
aker, and Thrush	121	Imposume	227	Stones, Ulcers, broken and heilled	82
illdoed	625	Kild by severall accidentes	46	Limbs	82
hrilomes and Infants	1258	Kings Evill	86	Spleen	14
old and Cough	63	Leproue	2	Spotted Fever and Purples	1929
ollick and Winde	134	Lethargy	14	Scopping at the stomack	334
onsumption and Tillick	4808	Livergrowne	21	Stone and Stranguy	8
onvulsion and Morice	1056	Meagrom and Headach	82	Surlet	1207
illtasted	5	Mealles	7	Teeth and Worms	2014
rouse and Turpany	1476	Mortised and Shot	9	Vomiting	51
rowned	52	Overjaud & Starved	45	Vunn	7

♂ Males	5114	Buried	♂ Males	48569	Of the Plague	68195
♀ Females	4853		♀ Females	48717		
In all	9967		In all	97286		

Increased in the Burials in the 130 Parishes and at the Pest-houses this year.	79009
Increased of the Plague in the 130 Parishes and at the Pest-houses this year.	68590

1603: regular bills of mortality

1611: incorporation of parish clerks counting by "searchers"

1629: other deaths

1728: age of deceased

1837: last bills

political arithmetic

William Petty, RS

surveyor

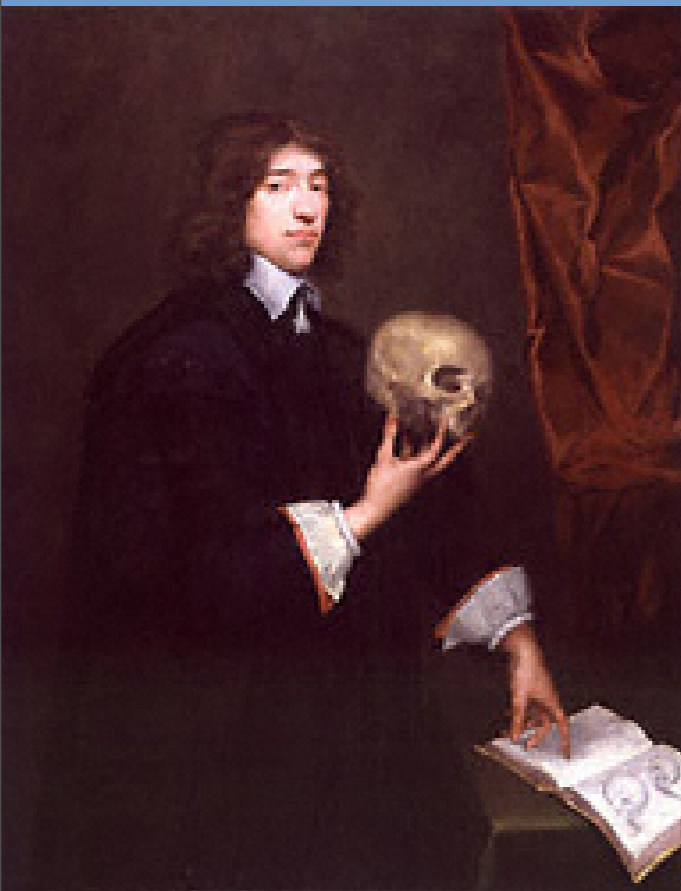
Political Arithmetic of Ireland

velocity of circulation

natural vs market price

economic surplus

population change



William Petty
1623–1687



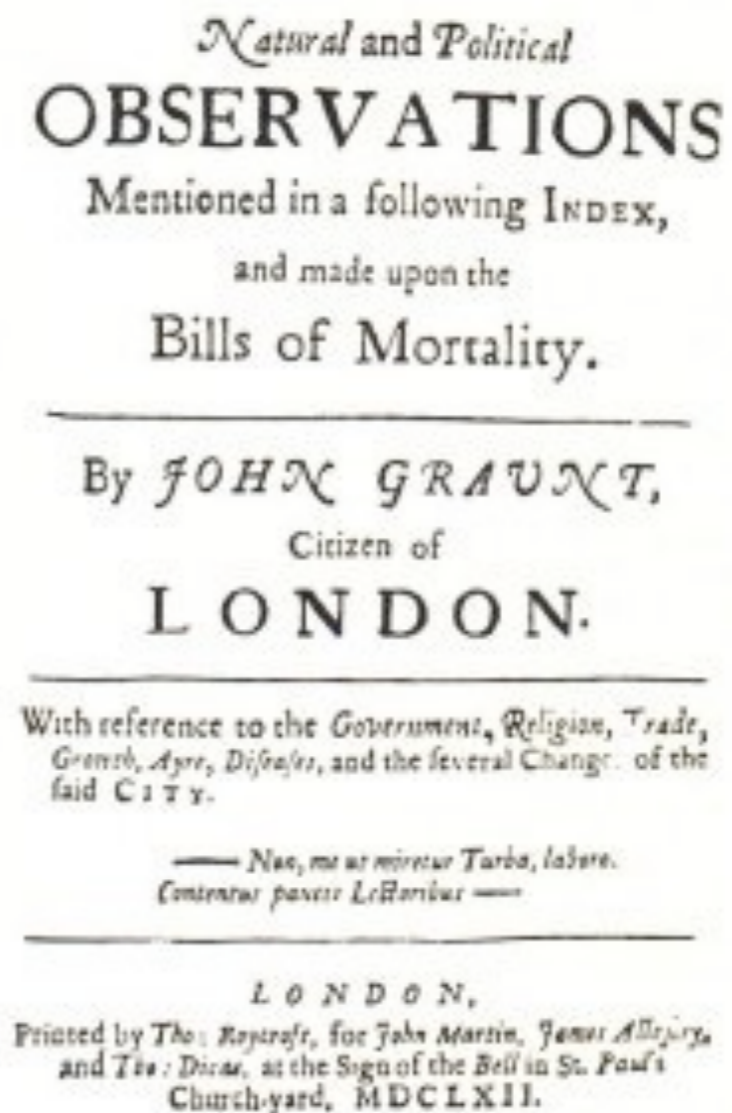
John Graunt
1620–1674

"His Majesty gave this particular charge to His Society, that if they found any more such Tradesmen, they should be sure to admit them all, without any more ado."

--Sprat

in a class of his own?

John Graunt, RS
Natural and Political Observations ... upon the Bills of Mortality 1662





open science

matters of trust

in *books*

in *machines*

in *people*





open science

matters of trust

in *books*

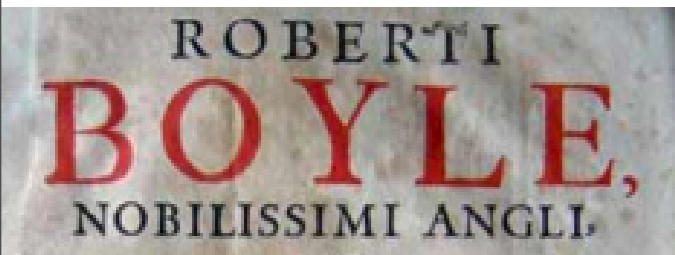
in *machines*

in *people*

"I judged that whatever men's eyes were in the younger age of the World, our eyes in this old age of it needed spectacles"



Nullius in Verba?



social revolution?

significant developments?

scientific societies

the English gentleman

"Though the Society entertains very many men of particular Professions; yet the farr greater Number are Gentlemen, free, and unconfin'd. ...

"to commit the Work to the care of such men, who, by the freedom of their education the plenty of their estates, and the usual generosity of Noble Bloud, may be well suppo'd to be most averse from such sordid considerations."

Nullius in Verba

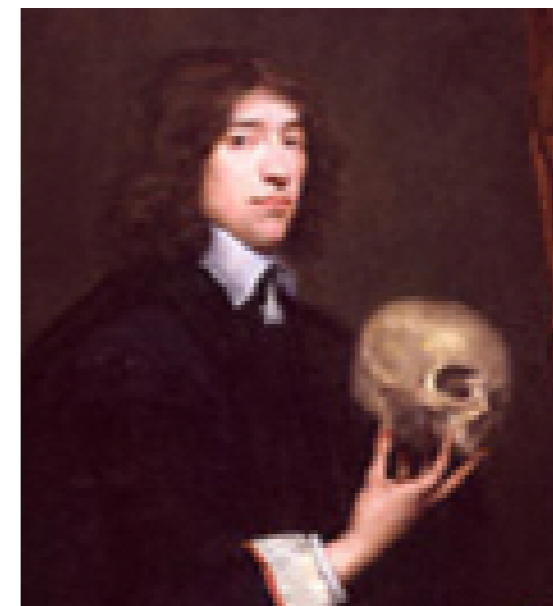
whom to trust

"the distribution
of credibility
followed the
contours of
English society"
--Steven Shapin

Hooke's
subordination

Graunt's
"shop arithmetic"

Petty
Anne Greene



"we find many Noble Rarities to be every day given in, not onely by the hands of Learned and profess'd Philosophers; but from the Shops of *Mechanicks*; from the Voyages of *Merchants*; from the Ploughs of Husbandmen; from the Sports, the Fishponds, the Parks, the Gardens of Gentlemen"

--Sprat

Nullius in Verba

establishing authority

(1)

Numb. 1.

PHILOSOPHICAL TRANSACTIONS.

Munday, March 6. 166⁴.

The Contents.

An Introduction to this Tract. An Account of the Improvement of Optick Glasses at Rome. Of the Observation made in England, of a Spot in one of the Belts of the Planet Jupiter. Of the motion of the late Comet predicted. The Heads of many New Observations and Experiments, in order to an Experimental History of Cold; together with some Thermometrical Discourses and Experiments. A Relation of a very odd Monstrous Calf. Of a peculiar Lead-Ore in Germany, very useful for Essays. Of an Hungarian Bolus, of the same effect with the Bolus Armenus. Of the New American Whale-fishing about the Bermudas. A Narrative concerning the success of the Pendulum-watches at Sea for the Longitudes; and the Grant of a Patent thereupon. A Catalogue of the Philosophical Books published by Monsieur de Fermat, Counsellour at Tholouse, lately dead.

Numb. 364.

Beginning the Thirty first Volume.

PHILOSOPHICAL TRANSACTIONS.

For the Months of *January, Feb. March and April.* 1720.

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- I. *Some Remarks on a late Essay of Mr. Cassini, wherein he proposes to find, by Observation, the Parallax and Magnitude of Sirius.* By Edmund Halley, L. L. D. Astron. Reg. Geom. Prof. Savi. & R. S. S.
- II. *An Account of the External Maxillar, and other Salivary Glands: Also of the Insertions of all the Lymphatics (as well above as below the Subclavians) into the Veins; which Glands and Insertions have not hitherto been mentioned, or not truly described by any Authors.* By Richard Hale, M. D. Reg. Soc. & Col. Med. Lond. Soc.
- III. *De Peste Constantinopoli grassante. Auctore nupero V. Cl. Emanuele Timone, M. D. Hoc scriptum ab Auctore Clarissimo, qui Constantinopoli per multos annos Medicinam fecerat, Excellentissimo Ablegato Britanico, Roberto Sutton, Eq. Aurato, traditum, ejusdem Equitis permisso, cum Societate Regia communicavit idem R. Hale, M. D.*
- IV. *An Account of a Luminous Appearance in the Air, seen at Dublin on January the 12th, 1720.* By Philip Percival, Esq; Brother to the Right Honourable the Lord Percival, F. R. S. and communicated by his Lordship to the Royal Society.

V. Of

exclusivity

- V. *Of the Infinity of the Sphere of Fix'd Stars.* By Edmund Halley, L. L. D. R. S. S.
- VI. *Of the Number, Order, and Light of the Fix'd Stars.* By the same.
- VII. *An Account of the Method of making Sugar from the Juice of the Maple Tree, in New England.* By the Honourable Paul Dudley, Esq; F. R. S. Communicated by John Chamberlayne, Esq.
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- IX. *A Discourse concerning a Method of discovering the Virtues of Plants by their External Structure.* By the Same.
- X. *An Account of a Book, Entituled, Geometria Organica, sive Descriptio Linearum Curvarum Universalis. Auctore Colino Mac Laurin, Matheseos in Collegio Novo Abredonensi Professore, & R. S. S.*

Nullius in Verba?

going closed?



Let us consider the matter in this way: If the wise man or any other man wants to distinguish the true physician from the false, how will he proceed?

.... He will consider whether what [the physician] says is true, and whether what he does is right, in relation to health and disease?

... But can any one attain the knowledge of either unless he have a knowledge of medicine?

... No one at all, it would seem, except the physician can have this knowledge; and therefore not the wise man; he would have to be a physician as well as a wise man.

--Plato, *Charmides*

8-Hof12-SR 69

"experience ...
tells us, that
greater things
are produc'd, by
the free way,
than the formal"

--Sprat

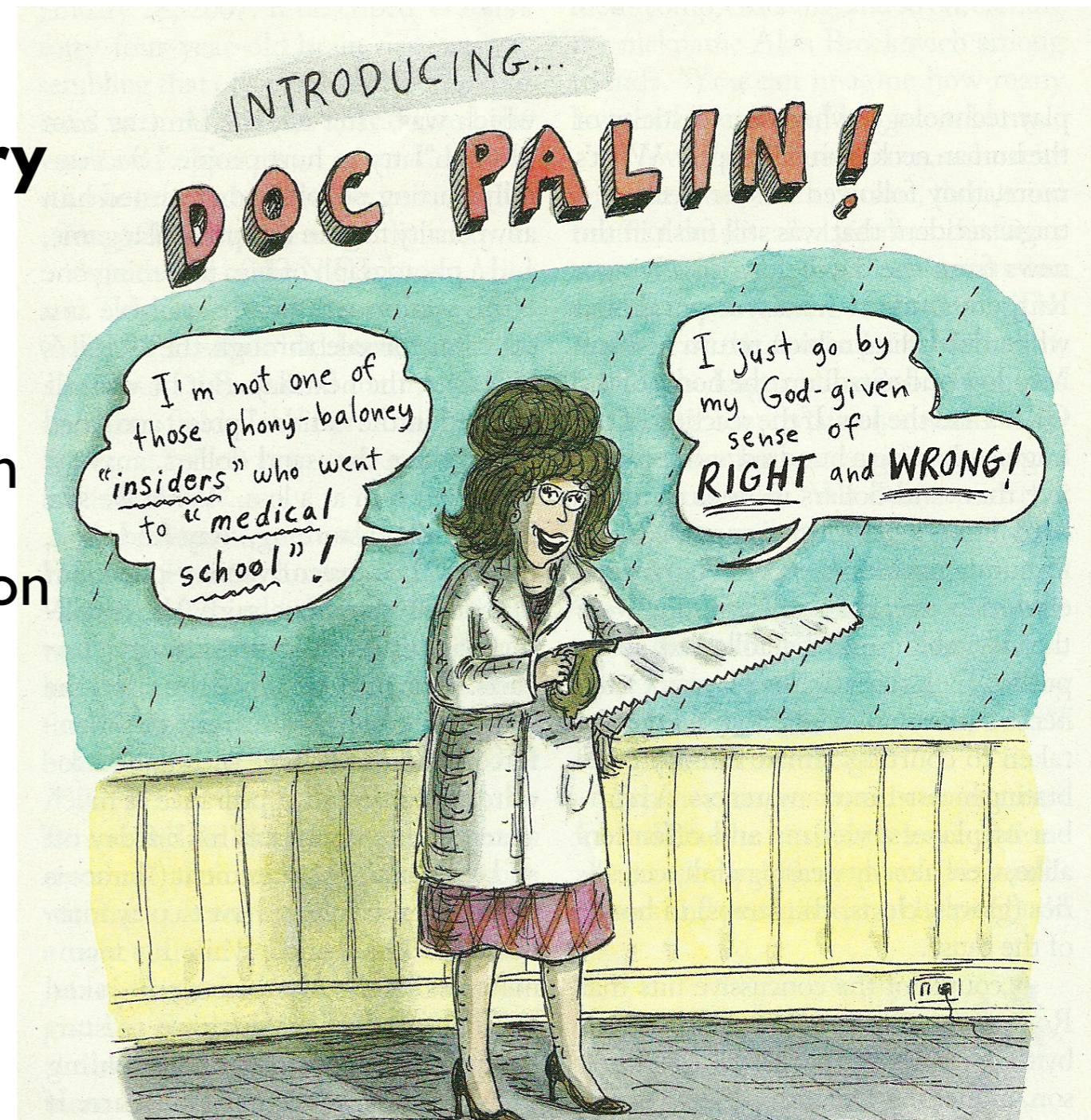
open again

US 19th Century

dismantling medical
societies

resisting vaccination

opposing controls on
food and drugs



science today?

going open?

or going closed?

The Credibility Crisis in Computational Science

"I judged that whatever men's eyes were in the younger age of the World, our eyes in this old age of it needed spectacles"

Dean's Lecture

Wednesday, February 1, 2012, 4:10 pm - 5:30 pm

Scientific computation is emerging as absolutely central to the scientific method, but the prevalence of very relaxed practices is leading to a credibility crisis affecting many scientific fields. It is impossible to verify most of the results that computational scientists present at conferences and in papers today.

Reproducible computational research, in which all details of computations — code and data — are made conveniently available to others, is necessary for a resolution of this crisis. This requires a multifaceted approach including policy solutions, computational tools for data and code dissemination, curation and archiving, and open licensing frameworks such as the [Reproducible Research Standard](#).

up ahead

Week 5

14 Feb: Emergence of the Public Sphere

Required reading:

- Cowan, Brian. 2005. "Inventing the Coffee House" and "Penny Universities," pp. 79-112 in *The Social Life of Coffee: The Emergence of the British Coffeehouse*. New Haven. Yale University Press.
- Darnton, Robert. 2000. "An Early Information Society: News and the Media in Eighteenth-Century Paris." *American Historical Review* 105.1.

assignment

In the light of Darnton's discussion of the various ways in which information was circulated in the France of the Old Regime, consider the various ways in which you have kept yourself informed about the Berkeley budget crisis/situation. Which of these are parallel to the channels of information circulation in France of that period (i.e., the various media listed in the second column of figure 3 and the others he mentions)? Which have no exact equivalents? Would you say that the contemporary system is qualitatively different from the one in use at that time?