

Abraham Lerman

## The Joys of Cultural Asymmetry at the Wissenschaftskolleg



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The first I learned of the *Wissenschaftskolleg zu Berlin* and its English-language title, the Institute for Advanced Study, was from an article in the weekly *Die Zeit* (7 March 1980), written in advance of the opening of the Institute by the then Rector-designate and later first Rector, Professor Peter Wapnewski. The eye-catching title of the article was *Denkfabrik im Grunewald*, and the author discussed in it in considerable

detail the intellectual advantages of bringing scholars for limited periods of time into an environment where they can be completely free to pursue their academic work, and the very favorable and enlightened decisions in Berlin that made it possible to establish there the Institute for Advanced Study. Professor Wapnewski chose a quotation from Werner Heisenberg as an epigraph for his article that foresaw extraordinarily well the future atmosphere at the Institute — "*Wissenschaft entsteht im Gespräch*", which translates freely as "discourse is the origin of scientific knowledge". The physical appointments of the space at the Institute and the opportunities for meetings and exchanges among the Fellows and guests offer much to those who thrive on oral discourse, as well as those who prefer solitary introspection.

My first visit to the *Wissenschaftskolleg* was in the summer of 1988, when the Rector, Professor Wolf Lepenies, very kindly invited me for a familiarization with the Institute and some of the research facilities in Berlin after I was nominated for a Fellowship that was to begin two years later. The very pleasant hospitality of the Institute's administration, the atmosphere of cultural diversity at the Institute, and the excellent organization of the place where one could work without interruptions made the prospects of a year there inviting, even though at that time, some 15 months before the Berlin Wall was to come down, Berlin was an island remote from the German mainland, and the travel to and from it was not a simple matter. The Fellowship plans for 1990-91 had to be postponed because of a combination of professional and personal commitments, but I was fortunate to have my appointment reinstated for 1995-96, when I could spend a total of five months at the Institute.

In 1995-96, as in all the years since the Institute opened its doors in 1981, the class of Fellows included people from a diverse assemblage of academic disciplines, mostly in humanities, social sciences, and natural sciences. When people of such diverse cultural backgrounds assemble in the very well organized and comfortable circumstances of the Institute for periods of up to ten months, intellectually rich and diverse experiences should be expected. More than thirty-five years ago, the term "The Two Cultures" was introduced by C. P. Snow to describe the gaps in mutual understanding and the ability to communicate between the scientists and non-scientists. The simplistic polarity of dividing the world into the two cultures, scientific and non-scientific, troubled Snow as he wrote the first edition of "*The Two Cultures and The Scientific Revolution*" in 1959 and the expanded version of "*The Two Cultures and A Second Look*" in 1963. Nevertheless, the two cultures became rooted in the English language and, in the U.S., Snow's thesis has generated much debate about the structure of university education as the main avenue

that should lead to closing the gap between the scientific and non-scientific cultures. From my personal perspective as a faculty member in a U.S. university, I see these concerns continuing today, since the days when the two cultures came into the vocabulary. Perhaps the number of cultures was always greater than two, but the simple number two has led the concerns about the splitting and overspecialization of knowledge to the broader concept of interdisciplinary programs that educate people across the boundaries of the traditional disciplines in a university curriculum. Most recently, the convergence of the two cultures has received new impetus arising from the need to understand and counteract the global climate change and its consequences on time scales that far exceed those of the short-term concerns of one human generation. This recent trend became appropriately known as Earth System Science, where the Earth System includes the physical world and the biosphere. Research and curricula in Earth System Science require integration of the different disciplines among the traditional natural and social sciences, insofar as they deal with the inorganic and biological processes in nature that affect human societies in the different stages of their technological and social development.

Have the two cultures come closer to each other since C. P. Snow's lectures and writings of more than three decades ago?

I think that the answer is both yes and no. Yes, because the awareness of the gap between the two cultures in the Western societies has helped restructure the educational process in the direction of a more integrated view of the world, at least among those who chose to take this educational path. The system of liberal arts education in the U.S. was able to develop cross-disciplinary programs that bring the proverbial two cultures closer than educational systems in which students have to go through more narrowly prescribed and specialized curricula from the beginning.

The other answer, no, comes to my mind when I see students in the university with so little understanding of elementary science and no appreciation of quantitative thinking, that I begin to believe in a state of *arithmophobia praecox* (aversion or fear of numbers by the young) as a cultural disease pervading our society. I do not know whether C. P. Snow foresaw in the late 1950's and early 1960's that by the 1990's there would be a great increase in the number of trained scientists, engineers, and other academic professionals in the world. This increase in itself has made the cultural groups bigger, without necessarily bringing greater proportions of their members closer one to the other.

Each class of Fellows at the Institute is drawn from the scholarly diversity of the academic fields in the outside world. Looking at this

diversity only from the perspective of a scientist, I estimated from the Institute's annual reports the numbers of scientists and other scholars in each class of Fellows since 1981. The results are summarized in Table 1 and plotted as shown in Figure 1. Each bar in the figure shows the number of Fellows and Rector's guests (those who stayed at the Institute less than six months). The upper part of each bar is the number of scientists and mathematicians among the Fellows, and the lower part is the number of Fellows from other fields. The results of my count would not be significantly affected by an interpretation, different from mine, of some of the Fellows' principal disciplines: for example, one may question, in what category should be included the two or three aeronautical engineers among the Fellows; or where do those Fellows belong, whose original training was in medicine, physics or mathematics, but whose field of work is history or philosophy of science (I counted them as not scientists or mathematicians). There has been a nearly steady increase in the total number of Fellows each year, from 18 in the first year of the Institute, 1981-82, to 47-49 in the 1990's. The scientists and mathematicians have always been a minority: 0 or 1% in three of the years, and 5 to 30% of the Fellows in each class otherwise. Consistent with the academic policy of the Institute, several Fellows in closely related disciplines usually make one working group, such that the total number of fields represented in each year is considerably smaller than the number of Fellows.

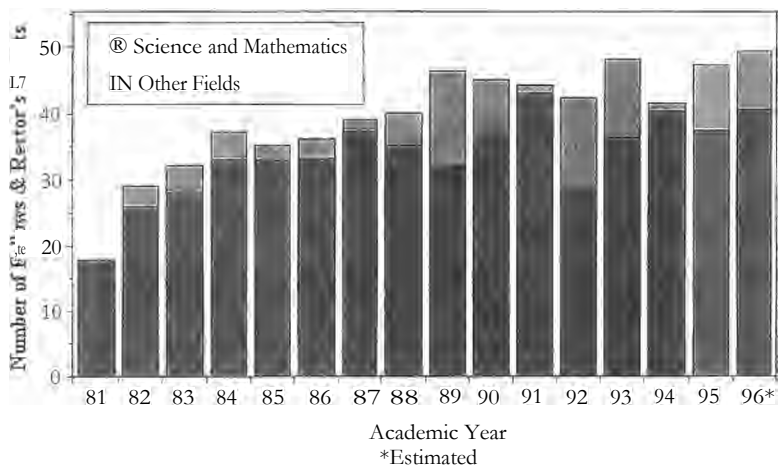
On the scale of science or non-science, the cultural environment at the *Wissenschaftskolleg* is pronouncedly asymmetric. Whether this asymmetry and the choice of the disciplines in the individual years will remain about the same or follow a different program in the future would shape to a large extent the Institute's stature as a home of innovative and cross-disciplinary ideas on an international scale for years to come.

The statistics of professional diversity in an academic institution, such as the data shown in Figure 1 for the *Wissenschaftskolleg*, tell little about the contacts, interactions or collaboration among the individuals. In a university environment, where professional diversity is, in general, a function of the faculty size, physical separation between the different disciplines is often too great and becomes a barrier to frequent discourses between people in different departments or institutes. At my institution, Northwestern, in the College of Arts and Sciences, about 35% of the regular faculty members are in sciences and mathematics. The College includes some twenty-five departments of natural sciences, mathematics, social sciences, and humanities, and a number of interdisciplinary programs. For the several hundred faculty members on Evanston Campus as a whole, there are only relatively limited opportu-

TABLE 1

Academic Year	Total Fellows and Rector's Guests	Number of Scientists
1981-82	18	0
1982-83	29	3
1983-84	32	4
1984-85	37	4
1985-86	35	2
1986-87	36	3
1987-88	39	2
1988-89	40	5
1989-90	46	14
1990-91	45	8
1991-92	44	1
1992-93	42	13
1993-94	48	12
1994-95	44	1
1995-96	47	10
1996-97	49	9

FIGURE 1



nities for cross-disciplinary exchanges outside the business meetings of the College faculty or other Schools, some specially scheduled events, or collaborative research projects between individuals from different fields. It is precisely the academic diversity in small numbers that an institution like the *Wissenschaftskolleg* is admirably suited to nurture by bringing together under its roof and in daily contact scholars who may have no other opportunity to get to know each other. My personal reaction to the environment at the *Wissenschaftskolleg* has been very positive, because I always find it stimulating to talk and listen to people in disciplines remote from mine. There is much to be said for the importance of such cross-disciplinary contacts, even if it cannot be explained in the same terms as the importance of discussions with colleagues in one's own field. To paraphrase Wapnewski's epigraph mentioned at the beginning of this report, I do not know how much new knowledge I help generate by participating in cross-disciplinary discourses, but I know that I find them enjoyable, intellectually gratifying, and fun.

One of the points at the weekly colloquia at the Institute that attracts notice is the difference in the styles of presentation between the scientists and non-scientists. The non-scientists, with a number of memorable exceptions, tend to lecture by reading much more closely from a prepared text than the scientists. The latter tend to speak in a free style and use more visual aids to explain their material, perhaps obeying an old editorial dictum that a good picture is worth a thousand words. Another aspect of some of the colloquia and guest lectures I found more disquieting, when the audience had difficulties following some of the speakers in their own language. When talking in one's own language to an international group, much can be easily lost if the lecturer forgets that he is not in his home institution, and some of his vernacular expressions, local lore, or jokes may have little meaning to many in the audience. This may be only insignificant flutter of the speakers' demeanor in front of an audience, not detracting from the substance of a talk, but it relates to a broader cultural issue that the *Wissenschaftskolleg* brings into focus under its roof. This issue is language and its uses at the Institute, on which I shall offer a few thoughts below.

It may be trite to state, but nevertheless true, that successful and meaningful communication within an international group of scholars depends on either a common language or languages shared by all. To forestall any possible criticisms of narrow-mindedness, I shall say that, first of all, I believe that good scholarship does not depend on good linguistic abilities, and I do not advocate that the *Wissenschaftskolleg* impose a linguistic standard for its academic activities. After all, the biographers of Planck and Einstein wrote of Planck's difficulties in

speaking English and of Einstein's difficulties in writing in that language even after many years in the U.S. However, at different times there usually was one language that played a main role in scholarly communications. Once it was Latin. French had its time as the prevalent language of international cultural exchange. In very recent times, government decrees to the French scientific community aimed to strengthen the role of the French language in international scientific exchange. The decrees have been singularly unsuccessful, showing that political regulation is not enough to make a language internationally acceptable, no matter how rich or beautiful that language is. Late in the last and in early part of the present century German reigned in natural sciences, and there are (possibly anecdotal) stories in U.S. academia that no young chemist in those days could receive promotion in any respectable university unless he had published in one of the highly-regarded German chemical journals. The academic environment of post-World War II strongly favors English as the language of communication, and most pronouncedly so in sciences. I think that as long as the *Wissenschaftskolleg* lets a natural equilibrium develop among the two or three major languages within its walls, the professional communication among the Fellows will remain on a level of good coherence, and even more so if the Fellows were not monolingual. Much of this, however, may be lost if the *Wissenschaftskolleg* followed the examples of the United Nations or organizations of the European Community by admitting more languages into its working order, which is very different in its goals and scope from those of any international political bodies.

My time at the Institute brought many new, valuable and unforgettable contacts with many of my Fellow colleagues. At breakfasts, lunches, dinners, and in the reading rooms I had many enlightening conversations with the Fellows, from whom alone I could learn about the new and interesting developments in anthropology and uses of land-resources, botany, ecological modeling, economics, history of the slave trade, history of science, law and philosophy, literary analysis, political structures in the developing countries, symbolism of colors in decorative art, and urban renewal and growth. On a plane of a wholly different experience, none of my previous sojourns in Germany brought so much first-hand visual information on recent German history up to the end of World War II as my time at the *Wissenschaftskolleg*. For this I am particularly grateful to Gisela Bock, Norbert Frei, Bernd Herrmann, and Kurt Spillmann.

To conclude this report, I shall summarize the scientific framework of my Fellowship. The appointment at the Institute offered me an unmatched opportunity to work together with Ken Hsü, of ETH-Zürich,

and Fred Mackenzie, of the University of Hawaii, Honolulu. In Berlin, we met for discussions and our joint work on environmental geochemical cycles in the oceans, land and atmosphere at two points far apart in the Earth's geological history: in Precambrian time, when the calcium metabolism of the oceans was very different from the present, and carbon dioxide in the atmosphere and oceans might have been much greater than now; and at the present time, human activities affect the atmospheric carbon dioxide and, through it, the global climate and natural geochemical processes in the atmosphere, on land and in the oceans.

My stay could never have been so pleasant if I did not have the benefit of the friendly and dedicated professional support from the computer-network advisors, the librarians, the secretariat, and all those in the administrative and technical services at the *Wissenschaftskolleg* on whom I had to impose from time to time.