UBVA symposium: *Hvad er god forskning? Og hvordan skal vi måle det?*

Hovedpositioner i citationsdebatten

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Citationer = kvalitet/impact?

- Det normative synspunkt
- Det konstruktivistiske synspunkt
- Gennemsnitsmantraet

Det normative synspunkt

- *Standing on the shoulders of giants*
- *Giving credit where credit is due*

- Den neutrale forsker

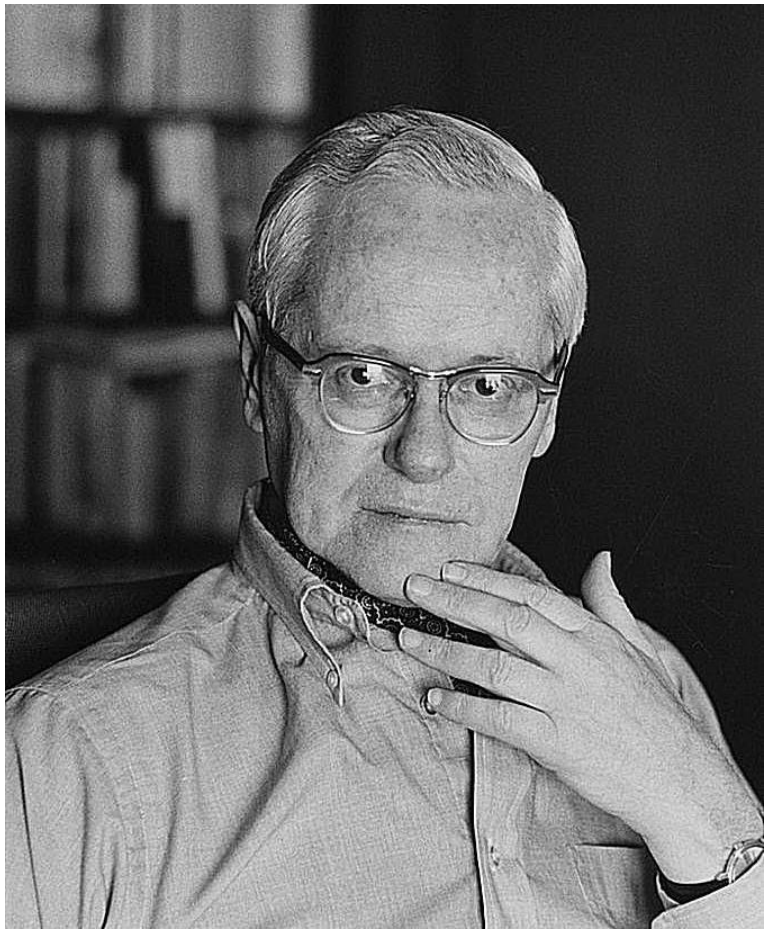
- Citationer er udtryk for brug
- Man citerer det bedst mulige
- Citerende/citerede dokument er emnemæssigt beslægtet

- Citationer = Kvalitet/impact

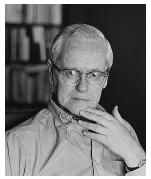
Robert K. Merton (1910-2003)

Universalism

Universalism[5] finds immediate expression in the canon that truth-claims, whatever their source, are to be subjected to *preestablished impersonal criteria*: consonant with observation and with previously confirmed knowledge. The acceptance or rejection of claims entering the lists of science is not to depend on the personal or social attributes of their protagonist; his race, nationality, religion, class, and personal qualities are as such irrelevant. Objectivity precludes particularism. The circumstance that scientifically verified formulations refer in that specific sense to objective sequences and correlations militates against all efforts to impose particularistic criteria of validity. The Haber process cannot be invalidated by a Nuremberg decree nor can an Anglophobe repeal the law of gravitation. The chauvinist may expunge the names of alien scientists from historical textbooks but their formulations remain indispensable to science and technology. However *echt-deutsch* or hundred-percent American the final increment, some aliens are accessories before the fact of every new scientific advance. The imperative of universalism is rooted deep in the impersonal character of science.



Merton, R.K. ([1942] 1973). The normative structure of science. In: Merton, R.K. (ed.), *The Sociology of Science: Theoretical and Empirical Investigations.* Chicago, IL: University of Chicago Press: 267-278.

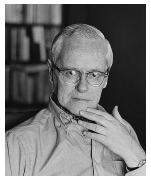


Robert K. Merton (1910-2003)

SOCIALLY ORGANIZED SKEPTICISM

Having long ago identified this technical and moral norm embedded in the culture and the social structure of science (Merton [1942] 1973:267-78;339-40), I can only applaud SSS's manifest adherence to it. The term and concept, *socially organized skepticism*, refers to institutionalized arrangements for the critical scrutiny of knowledge claims in science and learning that operate without depending on the happenstance skeptical bent of this or that individual. The process of socialization in the culture of science joins with such social arrangements as published and unpublished "peer review" that serve as agencies of social control which see to it, among other things, that authors generally abide by the norm of indicating their predecessors and sources.

Merton, R.K. (1995).The Thomas theorem and the Matthew effect. *Social Forces, 74*(2), pp. 379-424.



Robert K. Merton (1910-2003)

on pain of sanctions and, insofar as the norm has been internalized, on pain of psychological conflict.

The virtual absence of fraud in the annals of science, which appears exceptional when compared with the record of other spheres of activity, has at times been attributed to the personal qualities of scientists. By im-

Merton, R.K. ([1942] 1973). The normative structure of science. In: Merton, R.K. (ed.), *The Sociology of Science: Theoretical and Empirical Investigations.* Chicago, IL: University of Chicago Press: 267-278.

PRIORITIES IN SCIENTIFIC DISCOVERY

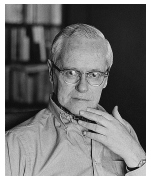
suicide.[56] Most recently, the Piltdown man —that is, the skull and jaw from which his existence was inferred—has been shown, after forty years of uneasy acceptance, to be a carefully contrived hoax.[57]

Excessive concern with "success" in scientific work has on occasion led to the types of fraud Babbage picturesquely described as "trimming" and "cooking." The trimmer clips off "little bits here and there from observations which differ most in excess from the mean, and [sticks] . . . them on to those which are too small . . . [for the unallowable purpose of] 'equitable adjustment.' " The cook makes "multitudes of observations" and selects only those which agree with an hypothesis and, as Babbage

the medical scientist of the greatest distinction who told me that during his graduate fellowship at one of the great English universities he encountered for the first time the idea that in scientific work one should be really honest in reporting the results of his experiments. Before that time he had always been told and had quite naturally assumed that the point was to get his observations and theories accepted by others, and published.[59]

Yet, these deviant practices should be seen in perspective. What evidence there is suggests that they are extremely infrequent, and this temporary focus upon them will surely not be distorted into regarding the exceptional case as the typical. Apart from the moral integrity of scientists themselves and this is of course the major basis for

Merton, R.K. ([1957] 1973). Priorities in scientific discovery. In: Merton, R.K. (ed.), *The Sociology of Science: Theoretical and Empirical Investigations.* Chicago, IL: University of Chicago Press: 286-324.



Robert K. Merton (1910-2003)

Norms and Behavior in Science

Contributing to the substitution of sentiment for analysis is the often painful contrast between the actual behavior of scientists and the behavior ideally prescribed for them. When confronted with the fact that their dis-

Merton, R.K. ([1963] 1973). The ambivalence of scientists. In: Merton, R.K. (ed.), *The Sociology of Science: Theoretical and Empirical Investigations.* Chicago, IL: University of Chicago Press: 383-412.

Det konstruktivistiske synspunkt

- Opgøret med den neutrale forsker
- Videnskab er et socialt fænomen - alle aspekter af videnskab må derfor kunne studeres og forklares på baggrund af sociale faktorer
- Forskningsprocessen er en forhandlingsproces – den bedste forhandler ender med at få ret
- Alle kneb gælder – alle kneb bliver brugt
- Citationer ≠ Kvalitet/impact

Bruno Latour (1947-2022)
Steve Woolgar

Science is “the art of persuasion”. In science, the successful are those, who most skillfully manage to persuade others that they are not just being persuaded, “that no mediations intercede between what is said and the truth”.

Latour, B. & Woolgar, S. (1986). *Laboratory Life: The Construction of Scientific Facts.* Princeton, NJ: Princeton University Press.

Bruno Latour (1947-2022)

> First, many references may be misquoted or wrong; second, many of the articles alluded to might have no bearing whatsoever on the claim and might be there just for display.

Latour, B. (1987). Science in Action. Cambridge, MA: Harvard University Press.

Nigel Gilbert

Authors preparing papers will tend to cite the 'important and correct' papers, may cite 'erroneous' papers in order to challenge them and will avoid citing the 'trivial' and 'irrelevant' ones. Indeed, respected papers may be cited in order to shine in their reflected glory even if they do not seem closely related to the substantive content of the report.

Gilbert, G.N. (1977). Referencing as persuasion. Social Studies of Science, 7: 113-122.

Howard White

As soon as one examines the case for dark persuasion, it falls apart. Its basic claim is that the entire system of citation is (perhaps amusingly) corrupt. The constructivists take this position without producing even anecdotal evidence for it. They can do this because they write essentially as satirists, relying on every academic's stock of cynicism for assent. **But they give no hard data.**

White. H.D. (2009). Letter to the editors. *Learned Publishing*, Vol. 22, pp. 253-254.

Harriet Zuckerman

Citations received by items cited one or more times in the 1975-1979 cumulated SCI.

≥ 1	10.641.000	100,00%
≥ 2	3.874.000	36,00%
≥ 5	1.531.000	14,00%
≥ 10	670.000	6,30%
≥ 17	313.000	3,00%
≥ 25	155.000	1,50%
≥ 51	44.000	0,40%
≥ 101	10.500	0,10%

Zuckerman, H. (1987). Citation analysis and the complex problem of intellectual influence. *Scientometrics,12*(5-6): 329-338.

Hard data

Baldi, S. (1998). Normative versus social constructivist processes in the allocation of citations: A network-analytic model. *American Sociological Review, 63*: 829-846.

Case, D.O. & Higgins, G.M. (2000). How can we investigate citation behavior?: A study of reasons for citing literature in communication. *Journal of the American Society for Information Science, 51*(4): 635-645.

Frandsen, T.F. and Nicolaisen, J. (2017). Citation behavior: a large-scale test of the persuasion by name-dropping hypothesis. *Journal of the Association for Information Science and Technology, 68*(5): 1278-1284.

Moed, H.F. and Garfield, E. (2004). In basic science the percentage of 'authoritative' references decreases as bibliographies become shorter. *Scientometrics, 60*(3): 295-303.

Nicolaisen, J. and Frandsen, T.F. (2021). Acting hot or not?: Testing the citing to show-off hypothesis. *Journal of Documentation, 77*(2): 461-478.

Shadish, W.R. et al. (1995). Author judgement about works they cite: Three studies from psychology journals. *Social Studies of Science, 25*: 477-498.

Stewart, J.A. (1983). Achievement and ascriptive processes in the recognition of scientific articles. *Social Forces*, *62*: 166–189.

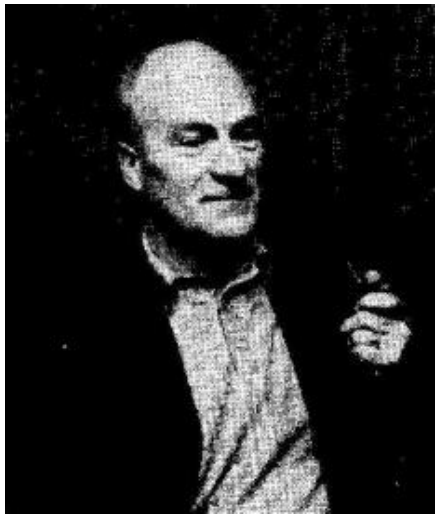
Van Dalen, H.P., and Henkens, K. (2001). What makes a scientific article influential? The case of demographers. *Scientometrics*, 50(3): 455–482.

White, H.D. (2004). Reward, persuasion, and the Sokal hoax: a study in citation identities. *Scientometrics*, 60(1): 93–120.

Gennemsnitsmantraet

- Forfattere citerer korrekt ofte nok
- De store tals lov
- Citationsanalyse er et gyldigt værktøj til forskningsevaluering
  - Brugt med omtanke
  - Udført på tilstrækkeligt store datamængder

Gennemsnitsmantraet



Citation anomalies [in sence of excessive self-citations, plagiarism of references, careless or omitted references etc.] have little effect - they are like random noise in the presence of strong repetitive signals.

Cawkell, A.E. (1976). Understanding science by analysing its literature. *The Information Scientist,, 10*(1): 3-10.

Gennemsnitsmantraet

Even if all papers would to a large extent (but not completely) cite in an arbitrary way, it would still be possible to detect valid patterns in the citations, if a sufficiently large number of papers would be sampled.

Nederhof, A.J. & Van Raan, A.F.J. (1987). Citation theory and the Ortega hypothesis. *Scientometrics, 12*(5-6): 325-328.

Gennemsnitsmantraet

The issue is not whether we can rely on reference lists in individual cases as complete sets of influences (we cannot), but rather whether references can be used statistically, in the aggregate, as an indicator of influence.

Small, H. (1987). The significance of bibliographic references. *Scientometrics, 12*(5-6): 339-341.

Gennemsnitsmantraet

Citation analysts assume that the biases and deficiencies of individual citers are repaired to a tolerable degree by the combined activity of the many.

White, H.D. (2001). Authors as citers over time. *Journal of the American Society for Information Science and Technology, 52*(2): 87-108.

Gennemsnitsmantraet

Why not believe that there is a norm of citing – straightforward acknowledgement of related documents – and that the great majority of citations conform to it?

White, H.D. (1990). Author co-citation analysis: Overview and defence. In: Borgman, C.L. (ed.), *Scholarly Communication and Bibliometrics.* Newbury Park, CA: Sage: 84-106.

Læs mere

Nicolaisen, J. (2007). Citation analysis. *Annual Review of Information Science and Technology, 41*: 609–641.