

## CURRICULUM VITAE: P.N. JOHNSON-LAIRD

## BIOGRAPHICAL DETAILS

Full name: Philip Nicholas Johnson-Laird

Date & place of birth: October 12<sup>th</sup> 1936; Rothwell, near Leeds, England.

Citizenship: Dual nationality: US and UK.

Marital status: Married Maureen Sullivan 1959. 1 son 1966; 1 daughter 1971.

Present appointment: Stuart Professor of Psychology  
 Department of Psychology  
 Princeton University  
 Princeton, NJ 08540, USA  
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 webpage: [http:// www.princeton.edu/~psych/PsychSite/~phil.html](http://www.princeton.edu/~psych/PsychSite/~phil.html)  
 laboratory: [http:// www.princeton.edu/~mentmod](http://www.princeton.edu/~mentmod)

## Department &amp;

University service: Director of Graduate Studies, Psychology: 1991-5; Spring 1998;  
 Spring 2000.  
 Institutional Review Panel: 1996-1999; Chair, 2001-2003.  
 Psychology: Cognitive Area co-ordinator: 2003, Spring 2007.

Education: Culford School, Suffolk, England, 1948-1952.  
 College of Estate Management, Kensington, London, 1954-1959.  
 Intermediate examination, Royal Institution of Chartered Surveyors.  
 University College London: BA(Hons) First Class, Psychology (1964)  
 Ph.D. Psychology (1967)

## Previous career and appointments:

Freelance musician and music critic, talks on BBC 3rd Programme, etc.,	1960-1961.
Department of Psychology, University College London:	
Assistant lecturer	1966-1967.
Lecturer	1967-1973.
Experimental Psychology, University of Sussex: Reader	1973-1978.
Professor	1978-1982.
Chair	1981-1982.
Medical Research Council, Applied Psychology Unit Cambridge:	
Special appointment	1982-1983.

Assistant director 1983-1989.

Visiting appointments:

Visiting Member, The Institute for Advanced Study, Princeton, NJ: 1971-1972.  
 Visiting Fellow, Cognitive Science Program, Stanford University: Spring 1980.  
 Visiting Professor, Psychology, Stanford University: Spring 1985.  
 Visiting Professor, Psychology, Princeton University: Spring 1986, Spring 1987,  
 Spring 1988.  
 Distinguished Visitor, Cognitive Studies, Cornell University: Spring 1987.  
 Visiting Professor, University of Trieste: June 1990.  
 Visiting Professor, University of Florence: July 1990.  
 Jan 1991.  
 The Macheachran Lecturer, University of Alberta, Edmonton: Fall 1990.  
 Visiting Professor, University College, London: Spring 1992.  
 Visiting Professor, Centre for Cognitive Psychology (CREPCO),  
 University of Aix-en-Provence, France: Spring 1996.  
 Visiting Professor, Turin University: June 1999.  
 Visiting Professor, Padua University, Turin University, and  
 University of Bari: Summer-Fall 2000.  
 Visiting Professor, The New School University: Spring 2005.  
 Visiting researcher, New York University: Spring 2009.  
 Visiting professor, University College, London: May 2009; June, 2010

Awards, fellowships, and honorific societies:

Rosa Morison Memorial Medal, University College London, 1964.  
 James Sully Scholarship, 1964-1966.  
 Spearman Medal, British Psychological Society, 1974.  
 Presidents' Award, British Psychological Society, 1985.  
 Fellow of Darwin College, Cambridge, 1985-9.  
 Fellow of the British Academy, 1986.  
 M.A., Cambridge University, 1986.  
 Medaglia d'Onore, University of Florence, 1989.  
 Fellow of the Royal Society (of London), 1991.  
 Fellow of University College, London, 1994.  
 Fyssen International Prize, 2003.  
 Mind and Brain Prize, Turin University, 2004.  
 Member of the American Philosophical Society, 2006.  
 Fellow of the Association for Psychological Science, 2007.  
 Member of the National Academy of Sciences, 2007.  
 William James Fellow, Association for Psychological Science, 2010

Honorary degrees

Doctorate, University of Gothenburg, Sweden, 1983.  
 Laurea, University of Padua, Italy, 1997.  
 D.Sc., Trinity College, University of Dublin, Ireland, 2000.

Doctorate in Psychology, Universidad Nacional de Educación a Distancia, Madrid, Spain, 2000.

Doctorate, University of Ghent, Belgium, 2002.

Laurea, University of Palermo, Sicily, Italy, 2005.

D.Sc., Sussex University, England, 2007.

Laurea, University of Ca' Foscari, Venice, Italy, 2008.

#### Grants:

Medical Research Council grant for scientific assistance for research into the effects of linguistic variables on cognitive performance, in conjunction with Dr. P. C. Wason, 1968-1971.

Social Science Research Council grant for scientific assistance for research into the representation of meaning in the mental lexicon, 1973-1976.

Social Science Research Council grant for research into the role of inference in comprehension and memory, in conjunction with K. Ehrlich, April 1977-1979.

Social Science Research Council grant for an experimental investigation into linguistic performance, 1977-1978.

Social Science Research Council: personal grant to free me from teaching for three years. An investigation into an integrated model of syntactic, semantic and inferential processing, October 1978-1981.

Science Research Council, Computing grant, with H.C. Longuet-Higgins and N.S. Sutherland, 1980-4.

Social Science Research Council grant for an investigation into working memory and inference with Jane Oakhill, 1982-1983.

Medical Research Council: my research was directly supported from 1982-9.

ARPA/SISTO/CAETI: Two year grant awarded to George A. Miller and P.N. Johnson-Laird: Educational Uses of WordNet, 1995-7.

National Science Foundation, Three year grant to study Strategies in Reasoning, May 2001-April 2003. Extension to April 2004.

National Science Foundation, Three year grant to study Deductive and Probabilistic Reasoning, April 2009-May 2012.

#### Professional positions, research councils, etc.

Member of the Psychology Committee, Social Science Research Council (GB) 1975-1979.

Member of the Linguistics Committee, Social Science Research Council (GB) 1980-1982.

Member of Advisory Council of the International Association for the Study of Attention and Performance, 1984-7.

Chair, Education and Social Research Council, Committee to set up Interdisciplinary Research Centre on Language, 1988.

Board of Directors, NICI, Nijmegen, The Netherlands, 1990-2.

Consultant for NIMH panel on Interdisciplinary Units, 1994.

Member of Governing Board of Cognitive Science Society, 1990-1996.

Consultant for Educational Testing Service on reasoning, 2001-3.

Consultant for proposed graduate program in Cognitive Science, Rensselaer

Polytechnic Institute, Summer, 2003.  
 Consultant for Law School Admissions Council on reasoning, 2004.

Membership of learned societies:

Student member, British Psychological Society, 1962.  
 Member, British Psychological Society, 1964.  
 Member, Linguistics Association, 1967.  
 Member, Experimental Psychology Society, 1968.  
 Founder Member, Cognitive Science Society, 1979.  
 Member of Association for Computational Linguistics, 1981.  
 International Pragmatics Association, 1988.  
 International Society for Research on Emotion, 1989.  
 Member of Society of Experimental Psychologists, 1989.  
 Member of Eastern Psychological Association, 1991.  
 Member of Psychonomics Society, 1991.  
 Member of American Psychological Society, 1993 (fellow, 2007).

Editorial boards:

Previous:

Quarterly Journal of Experimental Psychology, 1970-2.  
 Cognition, 1975-2007.  
 Cognitive Psychology, 1975-1991.  
 Behavioral & Brain Sciences, 1976-2008.  
 Cognitive Science, 1977-87.  
 Cognition & Brain Theory, 1980-5.  
 Journal of Semantics, 1982-2003.  
 Cognitive Development Abstracts, 1983-5.  
 Journal of Experimental Psychology: General, 1985-9.  
 Computer Speech and Language, 1985-1993.  
 Foreign Advisor: British Journal of Psychology, 1989-94.  
 Rivista di Linguistica, 1989-1991.  
 American Journal of Psychology, 1989-2000  
 Consciousness & Cognition, 1990-1.  
 Current Psychology of Cognition, 1994-2000.  
 Journal of Spatial Thinking, 1999-2007.  
 Cognitive Science Quarterly, 2000-2001.

Current:

Language and Cognitive Processes, 1985-  
 Minds and Machines, 1990-  
 Thinking and Reasoning, 1993-  
 Trends in Cognitive Science, 1997-  
 Acción Psicológica, 2002-

## REFEREES

1. Emeritus Professor Keith Oatley,  
113 Bernard Avenue  
Toronto M5R 1S4, Canada  
tel: (416) 961-7969  
email: [koatley@oise.utoronto.ca](mailto:koatley@oise.utoronto.ca)
2. Professor Ruth M.J. Byrne,  
Department of Psychology  
Trinity College  
University of Dublin  
24-28 Westland Row  
Dublin 2, Ireland.  
tel: (1) 6082290  
email: [rmbyrne@tcd.ie](mailto:rmbyrne@tcd.ie)
3. Professor Adele Goldberg  
Department of Psychology  
Princeton University  
Princeton  
NJ 08540  
USA

## TEACHING

Previous:

Undergraduate lecture courses in the past included the following:

- Introduction to Psychology (a general course for first year students).
- Introduction to Cognitive Science (a general course for first or second year students).
- First year laboratory class (ranging from Psychophysics to Social Psychology).
- Second year laboratory class and introduction to experimental design and analysis.
- Language and thought (a general introductory course).
- Psycholinguistics (an advanced course).
- Thinking (as second year and as an advanced third year option).
- Mental representations (a brief advanced course to Philosophy students).
- Artificial Intelligence and Cognition (an advanced course)
- Psychology of language (an advanced course)
- Creative processes (an advanced course)
- Introduction to Cognitive Science
- Introduction to Cognitive Psychology
- Human-machine interaction
- Rationality
- Psychology of thinking
- Psychology of music

In addition to advising UG Junior and Senior theses in psychology, I advised students in Computer Science and in Philosophy.

## Graduate courses:

Cognitive Psychology (a course to M.Sc. students of Speech Processing, in Engineering Department, Cambridge).

Cognitive Science

Thinking and reasoning

Psychology of deduction

Psychology of induction (co-taught with Eldar Shafir)

Reasoning and decision making (co-taught with Eldar Shafir)

Creative processes

Psychology of proof

Computer modeling of cognitive processes

Reasoning and the consistency of beliefs

## Evening lectures to the general public:

Psychology (a course of 20 lectures at Morley College, London).

## Postgraduate supervision:

Supervised 21 PhD students in the following general areas: Experimental Psycholinguistics, Language acquisition, Interpretation of discourse, Reasoning, Creativity, Diagnosis of faults, and Reverse engineering: David Green, 1973 (Professor of Psychology, University College London, UK); David Warden, 1974 (Psychology, Stirling University, Scotland); Philip Barnard, 1974 (MRC Brain research unit, Cambridge, UK); Mary De Z. Cooke, 1975; Deborah Hodgkin, 1975; Kate Ehrlich, 1978 (IBM Watson Research Center, Cambridge, MA); Til Wykes, 1978 (MRC Unit, Maudsley Hospital, London, UK.); Alan Garnham, 1981 (Professor of Psychology, University of Sussex, UK.); Jane Oakhill, 1981 (Professor in Psychology, University of Sussex, UK.); Mic Power, 1981 (Professor in Psychiatry, Edinburgh University, Scotland); Patrizia Tabossi, 1983 (Deceased 2011; former Professor of Psychology, University of Trieste, Italy); Alison Black, 1987 (Alison Black Research & Consulting, Reading, UK); Jung Min Lee, 1994; Victoria Shaw, 1994; Patricia Barres, 1998 (clinical psychologist); Victoria Bell, 1998; Yevgeniya Goldvarg, 1999; Uri Hasson, 2004 (Professor, Trento University, Italy); Geoffrey Goodwin, 2006 (Professor, University of Pennsylvania); Louis Lee, 2007 (Professor, Chinese University of Hong Kong); Sangeet Khemlani, 2011 (Post-doctoral fellow at the Naval Research Laboratory, Washington, DC).

## RESEARCH

My early research was about the pragmatics of natural language, and it showed that the surface form of sentences had a considerable effect on their significance, contrary to the then prevailing views of transformational grammar [see e.g. my papers of 1967-8].

I then collaborated with Peter Wason on a study of the psychology of deductive reasoning. We discovered that people make systematic errors in reasoning, and that there is a large effect of the content of premises on the form of conclusions that they draw [see our joint publications 1969-1973 and our book, *Psychology of Reasoning*, 1972]. The effects of content are not readily compatible with the thesis, still urged by some

psychologists, that there is a mental logic consisting of formal rules of inference. At the time, however, we were unable to formulate an alternative theory of how people reason.

From the 1970s, my research again concerned psycholinguistics. I worked on memory for meaning [see e.g. my letters to *Nature* of 1970, 1974, 1976 and 1977]; and I collaborated with George A. Miller on a theory of the mental representation of the meanings of words [see our book, *Language and Perception*, published in 1976]. This work led to the view that lexical meanings could be fruitfully treated as elements of procedures executed in the process of understanding discourse [see the paper, 'Procedural Semantics', of 1977]. Mark Steedman and I developed a computer program that modeled certain aspects of this theory, which in turn motivated some experimental tests of it [see the papers published with Bethell-Fox, and with Gibbs and de Mowbray, in 1978]. But, an essential question remained unanswered: what form did the mental representation of discourse take?

I returned to the study of deductive reasoning, and following an earlier idea [see my paper, 'Models of deduction', 1975] put forward the theory that ordinary individuals reason by imagining a situation in which the premises are true -- they construct a mental model of them. In the case of some premises, such as disjunctions, they may have to construct multiple models to capture the multiple possibilities. A conclusion is valid if it holds in all the models of the premises, it is probable if it holds in most of them, and it is possible if it holds in at least one of them. Steedman and I implemented the theory in a computer program that made deductions from singly-quantified assertions, and its predictions about the relative difficulty of such problems were strikingly confirmed: the greater the number of models that have to be constructed in order to draw the correct conclusion, the harder the task is [see our paper of 1978, 'The psychology of syllogisms', and the revised theory developed in collaboration with Bruno Bara, see our paper of 1984].

This mental-model theory of deductive inference could be generalized to other forms of deductive inference, and I implemented the theory in a computer program that reasoned about spatial relations; the experimental results were equally successful [see e.g. 'Mental models in cognitive science', 1980, and 'Thinking as a skill', 1982]. But the idea also suggested an answer to the earlier question of the form taken by the mental representation of discourse: comprehension is a process of constructing a mental model. This theory was also been modeled in computer programs [see 'Comprehension as the construction of mental models', 1981], and led to a number of experimental studies [see e.g. the papers co-authored with Garnham and Oakhill, 1982; with Ehrlich, 1982; with Mani, 1982; and with Black and Freeman, 1986].

The theory of mental models posits that comprehension depends on a grasp of how words relate to the world (their contribution to 'truth conditions') and that reasoning consists in the manipulation of models. It therefore is opposed both to traditional accounts of meaning that analyze it in terms of semantic networks, meaning postulates, or semantic features [see the paper co-authored with Herrmann, and Chaffin, in 1984]. These forms of representation merely translate natural language into another form of symbolism, which they fail to relate to the world. A similar overemphasis on syntax is made by psychological theories of deduction that suppose that it follows formal, or syntactic, rules of inference. In short, mental models integrate two hitherto different

strands of research: the psychology of reasoning and the psychology of meaning [see my book, *Mental Models*, published in 1983].

This book was well received except on the part of those who believe in formal rules of inference. They pointed out that the evidence was not decisive and that theory had not been extended to propositional reasoning, i.e. reasoning that depends on such sentential connectives as 'if' and 'or'. In a three year collaboration, Ruth Byrne and I developed a model-based theory of propositional reasoning, which we also corroborated experimentally. Likewise, we modeled various aspects of the theory in computer programs; and we gathered further evidence that supported its applicability to the domains of spatial reasoning and reasoning with multiply-quantified assertions [see our publications of 1989 et seq, and our book *Deduction*, 1991]. I have also extended a model-based algorithm to solve a well-known problem in logic: the search for a maximally parsimonious circuit equivalent to a given circuit (made up from Boolean units). The algorithm, which I have implemented, is in principle guaranteed for find such a description for any given one; in practice, as is well-known, any such algorithm is intractable. The model theory predicts that any device that makes alternative possibilities more explicit should improve reasoning. Malcolm Bauer and I corroborated this prediction in a study of reasoning based on diagrams: those diagrams that make alternatives explicit vastly enhance reasoning in comparison with a verbal presentation of problems (see our joint papers of 1993).

Victoria Bell and I showed how the model theory applies to so-called 'modal' reasoning, e.g., reasoning about what is possible and what is necessary. Our main discovery was the corroboration of a key interaction predicted by the model theory: reasoners are faster and more accurate in inferring that an event is possible as opposed to necessary, but they are faster and more accurate in inferring that an event is not necessary as opposed to not possible. The model theory also predicts the existence of 'illusory' deductions, i.e. premises with compelling conclusions that nearly everyone draws, and yet that are totally wrong. They arise, according to the theory, from a failure to take into account information about what is false. We have shown that these illusions do occur, and we have developed various antidotes to them. This work has been carried out with various colleagues, including Fabien Savary (my former post-doctoral student), Mary Newsome (a former graduate student), Carlos Santamaria (of the University de La Laguna, Tenerife), Eugenia Goldvarg (a former graduate student) and Yingrui Yang (a former post-doctoral student). We have also applied the model theory to informal argumentation in everyday life. The empirical investigation concerns problems in the GRE, and was carried out with Yingrui Yang (Renssalaer Polytechnic) and Malcolm Bauer (ETS, Princeton).

Over the last twenty five years, Keith Oatley (OISE, Toronto) and I have developed a theory of emotions (see, e.g., our papers of 1987 and 2000) and shown how it accounts for the semantics of emotional terms, and Oatley has corroborated some of the theory's predictions in empirical studies. More recently, it led to the development of a new hyper emotion theory of the origins of neurotic and other psychological illnesses. This research was carried out in collaboration with Francesco Mancini (a psychiatrist in Rome who is the director of the Institute of Cognitive Therapy there) and Amelia Gangemi (a clinical psychologist at the University of Messina). We have published the theory in *Psychological Review*, and we are continuing experiments in which we test individuals



who suffer from psychological illnesses. Our theory predicts that they will reason better than normal individuals (pace Beck), but only on matters pertaining to their illness.

My work on creativity has largely concerned the development of 'creative' algorithms with particular reference to music (I have implemented programs that generate novel tonal chord sequences, bass lines, and melodies, see my paper of 2002). I have also explored the use of imagery in creative thinking in collaboration with a former a Ph.D. student, Jung Min Lee.

My research on strategies in reasoning was carried out with the support of an NSF grant (2002-5), and it led to the publication of over 50 papers (see papers published from 2003-2006). It showed that different individuals develop different strategies to reason.

My current research is concerned with several topics:

1. Reasoning with quantifiers. This NSF-funded study engages my colleagues and I in a variety of studies, including a comprehensive review of monadic and syllogistic reasoning (with Sangeet Khemlani, a recent graduate student), studies of how content modulates the interpretation of quantifiers (Sangeet Khemlani, Niklas Kunze of Konstanz University, and Max Lotstein, a researcher in my laboratory), studies of the iterative loops underlying the interpretation of multiply-quantified assertions. We are developing a computer program to model reasoning with quantifiers. Hua Gao (Fujian Normal University, Fuzhou Province, China) and I are studying judgments of the consistency of numerical and proportional assertions. Likewise, Marco Ragni (Freiberg University) are studying the consistency of regular quantified assertions.
2. Probabilities. Another aspect of the NSF-funded project. Sangeet Khemlani, Max Lotstein, and I are studying the sub-additivity of intensional probabilities. The model theory predicts that individuals should make greater errors when they have to estimate conditional probabilities as opposed to conjunctive probabilities. We have corroborated this prediction, and are in the process of replicating the findings.
3. Moral reasoning. Monica Bucciarelli (University of Turin), Sangeet Khemlani (a recent graduate student), and I, have developed a theory of how individuals reason about moral matters. We have corroborated some of its predictions experimentally, and Bucciarelli and I continue to carry out experiments to examine children's moral reasoning.
4. The effects of knowledge and meaning on reasoning with conditionals. This project is a long-standing one carried out in collaboration with Ruth Byrne (Trinity College, University of Dublin) and both Cristina Quelhas and Csongor Juhos (ISPRA, Lisbon, Portugal). A similar project with Isabel Orenes (La Laguna, Tenerife) concerns the so-called "paradoxes" of material conditionals.
5. Psychopathology of reasoning. Professor Francesco Mancini (Psychiatrist and director of Institute of Cognitive Therapy, Rome), Professor Amelia Gangemi (University of Messina) and I have shown that individuals suffering from psychological illnesses reason better than control participants but only on topic pertaining to their illness. We continue to investigate the topic.
6. Disjunctions. Ruth Byrne (Trinity College, Dublin), Max Lotstein, and I, are working on the interpretation of disjunctions and on inferences made from disjunctive premises.
7. Geoff Goodwin (University of Pennsylvania) and I are working on two projects. The first project concerns a theory of Boolean concepts – what makes them difficult to learn

and difficult to use. The second project concerns the simulation of events in reasoning from conditional premises (this project is also with Monica Bucciarelli).

8. Caren Frosch (Queens University, Belfast) and I are working on how individuals understand causation, with special emphasis on its relation to the law, and what they consider to refute such relations.

9. The interaction between sentential connections and relations. Robert Mackiewicz (Warsaw School of Social Sciences and Humanities) are investigating how individuals understand and reason from assertions that combine relations with various sentential connectives.

10. On musical dissonance. Olivia Kang (Dartmouth), Yuan Leong (PU), and I, have developed a test of how tonality and sensory roughness combine to yield judgements of the dissonance of musical chords.

11. Reverse engineering and problem solving. Louis Lee (Chinese University of Hong Kong) have developed a theory of how reverse engineering is carried out, and we have a project to corroborate this account.

#### MISCELLANEOUS

Recent invited papers, presentations at conferences, and colloquia:

Colloquium at the Institute for the Study of Child Development, Rutgers, March 2007.

Talk at Sussex University, July 2007.

Joint talk with Geoffrey Goodwin at the second Annual London Reasoning Workshop, London, UK, August 2007.

Joint talk with A. Cristina Quelhas and Csongor Juhos at the second Annual London Reasoning Workshop, London, UK, August 2007.

Joint talk with Caren Frosch and Michelle Cowley, at the Annual Conference of the Cognitive Science Society, Nashville, Tennessee, August 2007.

Joint talk with Geoffrey Goodwin at Psychonomics meeting, Long Beach, CA, November 2007.

Joint talk on the psychology of moral reasoning with Monica Bucciarelli and Sangeet Khemlani at Meeting on Understanding Moral Emotions, at Istituto di Scienze e Tecnologie della Cognizione, CNR, Roma, May 2008.

Joint poster with Sangeet Khemlani, Annual Conference of the Cognitive Science Society, Washington DC, July 2008.

Colloquium, University of Ca' Foscari, Venice, Italy, May 2008.

Joint talk with Caren Frosch, London Workshop on Reasoning, August 2008.

Keynote address, International Conference on Thinking, Venice, August 2008.

Colloquium, Department of Psychology, Princeton University, January 2009.

Colloquium, Department of Psychology, NYU, February 2009.

Colloquium, Department of Psychology, University College, London, May 2009.

Colloquium, Fondazioni di Studi Avanzati, Venice, Italy, May 2009.

Colloquium, Philosophy and logic, CUNY Graduate Center, New York, June 2009.

Joint talk with Sangeet Khemlani, London Reasoning Workshop, August 2009.

Colloquium, Psychology, University of Pennsylvania, April 2010.

Jonckheere Memorial Lecture, University College London, May 2010.

Colloquium Trinity College, University of Dublin, June 2010.

Joint talk with Sangeet Khemlani, London Reasoning Workshop, July 2010.

Keynote address: International Conference on Thinking, London, July 2012.

## PUBLICATIONS

### Books:

1. *Thinking and Reasoning*. (P.C. Wason and Johnson-Laird, P.N., Eds.) Harmondsworth: Penguin, 1968.
2. *Psychology of Reasoning*. (P.C. Wason & Johnson-Laird, P.N.) London: Batsford. Cambridge, Mass.: Harvard University Press, 1972.  
Italian translation: *Psicologia del Ragionamento*, Martello-Giunti, 1977.  
Spanish translation: *Psicologia del Razonamiento*, Editorial Debate, Madrid, 1980.
3. *Language and Perception*. (George A. Miller & Johnson-Laird, P.N.) Cambridge: Cambridge University Press. Cambridge, Mass.: Harvard University Press, 1976.
4. *Thinking*. (Johnson-Laird, P.N. & P.C. Wason, Eds.) Cambridge: Cambridge University Press, 1977.
5. *Mental Models*. Cambridge: Cambridge University Press. Cambridge, Mass.: Harvard University Press, 1983.  
Italian translation by Alberto Mazzocco, Il Mulino, 1988.  
Japanese translation, Japan UNI Agency, 1989.
6. *The Computer and the Mind: An Introduction to Cognitive Science*. Cambridge, MA: Harvard University Press. London: Fontana, 1988. Second edition, Fontana 1993.  
Japanese translation, 1989.  
*El ordenador y la mente*. (1990) Ediciones Paidós. [Spanish translation]  
*La Mente e il Computer*. (1990) Il Mulino. [Italian translation]  
Korean translation, Seoul: Minsuma, 1991. [Including a new preface.]  
*L'Ordinateur et L'Esprit*. (1994) Paris: Editions Odile Jacob. [French translation of second edition.]  
*Der Computer im Kopf*. (1996) München: Deutscher Taschenbuch Verlag. [German translation of second edition.]  
Polish translation, 1998.
7. *The Blackwell Dictionary of Cognitive Psychology*. (Eysenck, M.W., Ellis, A.W., Hunt, E.B., & Johnson-Laird, P.N., Eds.) Oxford: Blackwell, 1990.
8. *Deduction*. (Johnson-Laird, P.N., & Byrne, R.M.J.) Hillsdale, NJ: Lawrence Erlbaum Associates, 1991.
9. *Human and Machine Thinking*. Hillsdale, NJ: Lawrence Erlbaum Associates, 1993.  
*Deduzione, Induzione, Creativita*. (1994) Bologna, Italy: Il Mulino.
10. *Reasoning and Decision Making*. (Johnson-Laird, P.N., & Shafir, E., Eds.) Oxford: Blackwell, 1994.
11. *Models of Visuospatial Cognition*. (De Vega, M., Intons-Peterson, M., Johnson-Laird, P.N., Denis, M., & Marschark, M.) Oxford: Oxford University Press. 1996.
12. *Johnson-Laird: La vita, il percorso intellettuale, i temi, le opere*. (1998) Ed. by Tabossi, P. Milan, Italy: FrancoAngeli.

13. *The Shape of Reason: Essays in Honour of Paolo Legrenzi*. (Giroto, V., & Johnson-Laird, P.N., Eds.) New York: Psychology Press, 2005.

14. *How We Reason*. Oxford: Oxford University Press, 2006. (P/b 2008.) Italian translation, 2008.

Pamphlets and popular works:

*Philosophy: An Introductory Book-list*, Hendon Public Libraries, 1964.

Can a computer be conscious? *Boston Review*, June 1982.

Cari signori non ho nessun asso. ['Ladies and Gentleman, I don't have an ace' -- an article on illusory inferences, translated by M. Piattelli-Palmarini] *La Repubblica*, August 9th, 1995.

Many book reviews in *Times Literary Supplement*, *London Review of Books*, etc., and scientific journals.

Scientific papers:

1967

Johnson-Laird, P.N. (1967). Katz on analyticity. *Journal of Linguistics*, 3, 82.

1968

Johnson-Laird, P.N. (1968). The interpretation of the passive voice. *Quarterly Journal of Experimental Psychology*, 20, 69-73.

Johnson-Laird, P.N. (1968). The choice of the passive voice in a communicative task. *British Journal of Psychology*, 59, 7-15.

1969

Johnson-Laird, P.N. (1969). On understanding logically complex sentences. *Quarterly Journal of Experimental Psychology*, 21, 1-13.

Johnson-Laird, P.N. (1969). Reasoning with ambiguous sentences. *British Journal of Psychology*, 60, 17-23.

Wason, P.C., & Johnson-Laird, P.N. (1969). Proving a disjunctive rule. *Quarterly Journal of Experimental Psychology*, 21, 14-20.

Johnson-Laird, P.N., & Tagart, J. (1969). How implication is understood. *American Journal of Psychology*, 82, 367-373.

Johnson-Laird, P.N. (1969). '&', *Journal of Linguistics*, 6, 111-114.

1970

Johnson-Laird, P.N., & Wason, P.C. (1970). Insight into a logical relation. *Quarterly Journal of Experimental Psychology*, 22, 49-61.

Johnson-Laird, P.N., & Stevenson, R. (1970). Memory for syntax. *Nature*, 227, 412.

Johnson-Laird, P.N., & P.C. Wason (1970). A theoretical analysis of insight into a reasoning task. *Cognitive Psychology*, 1, 134-148.

Wason, P.C., & Johnson-Laird, P.N. (1970). A conflict between selecting and evaluating information in an inferential task. *British Journal of Psychology*, 61, 509-515.

The perception and memory of sentences. (1970). In Lyons, J. (Ed.) *New Horizons in Linguistics*. Pp. 261-270. Penguin Books, Harmondsworth.

The interpretation of quantified sentences. In *Advances in Psycholinguistics*. Edited by W.J.M. Levelt & G.B. Flores d'Arcais. North Holland, Amsterdam. Pp. 347-372.

Linguistic complexity and insight into a deductive problem. *In Advances in Psycholinguistics*, Ibid, Pp. 334-343.

1972

Johnson-Laird, P.N., & Tridgell, J.M. (1972). When negation is easier than affirmation. *Quarterly Journal of Experimental Psychology*, 24, 87-91.

Johnson-Laird, Legrenzi, P., & Sonino Legrenzi, M. (1972). Reasoning and a sense of reality. *British Journal of Psychology*, 63, 395-400.

Johnson-Laird, P.N. (1972). The three-term series problem. *Cognition*, 1, 57-82.

1973

Johnson-Laird, P.N., & Wason, P.C. (1973). Un'analisi teorica dell'insight in un compito ragionativo. In *Psicologia del Pensiero*. Legrenzi, P., & Mazzocco, A. (Eds.) Milan: Martello. Pp. 411-427.

Wason, P.C., & Johnson-Laird, P.N. (1973). Patologia del ragionamento. In *Psicologia del Pensiero*, Ibid. Pp. 444-455.

1974

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