A Century of Science Publishing
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Chapter 9
German Post-WWII Developments and Changes in the Language of Science

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After the Second World War German universities and scientific research recovered only very slowly. In West Germany, many scientists left for the USA and other Western countries. A prominent example of this "brain drain" is the physicist Rudolf Mößbauer. He discovered a special interaction of gamma rays with atomic nuclei ("Mößbauer-Effekt") in 1957 in München. In 1961 he received the Nobel Price for his discovery, but in the same year he started to work in the California Institute of Technology in Pasadena. When he returned to München in 1964 he insisted that the Physics Faculty had to be reorganised. As a by-product of this reorganisation, the physics section of the Technical University of München in Garching was renamed into "Physik Department" (explicitly with the English word "department", and not with its German equivalent "Abteilung"). Even now, in 2000, there is still a debate whether this is an acceptable name for a German institution.

Corresponding to the slow recovery of universities, scientific publishing started from a very low level. The division into two German states was an additional handicap for the development of the publishing industry. Many traditional publishing houses had independent east and west German successors who could not contact each other for political reasons. Many owners of publishing houses in East Germany (many of them in Leipzig) had been dispossessed, and some of the companies were continued as VEB ("Volkseigener Betrieb"), while the owners re-established their companies in West Germany. In a table of publishing companies from 1960 the following "dual" companies are listed [1]:

Johann Ambrosius Barth	München 1949	Leipzig 1780	Medicine, Sciences
Bibliographisches Institut AG	Mannheim 1953	Leipzig 1874	Dictionaries
Breitkopf & Härtel	Wiesbaden 1947	Leipzig 1719	Music
F.A. Brockhaus	Wiesbaden 1945	Leipzig 1817	Dictionaries

Gustav Fischer Verlag KG	Stuttgart 1948	Jena 1878	Medicine, Sciences
Otto Harrassowitz	Wiesbaden 1947	Leipzig 1872	Orientalistics, Literature
S. Hirzel Verlag KG	Stuttgart 1947	Leipzig 1853	Medicine, Sciences
Insel-Verlag Anton Kippenberg	Wiesbaden 1945	Leipzig 1899	Literature
Max Niemeyer Verlag	Tübingen 1950	Halle 1870	Germanistics, Philosophy
Julius Perthes	Darmstadt	Gotha 1785	Geography
C.F. Peters	Frankfurt/M 1950	Leipzig 1800	Music
Philipp Reclam jun.	Stuttgart 1947	Leipzig 1828	Literature
Dr. Dietrich Steinkopff	Frankfurt/M 1948	Dresden 1908	Medicine
B.G. Teubner Verlagsges. mbH	Stuttgart 1953	Leipzig 1811	Mathematics, Sciences
Georg Thieme Verlag	Stuttgart 1946	Leipzig 1886	Medicine

(This list is not comprehensive; I know of at least one pair of companies that is missing: Akademische Verlagsgesellschaft Geest & Portig KG, Leipzig, and Akademische Verlagsgesellschaft, Frankfurt/Main.)

In both parts of Germany, academic publishing started with university textbooks in German, mainly new editions of pre-war books. The East German publishers flourished with translations of Russian books (that were heavily subsidised). One famous example is the *Lehrbuch der Theoretischen Physik* in 7 volumes by L.D. Landau and E.M. Lifschitz, published in German by Akademie-Verlag, Berlin 1966. In West Germany, translations from English textbooks were also done, but on a much smaller scale. Most traditional academic publishers kept to developing German language textbooks by German authors. Only one publisher (Springer Verlag) started early with English language journals and books, and founded an affiliate in New York 1964. The aim was not only to distribute English language books and journals published in Germany but also the development of a genuine international product by American and international authors.

Though the university textbooks were written in German, the research level literature (journals, conference proceedings, monographs) was mainly in English. So even long before the introduction of the "Impact Factors" (which are heavily biased in favour of American journals) German researchers tended to publish their results in the English language, and they had to rely on Springer or foreign publishers. So in 1972 it was natural that I published my own thesis in English, and the obvious medium was the Springer journal *Astronomy and Astrophysics*. That journal was founded in 1969, as a merger of five national journals (*Annales d'Astrophysique, Bulletin of the Astronomical Institutes of the Netherlands, Bulletin Astronomique, Journal des Observateurs, Zeitschrift für Astrophysik*). This merger ended the strange situation that a journal with the German title *Zeitschrift für Astrophysik* contained

nearly 100% English language articles.

Late in the Sixties it had become obvious that scientific education and research in Western Germany were behind, and the turbulent upheaval associated with the "68 generation" coincided with demonstrations against the "Bildungskatastrophe". (I don't know whether this was just a coincidence or whether these two developments were factually inter-related. If I remember correctly, the impression that academia was neglected by politics was at least one of the components of the severe frustration that discharged at that time.) In order to end this "Bildungskatastrophe", many new universities were founded (24 new universities, and 12 special high schools on top of 29 existing universities). The number of students rose dramatically within a few years, and also the percentage of school graduates with "Abitur" (qualification for studying) within the corresponding age group, as the following table shows [2].

	Students beginners	total	Qualified for studying (%)
1960	79,400	291,000	5.5
1965	65,700	384,000	7.5
1970	125,700	510,000	10.8
1975	166,600	840,000	20.1
1980	174,000	978,000	22.8

When I started in the publishing business in 1973, I had expected that the market for university textbooks would increase dramatically along with student numbers. But the contrary was the case: the sales figures of academic books had shown a marked drop in 1968.

I had left university and started in the publishing business in 1973. The company was "Bibliographisches Institut" which published mainly dictionaries, reference books, atlases, and had just started a big encyclopedia. Only a small fraction of the company's resources was devoted to academic books: the *BI-Hochschultaschenbücher* (university pocketbooks). First experiences with small, low-cost academic books had been made before the war with *Meyers kleine Handbücher*, and the new series had been started in 1958 with Werner Heisenberg's *Physikalische Prinzipien der Quantentheorie*. The series continued with small reference books, and "additional reading", but also included an increasing number of compact introductory texts. The usage of these books spread rapidly among students and thus attracted more and more authors. The sales figures rose correspondingly. This very agreeable development slowed down around 1968/69, and only in 1972 was the sit-

uation obvious, and the section devoted to academic publishing was restructured subsequently (and I was then hired to help in this restructuring process).

What were the reasons for the adverse development of sales figures despite growing student numbers? Fortunately there is a written account which speculates on some of the reasons in the relevant chapter of the commemorative publication for the 150 years anniversary of "Bibliographisches Institut" in 1976 [3]. Apart from a few wrong assumptions, this analysis reflects some general aspects of academia and publishing in these critical years: One of the internal mistakes was that too many books had been included with a limited market that did not fit into a pocketbook series — it is never easy to reject an important author. But at the same time, due to reformed teaching models, more and more lecturers chose to (or were forced to) distribute their lecture notes free of charge to the students. At the same time, free photocopying in university libraries propagated. As authors made a point of low selling prices, several publishers started paperback series (*Heidelberger Taschenbücher* by Springer, *Teubner Studientexte*, a joint venture of Vieweg with rororo Pocketbooks). So the sales potential for textbooks in the already limited German language market diminished rapidly. Falling print runs imply rising unit costs, and, to absorb these, cheaper typesetting methods were used. *BI-Hochschultaschenbücher* moved from proper Monotype typesetting to the IBM Composer, and later to just reproducing the authors' typewritten pages (with handwritten Greek letters and mathematical symbols). This production development again reinforced the impression that there is no big difference between a proper book and your professor's (free) lecture notes.

Looking back now, more than 25 years later, I believe the increase in student numbers itself had an influence on the book market. My hypothesis: Before the rapid increase in numbers, most students had an academic interest in their field of study in Humboldt's sense, and tried to read about many different aspects of certain ideas and results in order to get a deeper understanding. Many of the "new" students were attracted by improved career chances and saw their studies as a professional training. They would strictly adhere to their own professor's lecture notes in order to pass their examination, and would avoid being distracted and losing time by worrying about different aspects of their subject. I think this new situation — when learning focuses on grades with minimal effort rather than on the acquisition of knowledge — is an additional explanation for the fact that the use of literature did not grow with the number of students. But I think there will always remain a small but constant "hard core" of students with a deeper interest in their subject.

In 1972, as a response to the mentioned difficulties, BI-Wissenschaftsverlag was founded, the new university branch of Bibliographisches Institut that was no

longer dependent on pocketbooks. To become a full scale academic publisher, one of our next steps was to publish in English. We were not alone with this decision; around the same time many traditional German publishers started to publish higher level books in English that would previously have been published in German. This decision was obviously based on the assumption that this step would increase the potential market while more or less maintaining the previous local market, at least a major proportion of it. A 1975 survey [4] among German academics, students, and business executives confirms: English language academic literature is accepted by 60% of researchers, 54% of students (and only 23% of business executives); among academics, acceptance is highest in the arts (58%), lowest in medicine (40%), and has a medium value in economy and sociology (38%) and sciences (47%). Many readers prefer German translations but 22% of researchers, 20% of students, and 29% of executives would read the English original even if the German translation is available; among academics, the proportion is again highest in the arts (32%), and lowest in medicine (9%). To add some personal recollections to these statistics: I remember that even as early as 1965 our mathematics professor had based his lecture on an English text (Ahlfors, Complex Analysis, McGraw Hill International Student Edition), mentioning that we would have to learn and read English in any case during our further studies. In 1969 we had enjoyed reading the English original of *The Feynman Lectures on Physics* (Addison-Wesley), and in my subsidiary subject, Watson's *Molecular Biology of the Gene* (Benjamin) was indispensable.

Around 1984, our company moved into English language publishing; as first steps we started a new international journal (*Expositiones Mathematicae*), published English or mixed language conference volumes, and included English language articles in our *Jahrbuch Überblicke Mathematik* (and gave it the English subtitle *Mathematical Surveys*). Only then did we discover the obvious fact that the English language is a necessary but not a sufficient condition to sell books internationally. In order to obtain some knowledge and assistance in marketing books worldwide, we joined the "International Group of Scientific, Technical & Medical Publishers" (STM). We were not alone; the stm information booklet lists quite a few publishing houses from the German speaking countries (German or Swiss subsidiaries of international groups are not included). Springer Verlag is one of the founding members (not surprisingly), and many companies joined in 1969–1970, immediately after the founding of the group, then there was a second accumulation in 1977–1983; (a tabular overview is shown on the next page).

Various attempts to start individual international book marketing culminated in the early eighties in the idea of a joint effort. The Boston affiliate of Birk-

häuser Verlag (in person of Alice and Klaus Peters) offered German publishers help in entering the American market. This offer included joint distribution and marketing, advice for adjusting the advertising material, but also for re-designing the books themselves (and even for re-orienting the publishing strategy). Parallel to this support of stm publishing, they founded Suhrkamp/Insel USA, and started publishing translations of important German works. Goethe and the collected poems of Heinrich Heine are but two examples. We learnt much from this cooperation, and — with hindsight — it might have developed into a successful German book marketing institution. But unfortunately, this ended in the mid-eighties, when Birkhäuser Verlag, including its Boston subsidiary, was bought by Springer Verlag. So a number of German stm publishing houses lost their guidance in America. The only comfort in this situation was that at least Alice and Klaus Peters did not have a big problem; they received an immediate offer from William Jovanovich to build a new office in Cambridge (MA) to handle the program in the mathematical sciences for Academic Press, and to publish trade books within Harcourt Brace Jovanovich. Today, they have their own independent publishing house (AK Peters, Ltd.).

German, Austrian and Swiss Members of the STM Group (1986) and their first year of membership

Verlagsgruppe Bertelsmann (on behalf of Vieweg)	1970
Bibliographisches Institut	1977
Birkhäuser Verlag	1969
Gustav Fischer Verlag	1978
Walter de Gruyter & Co	1969
Carl Hanser Verlag	1974
Otto Harrassowitz	1984
Hans Huber Verlag	1969
R. Oldenbourg Verlag	1969
Paul Parey	1973
K.G. Saur Verlag	1983
F.K. Schattauer Verlag	1970
Schwabe & Co	1977
J. Schweitzer Verlag	1985
Springer Verlag	1968
B.G. Teubner	1977
Georg Thieme Verlag	1969
Urban & Schwarzenberg	1969
VDI-Verlag	1977

So in the end, Springer Verlag remained the first and only German scientific publishing house which moved successfully into international English language publishing. In the late eighties the attempts of German publishers to become international had stopped. In a reversal of that trend, international publishers started to establish their own subsidiaries in Germany and/or acquired German publishing houses on a larger scale. I thank Rolf Pakendorf (Pearson Education, München) for the following account of this movement from the view of an insider:

> As prosperity increased in Germany after the War and after the reforms of the sixties in the university sector student numbers increased dramatically — instead of 10% of all children born in a particular year enrolling in university, the number rose to 25% by the late seventies. The approximately 1 million German students suddenly constituted an attractive market for US textbook publishers. The first to follow the siren song of large enrolments was McGraw-Hill Book Co.
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> McGraw-Hill, at that time the largest and most international of textbook publishers, started a distribution company in Düsseldorf in 1974. Jolanda von Hagen, who started and ran Springer's New York office took over the management of McGraw-Hill's German operation in 1976. She initiated a German publishing programme at the college level which was expanded in the eighties to cover the professional market in the fields of computer science and business and marketing. In the late eighties McGraw-Hill branched out into medical publishing with the translation of Harrison's Principles of Internal Medicine. The fact that a major US house was on their doorstep encouraged a number of German academics to offer their (English) monographs to McGraw-Hill, thus exacerbating the dire situation of German STM publishers.
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> McGraw-Hill was followed by Addison-Wesley in 1984. Addison-Wesley Germany was conceived of as a publishing operation. The company concentrated on publishing books in computer science for professionals and was so successful they soon ventured into a fully fledged university textbook publishing programme (which they abandoned after a few years, because of the difficulty of the marketplace). The textbook publishing activities led to funneling of (English) monographs to the Addison-Wesley offices in the UK and the US.
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> Basil Blackwell established a German subsidiary in the late eighties. Blackwell Germany acquired McGraw-Hill's German medical list when the latter company abandoned its German operation in the early nineties. Blackwell's German subsidiary concentrates on publishing STM books in German, but obviously English monographs are referred to Oxford.

There are more examples for the establishment of international publishers in Germany. Just to mention a few: as early as 1966 Pergamon Press acquired Vieweg

Verlag in Braunschweig (which became part of the Bertelsmann group in 1974 and moved to Wiesbaden), and in 1996 the Japanese publisher Ohmsha and the Dutch publisher IOS Press re-established Akademische Verlagsgesellschaft in Berlin.

But most such moves cannot be described in few words. To give an example of the more complicated nature: In 1992 the Thomson group established itself in Germany, and founded the subsidiary ITP (International Thomson Publishing) in Bonn which was originally intended to publish textbooks but later moved into computer applications. In 1993 Thomson acquired the medical book program from VCH, Weinheim, and incorporated it into Chapman & Hall. Later VCH became part of John Wiley. In 1998 Thomson disengaged from the German market, and sold ITP to Verlag Moderne Industrie (who made it MITP), the German part of Chapman & Hall was sold to Thieme, and the international parts of the Science publishing to Wolters Kluwer. In 2000 Thomson reengaged in Germany by buying K.G. Saur Verlag from Reed Elsevier, and incorporated Saur into its Gale Group. This is an indication of the accelerating merger, acquisition and reorganisation process which is typical for international businesses, and which eventually had its impact on academic publishing in Germany. In this context the two major German publishing groups with relation to academic publishing should be mentioned: Holtzbrink and Bertelsmann.

Here I have to thank Andreas Deutsch from Spektrum Akademischer Verlag for his valuable material that was the basis of the following paragraphs. This is not only an account of the Holtzbrinck story but also gives an excellent view of the development of academic publishing in the 1990's.

> In the academic and stm field the Holtzbrinck group comprises Spektrum Akademischer Verlag, Gustav Fischer Verlag, Urban und Schwarzenberg, Schaeffer-Poeschel, Metzler, Handelsblatt and shares of VDI Verlag. The academic aspect of the Holtzbrinck story begins in 1978, when the journal *Scientific American* founded its German daughter journal *Spektrum der Wissenschaft*, at the suggestion of Prof. Helmut Grünewald of VCH, Weinheim. The German journal started as a joint venture of Scientific American and VCH, and the first issues were published 1978 in Weinheim, in 1980 the journal became a 100% daughter of Scientific American, and moved to Heidelberg. In the first years the German journal was more or less a one-to-one translation of Scientific American, but from 1983 it was also used by German scientists for their own articles and short contributions. Meanwhile, Spektrum der Wissenschaft had started to publish books, beginning with collections of articles from the journal in the series *Verständliche Wissenschaft*, and since 1982 a new book series, lavishly made-up, about different scientific subjects independent of the journal articles. According to their high academic value, understandable writing, and high quality make-up, the books had printruns that were unusu-

ally high in relation to usual academic publications. In 1986 the whole company Scientific American with all its American and international daughter companies (including W.H. Freeman, Scientific American Medicine, and the Heidelberg daughter) was acquired by the publishing group Georg von Holtzbrinck in Stuttgart.

In 1991 the book publishing was separated from the journal, and *Spektrum Akademischer Verlag* was founded with the intention to start a full scientific publishing program. An English language book program was started, together with Freeman in Oxford. But the planned strategic cooperation with Freeman failed after some time due to a re-orientation of Freeman towards pure College publishing. Since an international distribution was missing, even after the acquisition of Macmillan (and Nature) the publishing house had to concentrate on the German language. Meanwhile, after internal growth, but also due to the take-over of BI-Wissenschaftsverlag and the biology program of Gustav Fischer, Spektrum is the market leader in the German scientific textbook market, above Springer. As a second pillar, besides the textbooks, a series of scientific dictionaries and reference books was established. The publisher included electronic media at an early stage so that most of the program is available in digital form. In spite of all this effort it is nearly impossible to continue a German language program on a library level, because of the restriction to the German language market. The publisher continues his — small but successful — scientific non-fiction program, in continuation of the early tradition of Spektrum der Wissenschaft.

Gustav Fischer Verlag was acquired by the Holtzbrinck group in 1991, to strengthen the stm-field that was until then covered by Metzler, Schäffer-Poeschel, and Spektrum. The biological titles of Gustav Fischer were taken over by Spektrum, and the medical field of Gustav Fischer was stengthenend by the subsequent merger with Urban & Schwarzenberg. Metzler concentrated on the humane disciplines with textbooks and reference books in the same way as Spektrum did in the sciences. Schaeffer-Poeschel was originally seen as one of the professional publishers, together with Spektrum and Metzler, but later it was integrated within Handelsblatt. Holtzbrinck's share in VDI-Verlag is also related to Handelsblatt, and the book program was sold to Springer.

In general, all these measures of concentration and consolidation were undertaken in view of a massive drop in student numbers in the natural sciences. The beginners in Chemistry dropped by 65% from 1991 to 1995, in other scientific fields the decrease was around 30%. A similar development took place in Medicine and Engineering. In view of this sharp drop in student numbers the present lack of technical specialists in many fields ("Bildungslücke") does not come as a surprise for those who had watched the 1995 development carefully. Parallel to the drop of student numbers the library budgets were cut drastically. All this caused a crisis atmosphere that also had an effect in private pur-

> chasing of academic books. Publishers had to concentrate on their core fields, and the costly development of new key titles or entering new fields of business was impossible for most publishers, not only the small ones. Final result was a reduction publishing activities in many places, and a new wave of sales and mergers.

The last turn of this account gives an excellent trigger for the surprise of the century. Given that Springer was one of the first successful commercial publishing houses, the first to move to America, was the founding member of the stm Group, remained the market leader in many scientific fields, had acquired Steinkopff, Physica, Birkhäuser, Urban & Vogel, had subsidiaries in London,Tokyo, Paris, Hongkong, Barcelona, Milan, and Singapore, was one of the first to establish a strong electronic publishing strategy — who could have imagined that this company would become the object of acquisition. On November 11, 1998 it became public: Springer had been sold to Bertelsmann, and the new company "Bertelsmann Springer Science + Business Media" would be born.

This leads us to the Bertelsmann story, and here I have to thank Sabine Schaub, leader of Springer's PR department, for valuable material. The name of the new company is an indication that scientific and professional publishing are put together, so the relevant story starts with the foundation of "Bertelsmann Fachzeitschriften" (professional journals), especially *DBZ Deutsche Bauzeitschrift* in 1953. A selection of the next expansions and acquisitions are given in tabular form:

1970	Heinrich Vogel	Traffic
1973	Münchener Medizin Verlag	Medicine
1974	Vieweg	Mathematics, Sciences
1977	ibau	Building
1978	Gabler	Economy
1979	Heinze	Building

That the activities of former Bertelsmann and Springer companies were coordinated was to be expected. As the three publishers Vieweg, Gabler, and Westdeutscher Verlag, all in Wiesbaden, had been grouped as "Bertelsmann Fachverlage" for a long time, they were of course integrated into the new group. Also the merger of Münchner Medizin Verlag and Urban & Vogel came as no surprise. The next sensation was the acquisition of Teubner by the new group in July 1999. In February 2000 the German "Financial Times" was started in co-operation with the Pearson group. More moves are to be expected, and they will no longer be associated with surprise or sensation. Though Bertelsmann is by far the biggest

publisher in Germany, this is not the case internationally. The following table [5] shows the 10 biggest professional publishing companies in the world and their turnovers (1997, in Million DM):

1	Reed Elsevier	9.5
2	Thomson Corporation	6.7
3	Wolters Kluwer	4.6
4	McGraw Hill	2.7
5	Havas	1.8
6	VNU	1.5
7	Bertelsmann/Springer	1.3
8	Wiley & Son	0.8
9	Harcourt General	0.8
10	Weka	0.8

For the 1970's and 1980's we had touched on the question of the language of science, and whether German academic publishers could move into international publishing or if foreign publishers would take over. The success stories of ever and faster growing international publishing groups make this question more or less obsolete. A big international group would know how to act locally, independent of the location of its headquarters or the mother language of its CEO. We have seen from the Holtzbrinck group that international distribution of English language books can be a problem even within an international group. It is reported that within Springer Verlag the decisions about marketing of English language material in the U.S.A. were always made in New York, and never in Heidelberg.

Directly after the German unification and the fall of the iron courtain some people expected (hoped or feared?) that the German language would regain some of its old potential in science. But this expectation was not fulfilled. Scientific research literature had been published in English since the war, and nothing changed after 1990. There is also an obvious tendency for German participants of German conferences in Germany give their contributions in English. The most recent idea is that university students should receive their regular lectures in the English language — because they will have to do their research in English anyhow. On top of that everyday German is flooded with English expressions, and serious efforts have been started to save the German language from extinction. At least we will have to face the threat that German shares the fate of "small" languages.

As far as the everyday use of language is concerned, this development could certainly be deplored. From the view of a scientific publisher nothing has changed.

On the one hand, the steady tendency towards the English language in scientific research and teaching cannot be reversed. On the other hand the export potential of English research literature from Germany is very limited. So it remains a challenge for German scientific publishers to find their individual niches for publishing in German.

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