

# Psychology and the Nobel Prize \*

## Psicología y el premio nobel

Received: 06 June 2016 | Accepted: 15 July 2016

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### ABSTRACT

The Nobel Prize is considered the utmost global recognition bestowed upon a scientist, writer, or peace promoter. The Nobel Prizes have been granted since 1901 in the fields of Physics, Chemistry, Physiology or Medicine, Literature, and Peace. Later on, in 1969, the Prize in Economic Sciences was established. A Nobel Prize in psychology does not exist, nor is there one in mathematics, ecology, or other disciplines. Nevertheless, a great number of psychologists have received the award. The discussion about who can be considered a psychologist is determined by three categories: (1) the person that received an undergraduate degree in psychology, (2) a person that holds a Ph.D. in psychology, and (3) someone trained in a discipline different from psychology whose contributions are of great relevance to this field. Presented here is a brief biography of some of the psychologists (in any of the three categories) that have received the Nobel Prize. It is also indicated that there are other somewhat similar awards received by psychologists, such as the ones bestowed by the APA, the IUPsyS, and the Grawemeyer Prize in Psychology. It is possible in the future that more psychologists will receive the Nobel Prize in one of its categories.

### Keywords

Nobel Prizes, laureates, psychology.

### RESUMEN

El Premio Nobel es considerado como el máximo reconocimiento a nivel mundial que puede recibir un científico, un escritor o un promotor de la paz. Los Premios Nobel se otorgan desde 1901, en los campos de la física, química, fisiología o medicina, literatura y paz. Más adelante en 1969 se creó el Premio Nobel en ciencias económicas. No existe un Premio Nobel en psicología y tampoco en matemáticas, ecología y otras disciplinas. Sin embargo, un cierto número de psicólogos ha recibido el Premio Nobel. Se discute acerca de quién puede definirse como psicólogo y se presentan tres categorías: (1) una persona que recibió una formación de pregrado en psicología, (2) una que recibió un Ph.D. en psicología, (3) alguien que realizó contribuciones de gran relevancia a la psicología aunque su entrenamiento haya sido en otra disciplina. Se presenta una breve sinopsis de la vida y obra de algunos de los psicólogos (de cualquiera de las tres categorías) que han recibido el Premio Nobel. Se indica que existen otros premios relativamente similares como los que otorga la IUPsyS, la APA y el Premio Grawemeyer en Psicología. Es posible que en el futuro más psicólogos reciban el Premio Nobel en alguna de sus categorías.

### Palabras clave

Premio Nobel; galardonados; psicología

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## Introduction

When Alfred Nobel died in 1896, psychology was in its early stage as a science and as a discipline. The earliest Experimental Psychology Laboratory (Institute) was founded in Leipzig University in 1879 and the First International Congress of (Physiological) Psychology took place in Paris in 1889, both under the leadership of Th. Ribot. The APA was founded in 1892. However, psychology, in spite of its long past, had a short history and was taking its first steps as a specific area of knowledge.

Alfred Nobel (1833-1896) was a Swedish chemical engineer that had a great influence in his country, Europe, and the world. He invented dynamite, and ballistite, among other things, and he was a great entrepreneur. During his last years, he established the Prizes that honor his name and were given for the first time in 1901. In his will (1895) he stipulated the creation of the Foundation that bears his name and explicitly presented the creation of such awards, the way that the candidates should be chosen, the objective of each award, etc. Nobel created the prizes in Physics, Chemistry, Literature, and Medicine or Physiology that the Royal Swedish Academy of Sciences grants, and the Peace Prize, which is chosen by the Norwegian Nobel Committee, elected by the Norwegian Parliament. The Literature Prize has the approval of several academicians.

In 1969 the Nobel Prize in Economic Sciences was created by the Bank of Sweden. However, there is not a Nobel Prize in Mathematics or Psychology. In the first case, the mathematicians created the Fields Medal, awarded for the first time in 1936, which that discipline considers as equivalent to the Nobel Prize. Other important prizes in mathematics are the Turing Award and the Abel Award. As for the case of psychology, the most similar to the Nobel Prize Award is the Grawemeyer Prize that was created in 1985 and has been granted in psychology since the year 2000. Among the psychologists awarded this are Albert Bandura, Anne Treisman, Michael Posner, Aaron Beck, and Elizabeth Loftus. Two psychologists that have received both awards, the

Grawemeyer Prize and the Nobel Prize, are John O'Keefe and Daniel Kahneman. There are other important prizes for psychologists, among them the prizes awarded by the APA and the IUPsyS.

Many other disciplines have been left out of the Nobel Prizes due in part to the preference of its creator Alfred Nobel for certain areas of knowledge, and in part for the relatively low visibility of the area when the prizes were created (Pickren, 2003). The Prize in Economic Sciences is the only one added to the initial five. Nowadays, the Nobel Prize is considered the maximum recognition in the world bestowed upon a scientist, a writer, or a peace advocate. It has been proposed to create prizes in disciplines such as ecology or psychology, but the Nobel Committee considers that the number should not be augmented ceaselessly. The possibility of a Nobel Prize in Behavioral Sciences or a Nobel Prize in Cognitive Sciences has been considered, but it seems this attempt is not going to bear fruit.

In spite of not having a Nobel Prize in Psychology, several psychologists have received the Nobel Prize in Physiology or Medicine, others in Economics, and even in Literature.

Wilhelm Wundt was nominated three times for the Nobel Prize in Physiology or Medicine, the last time he was proposed by Hugo Münsterberg in 1915. Also, Sigmund Freud was nominated eleven times for the Nobel Prize in Physiology or Medicine, the last occasion being in 1938; and once more for the Nobel Prize in Literature by Romain Roland in 1936 (Benjamin, 2003). None of these pioneers of psychology was honored with this distinction.

## Who Is Considered a Psychologist?

At the turn of the 20<sup>th</sup> century when the Nobel Prizes were awarded for the first time, psychology was only beginning to be considered as a discipline distinct from philosophy and/ or medicine. Some of the main pioneers of psychology (Wundt, Pavlov, Freud) had studied medicine. Others were philosophers that worked in psychological topics. When analyzing the psychologists that had received the Nobel Prize, it is relevant to

point out who is considered a psychologist (Ardila, 1969). The possible alternatives are:

A person who holds an undergraduate degree in psychology.

A person who received a doctorate degree in psychology.

A person who works in psychological topics and makes significant contributions to psychology.

In the first category we have people like Roger W. Sperry (United States, Nobel Prize of Physiology or Medicine 1981), Daniel Kahneman (Israel-United States, Nobel Prize in Economic Sciences, 2002), and Tomas Tranströmer (Sweden, Nobel Prize of Literature, 2011).

In the next category we also have Kahneman, John O'Keefe (USA), Nobel Prize in Physiology or Medicine, 2014, and his colleagues May Britt-Moser (Sweden) and Edvard I. Moser (Norway), among others.

In the third category of people that have made important contributions to psychology and do not possess an undergraduate or doctorate degree in psychology, we have: Ivan P. Pavlov (Nobel in Physiology or Medicine 1904), Santiago Ramón y Cajal (Nobel in Physiology or Medicine, 1906), Bertrand Russell (Literature, 1950), Konrad Lorenz (Physiology or Medicine, 1973), Herbert Simon (Economic Sciences, 1978), and Georg von Békésy (Physiology or Medicine, 1961), among others.

Including the three categories, we can present the following list of psychologists that have received the Nobel Prize.

## Nobel Prize Psychologists

1904. Ivan P. Pavlov (Physiology or Medicine)

Citation: "In recognition of his work on the physiology of digestion, through which knowledge of vital aspects of the subject has been transformed and enlarged"

1906. Santiago Ramón y Cajal (Physiology or Medicine, with Camillo Golgi)

"In recognition of their work on the structure of the nerve cell"

1949. Edgar Moniz (Physiology or Medicine,  
| Universitas Psychologica | V. 15 | No. 4 | Octubre-Diciembre | 2016 |

with Walter Rudolf Hess)

"For his discovery of the therapeutic value of leucotomy in certain psychoses"

1950. Bertrand Russell (Literature)

"In recognition of his varied and significant writings in which he champions humanitarian ideals and freedom of thought"

1961. Georg von Békésy (PhM)

"For his discoveries of the physical mechanism of stimulation within the cochlea"

1973. Karl von Frisch, Konrad Lorenz and Nikolaas Tinbergen (PhM)

"For their discoveries concerning organization and elicitation of individual and social behavior patterns"

1978. Herbert Simon (Economics)

"For his groundbreaking work on bounded rationality principle bridging psychology and economics"

1981. Roger W. Sperry (PhM, with David H. Hubel and Torsten N. Wiesel)

"For his work on the functional specialization of the cerebral hemispheres"

2002. Daniel Kahneman, (Economics, with Vernon Smith)

"For his groundbreaking work on applying psychological insights to economics theory, particularly in the areas of judgement and decision-making under uncertainty"

2011. Tomas Tranströmer (Literature)

"For this surrealistic poems about the mysteries of the human mind. Through his condescend translucent images he gives us fresh access to reality"

2014. John O'Keefe, May Britt-Moser and Edvard I. Moser (PhM).

"For their discoveries of cells that constitute a positioning system in the brain"

Next we present biographical and scientific information about some representative people of

this list. We do not include all psychologists that have been granted the Nobel Prize in any of their fields but only a selected few.

*Ivan P. Pavlov* (1849-1936) is remembered in history of sciences for his work on behavior, “psychological reflexes”, and conditional reflexes. The Nobel Prize was granted in 1904 for his work on the physiology of digestion. His relationships with psychology were complex (Ardila, 1987; Todes, 2014), but he is one of the most recognized figures in the history of this science. His contributions to the psychology of learning, psychopathology, and in general to the broad conceptualization of human and animal behavior have been decisive.

*Santiago Ramón y Cajal* (1852-1934) was a Spanish physician and histologist whose works about neuronal theory are the foundation of the neurosciences. He was always associated with psychologists and he was interested in psychological topics. In his books about scientific research, old age, social issues, and Don Quixote he refers often to psychological issues. Cajal was going to be the Honorary President of the XI International Congress of Psychology that was going to take place in Madrid in 1936 and that could not be held due to the conflicts that preceded the Spanish Civil War. The Congress took place in Paris in 1937. Cajal died in 1934, when the Congress was in the process of organization.

*Edgar Moniz* (1874-1955) was a Portuguese psychiatrist and neurosurgeon that received the Nobel Prize in 1949 for his “discovery of usefulness of lobotomy in determined psychosis”. This technique was used mainly in the decade of the 1940s and has been disputed in posterior scientific research. Lobotomy and similar procedures have not been used for several decades, and even in several literary works and films this topic has been shown as really diabolic procedures. This honor to Moniz has been controversial.

*Bertrand Russell* (1872-1970), was a philosopher and mathematician of great influence during the 20<sup>th</sup> century and first decades of the 21<sup>st</sup> century. He received the Nobel Prize in 1950. He made conceptual contributions to epistemology, mathematics, the philosophy of science, psychology, social critique, politics,

education, sexuality, women rights and peace promotion, inter alia. His book *The Analysis of Mind* (1921) influenced the psychology of the time. His positive evaluation of J.B. Watson’s work in several of his writings was decisive for Skinner’s intellectual formation (Bjork, 1993). His book *The Conquest of Happiness* (1930) is one the first works on this topic published in the modern world, and could be considered pioneer and inspiratory in this field of work with great contemporary importance, as is the psychology of happiness and subjective wellness. Another work of psychological emphasis is *Power: A New Social Analysis* (1938). In many other publications he wrote about psychological topics. A detailed evaluation of Bertrand Russell as a psychologist is found in Ardila (1971).

Much less known than Bertrand Russell is *Georg von Békésy* (1899-1972). He worked in the Psycho-Acoustic Laboratory of Harvard University after migrating to the United States. He was a Hungarian biophysicist, a famous researcher in the psychology of perception, and worked side by side with S.S. Stevens, E.G. Boring, G.A. Miller and other psychology leaders of the United States. He received the Nobel Prize of Physiology or Medicine in 1961 for his studies on acoustic perception and the structure of the cochlea. Most of his career was spent in Harvard, between 1947 and 1966. Later, he moved to the University of Hawaii where he stayed until his death in 1972.

*Konrad Lorenz* (1903-1989) is associated along with Tinbergen with the study of animals in their natural environment and with the development of the discipline of ethology. Lorenz is an Austrian zoologist who studied medicine at the Columbia University (New York) and then returned to Vienna, and graduated as a physician in 1928. He completed studies in zoology and graduated there in 1933. He was a pupil of the psychologist Karl Bühler, studied evolution, was interested in psychological research, also in Kant and phenomenology. During the Second World War he participated on the side of the Germans and was held prisoner by the Russians for six years. Upon his return to Vienna he carried out numerous research projects, published scientific

papers and books, and generated polemics with some of the experimental psychologists of the time about the role that innate behavior and learning play. Finally, he made a synthesis between ethology and comparative psychology. In 1973, he received the Nobel Prize in Physiology or Medicine along with Tinbergen and von Frisch. Konrad Lorenz is today one of the most respected figures in the study of animal behavior and his works opened new research perspectives for psychology (Dewsbury, 2003).

*Roger W. Sperry* (1913-1994) received the 1981 Nobel Prize in Physiology or Medicine for his work on the functional specialization of the brain hemispheres. He shared it with another two researchers, *David H. Hubel* and *Torsten N. Wiesel*. Sperry held a B.A. in English and an M.S. in Psychology, the latter from Oberlin College in 1937. He then continued at the University of Chicago undertaking studies for a Ph.D in Zoology, under the guidance of Paul Weiss, which he received in 1941. He also achieved a post-doctorate with Karl Lashley at Harvard and in the Yerkes Primate Research Center (Orange Park, Florida). He worked at the University of Chicago and later at the California Institute of Technology (Caltech), which was where his main experimental research was done and where he conceived his theories on the relationship between mind and brain. The preparation of the split-brain was especially important in this respect. Sperry was always connected with psychology, above all with the APA, and he received numerous professional recognitions in addition the Nobel Prize in 1981. His principal research problems were equipotentiality, nerve regeneration and plasticity, the experiments on split-brain, and the psychology of the consciousness. In Puente's chapter (2000) a description of Sperry's work and its impact on psychology can be found.

When *Daniel Kahneman* (born in 1934) received his Nobel Prize in Economic Sciences in 2002, it was affirmed (erroneously) that he was the only psychologist that had received this prize. Anyhow Kahneman is one of the few psychologists that can be found in the three categories mentioned above: undergraduate degree in psychology, PhD in psychology, and

research work in psychology that represents relevant contributions to the discipline. He was born in Palestine, today Israel, received his credentials from The Hebrew University and after working there, he migrated to Paris and then to North America. His Ph.D. in psychology is from the University of California, at Berkeley. His research studies on human judgment, decision-making under uncertainty, other aspects of cognitive psychology, and his prospect theory have had great influence on the discipline. His Nobel Prize in Economic Sciences was received "for having integrated insights from psychological research into economic science, especially concerning human judgment and decision-making under uncertainty." At present, he is professor emeritus at Princeton University and has published several books on thinking and cognition.

*John O'Keefe* (born in 1939) and his two Scandinavian colleagues *May Britt-Moser* (born in 1963) and *Edvard I. Moser* (born in 1962) became recipients of the Nobel Prize in Physiology and Medicine in 2014. The three of them are psychologists and have researched in "classical" areas such as the perception of space and the formation of the cognitive maps that Tolman had proposed. O'Keefe was born in New York and earned his Ph.D. in physiological psychology at McGill University in 1967. He pursued his post-doctorate at University College of London. He worked there as a professor of cognitive neurosciences. He discovered in 1971 a type of nerve cells in the hippocampus that are activated when the animal is located in a certain spot of a room and others which are activated when it is found in another location. These "place cells" constitute an internal map of the surroundings. O'Keefe was the mentor of the Moser couple and together they worked on spatial memory and orientation.

These above are some of the psychologists that have been winners of the Nobel Prize.

## Conclusions

The Nobel Prizes are considered the main recognitions at a world level that a scientist, a writer, or a peace-maker can receive. The winners of these prizes are the "elite" of the

intelligentsia. Many of the most creative and outstanding figures of the 20th and 21st century have deserved it. Others who are considered to have made contributions at a similar level have not been chosen, such as J.L. Borges or Aldous Huxley in literature. In the case of psychology B.F. Skinner, Neal E. Miller, A. Bandura, Kurt Lewin, Jean Piaget, and others would be at the level of those that have received the Nobel Prize. Other prizes exist that are considered equivalent (relatively) to the Nobel Prize. In the case of psychology it would be the Grawemeyer Prize and the ones granted by the APA and the IUPsyS. A Nobel Prize in Psychology does not exist; neither does one for mathematics, ecology, and other disciplines. It has been proposed to create one and also to create a Nobel Prize in Behavioral Sciences or Cognitive Sciences. The psychologists who have received the Nobel Prize have achieved this in Physiology or Medicine, Economic Sciences, or Literature. Oddly, no psychologist or group of psychologists has received the Nobel Peace Prize.

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## Notes

- \* Reflexion article