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Research trends



# Does a Nobel Prize lead to more citations?

SARAH HUGGETT

A Nobel Prize is considered by most as the pinnacle of scientific achievement, but does winning a Nobel Prize have any effect on the citations received by individual researchers?

For instance, it has been noted that citations can be used to indicate potential future Nobel Laureates (1, 2). Eugene Garfield’s research group found that among the 50 most highly cited primary authors in the Science Citation Index of 1967, six had already won the Nobel Prize and eight others went on to win. In addition, among the 50 most-cited authors in economics between 1966 and 1986, 15 had already won a Nobel Prize and two others received it between 1987 and 1991. However, while this indicates the power of citation analysis to forecast Nobel Prize winners, does it work the other way round: can Nobel Prizes indicate future citations?

Research Trends extracted the publication records of the winners of the 2000–2004 prizes in Chemistry, Economic Sciences, Physics, and Physiology or Medicine from Scopus. Annual 1996–2009 citations to this dataset, comprising more than 10,000 records, were then exported. Finally, the citations were matched by the year the Prizes were awarded to allow the data before and after the Prize to be compared (see Figures 1 and 2).

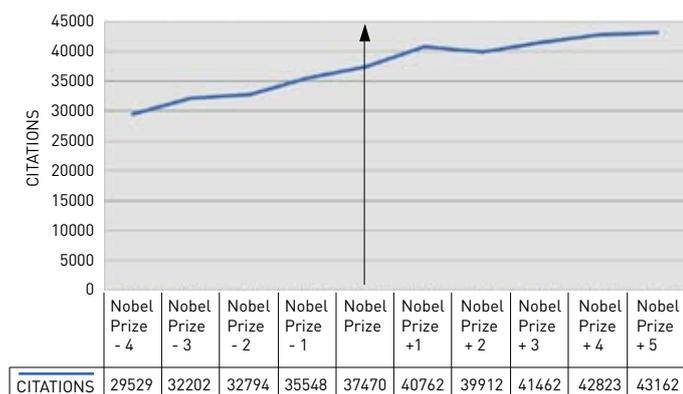


Figure 1 – Annual citations received by papers published by 2000-2004 Nobel Prize winners four years before receiving the prize and five years afterwards. Source: Scopus.

These analyses reveal no particularly large shift in citation rates between the “before Nobel” versus “after Nobel” time periods, which makes sense, as the prizes are usually received many years after the award-winning research has been published. Control analyses performed for eminent scientists who did not

win a Nobel Prize but achieved excellence in related research areas confirmed that perceived increases in citation rates (e.g. for Chemistry) could not be directly attributed to the Nobel Prize.

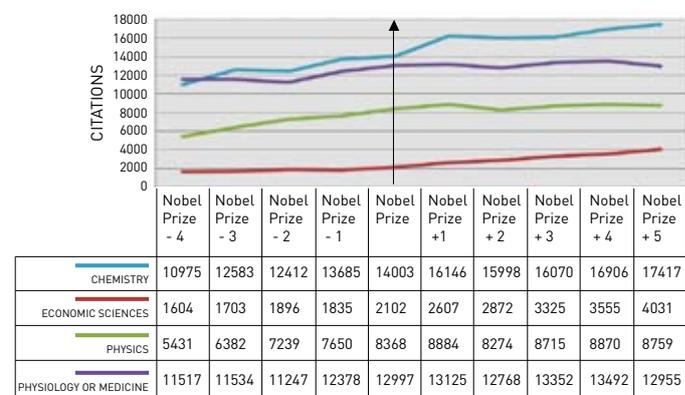


Figure 2 – Annual citations received by papers published by 2000-2004 Nobel Prize winners, by subject area, four years before receiving the prize and five years afterwards. Source: Scopus.



Professor Wolfgang Ketterle

Life goes on...

This apparent absence of effect of Nobel Prizes on citations was consistent with the observations of the recipients themselves.

Professor Wolfgang Ketterle, winner of the 2001 Physics Prize for achievement of Bose-Einstein condensation in dilute gases of alkali atoms and for early fundamental studies of the properties of the condensates, says: “In my case, the Nobel Prize has not changed my career or publication record in any major way. I was fortunate that my work received very good attention and funding before the Nobel Prize. Probably, the Nobel Prize made it easier to maintain this.”

Professor Kurt Wüthrich, 2002 Chemistry prizewinner for the development of nuclear magnetic resonance spectroscopy for determining the three-dimensional structure of biological macromolecules in solution, made the following observations: “In my case, the Nobel Prize came just three years before mandatory retirement age. This coincided with a change in

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Professor Kurt Wüthrich

government policy in Switzerland, allowing people who wished to carry on working to extend their employment beyond the age of 65 [...] I published rather a bit less afterwards, but not by much. My citation rate went up for a couple of years after the Prize, and is now back at the level it was before winning the Prize. [...] It certainly made it easier for me to establish collaborations I was interested in.

[...] When it comes to publication and peer review, I notice that our papers are being read extremely carefully and we very often get really detailed reports on our papers that are longer than the papers themselves."



Professor Peter Agre

Professor Peter Agre, 2003 Chemistry prizewinner for the discovery of membrane water channels, reports: "[It] was both exhilarating and draining. Basically, our work was already pretty well regarded, but the expectations after the Nobel became unrealistic. The family dog didn't love me more than before, but my many friends and colleagues were jubilant. Our funding and publication record did

not change. It was ironic that prior to the Nobel, the only NIH application of ours that had been rejected was the one where we proposed the work that led to the water channel! I guess we were ahead of our time."

## References:

- [1] Garfield, E. and Welljams-Dorof, A. [1992a] "Of Nobel class: A citation perspective on high impact research authors", *Theoretical Medicine*, Vol. 13, pp. 118-126.
- [2] Garfield, E. and Welljams-Dorof, A. [1992b] "Of Nobel class: A citation perspective on high impact research authors [Part 2]", *Theoretical Medicine*, Vol. 13, pp. 128-136.