

ADDICTION PUBLISHING AND THE MEANING OF (SCIENTIFIC) LIFE

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A common theme in literature, philosophy and science is the search for meaning. Addiction science incorporates this theme as well, especially as it applies to the understanding, prevention, and treatment of problems associated with the use of psychoactive substances.

The global scientific enterprise of addiction studies that has developed during the past half century would be impossible without the publishing infrastructure that has been described in Chapter 2 of this book. At the core of this infrastructure is the peer-reviewed scientific article and the expanding network of journals that publish scientific communications in this form.

Having taken the reader through a journey of discovery in the previous chapters of this book, it remains to put all of this scientific, ethical and practical information in its proper context. Throughout the book we have maintained a focus on publishing scientific papers in peer-reviewed journals because this is a key part of the meaning of scientific life. Publishing is a way for the scientist to take a position and operate in a forum representing the free exchange of ideas and findings. In this final chapter we will explore this theme in greater detail in relation to addiction science, which for many highly trained researchers throughout the world is becoming a career commitment that is not only personally rewarding, but one that benefits society as well.

In brief, our argument is as follows. Science is meaningless if not communicated. Addiction publishing is a way to gain meaning in scientific life. Publishing is also the hallmark of a productive scientific career. Scientific integrity is a core feature of a successful career, and it must be nurtured by individuals, groups and institutions, including scientific journals. Finally, we will argue that to the extent that science is a universal language and method, there is a special need for addiction careers in low and middle income countries.

THE MEANING OF SCIENCE

A seminal article by Ilkka Niiniluoto (2002), professor of philosophy at Helsinki University, traces the history of science through the various milestones in the search for knowledge from the time of the ancient Greeks to the present times.

Aristotle, the first giant, distinguished between the theoretical sciences that studied reality (physics, biology, meteorology, psychology) and research on human activities (the practical sciences like ethics and politics). His legacy, according to Niiniluoto, lies

above all in the principles of organisation that describe how we come to know the world and its generally accepted laws ('why' knowledge).

A second phase in the history of science came with Galileo's search for regularities in changes ('how' knowledge).

A third, and much later change in the development of science, began at the end of the 19th century when Charles Pierce introduced the notion of fallibility, which claimed that human beings are always making mistakes in their search for knowledge and that all claims about the real world should be questioned as the objects of critical research. 'This is true also of research, even if the scientific method of the research community, at least in the long run, is the most reliable way to produce and motivate conceptions of the world.' (Niiniluoto 2002 p. 32, authors' translation).

Niiniluoto talks about science as a self-correcting process. This means that the scientific community has developed its own quality assessment system (e.g., the peer review process), that scientific claims are public, and that all parties in the scientific community have the right to take part in discussions about them. According to Niiniluoto, contemporary science is characterized by objectivity (gaining as true a picture of the object studied as possible); a critical attitude (research should be public and open for critical discussion in the research community); autonomy (the scientific community operates independent of religious, political, economic, personal or social influences); and progressivity (science creatively seeks new solutions and builds on old ones).

Arguing further that science is a social institution, he refers to Merton's (1973) four imperatives for the ethos of science: 1) universalism (i.e., the truth of claims shall be judged on impersonal grounds irrespective of the race, nationality, class or personal characteristics of the person who presents them); 2) communism (i.e., scientific findings are the result of social cooperation and should be common property); 3) disinterestedness (i.e., scientific knowledge should be presented and analysed without considering the career or prestige of the researcher); and 4) organized scepticism (i.e., scientific results shall be scrutinized critically on the bases of empirical and theoretical criteria).

Niiniluoto says that Merton's principles have been criticized as deficient, insufficient and inconsistent with the everyday life of research in the contemporary world. Big Science, increasing competition for personal repute and the inequitable concentration of resources have eroded the ethos of science, as has the use of science in war and commercial production, which has produced a form of applied science that is business-like and breaches the principles of communism and universalism. Niiniluoto argues, though, that this activity is not really *scientia* and should be viewed as something other than academic research, even if it can often be valuable for society.

In addiction research, the increasing competition for research positions and financial resources can foster temptation to neglect ethical rules as well as the ethos of science. Career considerations can press a scientist to give priority to things other than the search for truth. The growing share of private research funding may lead to secrecy

instead of open exchange of new ideas and research results, and to new priorities favouring business interests rather than the public good.

If we accept Niiniluoto's assertions, we can find here the reasons why good publication practices, of the type described in this book, are crucial for science and the search for meaning in scientific life. Good publication practices represent the principles that should guide the quest for truth and at the same time demonstrate how to become a respected member of the scientific community. If science is to be used properly in the search for meaning as well as the basis for the betterment of humankind, then there needs to be open access to the enormous reservoir of scientific knowledge in the world. That knowledge not only needs to be readily available, it must also be recorded in a way that is understandable, useable and certifiably free of error and bias. This is the role of journals and the responsibility of their authors. As noted by Lafollette (1992), a journal serves as the arbitrator of the authenticity and legitimacy of knowledge. It provides an historical record of a particular area of knowledge, and confers implicit certification on authors for the originality of their work.

CAREERS IN ADDICTION SCIENCE

Publishing with scientific integrity is the hallmark of a productive scientific career. With the remarkable growth of addiction science worldwide (Babor 1993, 2002), there is now a variety of career options available to those interested in basic, clinical or social research. Research societies, sub-specialties within professional organizations, and research centres have proliferated in many parts of the world, as has the availability of addiction specialty journals (see Chapter 2). There is growing evidence that a career in addiction science has become a viable and rewarding way to spend one's professional life (Edwards ed. 1991, 2002). As noted in Chapter 2, journals and the process of scientific publication serve the interests of career advancement and provide a vehicle for scholarly achievement. Indeed, the easiest way to understand a scientist's career is to review the publications proudly listed in his or her curriculum vitae. When one looks at the seminal thinkers and scientists in the field, it is the published works that constitute the main record of their professional lives as well as their achievements. Boxes 9.1-9.3 provide examples of how productive and influential addiction researchers reflect upon qualitative and quantitative aspects of their research and scientific communications.

Box 9.1 GENEVIEVE KNUPFER

Genevieve Knupfer received her professional training in sociology (Brussels; Wellesley, Mass.; Columbia, NY) and in medicine (Rochester, NY). She worked with the Alcohol Research Group at the University of California, Berkeley, and was an advisor to the World Health Organization's alcoholism programme for many years. When asked about her general approach to research, she responded with a description of a paper she had published:

Too often the conclusions of a research publication, no matter how tentative, are what is remembered. Too seldom are the basic data really spelled out. To my mind, that is what we need to look at, not at the lot of arithmetical means, multiple regressions and correlation coefficients. I suspect, for example, that the term 'statistically significant' means to many people 'significant' in the more general sense. My recent paper on 'Drinking for Health' (Knupfer 1987) was an attempt to expose some of these fallacies.

Biographical and interview data from Edwards, ed. (1991, pp. 155-162).

Quotation from Edwards, ed. (1991, p. 160).

Box 9.2 CHARLES S. LIEBER

Charles Lieber was born in 1931 in Antwerp, Belgium. He was a refugee in Switzerland during the Second World War. He qualified in medicine from Antwerp in 1955. Most of his professional life has been spent in the USA with senior research appointments at the Harvard Medical School, Cornell Medical College, and Mount Sinai Medical School. His prolific published work has centered on biological aspects of alcohol abuse, including the mechanisms underlying the development of alcoholic cirrhosis of the liver. Here he describes some of the papers that changed the course of biological research on alcohol:

There seemed to be an adaptive system which helps us survive in modern society because it is relatively non-specific and detoxifies foreign compounds even when the body has never been exposed to them before. When we observed a similar morphological response after alcohol, I postulated that alcohol may therefore also be a substrate for this system. This hypothesis led to the discovery of the microsomal ethanol oxidizing system (MEOS) as a new pathway of ethanol metabolism.

Biographical and interview data from Edwards, ed. (2002, pp. 11-28).

Quotation from Edwards, ed. (2002, p. 19).

Box 9.3 MARTHA SANCHEZ-CRAIG

Martha Sanchez–Craig, PhD, joined the Addiction Research Foundation (ARF), Toronto, Canada, as director of a halfway house for homeless alcoholics. In 1977 she moved to the Clinical Institute of the ARF as a Senior Scientist where her main line of research was in the area of brief interventions for alcohol and drug–related problems. Despite her extensive publication career, she cautions about the 'publish or perish' mentality:

... one of the senior people, who was conducting experiments with small numbers of non–human subjects, said 'I don't have much regard for any scientist who doesn't publish at least six papers a year in peer–reviewed journals'. I was very worried about that. I met colleagues who would get depressed or seriously worried if they couldn't publish a paper every month. I began to think that there are a lot of people here who like to do science that looks good and only a few who like to do good science...

But discovery fascinates me, the kind of discovery that jumps out at you from the data. I spent countless hours with data print–outs, looking for patterns. I didn't want to rely on what the statistical experts would come up with as a result of multivariate analyses and so forth. I wanted to see patterns with my own eyes.

Biographical and interview data from Edwards, ed. (2002, pp. 115–125).
Quotation from Edwards, ed. (2002, p. 124).

INDIVIDUAL RESPONSIBILITY

Research can be a lonely endeavour: late nights spent in your study or laboratory, preparations to defend a thesis or question someone else's dissertation, standing on a podium to present a scientific paper. These are all individual responsibilities experienced in the course of an individual's professional career. In many cases it is impossible, at least without considerable effort, for an outsider to know whether the researcher has behaved in an ethical way. All researchers are thus responsible for guarding the integrity of the public trust in research. But research is also a highly social enterprise, with much of the work now conducted in teams of investigators and support staff that share responsibility for the completion of a project and the publication of a scientific report. In this context, individual responsibility sometimes becomes diluted and ambiguous in relation to ethical matters. The research world is also often very hierarchical. Younger researchers are in certain ways like apprentices, being trained by their masters, and are often economically dependent on them for positions and promotions. These differential power relations can further dilute ethical responsibility.

In spite of these threats to research integrity, addiction scientists must adhere to the ideal of the polis of the ancient Greeks, where every free man (we will have to ignore the gender discrimination of the time) was an equal, with similar responsibilities to decide matters of importance and civil rights to support those responsibilities.

One implication of this book is that every researcher must feel his or her personal responsibility for creating a more transparent and ethical addiction research community that includes young investigators and senior researchers alike, as well as editors of journals and peer reviewers. Everyone, for example, has a responsibility to use citations in a fair and informative way, to see to it that authorship credits are properly assigned, and to adhere to ethical rules. If all researchers view themselves as equals in the republic of science, this will also be the best foundation for creative discussions that will lead to progress in research.

CREATING GOOD INSTITUTIONS

In many instances, exhortations to individual responsibility are not enough to guarantee scientific integrity. Good institutions are needed to support creative research milieus with sound ethical principles. Informal structures, such as open communication within departments (not only about research but also about ethical problems), reading and commenting each other's work, democratic decision-making, the tradition of cooperation and teamwork on multidisciplinary projects, all emanate from participatory norms and strong leadership. Boxes 9.4-9.7 provide examples of how productive and influential addiction researchers reflect upon the social and institutional aspects of their research and scientific communications.

Also helpful to scientific integrity are the more formal structures, such as policies for the ethical conduct of research and procedures for the determination of authorship credits. Addiction scientists have a special responsibility to support these institutional structures rather than seeing them as inconveniences and hindrances. In recent years addiction journals have emerged from their relatively obscure and modest origins to take a leadership role in the prevention of scientific misconduct. The ethical principles for authors included in Appendix B of this book represent the consensus of editors who are members of the International Society of Addiction Journal Editors. Integrity in scientific publishing can only be enhanced by education, vigilance, clear policies and institutional norms that put science first.

Box 9.4 MUSTAPHA SOUEIF

Mustapha I. Soueif, PhD, was born in 1924. He completed his graduate studies in psychology at University of Cairo, Egypt. In addition to teaching psychology at the University of Cairo, he also worked for the World Health Organization. Here he describes the challenges of publishing in different languages and the conflicts between having a national commitment and an international vision:

It is a long time now that I have been living with this double identity; on the one hand I feel a world-citizen, on the other I belong to Egypt. This complex 'consciousness' or oscillating began in the late fifties when I was carrying out my first piece of clinical research in Egypt (at Abbassia Psychiatric Hospital) while keeping an eye on getting it published abroad. This was the paper on 'Testing for organicity in Egyptian psychiatric patients'. It was accepted for publication in Acta Psychologica (in Amsterdam). That was the first step towards establishing my reference group, defined in this case as a group of international scientists who would judge the worth of my research on its objective merits. My international identity, however, was definitely promoted through my contact with the WHO in Geneva. In 1966 I was approached by the WHO people to prepare a paper for publication in the UN Bulletin on Narcotics reporting on our work on 'Hashish Consumption in Egypt' which has been under way since 1957. This I did, and the paper was published in 1967. In 1970 I was invited to participate in a 'scientific group' meeting to be held at WHO headquarters. The recognition my work received there was deeply gratifying.

Biographical and interview data from Edwards, ed. (1991, pp. 427-444).
Quotation from Edwards, ed. (1991, p. 436).

Box 9.5 JOY MOSER

Joy Moser (1921–2001) studied languages before receiving a Masters degree in Public Health. She worked for the World Health Organization in Geneva (1950–1981), first as an editor, then as scientific assistant and finally as Senior Scientist in the Mental Health Programme. Her extensive work at WHO reflects the important role of mission-oriented commissioned papers and expert committee reports in the development of hypotheses, theories, and applied research that eventually are published in peer-reviewed journals. In the following quotation, she talks about how WHO facilitated the seminal work of Griffith Edwards and colleagues (1977) in the development of the alcohol dependence syndrome concept and the introduction of a broader alcohol problems perspective to the international policy making process:

Between 1973 and 1975 a steering group prepared and discussed extensive reviews of the state of knowledge on these matters. All this material was synthesized by Dr. Edwards and the complete documentation was submitted to a wider group of investigators from various parts of the world. This group's final report was published together with several of the working papers.....

One result of this project was that the term 'alcohol dependence syndrome' described in the report was accepted for the ninth revision of the ICD. Moreover this project seems to have promoted considerably increased recognition that it is not enough to focus on treatment of the person with this syndrome (the 'alcoholic'). Many other disabilities related to alcohol consumption are likely to be of greater public health significance because they are so prevalent and have such an impact on society. Actually the term 'alcohol-related problems' soon came into very general use. At the same time, interest was growing in the need to develop more effective ways of preventing or limiting the impact of alcohol-related problems.

Biographical and interview data from Edwards, ed. (1991, pp. 3-23).
Quotation from Edwards, ed. (1991, pp. 12-13).

Box 9.6 KETIL BRUUN

Ketil Edmund Bruun (1924–1985) received his doctoral training in sociology from the University of Helsinki. His alcohol research was most identified with his work at the Finnish Foundation for Alcohol Studies, where he was served as a Scientist Director (1955–80). He received the Jellinek Prize in 1971. He is perhaps best known for his influential book, *Alcohol Control Policies in Public Health Perspective*, published in 1975 under the auspices of the World Health Organization. As Robin Room states: 'This book, known in some circles as the 'purple book' from the color of its cover in the English language edition (it has appeared also in Finnish, German and Swedish), has attained an unusual prominence in the literature, becoming the basic citation for its fundamental argument, as that argument has gained increasing acceptance. 'Changes in the overall consumption of alcoholic beverages have a bearing on the health of the people in any society. Alcohol control measures can be used to limit consumption: thus, control of alcohol availability becomes a public health issue'.

In the following quotation Bruun describes with characteristic modesty the process that gave rise to the book:

The background was that I had to rethink my ideas of alcohol control in the light of the Finnish experience in 1968/69 when controls had been suddenly relaxed with dramatic increase in consumption and harmful effects. My own liberal views on alcohol policies had received a blow. Then I was confronted in the European Office with international issues. I thought that I had to reconsider my position and that probably the best way to do it was to try to have a group which could develop a perspective beyond the specific situation in Finland. The situation was fortunate because many of the relevant questions had by then been focused for research. The group which emerged from my invitation did a marvellous job.

Biographical and interview data from Edwards, ed. (1991, pp. 365-375).

Quotations from Room (1986) Ketil Bruun, 1924-1985: an appreciation. *The Drinking and Drug Practices Surveyor*, 21, pp. 1, 42-49; and Edwards, ed. (1991, pp. 371-372).

Box 9.7 ALBERT TUYSNS

Albert Tuyns was born in 1922 in Belgium. He received his MD from the University of Brussels in 1948, and was awarded an MPH from Johns Hopkins School of Public Health in 1962. He worked for 15 years as an epidemiologist with the International Agency for Research on Cancer (1967–1982). He was a recipient of the Jellinek Award in 1982. His published work with Georges Pequinot provided the first systematic link between alcohol and cancer, and the interactions with tobacco smoking. These findings had enormous implications for public health and health policy. Here he describes some of his professional writings on the subject:

It is one of my favourite theses that the aetiology of cancer is probably multi-factorial; the association of alcohol and tobacco is – I believe – the clearest demonstration of this. I tried to express this in an editorial (Tuyns 1991) in the British Journal of Cancer. (p. 318)

Alcohol and cancer? ... a large group of workers produced that monograph (International Agency for Research on Cancer 1988), people coming from various parts of the world. From the epidemiological standpoint we had no major difficulties, and I remember that we described the correlation between cancer of the breast and drinking. (p. 319)

You look at your past life and you say I have been working for 20, 25, 30 years, what did I do really? What has come out of it, beneficial or not? I did my job to the best of my capacities, that's all. I am grateful to society, to my parents, professors, friends, who gave me a chance to produce good work; in return I contributed some valid pieces of knowledge and other work which was not so valuable. I feel that I have been useful, that I have respected my contract, as we say in French. (p. 320)

Biographical and interview data from Edwards, ed. (2002, pp. 313-321).
Quotations from Edwards, ed. (2002).

AWARENESS OF GLOBAL INEQUALITY

Addiction is a global concern, and the concepts of universalism and autonomy suggest that knowledge gained from research should be shared throughout the world. Unfortunately, resources for both research and scientific communications are limited in many parts of the world, and research is often conducted in the more resourced countries with parochial interests in mind. Moreover, the dominance of English as the de facto language of science comes at a price for the majority of the world where other languages predominate.

Addiction researchers in the English speaking and the more developed countries have a special obligation to conduct and present their research, whenever possible, in a way that benefits the rest of humankind. The peer review process should be open to scientists from all languages and nationalities, as should the editorial boards of the journals serving as the gatekeepers for scientific truth. Publication in addiction science should not be limited by language or culture. This is not only a question of fairness, it also speaks to the cross-cultural generalizability of scientific findings and the need to discover universal truths.

CONCLUSION: THE MEANING OF SCIENTIFIC LIFE

In Chapter 1 of this book we referred to the medieval philosopher Maimonides and his Guide for the Perplexed. This was perhaps not a very modest analogy. We do not want to suggest that this book - or any book for that matter - can remove all confusion and provide a researcher with the guidance needed to have a successful career in addiction science. Even if all of the information contained in these chapters is used faithfully, the route of the informed researcher will not lead to a Paradise where all problems that arise are easily solvable.

Rather, we hope the information in this book will lead its readers to the agora of science, a community square or common ground where open and democratic discussions can take place between equals about the difficult problems all researchers, novices and career professionals alike, encounter in their everyday work.

Having explored the meaning of scientific life to this point, the editors will not be so presumptuous as to venture into the meaning of nonscientific life, except to say that like science, meaning in life is probably found as much in the quest for truth as in its actual discovery.

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