

Role	Name	Affiliation
	EVOLUTION GEOGRAPHICAL THOUGHT IN INDIA	
Principal Investigator	Prof. Masood Ahsan Siddiqui	Department of Geography, Jamia Millia Islamia, New Delhi
Paper Coordinator, if any	Dr. Taruna Bansal	Department of Geography, Jamia Millia Islamia, New Delhi
Content Writer/Author (CW)	Dr. Taruna Bansal	Department of Geography, Jamia Millia Islamia, New Delhi
Content Reviewer (CR)		
Language Editor (LE)		

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EVOLUTION OF GEOGRAPHICAL THOUGHT IN INDIA

INTRODUCTION

India is the home of one of the earliest civilizations; it has been observed by number of scholars that in India geographical studies date back to those times. The contributions of Indian scholars by no means are less than that of Greeks, Romans and Chinese. The legendary works like Upanishads and Vedas led us to develop number of indigenous systems of knowledge. Surprisingly, most of the inventions and discoveries that are believed to have originated in the Western world have their roots in the ancient Indian knowledge which has 2000 years old legacy. Although the formal foundation was laid during the British period (1920s); this can be affirmed through the statement of James and Martin (1972) 'the new geography was transmitted by British to its colonies through universities'. In India the first geographical association was established in 1920 at Lahore where a college was established with under-graduate classes. And later on it was established in Aligarh in 1924 and in Patna in 1927; therefore geographical studies found their expression in India education system only in the early twentieth century. To understand the development and growth of this discipline in India one has to see the paradigmatic changes that this field has witnessed especially in last hundred years as well as the roots that lie in our ancient traditional knowledge.

The roots of Indian Geography in the Ancient Literature

In Hindi geography is called "**Bhugol**", where '*bhu*' means '*earth*' and '*gol*' means '*round*' that is **study of round earth** (Rana, 2013). The word *Bhugol* is derived from two Sanskrit words. It means that from ancient times Indian scholars considered earth to be round; a notion contrary to the other ancient civilizations which considered earth as a flat disc. This becomes evident when one dwells upon the fact that many scholars of that time had expertise in various disciplines relate to earth. Table 1 provides the information on different disciplines which were popular among these ancient scholars.

Table 1
The Earliest Known Indian Scholars and Their Field of Interest

Name	Field
Acharya Kapil (3000 BC)	Cosmology
Acharya Bharadwaj (800 BC)	Aviation technology
Baudhāyana, (800 BC)	Mathematics
Acharya Charak (600 BC)	Medicine
Acharya Kanad (600 BC)	Physics (Atomic Theory)
Acharya Sushrut (600 BC)	Medicine (Surgery)
Gautama Buddha (563 to 483 BC)	Philosophy
Pānini (400BC)	Grammar
Nagarjuna (100 AD)	Chemistry
Āryabhatta I (476–550 AD)	Mathematics & Astronomy
Varahamihir (499-587 AD)	Astrology & Astronomy
Brahmagupta (598-668)	Mathematics & Astronomy
Bhāskara I (600 - 680)	Mathematics & Astronomy
AdiShankara (788 AD - 820 AD)	Philosophy
Aryabhata II (about 920)	Mathematics & Astronomy
Sridharacharya (AD 991)	Mathematics
Brahmadeva (1060- 1130)	Mathematics & Astronomy
Bhaskaracharya (1114-1183 AD)	Algebra

Source: Rana (2013)*Evolution of Modern Geographical Thinking and Disciplinary Trends in India*, p.2.

The above table clearly shows that the ancient scholars in India made significant contributions to the discipline of geography through their works in philosophy, cosmology, astrology, mathematics, medicine and linguistics. These works have largely benefited the branches of regional geography, physical geography, climatology and practical geography. The ancient scholars such as Aryabhata-I, Bhaskaracharya, Brahmagupta and Varahamihira had contributed to astronomy where they have put forward theories and concepts related to the planetary positions, planetary movements,

planetary forces, latitudes, longitudes and local time, directions or cardinal points, earthquakes and volcanoes, atmospheric observations with reference to seasons and its physical divisions along with related astronomical calculations. Example can be cited of works of Aryabhata; what Copernicus and Galileo suggested nearly 1500 years ago was originally propounded by him. Another example can be cited from the concept that from the Vedic times, Indians had classified the material world into five elements viz. Earth (Prithvi), fire (Agni), air (Maya), water (Apa) and ether (Akasha). These five elements or *Pancha Mahabhootas* have been identified with the various human senses of perception; earth with smell, air with feeling, fire with vision, water with taste and ether with sound. It is perceived that material world is composed of these panch mahabhootas and hence comprised miniscule particles of matter. The concept was atom (Parmanu) was also known to them; that suggested that there was a possibility even at an abstract level.

As during those times the means of communication were poor, the scholars had limited knowledge about the earth. In spite of that some description is available on the various regions of the world; these regions were known as the ***dwipas***. Seven *dwipas* have been mentioned in the Puranas. These are Jambu Dwipa, Krauncha Dwipa, Kusha Dwipa, Plaksha Dwipa, Pushkara Dwipa, Shaka Dwipa and Shalmali Dwipa. Jambu dwipa formed the centre of Geography as a discipline was not developed at a formal level during ancient times; the earliest mention of geography is made in the 8th century Puranic text – Bhagwat Purana. Some information is also found in the epics of Ramayana and Mahabharata. The oldest Veda, the Rig Veda clearly states the idea of six directions - Purva (East), Paschim (West), Uttar (North), Dakshin (South), Zenith (Meru) and Nadir (Bhadvanala). The reference has also been made of vacuum that existed between the earth and the heaven (Antariksha). The thickness of the Antariksha was calculated as 12 yojans which is equal to 96 kms (1 yojan = approximately 8 kms). all these continents. India has been mentioned as *Bharatvarsha*. It extended from the Himalayas to Kanyakumari and consisted of regions like Saptasindhu, Himavat, Kailash Parbat, Vindhayans, Sahyadri. Rivers originating from the Himalayas like Ganga, Yamuna, Brahmaputra, Saraswati, Satudri (Sutlej), Asikni (Chenab), Vitasta (Jhelum),

Arjikeya (upper part of Indus), Susoma (Savan), Sindhu (Indus), Kubha(Kabul), Gomati (Gomala), Krumu (Kurrum) along with the inland river like Narmada, Tapti (Tapi), Godavari, Krishna, Cauvery and Tungbhadra; all are mentioned in these ancient texts.

Indian Geography during the Middle Ages

During the medieval period the geographical boundaries of the known world extended for Indians. They migrated to lands like Cambodia and even set up trade links with china on one end to Greece on the other. The most significant feature of this period was that the Indians came into contact with the Arabs. The influence became more prominent when the Muslims established their empire in India. One of the most important writings of this time is Al-Beruni's *Tarikh – i – Hind* where he describes the geography of India. Other scholars of this period include Al-Beruni, Ibn-Batuta and Abul Fazl. The contribution came through '*Kitab 'I Hind*' of Al-Biruni;'s Travels in India and China, a travelogue of Ibn Batuta; and '*Ain-i - Akbari*' the third volume of Akbarnama, of Abul fazl-i-Allavi.

Geography in British India

As already stated that geography as an independent discipline established itself during the colonial period when number of colleges with under-graduate classes was initiated and geographical societies and associations were established in those colleges. Some of the prominent societies include the Curzon Geographical Society, Aligarh (1925); Madras Geographical Society, Madras (1926); Patna College Geographical Society, Patna (1929); Calcutta Geographical Society, Calcutta (1933) and Bombay Geographical Association, Bombay (1935). India's great personalities in the field of geography during this period were N. Subramanyam from Chennai, R.N. Dubey from Allahabad, K.S. Ahmad from Lahore, Tahir Rizvi from Aligarh and S.C. Chatterjee from Patna.

To promote their knowledge of the territories and the resources the Britishers set up a number of Surveys like the Survey of India followed by Geological, Zoological, Botanical, Linguistic, Archaeological and Anthropological Surveys. Further, the gazetteers, the reports of the Geological, Archaeological as well as Anthropological

survey of India, the Census data and reports, and statistical reports were produced periodically. The climatic data from the Indian meteorological department of Government of India was also published at regular intervals and therefore became a reliable source of geographical information.

At the end of the British period, the discipline of geography was still in its pre-embryonic stage as Indian scholars were not interested in this field; the possible reason may be lack of professionalism of the discipline viv-a-vis the continued relevance of geology in the earth studies (Adhikari, 2010).

Geography in Modern India

The progress of geography as an independent discipline in India can be best understood through its development in a series of sequential phases as suggested by Rana (2013). These phases are:

- (1) The Formative Stage: Pre-1950s;
- (2) The Informative Stage: The 1950s;
- (3) The Confirmative Stage: The 1960s; and
- (4) The Reformative Stage: Since 1971.

(1) The Formative Stage: Pre-1950s

There is no wonder that the first generation of the Indian geographers were those who were trained in other related disciplines. They chose geography only as their professional career; among these who left their marks on the history of geography in India are H.L. Chhibber, S.P. Chatterjee, R.N. Dubey, M.B. Pithawalla, G. Kuriyan, K.S. Ahmad, S.M. Ali, N.K. Bose and C.D. Deshpande. Their wide-ranging research interests covered the various branches of geography but their methodology was similar - the descriptive ideographic way to describe and interpret the heterogeneity and unevenness that prevailed over the earth surface. The geographical associations and societies founded during the colonial period played a vital role in disseminating geographical knowledge and promoting geographical research. They made the journals like *Indian Geographical Journal* (Madras), the *Geographical Review of India* (Calcutta), the

Geographer (Aligarh) and *the Bulletins of National Geographical Society of India* as their key geographic boughs.

(2) The Informative Stage: The 1950s

The second phase immediately after Independence gave geography a national base, though it followed the prototype framework as followed during the preceding stage. The torch bearers in this stage were O.H.K Spate and D.L Stamp. The monumental work of Spate *India and Pakistan* (1952) laid strong foundations for the discipline. Apart from this the work of R.L.Singh *Banaras: An Urban Geography* (1955) brought urban geography in the forefront. In this phase the year 1956 holds a significant place as several goals were achieved. The National Atlas and Thematic Organisation (NATMO) was established in 1956 under the leadership of S.P.Chatterjee. The National Atlas Organisation was also set up, which gave impetus to the growth and development of geographical teaching and research at universities.

On the eve of India's independence only four universities- Aligarh, Calcutta, Allahabad and Banaras- offered postgraduate studies in geography. By 1950, four other universities – Agra, Punjab (Chandigarh), Madras and Patna started postgraduate programmes in geography. The result was that in the next 30 years the discipline saw tremendous growth in India.

(3) The Confirmative Stage: The 1960s

The most important event of this stage was the 21st International Geographical Congress held in New Delhi in 1968 under the presidentship of Prof. S.P. Chatterjee. Apart from these now nearly 36 universities started offering geography as a post-graduate subject. Number of societies and associations also increased and this time they came up with academic journals also. To name a few - *Transactions of the Indian Geographers* (Patna), *Deccan Geographer* in Secunderabad, *Geographical Outlook* (Ranchi), *Indian Journal of Geography* (Jodhpur), *Geographical Knowledge* (Kanpur), *Geographical Viewpoint* (Agra), and the two Hindi journals known as *Uttar Bharat Bhoogol Patrika* (Gorakhpur) and *Bhoodarshan* (Udaipur). Several branches of geography came up; important being Economic geography, Human geography,

Physical geography, Regionalisation and regional planning, Cartography, Geographical thought and Historical geography.

(4)The Reformative Stage: Since 1971

The number of the departments of geography grew up to 48 in this stage. In 1972, the Indian Council of Social Science Research (ICSSR), New Delhi came up with a project report with a title “*Survey of research in Geography*”; and stated that eight branches of geography have reached their development. These are – economic geography; geography and planning; human geography; historical geography; political geography; regional geography, methodological review and research methods. This report identified the salient features of the Indian geography as:

- a) Concern with regards to the problems of planning and development
- b) Inter-mingling with other sister disciplines
- c) Adopting quantitative methods in geography
- d) Lack of generalization
- e) Application of western models on Indian geographical studies.

Similar surveys were conducted three more times and the fourth survey done in 1999 identified the following trends which clearly show the shifts and paradigmatic changes that Indian geography went through. These are:

- a) Acceptance of quantification
- b) Model building
- c) Development of methods related to observation and data handling
- d) importance to social processes
- e) integration of data with socio-cultural phenomenon
- f) implication of research to overall development

This shows that the Indian geography since independence has moved much ahead as rather being dependent on Anglo-American geography it is moving in different directions without the baggage of dualisms and dichotomies. The credit for this goes to the leaders of first generation which include – V.L.Prakasa Rao from Delhi School of Economics; R. L. Singh from Benaras Hindu University; P. Dayal from Patna University; M. Shafi from Aligarh Muslim University; G. S> Gosal from Punjab University,; S. M. Alam from Osmania University; C. D. Deshpande from Bombay University; S. P.

Dasgupta from NATMO; Moonis Raza from Jawaharlal Nehru University and R. P. Mishra from IDS, Madras. By 2000, there were as many as 50 societies and associations and they are playing pivotal role in disseminating and promoting geographical studies and research throughout the country. Various new branches emerged which are shown in table 2.

Table 2
Main Branches and their Proponents in Indian Geography

Branches of Geography	Major Proponents
Regional Development and Planning	C. D. Deshpande; K. V. Sundaram; C.R. Pathak; R. P. Mishra;
Urban Geography	R L Singh; R.B. Singh; R. Ramachandran
Climatology	P Dayal
Regional Geography	O. H. K. Spate; L S Bhat
Administrative Geography	Gopal Krishan; Suryakant
Agricultural Geography	M.Shafi; Jasbir Singh; Majid Hussain
Geography of Health	Rais Akthar; Jayati Hazra; Jayashree De
Geomorphology	H.L.Chibber; S.P.Chatterjee; R.P.Singh; Enayat Ahmad; Savindra Singh; S. R. Basu; S.C.Mukhopadhyay; V.S.Kale; A. Kar; R.C.Tewari
Gender Geography	Saraswati Raju
Political Geography	R.D. Dikshit; C.P.Singh; R.L.Dwivedi; Swaranjeet Mehta; S.Adhikari; R.N.P.Sinha; Govind Saran Singh
Population Geography	G.S.Gosal; R.C.Chandana; Gopal Krishan; Swaranjeet Mehta; M.S.Gill
Social Geography	A.Ahmad, M.Ishtiaque
Cultural Geography	A.B.Mukherji; Kashi Nath Singh
Economic Geography	S.P.Chatterjee
Resource Geography	R.P.Mishra; B. Thakur
Transport Geography	H.Ramachandran

Cartography and Thematic Mapping	S.M.Alam; B.K.Roy; A.Ramesh; L.R.Singh; Ashish Sarkar;
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Conclusions

In the words of Reddy (1982) geography in India is only 50 years old while the modern geography is as an academic and applied discipline in 150 years old. This means that Indian geography is much younger than modern geography. The reason can be found in what Panikkar stated in 1955 – geography has been at all times one of the great and most regrettable gaps in Indian knowledge. We have totally neglected geography even when historical events should be related geographically. A nation can only neglect geography only at its peril.

Clearly, Indian geography is today at an important turning point. The foundation laid down after independence by geographers who are now in retirement is being challenged by newly developed or introduced methodologies or research techniques, such as remote sensing, quantitative analysis and GIS. At the same time, the Indian geographers are just now beginning to look beyond their own regional boundaries, indeed even to the rest of the world for research subjects.

The need of the hour is to develop a methodological system of Indian geography which has its distinctive traits as an intellectual and scientific discipline that can provide a meaningful synthesis of our cultural heritage and physio-technological progress, our habits and habitats, as well as our opportunities and challenges and that can be more substantive, productive and satisfying. Modern Indian Geography, if it has to reach the status of science, must start studying our problems of life and living. Unless we identify the geographical perspectives of these problems and seek an explanation, there can be no Indian geography.

To conclude it can be said in India lacks the tendency of developing indigenous models and methodologies and are dependent on the western world geography in India has come a long way. After independence it has established itself as an independent field and made its place among the science dealing with the reality through its contribution to development and regional planning (Gosal, 1980).