

Even science Nobel Laureates find acceptance isn't a given, study finds

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The path of success for Nobel Prize laureates in the sciences isn't a straight shot from obscurity to never-ending scientific superstardom, a new study reveals.

Instead, many laureates see their Nobel-winning idea grow in acceptance from their first related scientific article to their most successful publication. But their later work related to the Nobel idea gains less acceptance, and many times is no more accepted by the scientific community than their very first efforts.

"In many cases, we found that Nobel laureates' final publication on their idea that won the Prize was lowest in our measures of acceptance," said Christine Charyton, who led the study as a visiting assistant professor and lecturer in psychology at Ohio State University.

"While their work is still successful, laureates find their later work doesn't get the same level of attention and acceptance as their earlier work." Charyton said.

However, there are exceptions, and the path to idea acceptance differs for laureates in physics when compared to those in chemistry and medicine, the researchers found.

In conducting the study, Charyton mentored Samantha DeDios, who did the work for her senior honors thesis at Ohio State. Thomas Nygren, professor of psychology at Ohio State, also advised DeDios on the

research.

They presented their work during a session on scientific approaches to creativity Aug. 6 at the annual convention of the [American Psychological Association](#) in Washington, D.C.

The purpose of the study was to find out how creative ideas in the sciences become accepted in their fields, said Charyton, who teaches the psychology of creativity at Ohio State.

"Even Nobel Prize-winning ideas take a long time to get accepted and the acceptance does not remain stable," Charyton said.

The study involved 204 Nobel laureates from 1980 to 2009 in physics, chemistry and medicine. In order to evaluate the acceptance of the laureates' prize-winning ideas, the researchers measured the effect of the articles that the laureates published in scientific journals. Journal articles are the major way in which scientific findings are disseminated.

By measuring how much of an influence these articles had within their scientific disciplines, the researchers could determine how much they had been accepted.

The researchers used several different measures regarding the effect of research publications. For example, one measure was how many times the article was cited by other scientists in their publications. This reflects how well-known a particular publication is among the scientific community.

Another measure was the "impact factor" of the journals that published the laureates' articles. This is a statistical formula that measures the importance or influence of a particular journal at a particular time.

The researchers looked at three key publications in the laureates' careers: the first publication concerning the idea that won them a Nobel Prize; the highest-cited publication concerning their Nobel idea; and the last publication concerning their Nobel idea.

Using several publicly available databases, including the ISI Web of Science and Journal Citation Reports, the researchers were able to see how these three publications of each laureate fared on the measurements.

Overall, the findings showed that, on many measures, Nobel laureates' most highly cited publication was indeed more accepted than their first publication.

Surprisingly, though, the Nobel laureates' first publication was almost always more accepted than their final publication involving the Nobel-winning idea, except for physicists. That suggests the glow of scientific acceptance that occurs after winning a Nobel Prize doesn't always extend to their later career.

The researchers don't know for sure why the last paper was less accepted than the first, but there are several possible reasons.

For one, the more prestigious journals may not want to publish more articles on the Nobel winning idea, figuring the new work is too related to what has already been published. Another possibility is that their last paper may have diverged too much from their original prize-winning idea.

"If the last paper diverges enough from the original idea, it may be seen as a novel idea again, and it will take some time to become accepted," DeDios said.

But the researchers cautioned that these are just possibilities, and more work is needed to determine why the final paper gets less acceptance.

They did find some differences in the path to acceptance in the three fields studied. In general, the impact factor measure showed that the physics laureates' publications were in less prestigious journals compared to those in medicine and chemistry, suggesting that the physics domain is more specialized and less accessible to the public. That may reflect differences in the scientific culture of physics compared to those in medicine and chemistry. For example, in recent years scientific journals have become less important in physics because more researchers are publishing online rather than in traditional journals.

The researchers did find that the first Nobel publication of physics laureates had a lower impact than their last Nobel-idea publication, which was opposite from those in chemistry and medicine.

Still, Nygren said he was struck by the similarities in the path to scientific acceptance taken by laureates in all three fields.

"It would be interesting to apply these tests in other fields, such as economics, but based on these findings I would suspect we would find very similar results," Nygren said.

Provided by The Ohio State University

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