

# Ten Years of NeuroQuantology: A Long and Narrow Road

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## Long and Narrow Road

Journals, like people and other living things, undergo a biographical process. The first seeds of *NeuroQuantology* were sown in 2001 with a simple web page. In the beginning it didn't even have a name, and it was introduced experimentally as a "New approach to the consciousness". What was this new approach? It was an approach that blended neuroscience and quantum physics to search with the help of quantum physics for answers to questions which neuroscience alone could not answer. Following the sowing of this first seed, the word *NeuroQuantology* was used for the first time in October 2001, and I became the father first of a journal and then of a potential new field of science. The name was as much a product of inspiration as it was of logic. At first, I searched the internet to see if such a word had been used before, but I did not come across the term *NeuroQuantology*. Of course, there are plenty of clinical and theoretical terms beginning with *neuro-*, so I was surprised that this particular expression had not been used previously.

In February 2002, the journal got at least some kind of registration with its International Standard Serial Number (ISSN 1303-5150), and it was at this same time that the journal's logo was created. This consisted of a red circle at the point where two other

circles intersect; the two large circles represented neuroscience and quantum physics/mechanics, and the area of overlap symbolized *NeuroQuantology*, where the common interests of these two areas of science lie.

In September 2002, the aims of the *NeuroQuantology* journal were set out on the web page. At the heart of these aims was the use of quantum physics/mechanics to understand human consciousness and higher cognitive processes. Up to that time, articles on neuroscience and related quantum physics had been published in various pioneering physics journals under the heading of "quantum mind". These were generally articles trying to explain the relationship between measurement problems in quantum physics and consciousness. Moreover, occasionally, space was given in some cognitive science journals to articles discussing whether quantum physics would solve unanswered questions of free will, choice, decision-making and consciousness. International conferences were organised under the heading of "quantum mind". But there was no academic journal which covered all such topics. With this deficiency in mind, we published the first issue of the journal *NeuroQuantology* in 2003. This first issue was assembled by inviting contributions from people with an interest in the subject. We did not have the financial support of a powerful publisher, or for advertising and publicity. Ours was just an amateur beginning.

In May 2004, we bought the name *www.NeuroQuantology.com*. We transferred

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all the old issues of the journal to this site, and for three years all, our material was freely available in Portable Document Format (PDF), still in a simple web format. Despite our need for an electronic system to accept articles, assess them and publish them in a trouble-free way, we could not obtain a electronic journal publication system at an annual cost of ten thousand dollars.



**Figure.** The logo of *NeuroQuantology*. The red sphere at the point of intersection symbolizes the field of interest of *NeuroQuantology*, and the two circles represent neuroscience and quantum physics / mechanics.



**Figure.** The cover of the first issue of *NeuroQuantology*

In 2007, we came across the freely-distributed journal publication system *Open Journal Systems* (OJS). This proved a godsend to us. We have to thank the people who developed this system for their contribution to

the spread of human knowledge. In 2007, we transferred all our old issues to OJS, and continued our publications using this system. From the beginning until now, we have not missed or been late in the publication of an issue. In fact, we have often been ready for publication early, but we have waited for the proper time.

OJS has given us many advantages. We have formed many subheadings and sections and have been able to assign editors to each one. We have been able to create new issues of the journal more easily and in a faster and more practical way. The system has allowed us to automatically rank and carry out searches on the writers of published articles. We have formed a reviewers' database so that we can easily choose reviewers by the use of keywords. We have created a uniform evaluation scale and at the same time cut down on reviewing time by directing reviewer evaluations with automatic scales. It has become easier to communicate reviewers' evaluations to the authors of articles by means of the system. In addition, it has become possible for contributors to follow the progress of their articles instantly. For readers, email notification systems have been provided. I owe a true debt of gratitude to the OJS team for these and many other features of the journal publication system.

### Subscription and Open Publishing

*NeuroQuantology* has no source of financial support, so that in order to cover various costs we have moved in the past two years to selling the journal individually or on a subscription basis. However, we wanted the journal to reach everybody, and we sought a solution with the idea that if the full text was available only to a few subscribers, our influence and readership would be reduced. The solution that we came up with was that the previous two years' issues of the journal would be available to subscribers only. All articles and issues older than that (that is all old issues of the previous eight years) would be available to everybody on a free access basis. In fact, we even made 20-30% of newly published issues and the articles in them freely available. In this way we were able both to derive some income from subscriptions and to reach the mass of the readership who were interested in our journal. We intend to continue with this system, and each issue will be made freely



available to all after a period of about one and a half years. This is because we wish our articles to be freely accessed and read.

### Electronic Publication

Recently, electronic publication has begun to overtake printed publication, although many significant and financially powerful journals continue to exist in printed form rather than moving over to an electronic version.

At *NeuroQuantology*, intended from the beginning not to be a printed publication. We will continue to publish electronically out of respect for paper and because we do not have enough material for a printed version. It is well-known that many scientific and academic journals are experiencing a reduction in subscribers to the printed journal and an increase in interest in their electronic version. All articles in our electronic version will be presented to readers as PDF, which readers will be able to print out as they like. In the future, we will always remain open to changes in the appearance and aesthetics of our pages.

### Databases Where We Have Been Indexed

After we got our ISSN number in 2002, we applied in 2005 for inclusion on the *Institute for Scientific Information (ISI)* database. In January 2008, we were accepted on to the *Science Citation Index (SCI)*, and we were included on the index from Volume 6, Number 1. Thus, we were accepted on the databases *The Science Citation Index Expanded*, *ISI Web of Science*, and *Neuroscience Citation Index*. This was seen as a great success for us. In 2006 we were accepted on the SCOPUS and EMBASE databases.

We have applied to PubMed-MEDLINE twice, two years apart, but have not been accepted. However, from what we have learned about our evaluation reports, their criteria were far from objective. We lost points for not publishing clinical reports and case studies, even though *NeuroQuantology* is a basic science journal. In the second evaluation, we got an even lower score despite having made a large number of structural changes to the journal. In fact, *NeuroQuantology* will never publish clinical research and case studies. We told them this, and we hope that we will be accepted on to this database at a

further evaluation. We also applied to the PsyINFO database at the end of 2011, and we are hoping for a positive result.

Indexing, while not an absolute necessity for a journal is nevertheless a great advantage. It is seen by researchers and writers in the academic community as a measure of the journal's reliability, continuity and stability. In addition, acceptance on to these databases is a way in which the content of the journal achieves immortality.

### Impact Factor Is It an Important Figure?

Although *NeuroQuantology* was accepted to SCI in 2008, its first impact factor (IF) was calculated two years later, so that it was given to us in the middle of 2011 as 0.69. The IF of a journal is calculated as the number of references in the previous two years to articles in the journal, divided by the total number of articles published in the journal in those years.

$$\text{Impact Factor (IF)} = \frac{A}{B} = 0.69$$

*A: number of references made to articles in the past two years (for us, two years 2009-2010),*

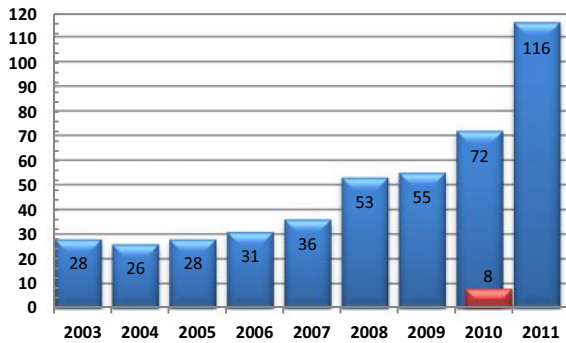
*B: number of articles published in the past two years to which reference could have been made.*

IF is a measure used as a quantitative analysis method to show the value of an academic journal. However, this involves a number of problems. Two years is a short time to show data for references made. In Journal Citation Reports however, there is a five-year reference window. IF will be calculated again for *NeuroQuantology* in 2013. When IF is calculated, the total number of references which *have been made* is included in the numerator, while articles to which reference *could have been made* are included in the denominator.

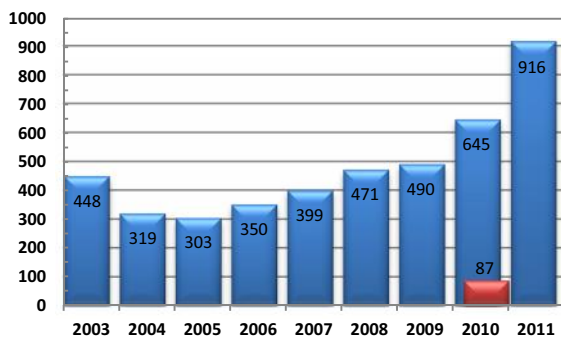
Of course, metric scales such as IF do help to compare journals. Even so, they cannot be measured by a single number or index, the scientific importance of which is accepted by all. Nevertheless, IF shows in numerical form the number of articles in a journal which have been referenced, and which may have been read and discussed. If researchers sometimes ask "What is the IF of your journal?" this has not an individual effect, but an average effect



on the journal as a whole. However, one thing is definite: from 2008 onwards, visits to articles in our journal increased markedly. In line with this, the number of pages in each of our volumes also increased considerably.



**Figure.** The total number of articles published annually in *NeuroQuantology* between 2003 and 2011. There is one volume each year, and four issues in each volume. From 2008 onwards, the number of articles in each issue of the journal and thus the annual total of articles increased considerably. The total for 2010 includes eight articles published in a supplementary issue (red bar: 68 + 8 = 72).



**Figure.** Total number of pages in volumes of *NeuroQuantology* published between 2003 and 2011. Each year has one volume, and each volume has four issues. From 2008 onwards the total number of pages in each volume increased considerably. Also in 2010 a supplementary issue of 87 pages was published (red bar).

At first calculation, *NeuroQuantology* has made a good start with an IF of 0.69 and 161 references. Among Neuroscience journals, it has been number 213 in order among 237 journals for two years. However, it must be remembered that *NeuroQuantology* is not just a neuroscience journal but is at the same time a physics journal. That is, it is an interdisciplinary journal taking in both quantum physics and the nervous system. For this reason, we feel that its limitation to the category of neuroscience and its IF do not

show the full influence of *NeuroQuantology*. Rather than securing a quantitative comparison of its IF score with other similar journals, it must be recognised that no other journal has the same scope and content, that *NeuroQuantology* is unique in its field, and that comparison and ranking are meaningless. To compare apples with apples, more apples are needed. It would only be meaningful to make comparisons with other similar interdisciplinary articles published in physics-neuroscience journals, but it is not possible to obtain such data officially. Of course an informal analysis has no scientific significance.

Another metric is the *h*-index, and this was 7 for the *NeuroQuantology* journal in 2011. This is used to evaluate both writers/people as well as journals. This index is a scale more developed to show both the productivity and the impact of a journal. At the same time, this index enables a longer-term view.

In the age of the internet and electronic media, both academic readers and those who are not academically productive access articles and make use of their content. A journal's two-year standard IF score directly affects frequency of references. The IF score certainly does not reflect all the hidden effects of access to an article. For example, the ten most downloaded articles are listed on our website under the heading "*Popular Articles*". This ranking is performed automatically by the system by calculating all articles which have been clicked on and downloaded as PDF. Our most downloaded article has been downloaded 4767 times, and the next 2439 times, according to records kept since April 2010. The article in third place has been downloaded 2260 times since it was published in December 2011. This is not shown in the IF score, but shows serious interest by readers.

In another example, the word *NeuroQuantology* did not appear in 2002 in search engines such as *Google*, *Yahoo* and *Altavista*, but later it had 100 links in 2003, and more than 26 thousand in 2011. It has 875 links in Google Scholar. And as time has passed, not only the word *NeuroQuantology* has become current among our followers and researchers, but also "*neuroquantologist*" for workers in the field, and the adjective "*neuroquantologic*". In only ten years, this must be counted as a considerable



achievement. As time has passed, not only journals but also books have begun to make references to our articles. Journals such as the *Lancet* and *PNAS*, and even BBC TV documentaries, have made references to *NeuroQuantology*. The number of such references is rising day by day.

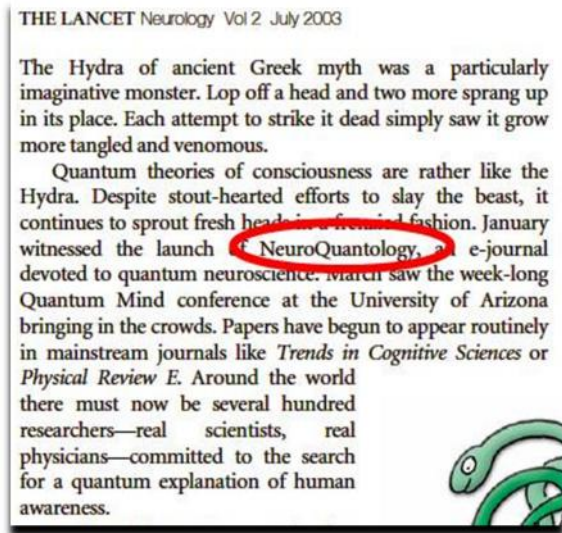


Figure. The Lancet Neurology refers to NeuroQuantology.

In the academic community, the number of people concerned with *NeuroQuantology* is no more than a small ant's nest, and I don't think most of these people are aware of the existence of the journal. Unlike the big publishers, we do not have a mailing list of thousands. Therefore it takes time for us to contact these people, and for them to contact us. However, this does not worry us greatly, because the journal is like a child, which is only ten years old. Of course, we know that the source of nourishment for a journal to prosper and grow is the readership of its articles. For this reason, we await the continuing support of readers, authors and researchers. We are working to produce special issues at regular intervals on selected topics with invited editors, and to provide a richer content. In the past two years, we have produced several special numbers with this purpose, and we have had a positive response to this approach. We will continue in this way in the near future. We plan to publish special issues with the help of invited editors on such topics as *The Brain in Love*, *Extrasensory Perception and Quantum Physics*, *Quantum Calculation*, *Freewill*, *From Single Photon to Vision*, and *Science and Hidden Censorship*.

Table. Special issues of *NeuroQuantology* and the number of articles which they contained.

Volume; Issue (Year)	Name	Number of articles
Vol 4, No 3 (2006)	Quantum Monadic Brain	7
Vol 5, No 1 (2007)	Microtubules and Consciousness	12
Vol 5, No 3 (2007)	The Brain, An Electromagnetic System	5
Vol 6, No 2 (2008)	Synaptic Quantum Tunneling	6
Vol 6, No 4 (2008)	Biophotons and Their Functions Editor: Fritz-Albert Popp	5
Vol 7, No 1 (2009)	Time, Timing, and the Brain Editor: Anna D. Eisler and Hannes Eisler	12
Vol 8, No 1 (2010)	Quantum Paradigms of Psychopathology Editor: Donald Mender	10
Vol 8, No 4 (2010)	Experimental NeuroTheology: Current Concepts and Future Research Editor: Michael A. Persinger	8
Vol 9, No 1 (2011)	Dreams, Telepathy, and Various States of Consciousness Editors: Stanley Krippner and Cheryl Fracasso	16
Vol 9, No 3 (2011)	Pioneers Who Have Changed the Face of Science and Those That Have Been Mentored By Them Editors: Cheryl Fracasso and Stanley Krippner	21
Vol 9, No 4 (2011)	Classical and "Quantum-like" Views of the Genetic Code Editor: Tidjani Négadi	11
Vol 10, No 1 (2012)	Unbiased Stereological Techniques Editors: Süleyman Kaplan and Sinan Canan	12



## A Look at NeuroQuantology and Its Underrating as a Science

From the point of view of our scientific outlook, the expression “*science always changes*” has always been at the forefront of our minds. For this reason, when we examine new ideas that are against the *status quo*, our first reaction is never one of rejection. Another idea in our minds is that the most important thing that forces science to change is science itself. Nevertheless, some scientists do not realise this, and their first reaction to anything new is one of resistance, suspicion and even the accusation of fraud.

Certain steps are always necessary in the acceptance of any new idea in science. At the first step, the dominating scientific community will claim that the new idea violates the known laws of science and that it is impossible. At the second stage, the doubters will admit unwillingly that the idea is possible, but that it is not particularly interesting and that the claim has great weaknesses. At the third stage, they accept that the suggestion is correct, and the doubters disappear from the scene. Sometimes, the doubters even claim that they thought up the idea themselves in the first place. The negative views which quantum physicists and neuroscientists expressed about *NeuroQuantology* in the first stage have given way to positive views in the second stage.

Our aim as a journal has never been to promote the idea that the higher cognitive functions (consciousness, decision-making, free will, memory, *etc.*) are to be completely explained by quantum physics. Rather it has been to find out whether quantum physics functions in the brain in some way alongside classical physics. If it does not, then the reason for this has to be explained.

Another way has been to enlist the help of that queen of sciences, quantum physics, in explaining the formation of the higher cognitive functions, which neuroscientists cannot explain with their classically biophysical knowledge of physiology. This is because neuroscience and quantum physics have many points in common. The first that comes to mind is the problem of measurement and the role of the observer in measurement in quantum physics, but there is a long list of others. As a journal, we are always ready to publish comments and critiques of authors,

especially negative ones, because our main purpose is not to say that it does have a function, but to enable a group of scientists who are open-minded and interested in the subject to take on the role of initiators and to keep to the right path by enabling continuous discussion in the subject.

As the editorial committee of the journal, we have published articles that we thought would attract negative comments when published. If we have not attained the professionalism of journals like *Nature*, *Science* and *Brain*, the knowledge of gaffes made in the past by such journals as *Nature* has given us courage. Examples of these in the past in *Nature* journal are “bodies heavier than air cannot fly”, and more recently the article on *a cloned picture*. Therefore, our policy is to publish anything which is consistent and has a valid chain of logic; time and the zeitgeist will decide on the correctness or otherwise of its contents.

Scientific developments which Thomas Kuhn characterises as revolutionary have generally underwent difficult times. This has also been true for the handful of scientists who have been concerned with *NeuroQuantology*. The history of science is full of such examples. For example, the rejection by Zurich University in 1901 of Einstein’s early ideas, and then in 1905 the opinion that special relativity was “incomprehensible” or “strange.” The fact that according to Einstein there were only twelve people in 1919 who understood relativity theory says a lot. As with other examples, this can be expressed in poetry or tears. The responses brought even Einstein (1879-1955) into doubt:

*“It’s as if I’m living in a dream,  
Where reality is something else.  
And yet I ask myself,  
Are they intelligent—is it me who is crazy?”*

Science is like a building which is continually in use, but which is at the same time continually under reconstruction. Thomas Kuhn (1922-1996) divided contributions to science into “normal” and “revolutionary”. He states that while normal science is carried on in within accepted beliefs and practices, revolutionary science involves revolutionary changes such as the change from Newtonian mechanics to relativity.

Theories form models which only allow us to move towards the truth, while the truth



still remains far away from us. All we can do is approach the truth. According to Kuhn, just as theories accepted in the past have been superseded today, the explanations of the truth which we accept today will also be replaced. The implications of this might be construed to be profoundly unsettling. It would suggest that articles published in journals like Science and Nature on the universe, nature and humankind are no more reliable than the descriptions of nature published long ago by Aristotle and Descartes! In Kuhn's view, even though some Nobel Prizes have been given for false contributions to science, it would not be true to say that the whole of science was unreliable and lacking. Today's scientific methods and approaches are *very, very* different from those in Aristotle's time, and perhaps only *very* different from those of Descartes. Today, the level of error in science is lower. Nevertheless, with the accelerating pace of the sharing of knowledge, from a critical standpoint wrong hypotheses will be consigned ever faster to the trash can.

The quest for certainty in science began with Descartes' attempts to free himself, independently of religion, from illusions widely shared by his contemporaries and reached its climax with Newton's "*natural laws*". These laws formed the model for physics for the next three centuries. By the twentieth century, we no longer had the belief that scientific research would lead us to a description of the world, which is *definite and correct*. It was more realistic to accept any explanation as the best solution to a current problem than to see it as a final truth. This is because it had to be remembered that nature existed before man, but man existed before science. However strangely nature appears to behave, even the simplest event necessitates the development of a model to explain how it occurs. Thus, we are still at the beginning of the adventure of science, and we are living in a very special period.

### **Editorial Committee and Thanks**

Our editorial committee is composed of respected and open-minded people with interdisciplinary interests. Among these is the physicist Brian Josephson, who won a Nobel Prize in his twenties, and who has stood up against fundamentalism and dogmatism. In fact he has honoured us with his name. Because of the reaction of some people to the

content of *NeuroQuantology*, we feel he became a target, and after a time with us, Brian offered his resignation.

Let us not progress without remembering Danko Georgiev, who, especially in the early years of *NeuroQuantology*, gave much help in structural improvements to the magazine and in publicity. We must also thank Huping Hu, not at present a member of our editorial committee but who has made substantial contributions. I have to mention the enthusiasm of Donald Mender, who joined us recently and who has contributed in the field of *Quantum Paradigms of Psychopathology* (QPP). He is the person who put into our heads the idea that psychopathology might be relevant in our frequent discussions on whether quantum physics has a place in normal cognitive functions. We are grateful to him for opening up to us a new field and point of view. Later on he partly handed over the QPP portion of his editorial duties to Mansoor Malik. We must remember Mark Germine, editor of the *Quantum Dynamical Psychology* section, for his fast and careful appraisals.

In the past year, the greatly respected and valued scientist Stanley Krippner, along with Cheryl Fracasso and Umit Sayin, created the *Altered States of Consciousness* section. I thank Cheryl Fracasso for her patient and speedy efforts in preparing and following up articles in this section. At the beginning of 2012 we formed the *Social Neuroscience* section under the editorship of Stephanie Cacioppo. We feel she will make very positive and valuable contributions to the journal. We have not forgotten the contributions of Gordon Globus, who has regularly contributed, blending quantum physics and consciousness in a deep philosophical viewpoint. I would like to extend this journal's thanks to Michael Persinger in the name of the journal for his extraordinary and untiring work in founding *NeuroTheology*. We thank Elio Conte for so readily supporting plans and efforts for a two-year school to teach young people about this interdisciplinary field.

We want to emphasise that with time the members of our editorial board will change, and we will give space to new subsections blending consciousness, mind, quantum physics, neuroscience, philosophy and mathematics. Our door is always fully open to anyone who feels he or she can make a



contribution. Anyone who contributes will give us both pleasure and strength. We feel that every brain that joins us will make us stronger. In addition, I wish to thank the nearly 300 referees who are on the database of our journal. It is they who perform the quality control of our steadily increasing content.

Finally, a journal lives by its high quality and influential articles. One of our primary objectives is to constantly improve the quality of content and to provide a contribution to knowledge in this field. In order to achieve this, we urge you to invite your friends and research colleagues to contribute to our journal. I would like to

remind you of our wide scope, from basic educational articles for those new to the subject to advanced academic theoretical and experimental articles. Introduce them to the journal, which is home to this new branch of learning. As in the past, we are and always will be open to any contributions. Send an article as a researcher or as a writer, join our group of referees, or if nothing else follow us as a reader. In one way or another, stay with us. If we are at present only like a tiny ant's nest, one day we will be known over the whole world and we will make the word *NeuroQuantology* better understood.

