SCIENTIFIC PUBLICATIONS OF CHINA IN 1994: EVOLUTION OR REVOLUTION?

B. MÉLY,*,† M. ABD EL KADER,* G. DUDOignon,* Y. OKUBO**

* Laboratoire Stratégie & Technologie, CNRS, Ecole Centrale Paris 92295 Châtenay-Malabry (France)
** Nantes Graduate School of Management, 44312, Nantes (France)

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SCI data bases have been widely used to analyse scientific production of various nations, their position in the international research community as well as their fields specializations. In the present study we examined, within the same methodological framework, the impact of the drastic reorientation of science funding systems which occurred in China (PRC) in the midst of the eighties. A decade after this turning point the pattern of Chinese publications from the 1994 SCI-CDRom reflects those of other countries although with its own peculiarities i.e. a relative weakness of life sciences and a prevalence of fundamental physics compared to the world average. Some effect of PRC’s policy could nevertheless be detected on this SCI profile like e.g. a neat increase of international papers after the opening of the country or the relatively high weight of collaborative works with laboratories from Hong Kong. We suggest that SCI data base is best suited for the analysis of public research of international standard due to the narrowness of the SCI window concerning applied research.

Introduction

In Chinese ancient times sciences and technology were often perceived as a threat against the perenniality of power¹ a situation which could explain, according to some experts, the lack of correlation between the richness of inventions and the weakness of applications in the Middle Kingdom.² Reversing this trend the Chinese government decided in the midst of the eighties to let science and technology ("S&T") play the leading role in the economic development of the country and its entry into the 21st century. This was recently emphasized by President Jiang Ze Min speaking about science and technology as "a productive force of the utmost importance for China", and promising that R&D expenses would increase by a factor of three by the year 2000.³
Actually a new S&T policy was set up in the midst of the 80 when it was decided to transform the Chinese system of innovation from a soviet model, where priorities were set by the military-industrial sphere, to a "market oriented" one.* Among the drastic decisions taken to that end one must quote,

- the need for laboratories to find an increasing part of their funding in the private sector or in self-developed commercial activities. For instance, under the new scheme only one-third of the research expenses of the prestigious Academia Sinica would be covered and,
- a periodical and external assessment of laboratories and their directors using number and quality of publications as a measure of success. In other words the system of "guaranteed grants" established since the founding of China was no more "guaranteed".

At the same time a "National Natural Science Foundation of China" (NSFC in short) was established to specifically support basic science projects less eligible to industrial funding.

A decade after this "complete turnaround" the impact of which on Chinese scientific behavior has been quite documented we wanted to examine if it would be visible on the pattern of Chinese publications found in the most widely used data base: the SCI published annually by the Institute for Scientific Information (Philadelphia, PA) which has become the reference for all kind of bibliometric studies despite its well known limitations especially the poor coverage of the peripheral scientific activity.

According to a previous study on the cumulative scientific publications of 48 countries found in the SCI base from 1981 to 1992, the PRC was ranking 20th, far behind Japan (2nd) and India (9th) but before Taiwan (30th), South-Corea (40th), Singapore (46th) and Thailand (47th).

In the SCI CD-ROM released for the year 1994, 7943 publications were identified as "Chinese" (PRC), which brings the mainstream scientific production of this country at the level of Denmark and Poland, quantitatively speaking.

* This orientation is periodically bewailed by western scientists for the loss of bright theoreticians who switched to more lucrative subjects or even to private companies!
** 89% articles, 8% notes, 2% letters and 1% reviews.