Relevancia de la historia de la ciencia en el quehacer del investigador: implicancias para la publicación

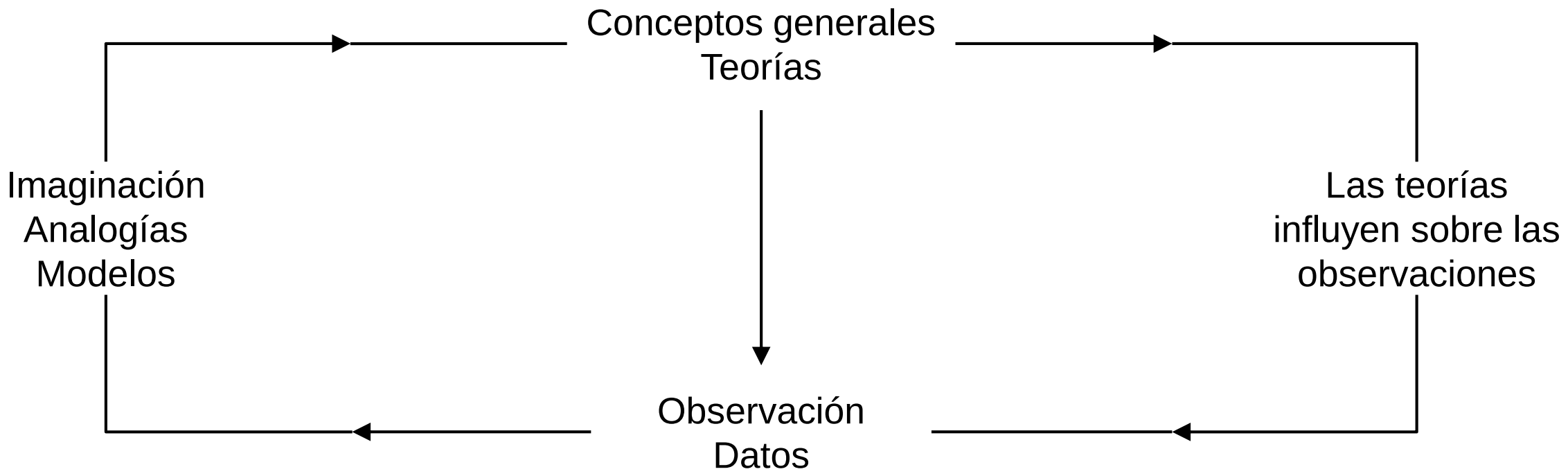
Dr. César Gutiérrez Villafuerte
cesar.gutierrez@udep.pe

Universidad de Piura
Facultad de Medicina

Temas a desarrollar

- El proceso de investigación científica
- Percepción general sobre la historia
- Importancia de la historia de la ciencia
- Aspectos históricos y la redacción de artículos

Estructura de la ciencia



Barbour IG. Religion and Science. New York: Harper One; 1997.

Reglas metodológicas en ciencias

1. El juego de la ciencia es, en principio, inacabable.

Quien afirma que los conceptos científicos no requieren evaluación posterior y que pueden ser considerados como plenamente verificados, se retira del juego.

2. Una vez que una hipótesis ha sido propuesta y probada, y ha demostrado su valía, no se debería permitir abandonarla sin una buena razón.

Una buena razón puede ser, por ejemplo: reemplazo de una hipótesis por otra que ha sido mejor verificada, o la refutación de alguna de las consecuencias de a hipótesis.

Popper K. The Logic of Scientific Discovery. London: Routledge; 2002.

Hitos históricos en la microbiología

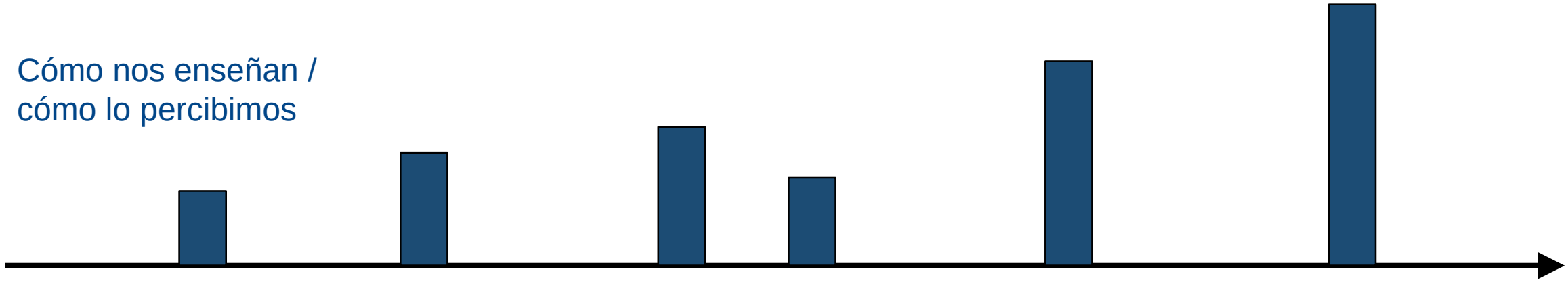
1676 - Antonie van Leeuwenhoek emplea su microscopio para observar microorganismos.

1796 – Edward Jenner prepara la primera vacuna contra la viruela.

1857 – Louis Pasteur publica su tratado sobre la fermentación por levaduras.

Percepción sobre la historia

Cómo nos enseñan /
cómo lo percibimos



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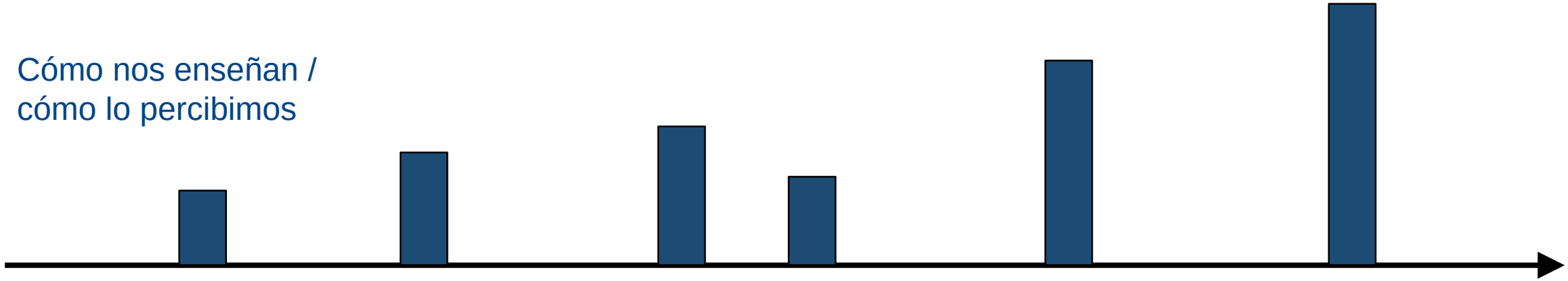
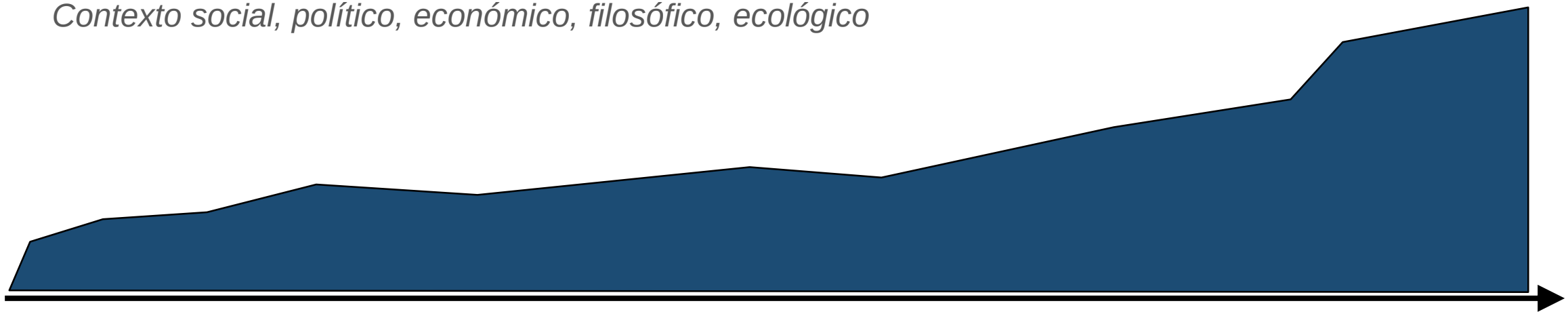


Cómo evolucionan los
conocimientos

Contexto social, político, económico, filosófico, ecológico



¿Por qué el investigador debe preocuparse por la historia de la ciencia?

1. La ciencia es influida por factores históricos y sociales
2. La historia permite aprender de errores previos
3. Una perspectiva histórica provee una mayor apreciación de cómo ocurrieron los descubrimientos
4. La historia puede dar un reconocimiento cuando se está en deuda
5. La historia revela la evolución de los estándares éticos en ciencia

Casadevall A, Fang FC. (A)Historical science. Infect Immun. 2015; 83(12): 4460-4.

La ciencia es influida por factores históricos y sociales

American Journal of Epidemiology

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Epidemiology in History

The Thompson-McFadden Commission and Joseph Goldberger: Contrasting 2 Historical Investigations of Pellagra in Cotton Mill Villages in South Carolina

Stephen J. Mooney*, Justin Knox, and Alfredo Morabia

* Correspondence to Stephen J. Mooney, Department of Epidemiology, Mailman School of Public Health, 722 West 168th Street, Room 729, New York, NY 10032 (e-mail: sjm2186@columbia.edu).

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As pellagra reached epidemic proportions in the United States in the early 20th century, 2 teams of investigators assessed its incidence in cotton mill villages in South Carolina. The first, the Thompson-McFadden Commission, concluded that pellagra was likely infectious. The second, a Public Health Service investigation led by Joseph Goldberger, concluded that pellagra was caused by a dietary deficiency. In this paper, we recount the history of the 2 investigations and consider how the differences between the 2 studies' designs, measurements, analyses, and interpretations led to different conclusions. Because the novel dietary assessment strategy was a key feature of the Public Health Service's study design, we incorporated simulated measurement error in a reanalysis of the Public Health Service's data to assess whether this specific difference affected the divergent conclusions.

epidemiology in history; measurement; multilevel epidemiology; nutrition

La historia permite aprender de errores previos

COFFEE AND CANCER OF THE PANCREAS

BRIAN MACMAHON, M.D., STELLA YEN, M.D., DIMITRIOS TRICHOPOULOS, M.D., KENNETH WARREN, M.D., AND GEORGE NARDI, M.D.

Abstract We questioned 369 patients with histologically proved cancer of the pancreas and 644 control patients about their use of tobacco, alcohol, tea, and coffee. There was a weak positive association between pancreatic cancer and cigarette smoking, but we found no association with use of cigars, pipe tobacco, alcoholic beverages, or tea. A strong association between coffee consumption and pancreatic cancer was evident in both sexes. The association was not affected by controlling for cigarette use. For the sexes combined, there was a significant dose-response relation ($P \sim 0.001$); after adjustment for cigarette smoking, the relative risk associated with drinking up to two cups of coffee per day was 1.8 (95 per cent confidence limits, 1.0 to 3.0), and that with three or more cups per day was 2.7 (1.6 to 4.7). This association should be evaluated with other data; if it reflects a causal relation between coffee drinking and pancreatic cancer, coffee use might account for a substantial proportion of the cases of this disease in the United States. (N Engl J Med. 1981; 304:630-3.)

OVER the past few decades, cancer of the pancreas has emerged as one of the most important neoplasias in human beings. It now accounts for approximately 20,000 deaths annually in the United States. Causative factors have been sought in several previous studies, but only cigarette smoking has emerged as a consistent, though relatively weak, exogenous risk factor. We report the results of a study that

whose interviews were judged to be unreliable, the control series used for the analysis consisted of 644 patients. Minor differences between tables in the stated numbers of cases and controls resulted from absence of specific items being analyzed in a few questionnaires.

The control series was composed of two principal diagnostic groups: 273 patients with cancer other than cancers of the pancreas and biliary tract, respiratory tract, or bladder and 371 patients with other disorders. Of the control patients with cancer, the tumor was in the breast in 65 patients, colon in 60, rectum in 25, stomach

Una perspectiva histórica provee una mayor apreciación de cómo ocurrieron los descubrimientos

Found Sci (2014) 19:387–401
DOI 10.1007/s10699-014-9348-0

Serendipity and the Discovery of DNA

Áurea Anguera de Sojo · Juan Ares · María Aurora Martínez · Juan Pazos · Santiago Rodríguez · José Gabriel Zato

Published online: 19 March 2014

Abstract This paper presents the manner in which the DNA, the molecule of life, was discovered. Unlike what many people, even biologists, believe, it was Johannes Friedrich Miescher who originally discovered and isolated nuclein, currently known as DNA, in 1869, 75 years before Watson and Crick unveiled its structure. Also, in this paper we show, and above all demonstrate, the serendipity of this major discovery. Like many of his contempo-

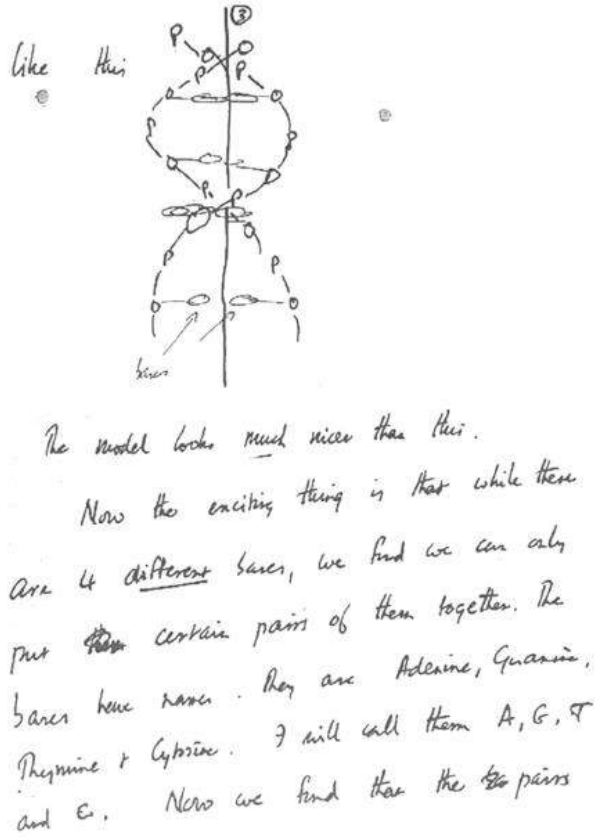


Fig. 1 Extract from Crick's letter to his son with a drawing of the DNA spiral model

La historia puede dar un reconocimiento cuando se está en deuda

Hist. Phil. Life Sci., 13 (1991), 97-124

Streptomycin: Discovery and Resultant Controversy

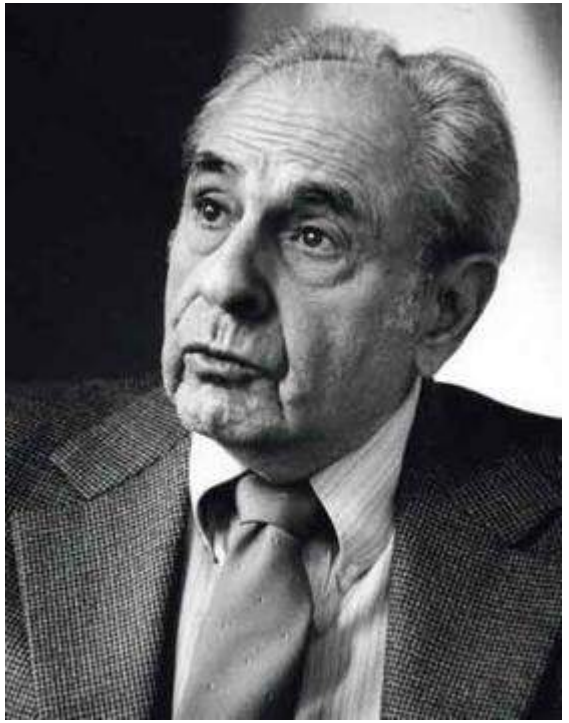
Milton Wainwright

Department of Molecular Biology
and Biotechnology, University of Sheffield,
Sheffield, S10 2TN, England

ABSTRACT – The antibiotic streptomycin was discovered soon after penicillin was introduced into medicine. Selman Waksman, who was awarded the Nobel Prize for the discovery, has since generally been credited as streptomycin's sole discoverer. However, one of Waksman's graduate students, Albert Schatz, was legally recognized as streptomycin's co-discoverer and received a share of the royalties from the drug. The aim of this essay is to discuss the streptomycin story, largely using previously unquoted archival material, and in particular to provide further evidence for the important role which Schatz played in the discovery.

Introduction

Streptomycin was discovered soon after penicillin was introduced into medicine, being the second major therapeutically useful antibiotic to enter medicine. It provided the first effective cure for tuberculosis, tuberculous meningitis, and a range of other infections caused by pathogenic Gram negative bacteria.[1] The impact of streptomycin on medicine in the early 1940's can be summed up by the following comment by L.P.



Albert Schatz

La historia revela la evolución de los estándares éticos en ciencia

ORIGINAL ARTICLES

Attempt to fulfil Koch's postulates for pyloric campylobacter

(see also page 431)

Barry J. Marshall, John A. Armstrong, David B. McGechie and Ross J. Glancy

ABSTRACT: A volunteer with histologically normal gastric mucosa received pyloric campylobacter by mouth. A mild illness developed, which lasted 14 days. Histologically proven gastritis was present on the tenth day after the ingestion of bacteria, but this had largely resolved by the fourteenth day. The syndrome of acute pyloric campylobacter gastritis is described. It is proposed that this disorder may progress to a chronic infection which predisposes to peptic ulceration.

(Med J Aust 1985; 142: 436-439)

The association between the newly

Second postulate. "The germ should be obtained from the diseased animal and grown outside the body." PC was first isolated in 1982 from a patient with gastritis.[11] Since January 1983 PC has been cultured from over 150 patients in our hospital. In almost all patients, an infiltration of polymorphonuclear cells has been found in the specimens of antral mucosa on the initial or a subsequent biopsy.

The experiment described in this paper was undertaken in order to fulfil Koch's third and fourth postulates; that is, to demonstrate that PC could colonize

with gastritis in the same gastroscopy session. The test isolate was taken from the latter patient, a 66-year-old man with non-ulcer dyspepsia. Before the human experiment was conducted, a portion of this isolate was inoculated intraperitoneally into two rats which suffered no ill effects after the inoculation. The isolate was sensitive to ampicillin, erythromycin, tinidazole, doxycycline and rifampicin. It was freeze-dried, then revived for the experiment.

One month later, when electron microscopic results were available and any lesion which resulted from the initial biopsies

Literatura científica – deliberadamente ahistórica

SCIENCE IN BOOKS

IS THE SCIENTIFIC PAPER FRAUDULENT?

Yes; It Misrepresents Scientific Thought

I HAVE chosen for my title a question: Is the scientific paper a fraud?

I ought to explain that a scientific "paper" is a printed communication to a learned journal, and scientists make their work known almost wholly through papers and not through books, so papers are very important in scientific communication. As to what I mean by asking "is the scientific paper a fraud?"—I do not, of course, mean "Does the scientific paper misrepresent facts?" and I do not mean that the interpretations you find in a scientific paper are wrong or deliberately mistaken. I mean the scientific paper may be a fraud because it misrepresents the processes of thought that accompanied or gave rise to the work that is described in the paper.

That is the question, and I will say right away that my answer to it is "yes." The scientific paper in its orthodox form does embody a totally mistaken conception, even a travesty, of the nature of scientific thought.

Just consider for a moment the traditional form of a scientific paper (in-evidence until the "discussion" section, and in the discussion you adopt the ludicrous pretense of asking yourself if the information you have collected actually means anything.

Of course, what I am saying is rather an exaggeration, but there is more than a mere element of truth in it.

The conception underlying this style of scientific writing is that scientific discovery is an inductive process. What induction implies in its cruder form is roughly speaking this: Scientific discovery, or the formulation of scientific theory, starts in with the unvarnished and unembroidered evidence of the senses. It starts with simple observation—simple, unbiased, unprejudiced, naïve, or innocent observation—and out of this sensory evidence, embodied in the form of simple propositions or declarations of fact, generalizations will grow up and take shape, almost as if some process of crystalization or condensation were taking place. Out of a disorderly array of facts, an orderly theory, an orderly general statement, will somehow emerge.

THIS conception of scientific discovery or the formulation of the scientific idea on the one hand, and demonstration or proof on the other hand,

Now, John Stuart Mill's deeper motive in working out what he conceived to be the essential method of science was to apply that method to the solution of sociological problems: He wanted to apply to sociology the methods which the practice of science had shown to be immensely powerful and exact. It is ironical that the application to sociology of the inductive method, more or less in the form in which Mill himself conceived it, should have been an almost entirely fruitless one.

The simplest application of the Millsian process of induction to sociology came in a rather strange movement called Mass Observation. The belief underlying Mass Observation was apparently this: that if one could only record and set down the actual raw facts about what people do and what people say in pubs, in trains, when they make love to each other, when they are playing games, and so on, then somehow, from this wealth of information, a great generalization would inevitably emerge.

Well, in point of fact, nothing important emerged from this approach.

THE theory underlying the inductive method cannot be sustained. Let me give three good reasons why not.

In the first place, the starting point of induction is philosophic fiction. There is no such thing as unprejudiced observation. Every act of observation we make is biased. What we see or otherwise sense is a function of what we have seen or sensed in the past.

The second point is this: Scientific

Science & Society

EMBO reports

Revisiting "Is the scientific paper a fraud?"

The way textbooks and scientific research articles are being used to teach undergraduate students could convey a misleading image of scientific research

Susan M Howitt[1] & Anna N Wilson[2]

In 1963, Peter Medawar gave a talk, *Is the scientific paper a fraud?*, in which he argued that scientific journal articles give a false impression of the real process of scientific discovery [1]. In answering his question, he argued that, "The scientific paper in its orthodox form does embody a totally mistaken conception, even a travesty, of the nature of scientific thought." His main concern was that the highly formalized structure gives only a sanitized version of how scientists come to a conclusion and that it leaves no room for authors to discuss the thought processes that led to the experiments.

Medawar explained that papers were presented to appear as if the scientists had no pre-conceived expectations about the outcome and that they followed an inductive process in a logical fashion. In fact, scientists do have expectations and their observa-actual process of discovery had been messy, a good paper presents a logical argument, provides supporting evidence, and comes to a conclusion. The reader usually does not need or want to know about false starts, failed experiments, and changes of direction.

This approach to scientific communication has implications for teaching undergraduates the nature and practice of science as it creates a completely wrong impression of how science actually works and perpetuates a stereotype of scientists as logical and rational beings, doggedly adhering to the scientific method. Students may confuse the presentation of a logical argument with an accurate representation of what was actually done. This leads to a view of science that is unrealistic and may even be damaging as it implies that failure, serendipity, and unexpected results are not a normal part of both the process of discovery and the thought that preceded it.

A case in point is the discovery of the double helical structure of DNA by James Watson and Francis Crick. Their *Nature* paper reporting the discovery is famous for its elegance and brevity [2]. A typical textbook account mentions that Watson and Crick used models to generate the double helix structure accommodating complementary base pairs. It usually also mentions the X-ray data of Rosalind Franklin and Maurice Wilkins but says little beyond this. As with a scientific paper, this is a question of purpose; students read textbooks to "learn facts," rather than to learn about scientific discovery.

As Watson's book, *The Double Helix* [3], makes clear, the actual process of discovery was anything but straightforward. In fact,

Literatura científica – deliberadamente ahistórica

AMERICAN DOCUMENTATION Vol. XI, 1960

THE "HALF-LIFE" OF SOME SCIENTIFIC AND TECHNICAL LITERATURES

R. E. BURTON and R. W. KEBLER***

ABSTRACT

A consideration of the analogy between the *half-life* of radioactive substances and the rate of obsolescence of scientific literature. The validity of this analogy suggests the possibility of more accurate prognostications concerning the period of time during which scientific literature may be used and hence might help to guide the planning of library collections and technical information services.

The concept of *half-life* is most familiar to the physicist and nuclear engineer who employ it to describe the decay of radioactive substances. Recently, however, the expression has been used by documentalists, some librarians, and other information "officers" to describe a totally different measure in a manner which

remaining material is the same as the half-life of the original mass.

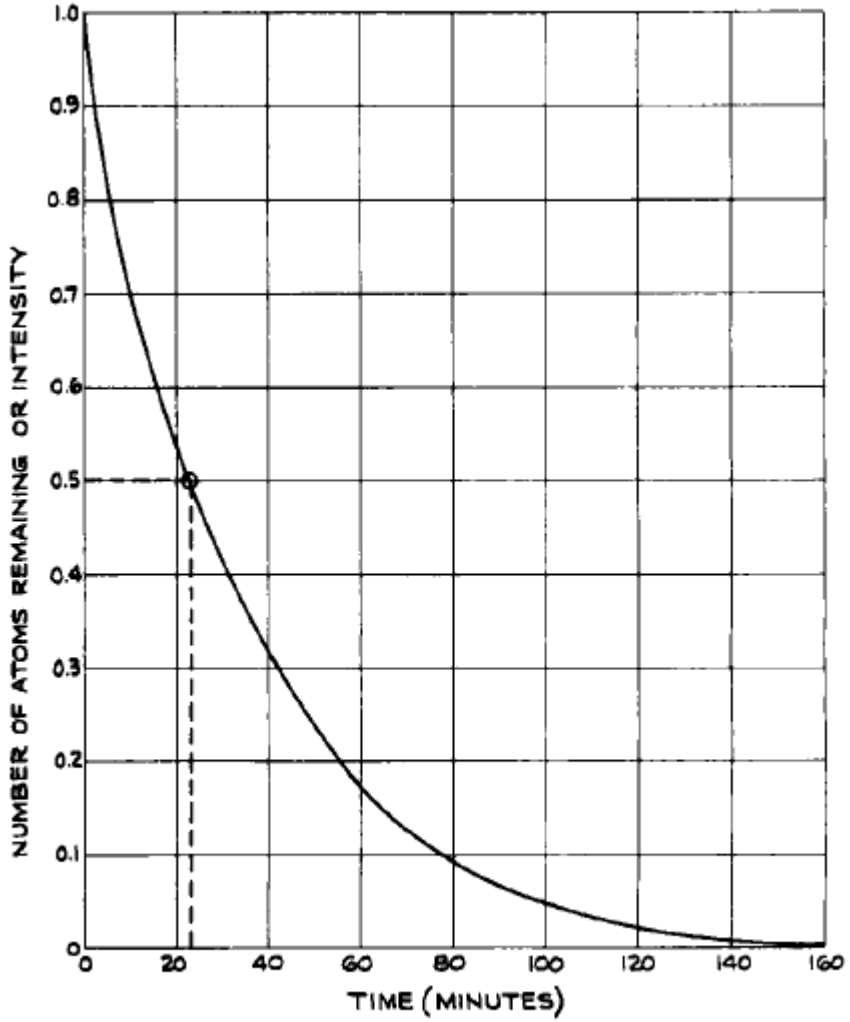


Fig. 1. Decay Curve for Uranium 239

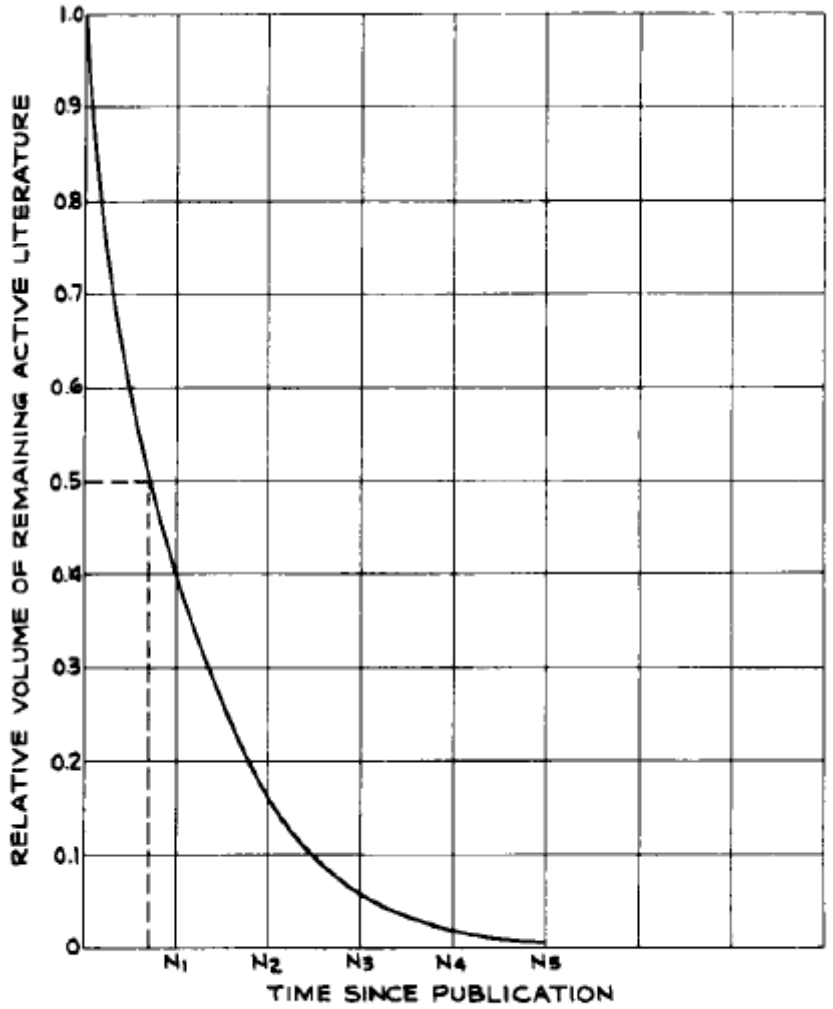


Fig. 2. Generalized Active Literature Curve

Table II

Literature Half-Lives

Chemical Engineering	4.8 years
Mechanical Engineering	5.2
Metallurgical Engineering	3.9
Mathematics	10.5
Physics	4.6
Chemistry	8.1
Geology	11.8
Physiology	7.2
Botany	10.0

Oral communication

500 BC

Ancient World

Philosophers teach at their own schools and their students carry the knowledge far and wide, spreading it orally, or writing it down in Greek. Later, the Roman Empire spreads this knowledge further, often translating Greek texts into Latin.

Scrolls or ancient texts

500 AD

Letter writing

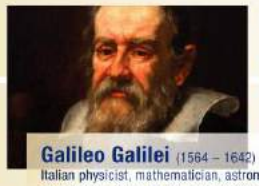
1000 AD

Early Middle Ages

Most teaching is done at religious schools. Knowledge is passed on orally and books are hand-written, copied by monks. Science is not high on the agenda, except where needed to determine the exact date of Easter or the time of day for prayer. Education is limited to the wealthy.

Published books

1250 AD



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Italian physicist, mathematician, astronomer and philosopher. Originally studied medicine at the University of Pisa, Italy, but did not graduate. Galileo championed the heliocentric view of the Solar System against the opinion of his peers and the Roman Catholic Church. He wrote books, essays and letters putting forward his views and presented them at royal courts and scientific societies.

1500 AD

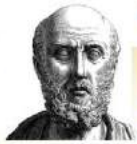
The Enlightenment

The first scientific journals are founded by scientific societies to formally publish the presentations made by their members. Ancient Greek texts are rediscovered and spark new advances that often overthrow the knowledge of the time. Important scientific ideas are still mainly communicated verbally, or in letters and books, but the invention of the printing press has made books more widely available.

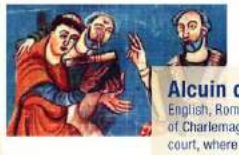
Gregor Mendel (1822 – 1884)
German-speaking Silesian scientist who demonstrated genetic inheritance in peas. Studied at the University of Olomouc, Czech Republic, before training as a priest and later studying at the University of Vienna, Austria. Mendel presented his ideas at meetings of scientific societies and published them in German-language scientific journals.

The 20th Century

All scientific discoveries are now published in scientific journals. Formalized peer-review is established and publication in journals has become the measure of a scientist's work. The scientific paper has become a highly stylized document. The invention of the Internet in the late 20th century now allows journal articles to be instantly available to scientists and students worldwide. The Internet also facilitates informal sharing of data and ideas between scientists.



Hippocrates of Kos (c. 460 – c. 370 BC)
Greek physician with revolutionary ideas about disease and medicine. Hippocrates passed on his teachings orally and in written treatises. His students added to and spread his ideas far and wide after training at his school.



Alcuin of York (c. 735 – 804 AD)
English, Roman Catholic scholar at the Carolingian court of Charlemagne. Alcuin taught in Catholic schools and at court, where he ensured that books and manuscripts were copied in an accurate and legible fashion. He also wrote letters to friends and peers to explain his theological and philosophical ideas.

The Renaissance

The first universities are founded to provide an infrastructure for teaching and research. Scientific advances are made, building on the work of Byzantine and Islamic scholars. Education is still limited to the wealthy. Scientific societies begin to form for intellectuals to present and discuss their ideas.

Isaac Newton (1642 – 1727)
English physicist and mathematician; widely regarded as one of the most influential scientists of all time. Attended and then taught at Cambridge University, UK. He published books and manuscripts explaining his ideas, wrote letters commenting on the ideas of others and exploring his own, and presented his research at meetings of the Royal Society in London.

1750 AD

Scientific journals

The 19th Century

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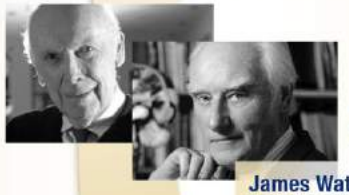

James Watson & Francis Crick (1953)
English biologists who discovered the double-helix structure of DNA. Both worked and taught at Cambridge University, UK. They presented their work at scientific meetings and published their research in scientific journals and would continue to do so throughout their careers. However, they have both written books to tell the full stories of their discoveries that cannot be captured in scientific journals.

2000 AD

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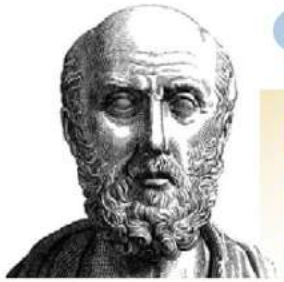

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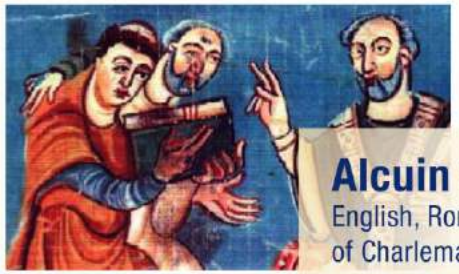

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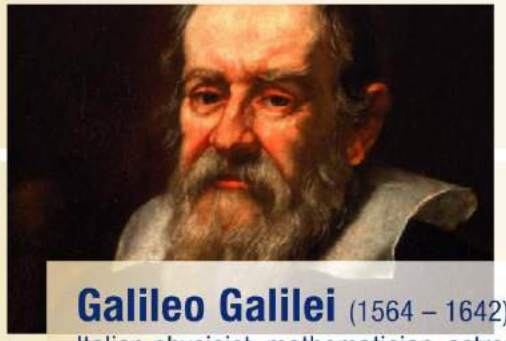

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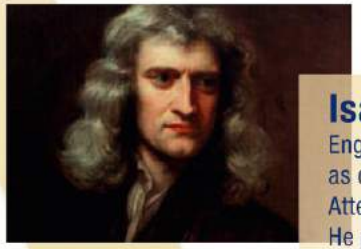

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The 19th Century

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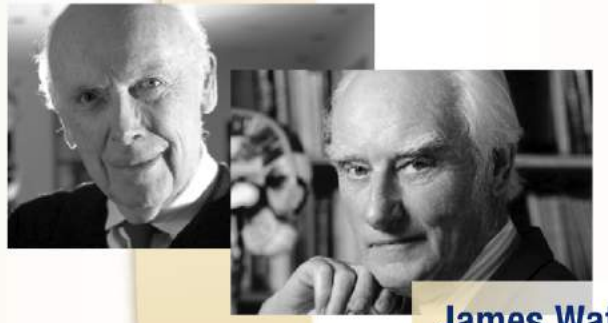
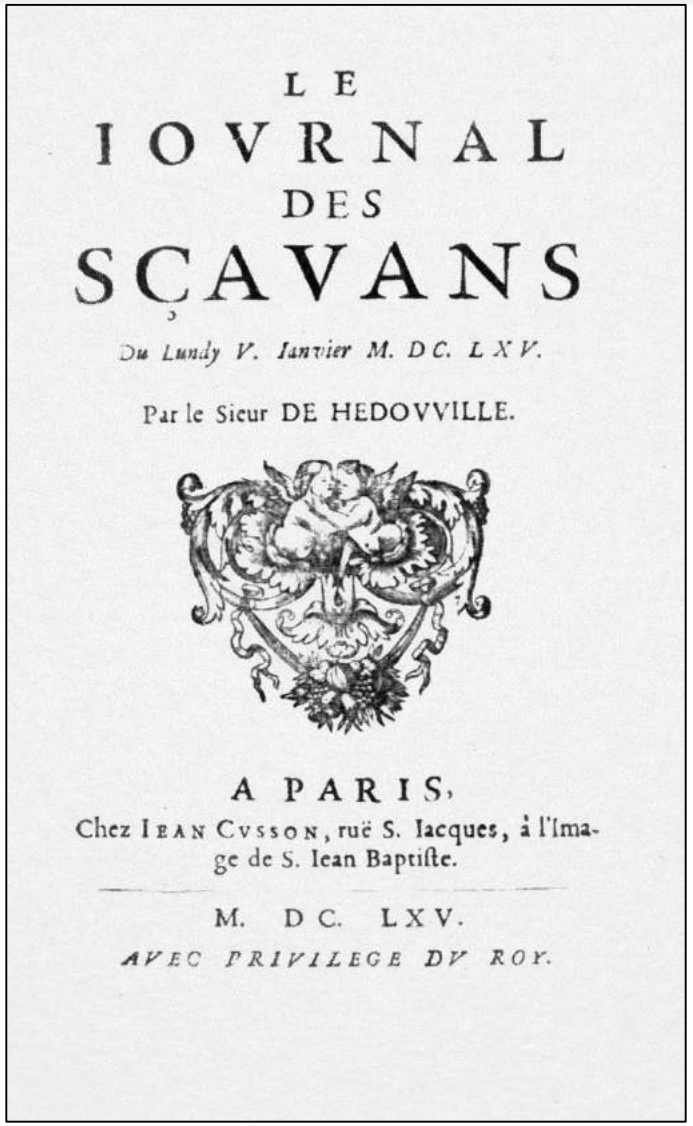


James Watson & Francis Crick (1953)
English biologists who discovered the double-helix structure of DNA. Both worked and taught at Cambridge University, UK. They presented their work at scientific meetings and published their research in scientific journals and would continue to do so throughout their careers. However, they have both written books to tell the full stories of their discoveries that cannot be captured in scientific journals.

2000 AD



LE
IOVRNAL
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Par le Sieur DE HEDOVVILLE.

A PARIS,
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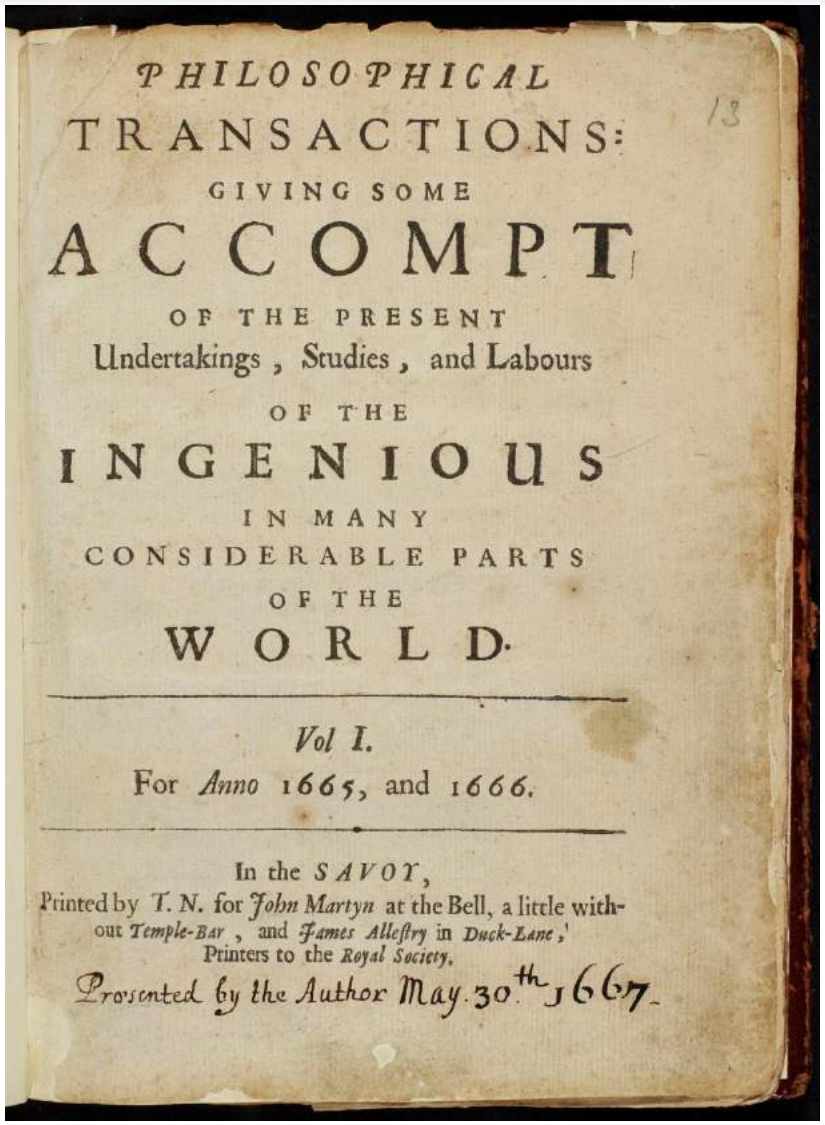

PHILOSOPHICAL
TRANSACTIONS:
GIVING SOME
ACCOMPT
OF THE PRESENT
Undertakings, Studies, and Labours
OF THE
INGENIOUS
IN MANY
CONSIDERABLE PARTS
OF THE
WORLD.

Vol I.
For *Anno* 1665, and 1666.

In the *SAVOY*,
Printed by *T. N.* for *John Martyn* at the Bell, a little without *Temple-Bar*, and *James Allestry* in *Duck-Lane*,
Printers to the *Royal Society*.
Presented by the Author May. 30th 1667.

06 marzo 1665
1665 →

THE

NEW ENGLAND JOURNAL

OF

MEDICINE AND SURGERY.

VOL. I.] JANUARY, 1812. [No. I.

REMARKS ON ANGINA PECTORIS.

BY JOHN WARREN, M. D.

In our inquiries into any particular subject of Medicine, our labours will generally be shortened and directed to their proper objects, by a knowledge of preceding discoveries.

When Dr. Heberden, in the London Medical Transactions, first described a disease under the name of Angina Pectoris, so little had it attracted the attention of physicians, that much surprise was excited by the communication. From the most striking and distressing symptoms, with which it was attended, pain and stricture about the breast, it received from him its denomination; and he soon after published farther remarks on this subject, with the history of a case and appearances on dissection.

That all the cases which this author had noticed as accompanied with affections of *a somewhat similar nature*, were instances of true Angina Pectoris, is by no means probable; for not less than one hundred of those were supposed by him to have fallen under his observation. Of those, three only were women, one a boy; all the rest were men, and about the age of fifty.

In the same work were communicated some observations on this disease made by Dr. Wall, who likewise added a case of dissection.

Dr. Fothergill, in the fifth volume of the London Medical Observations and Inquiries, 1774, published his remarks upon An-

NEJM - 1812

THE

BOSTON MEDICAL AND SURGICAL JOURNAL.

VOL. XLI. WEDNESDAY, JANUARY 2, 1850. No. 22.

DIVERSITIES OF HUMAN CHARACTER, AND DELICATE SHADES OF INSANITY—THEIR RELATION TO OFFENCES AND CRIMES.

A Lecture delivered at the Royal College of Physicians, in 1849, By JOHN CONOLLY, M.D., Physician to the Middlesex Lunatic Asylum at Hanwell.

When reflecting on the diversities of the human character, and the inequality of different mental faculties in different men, as manifested in their lives, we perceive that in some the inequality or peculiarity was such, that, although not accounted insane, they were really, to a great extent, of unsound minds all their lives. There have been monarchs, conquerors, judges, women, so cruel that it is impossible to doubt that a taint of madness existed in them. The horrible severities of our Judge Jeffreys were probably only the indications of actual madness, of which paroxysms were induced by his intemperate habits; but the activity of the intellectual faculties kept this man, and other scourges of mankind, from the wholesome seclusion and discipline which might have been serviceable.

The unfeeling eccentricities of Swift were but the earlier symptoms of the insanity which came at length fully upon him, and extinguished his remarkable intellect. Rousseau's eloquent words declare the infirmities of a highly-gifted mind from youth. When he grew older, his restless suspicions made all acknowledge that "he was frenzied"

"To that worst pitch of all, which wears a reasoning show."

And Byron himself, who applied these words to Rousseau, was so manifestly suffering during his whole life from the taint of ancestral faults, as to give bitter truth to his own repeated expressions, that his mind had often known the worst of trials.

There is no name in literature or morals to be pronounced with more grateful veneration than that of Johnson; yet his extraordinary oddities, his wild and singular habits, the difficulty with which he compelled his mind to its great labors, his excessive irascibility, his unmeasured rudeness, even his uncalculating benevolence, and numerous minor peculiarities, show, as some particular periods in his mental life actually declare, that with all his powers he was not at all times of sound mind. When only 20 years of age he was so afflicted with a morbid melancholy, as to be "almost overwhelmed with perpetual irritation, fretfulness and

NEJM - 1850

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Medical and Surgical Journal.

THURSDAY, JANUARY 4, 1900.

A Journal of Medicine, Surgery and Allied Sciences, published at Boston, weekly, by the undersigned.

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OUR ATTITUDE TOWARD INVESTIGATION.

There can be little doubt that the new century, and particularly its early years, is likely to witness changes of importance in medical education and matters pertaining thereto. The reforms have, in fact, already begun, and in all progressive institutions we may see, if we look, the introduction of new methods, the extension of the curriculum in various lines, and the gradual complete recognition of the claims of medicine to rank as an integral part of a university education. All these matters we have repeatedly had occasion to allude to in these columns during the past year, but the subject is certainly one which claims our repeated consideration. Evidently many new problems must arise before the new régime may be crystallized into definite and permanent form, if, in fact, that is ever possible, and in the meantime it is desirable to encourage discussion of the situation from all points of view.

We are glad, therefore, to notice that at the recent meeting of the American Society of Naturalists and Affiliated Societies a discussion was held regarding the position universities should take regarding investigation, and that the question of investigation in medicine received its share of attention.

The discussion was opened by Prof. Thomas Dwight, whose remarks we publish in this issue. It will be seen that Dr. Dwight is conservative; that he does not look with undisguised satisfaction on the encroachments of what is ordinarily called original investigation. He feels that the medical student should be a follower rather than an originator during the early years of his education, and that if he is destined later to investigate in new fields, he will surely do so, whatever his early training may have been. There can be no doubt, Dr. Dwight argues, that whatever the future may have in store, the medical school must still make practitioners of medicine, in the practical sense of the term, and that the best schools must not refuse to make the best practitioners. With this we are certainly in complete agreement, only we would not too sharply separate the spirit of learning from the spirit of investigating, as perhaps Dr. Dwight is inclined to do. We feel rather that the two attitudes are usually combined in good students everywhere, and that the great aim of the future, even in undergraduate medical education, must be to associate far more perfectly than we have yet done the claims of the spirit of investigation with those of the spirit of mere receptivity. This should be done in the student days and not after. What we need is a mean between the two extremes of originality and perfectly passive receptivity, and we are confident that a properly arranged course may be devised to bring out both of these attributes to the detriment of neither. To postpone all investigation to an indefinite future is, to our minds, as great an error as to urge its necessity on elementary students to the exclusion of fundamental knowledge at the very outset of their course. A compromise is most certainly both possible and desirable.

We can safely endorse what Dr. Dwight says about prizes and scholarships. As between prizes and scholarships or fellowships, the latter, it seems to us, are likely to be the more useful. There is no way in which a university may more profitably bestow its bounty than by making provision for promising students. A scholarship is a simple means to a perfectly definite end. The indiscriminate bestowal of prizes, on the other hand, establishes an entirely false standard and does little toward stimulating research or cultivating the spirit of true scholarship, an opinion which we have recently expressed.

MEDICAL MEETINGS AND MEDICAL PAPERS.

Some of us go to medical meetings; some of us write medical papers; a few of us do both, but a large proportion of us do neither. The reasons for these various attitudes of mind are no doubt very complex, and we have no desire to enter upon the task of analysis at this time. We should, however, like to call attention to a few palpable facts, which are constantly in danger of being ignored or forgotten. In the first place, papers which are admirable for publication are oftentimes most unsuitable to read at medical meetings. Medical meetings come usually in the evening; the audience is made up of men who have no doubt been busy during the day, and are hoping against hope that some slight recreation may attend their effort to be present at the meeting in question. They come possibly to learn something new, or to say something in discussion, but they do not come to be bored by detail or kept waiting for conclusions which might as easily be given at the end of fifteen minutes as at the end of an hour. Primarily, therefore, papers should be concise. If the attention of any considerable body of men is to be maintained, it is desirable that it be not taxed beyond half an hour. In this regard we have observed an improvement within the past few years; the tendency has grown at most of our societies to reduce the length of papers by special request to the writers, with a consequent gain in attendance.

NEJM - 1900

The New England
Journal of Medicine

Volume 242 JANUARY 5, 1950 Number 1

TWO-YEAR END-RESULTS IN THE TOTAL REHABILITATION OF VETERANS WITH SPINAL-CORD AND CAUDA-EQUINA INJURIES*

DONALD MUNRO, M.D.†

BOSTON

IN AN earlier paper the results obtained in paraplegic and paraparetic veterans after one year of definitive therapy under my direction at Cushing Veterans Administration Hospital, Framingham, Massachusetts, were summarized.[1] Certain comparisons were made with the results obtained in an even larger series of my patients from the Boston City Hospital, and certain minimal end results were suggested. Another year has now elapsed, and it is advisable to publish the two-year figures. Despite the information available since 1940, and despite the organized public demonstration of the possibilities of rehabilitation in these and other chronic invalids, there is virtually a complete ignorance among the medical profession in the United States of the fact that the large majority of paraplegic patients can be rehabilitated to the point of leading a normal social life and of successfully competing in industry with their nonparalyzed fellow workmen. This ignorance stems primarily from lack of personal experience along such lines and from the belief that the results cannot possibly be as good as they are painted. This is supported by the laissez faire attitude that goes with the refusal of hospitals with rapid patient turnover to accept such patients for prolonged treatment, and the unwillingness or inability of the doctor in charge to attend adequately to all the necessary daily details of therapy that, if neglected, prevent such recovery. The amount of hospital charges and the expense of needed consultations, of the multiplicity of x-ray examinations, of the splints and so forth are added deterrents. Finally, it is almost always the conviction of the patient, his family, his friends, his lawyer, his employer and his doctor that the victim is better off and less of a burden if he is dead. If, nevertheless he is kept alive, there is still the problem of where he can obtain adequate rehabilitation training. The few civilian rehabilitation centers like those in Canada and in New York City, Chicago, Boston and Medford are already overcrowded and may be at long distances from the home of the patient or not available to him because of his nationality. This acts as a further bar to adequate therapy.

For these and other reasons, including the fact that they are the most unfavorable group of paraplegic patients that could be found and studied, it seems worth while to report on the two-year results obtained in this group of veterans. The figures can then serve as a measure of the minimal service that every paraplegic patient would have the right to expect his doctor and his community to provide for him. An added advantage would also accrue in that it would be obligatory on the part of the doctor to explain, for example, why a given patient was discharged in a wheel chair without twenty-four-hour bladder and bowel control and without any job training whereas elsewhere another patient with like disease walked out of the hospital to a normal social life and the desire and opportunity to do gainful labor.

MATERIAL

The group reported herewith includes 228 patients admitted to Cushing Veterans Administration Hospital in Framingham, Massachusetts, between October 1, 1946, and October 2, 1948, for treatment of paralysis resulting from injuries to the spinal cord and cauda equina. One hundred and seventy-eight patients were discharged from the hospital during this period. Seven others who had received maximum hospital benefit were not discharged but are still being boarded because of housing difficulties.

CLASSIFICATION ACCORDING TO PATHOLOGY AND LEVEL OF INJURY

The severity of injury in this group as compared with a group of similar civilian patients is emphasized by the data contained in Tables 1 and 2. Table 1

*From the Paraplegic Service, Cushing Veterans Administration Hospital, Framingham, Massachusetts, and the Neurosurgical Department, Boston City Hospital, Boston, Mass.

The opinions expressed and the conclusions drawn are those of the author and not necessarily of the Veterans Administration.

Presented in summary before the Harvey Cushing Society, New Haven, Connecticut, June 4, 1949, and the Society of Military Surgeons, Washington, D. C., November 11, 1949.

†Assistant professor of neurosurgery, Harvard Medical School; associate professor of neurosurgery, Boston University School of Medicine; chief, Department of Neurosurgery, Boston City Hospital.

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VOLUME 342 JANUARY 6, 2000 NUMBER 1

THE RELATION BETWEEN BLOOD PRESSURE AND MORTALITY DUE TO CORONARY HEART DISEASE AMONG MEN IN DIFFERENT PARTS OF THE WORLD

PEGGY C.W. VAN DEN HOOGEN, M.Sc., EDITH J.M. FESKENS, PH.D., NICO J.D. NAGELKERKE, PH.D., ALESSANDRO MENOTTI, PH.D., M.D., AULIKKI NISSINEN, PH.D., M.D., AND DAAN KROMHOUT, PH.D., M.P.H., FOR THE SEVEN COUNTRIES STUDY RESEARCH GROUP

ABSTRACT

Background Elevated blood pressure is known to be a risk factor for death from coronary heart disease (CHD). However, it is unclear whether the risk of death from CHD in relation to blood pressure varies among populations.

Methods In six populations in different parts of the world, we examined systolic and diastolic blood pressures and hypertension in relation to long-term mortality from CHD, both with and without adjustment for variability in blood pressure within individual subjects. Blood pressure was measured at base line in 12,031 men (age range, 40 to 59 years) who were free of CHD. During 25 years of follow-up, 1291 men died from CHD.

Results At systolic and diastolic blood pressures of about 140 and 85 mm Hg, respectively, 25-year rates of mortality from CHD (standardized for age) varied by a factor of more than three among the populations. Rates in the United States and northern Europe were high (approximately 70 deaths per 10,000 person-years), but rates in Japan and Mediterranean southern Europe were low (approximately 20 deaths per 10,000 person-years). However, the relative increase in 25-year mortality from CHD for a given increase in blood pressure was similar among the populations. The overall unadjusted relative risk of death due to CHD was 1.17 (95 percent confidence interval, 1.14 to 1.20) per 10 mm Hg increase in systolic pressure and 1.13 (95 percent confidence interval, 1.10 to 1.15) per 5 mm Hg increase in diastolic pressure, and it was 1.28 for each of these increments after adjustment for within-subject variability in blood pressure.

Conclusions Among the six populations we studied, the relative increase in long-term mortality due to CHD for a given increase in blood pressure is similar, whereas the absolute risk at the same level of blood pressure varies substantially. These findings may have implications for antihypertensive therapy in different parts of the world. (N Engl J Med 2000;342:1-8.)

BLOOD pressure is directly related to mortality from coronary heart disease (CHD),[1-4] and previous results from the Seven Countries Study have suggested that the relative increase in mortality from CHD for a given increase in blood pressure is similar among different populations.[5] In the current investigation, we further explored this relation by investigating whether the relative risk of death due to CHD in relation to systolic and diastolic blood pressures and hypertension is similar among different populations. Because absolute risks are more important than relative risks from the perspective of public health and treatment, we also compared the absolute risk of death due to CHD at a given level of blood pressure among different populations.

Since an individual person's blood pressure can vary substantially, a single measurement will not accurately represent a person's average, or usual, blood-pressure level. When single measurements of blood pressure are used at base line, results with respect to the effect of blood pressure on the risk of death will be biased.[1,6] In our investigation, data from repeated measurements of blood pressure were available for use in examining the effects of within-subject variability.

METHODS

Study Populations

Between 1958 and 1964, 12,761 men 40 to 59 years old who resided in seven countries were enrolled in the study.[7] A total of 16 cohorts were included in the United States, Finland (eastern and western), the Netherlands (Zutphen), Italy (Rome, Crevalcore, and

From the Department of Chronic Diseases Epidemiology, National Institute of Public Health and the Environment, Bilthoven, the Netherlands (P.C.W.H., E.J.M.F., N.J.D.N., D.K.); the Netherlands Institute for Health Sciences, Rotterdam (P.C.W.H.); the Division of Epidemiology, School of Public Health, University of Minnesota, Minneapolis (A.M.); and the Department of Public Health and General Practice, University of Kuopio, Kuopio, Finland (A.N.). Address reprint requests to Dr. Kromhout at the National Institute of Public Health and the Environment, P.O. Box 1, 3720 BA Bilthoven, the Netherlands, or to Dr. van den Hoogen at peggy.van.den.hoogen@rivm.nl.

NEJM - 2000

The NEW ENGLAND JOURNAL of MEDICINE

ORIGINAL ARTICLE

Tafamidis Treatment for Patients with Transthyretin Amyloid Cardiomyopathy

Mathew S. Maurer, M.D., Jeffrey H. Schwartz, Ph.D., Balarama Gundapaneni, M.S., Perry M. Elliott, M.D., Giampaolo Merlini, M.D., Ph.D., Marcia Waddington-Cruz, M.D., Arnt V. Kristen, M.D., Martha Grogan, M.D., Ronald Witteles, M.D., Thibaud Damy, M.D., Ph.D., Brian M. Drachman, M.D., Sanjiv J. Shah, M.D., Mazen Hanna, M.D., Daniel P. Judge, M.D., Alexandra I. Barsdorf, Ph.D., Peter Huber, R.Ph., Terrell A. Patterson, Ph.D., Steven Riley, Pharm.D., Ph.D., Jennifer Schumacher, Ph.D., Michelle Stewart, Ph.D., Marla B. Sultan, M.D., M.B.A., and Claudio Rapezzi, M.D., for the ATTR-ACT Study Investigators*

ABSTRACT

BACKGROUND

Transthyretin amyloid cardiomyopathy is caused by the deposition of transthyretin amyloid fibrils in the myocardium. The deposition occurs when wild-type or variant transthyretin becomes unstable and misfolds. Tafamidis binds to transthyretin, preventing tetramer dissociation and amyloidogenesis.

METHODS

In a multicenter, international, double-blind, placebo-controlled, phase 3 trial, we randomly assigned 441 patients with transthyretin amyloid cardiomyopathy in a 2:1:2 ratio to receive 80 mg of tafamidis, 20 mg of tafamidis, or placebo for 30 months. In the primary analysis, we hierarchically assessed all-cause mortality, followed by frequency of cardiovascular-related hospitalizations according to the Finkelstein–Schoenfeld method. Key secondary end points were the change from baseline to month 30 for the 6-minute walk test and the score on the Kansas City Cardiomyopathy Questionnaire–Overall Summary (KCCQ-OS), in which higher scores indicate better health status.

RESULTS

In the primary analysis, all-cause mortality and rates of cardiovascular-related hospitalizations were lower among the 264 patients who received tafamidis than among the 177 patients who received placebo (P<0.001). Tafamidis was associated with lower all-cause mortality than placebo (78 of 264 [29.5%] vs. 76 of 177 [42.9%]; hazard ratio, 0.70; 95% confidence interval [CI], 0.51 to 0.96) and a lower rate of cardiovascular-related hospitalizations, with a relative risk ratio of 0.68 (0.48 per year vs. 0.70 per year; 95% CI, 0.56 to 0.81). At month 30, tafamidis was also associated with a lower rate of decline in distance for the 6-minute walk test (P<0.001) and a lower rate of decline in KCCQ-OS score (P<0.001). The incidence and types of adverse events were similar in the two groups.

CONCLUSIONS

In patients with transthyretin amyloid cardiomyopathy, tafamidis was associated with reductions in all-cause mortality and cardiovascular-related hospitalizations and reduced the decline in functional capacity and quality of life as compared with placebo. (Funded by Pfizer; ATTR-ACT ClinicalTrials.gov number, NCT01994889.)

The authors' affiliations are listed in the Appendix. Address reprint requests to Dr. Maurer at Columbia University Irving Medical Center, 622 W. 168th St., PH 12 Stem Rm. 134, New York, NY 10032, or at msm10@cumc.columbia.edu.

*The complete list of the ATTR-ACT Study Investigators is provided in the Supplementary Appendix, available at NEJM.org.

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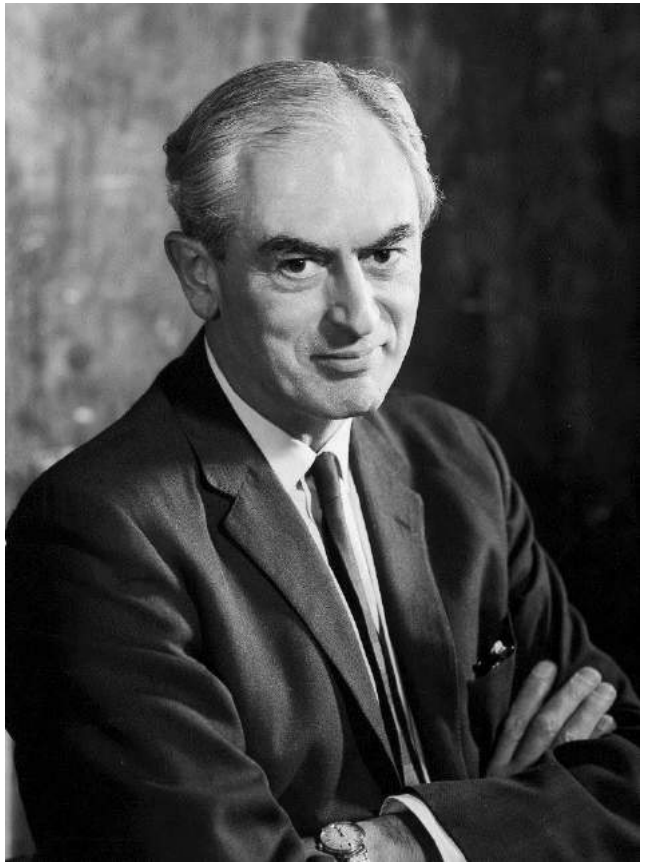
NEJM - 2018

Sobre la escritura de un artículo científico:

“El debido homenaje y justicia a los propios predecesores son normas que se deben tomar en cuenta…”



Medawar PB. Consejos a un joven científico. México, DF: Fondo de Cultura Económica; 1996.

Relevancia de la historia de la ciencia en el quehacer del investigador: implicancias para la publicación

Dr. César Gutiérrez Villafuerte
cesar.gutierrez@udep.pe

Universidad de Piura
Facultad de Medicina