

# The Development of Scientific Disciplines in a Transnational Context

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**D**isciplines and Movements: Conversations between India and the German-speaking World edited by Hans Harder and Dhruv Raina, is a recent publication in the field of transnational studies between India and German-speaking countries in scientific–historical contexts. This is a unique undertaking to overcome the almost paradigmatically established notions of cultural influences and exchanges, of scientific cooperation and direct and indirect participation in the genesis of scientific disciplines, especially at the beginning of the 20th century. Both commentators, Anil Bhatti and Jürgen Renn, agree that the anthology brings about a paradigm shift in the well-established comparative and transnational studies between India and German-speaking countries, and indeed within the framework of the disciplinary unfolding of the sciences and their participation in the globalisation of science

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and the production of knowledge. The overarching context of this project, in which authors from different scientific disciplines are involved, is undoubtedly the “globalization of knowledge in the age of disciplinary sciences,” as framed by Renn, which prompts the development of scientific disciplines in a transnational context.

Most of the articles in this anthology examine the disciplinary development of some of the modern sciences such as physics, psychology, Indology, and engineering at the turn of the century and the beginning of the 20th century, primarily to justify how the scientific disciplines are developed not only in a national but also in a global or universal framework. The transnational genesis

should essentially contribute to the globalisation of knowledge. Some essays point to how cultural differences and similarities, conformities and non-conformities, etc, influence, even determine, the disciplinarity of science and its historicity. Accordingly, the theoretical reflections on disciplinarity and interdisciplinarity should initially serve as a propaedeutic to the project.

It is precisely this theoretical propaedeutic that seems to be missing in the overall structure of the anthology, which consists of contributions from different disciplines. At least one essay should have provided an introductory discussion of the theoretical foundations of the genesis of the disciplines in a general context, but not necessarily in the context of a “disciplineology.” For a subtle leitmotif of many contributions seems to be the historical justification of a fact—how transnationalism and transculturalism in principle can have a decisive effect on the development of a scientific discipline and thereby promote the globalisation of knowledge. An exemplary investigation of the theoretical foundations of disciplinarity and interdisciplinarity would be the essay titled

“Unity of the World—Diversity of Science” by the renowned historian of science Lorenz Krüger (1987). Krüger poses the fundamental question about the nature, individuation, telos, and scientific genesis of the disciplines. Krüger also points to the necessary interdisciplinarity that underlies the disciplinary development of the individual sciences, as the theoretical prerequisites of a scientific discipline go beyond the scope of disciplinarity and require interdisciplinarity. The transnational and transcultural interests and efforts in the establishment and development of scientific disciplines should in principle produce a new form of interdisciplinarity or interdisciplinary contextuality and update it within the framework of the globalisation of knowledge. The sociocultural, philosophical, and philological “differences” between nations and civilisations correspond more to a form of interdisciplinarity (in a culture-specific framework), which tacitly presupposes the globalisation of knowledge that came about in history largely through colonisation.

### Construction of the Subject

An essay that examines the transnational dialogues or communications in the general or global framework of theoretical philosophy is Rajendra Dengle’s article in this volume, titled “The Post-Historical Subject as Project: Some Communicological Reflections”:

Dealing with the History of German Literature theoretically within the framework of philosophical debates around historicism reveals a methodological chasm between the positivistic, objective, and the “scientific,” and the phenomenological–hermeneutic perceptions of knowledge, but it also relegates the expression of this experience in various forms of art and literature to the peripheral realm of aesthetics. The hermeneutic perception, by contrast, does the very opposite: by shifting the focus to the subject of knowledge and its experience, along with the expression of this experience and its understanding, it moves away from the definition of the object of knowledge as a given to one that is produced, constructed, and that owes its existence to the effect that it has on the recipient. (p. 171)

As is clearly outlined in these introductory remarks, the status of knowledge production should not be based

merely on the givenness of knowledge, but should primarily be identified and legitimised in the construction of the subject itself, in its historical genesis and morphosis. Dengle does not seem to conceive the subject as a given universal subject—as in Immanuel Kant’s sense—but rather in the universality of its diverse, culture-specific forms of origin and appearance. To this end, references are carefully chosen that transcend the contextual boundaries of nations and cultures. Even if the references are limited to the cultural areas specified in this anthology—the German-speaking countries and India—the preferred references unfold in global contexts.

Indeed, the references here are writers, poets, philosophers, and sociologists who intellectually swing between the German-speaking cultural spaces and India, such as the early romanticists Johann Gottfried von Herder and Friedrich Schlegel, philosophers like Friedrich Nietzsche and Vilém Flusser, poets and writers like Fritz Mauthner, Hugo von Hofmannsthal, Hermann Bahr, sociologists such as Martin Buber, and others. The language crisis (Hofmannsthal), egolessness (Bahr), irredeemable ego (Ernst Mach), and Mauthner’s sensualistic subjectivism refer to the crisis of the subject in *fin de siècle* (19th/20th century) and its global impact extending across the Orient and the Occident. The focus of the investigation is Flusser, the renowned media and cultural theorist, and, in particular, his idea of the bottomlessness (*Bodenlosigkeit*) of the subject and Buber’s dialogical philosophy, which is based, among other things, on the historical and fateful role of Judaism in the dialogical bridge-building between the Orient and the Occident. The elucidation of the correlation and complementarity between Flusser’s bottomless subject and Buber’s dialogical subject seems to be the core of Dengle’s investigation.

### Transnational Scholarly Dialogues

However, the conversations between nations or between cultures, as represented in individual and institutional contacts, correspondence, and collaborations, should be primarily supported by factual information and evidence. Most

of the contributions in this anthology strive for factual extension and justification of the scientific and disciplinary connections between India and the German-speaking countries in a historiographical framework. In his essay “Late Colonial India and Weimar Germany: Physicists in Conversation,” Dhruv Raina, one of the editors of this anthology, highlights the individual, institutional, and governmental investigations in the establishment of transnational scholarly dialogues and collaborations between India and German-speaking nations after World War I and the Weimar period. Two models of scientific–disciplinary cooperation are contrasted and explained at the same time, namely non-governmental or *autotelic* and intergovernmental or *heterotelic*. This differentiation, which appears as a certain dichotomy in the essay, has clear reference points to the institutionalisation of scientific disciplines based on the establishment of universities and research institutes. Especially when it comes to

proves to be a late nation (to borrow a culture–theoretical expression from Helmuth Plessner), since the universities—despite the relatively long colonial rule—were not established until the middle of the 19th century.

However, Raina documents, with appropriate references, how the disciplinary and sub-disciplinary development of the sciences, especially physics, prompted the establishment of institutional research at the transnational level between India and the German-speaking countries. Particularly in the development of modern physics, in contrast to the long-established classical physics, places and institutions proved to be decisive, namely Berlin, Göttingen, Zurich, Cambridge, and Paris as the epicentres of this movement. The historical background to this transnational expansion of the disciplinary development of modern physics, especially when it comes to the exchange of science between India and German-speaking countries, was the fateful double isolation and alienation of science in Germany: First, after World War I, in which Germany lost against the Allies and consequently German scientists began to be neglected on an international level, and second,

the rise of National Socialism, in which scientists of Jewish origin, in particular, were forced to flee Germany. Raina excellently demonstrates how such historical contexts brought about and encouraged an active dialogue between German and Indian scientists and intellectuals, as exemplified in the conversations and correspondences between Bose and Einstein, which is known to have unfolded into seminal scientific constellations, for example, between Tagore and Einstein and between C V Raman and Max Born, that is, the efforts of Raman to establish a chair for Born at the Indian Institute of Science (IISc) in Bengaluru. Raman also wanted to bring other scientists like Erwin Schrödinger, Rudolf Peierls, and Paul Peter Ewald to IISc Bengaluru.

Raina shows that transnational scientific-disciplinary communication is autotelic or emerges as an initiative of individual scientists, which then unfolds into heterotelic or state-institutional collaborations. However, in scientific-disciplinary dialogues and collaborations, heterotelic internationalism should necessarily maintain its autotelic initiative, rather than hinder it. Raina gives one of the earliest examples of autotelic internationalism in disciplinary scientific collaboration that unfortunately went awry through institutional-administrative intervention, namely Raman's efforts to offer Born a chair in Mathematical Physics at the IISc. The article quotes a letter from Raman, expressing his deep disappointment: "If great minds like Born and Schrödinger could have been provided a home here, a real scientific movement could have started in the country" (Singh 2001: 1489–94). This emphatically proves how important it is that the autotelic initiatives of transnational scientific collaborations should be recognised and have a decisive impact on the heterotelic establishment of international scientific collaborations.

### Indo-German Encounters in the Psychological Sciences

The other disciplines discussed in this anthology within the framework of the transnational scientific conversations between India and the German-speaking

countries in the early 20th century are psychology, Indology, and sociology—apart from the essays by Roddam Narasimha on the contributions and participation of Germany in the development of Indian aeronautical science and technology in the 20th century. The papers of Christiane Hartnack and Hans Harder explicate the involvement of Indian scholars and scientists in the emergence of psychology as an autonomous discipline in the early 20th century, as demonstrated particularly in the works of Girindrasekhar Bose and his correspondences with Sigmund Freud.

In her essay titled "Indo-German/German-Indian Encounters in the Psychological Sciences," Christiane Hartnack outlines the genesis of psychology as an autonomous discipline and the resonance that the emergence of psychology in German-speaking countries found among famous Indian psychologists. Ever since Wilhelm Wundt founded the first psychological laboratory in Leipzig in 1879, psychology has developed as an autonomous discipline, which consequently began to free itself from philosophy. The founding of the School of *Gestaltpsychologie* in Berlin in the 1920s and the contemporary development of psychoanalysis in Vienna by Freud are among the landmarks of the exponential development of psychology that dominated the entire 20th century. Hartnack presents eight case studies in two categories, namely the encounter of Indian experts in psychology with German-speaking colleagues and—vice versa—the encounter of German-speaking experts in the psychological sciences with their colleagues in South Asia. The first category consists of four Indian psychologists: Bose (a key figure in the history of Indo-German encounters in the psychological sciences who "tried to convince Freud as to why cultural adaptations in psychoanalytical theory are necessary" [p 192]), Suhrit Chandra Mitra, Kripal Singh Sodhi, and Sudhir Kakar.

The second category includes Freud, Carl Gustaf Jung, Edith Gyömrői, and Medard Boss. This interesting and informative study focuses on Freud's alternating likes and dislikes for an Indian heritage in the genesis of psychology and psychoanalysis. Hartnack also briefly

outlines Jung's contrasting inclination—as against Freud's scepticism—towards Indian culture and the psychological contents of its classical literature and philosophy. Also of interest are references, such as Medard Boss's work *A Psychiatrist Discovers India* (1965), in which Boss criticises "Western attitudes of cognitive superiority and Europe's emotional poverty and intellectual reductionism, which leaves out experiential learning" (p 206). Hartnack's paper ends on a mixed note of disappointment and hope:

Contemporary research done in the psychological sciences in German-speaking countries has by now lost the status it enjoyed at the beginning of the twentieth century. As a result, the influence of German psychological science in India belongs to the past. (...) On the other hand, the burgeoning output of psychological research at Indian universities nowadays, as well as the revival of so-called "indigenous" psychology in India, might spark renewed interest in scholars from the German-speaking world. (pp 208–09)

In his article titled "Colonial Bilinguali-

Manoeuvring His Readers, Indian Traditions, and Freud," Harder examines Bose's scholarly positioning in a linguistically and culturally divided colonial world. Among other things, it is about the topicality of questions, such as whether psychoanalysis as a discipline enabled Bose to overcome the colonial hierarchy. The article consists in large part of a critical examination of various viewpoints of authors such as Hartnack, Ashis Nandy, and Kris Manjappa. While Hartnack and Nandy tend to recognise the current colonial contextuality in Bose's relationship and correspondence with Freud, Manjappa takes a different critical stance that Austrian nationality and the German legacy of psychoanalysis helped Bose to overcome colonial bifurcation and thereby take an ambivalent position.

Affinity with the intellectual history of Germany and German-speaking countries tacitly turned out to be an anti-colonial leitmotif on the part of Indian intellectuals, as noted by the renowned Indian Germanist Anil Bhatti.<sup>1</sup> The outsidership or third position of Freud, as Manjappa points out, seems to conform to the characteristic countering of the

prevalent British colonialism on the part of countries like India:

He (Manjapra) argues that for Bose, Freud held a third position outside the colonial set-up and his being Austrian enabled an engagement that was not predetermined by the coloniser–colonised divide. (p 218)

Harder convincingly discusses these differences in the current reception of the Bose–Freud relationship and correspondence in the context of the colonial era. The focus is on two main works by Bose: *Swapna*, which was intended to supplement Freud's famous *Interpretation of Dreams*, and *Yoga Sutra*, which appeared as a counterpart to *Swapna* and was contrasted with it. An important point that Harder discusses in his paper is the conventional or clichéd dichotomisation between characteristically Indian interiority and Western materialistic exteriority, as represented particularly in the field of science and technology—a conceptual opposition that unfolded in the 17th century (p 230).<sup>2</sup>

### Intellectual History of German Indology

In his essay titled “Sheldon Pollock and the German Indology,” Axel Michaels is critical of the polemical view of Pollock (1993), who, in his well-known article “Deep Orientalism? Notes on Sanskrit and Power beyond the Raj,” seeks to highlight the direct and indirect influence of German Indology on the rise of Nazism in the 20th century. Michaels quotes from Pollock's work:

German Indology of the NS [National Socialist] era, a largely nonscholarly mystical nativism deriving ultimately from a mixture of romanticism and protonationalism merged with that objectivism of Wissenschaft earlier described, and together they fostered the ultimate “orientalist” project, the legitimization of genocide.

With appropriate references, Michaels argues how such polemics against the tradition of the German Indologists or their origin in the 19th century and their academic establishment, especially their abuse by the National Socialists, are historically unfounded. Michaels explicates the one-sidedness of Pollock's polemics against German Indology by pointing to the resistance of many German Indologists

to National Socialism (which seems to be the missing important reference in Pollock's work), even to Indologists of Jewish descent who died by suicide, as well as the German Indologists like Paul Theme, who was arrested and imprisoned by the British in India, and the communists among the Indologists. At the same time, Michaels emphasises the strange silence of Indology in relation to the horrors of National Socialism, which, among other things, also underlies the apolitical nature of the subject and its historical continuity.

An important point that Michaels discusses is the characteristic confinement of German Indology to the classical Sanskrit language and literature of ancient India, and the German Indologists' reluctance to have first-hand experience of the contemporaneity of Indian culture, which had kept them from travelling to India. Following this, Michaels discusses the importance of incorporating modern philologies and cultural histories and theories into the hitherto classical Indology. Michaels attributes the decline of Indology in Germany to the dominance of classical Indology. The very important and quite topical reference that Michaels gives in this regard is the well-known dispute between two classical philologists, Ulrich von Wilamowitz-Moellendorff and Friedrich Nietzsche, in Basel. As is well known, the classically oriented philologist von Wilamowitz-Moellendorff polemicised vehemently against the historical–theoretical reinterpretation of classical antiquity by Nietzsche, as represented in his early work *The Birth of Tragedy*. Michaels quotes Pollock (2009: 932):

For Wilamowitz, true knowledge of any social or cultural phenomenon of the past could only be acquired by examining every feature of its historical context, and by doing so completely abstracting it from present-day perspectives. For Nietzsche, the approach of the newly professionalized (and only recently named) discipline of philology had completely deadened antiquity and perverted the true aim of its study; the philologists themselves had “absolutely no feeling for what should be justified, what defended.”

Here it is important to note that it was, among other things, Nietzsche's reinterpretation of the origin or birthplace of Dionysus as India (as opposed to the common notion of Dionysus' origin in Asia Minor)

that provoked the classical philologists such as von Wilamowitz-Moellendorff in Europe—an important reference related to this anthology, which unfortunately is missing.

The essay by Angelika Malinar, titled “Ideas of Indian Philosophy in Nineteenth-Century Germany: Vivekananda, Deussen, and Garbe” outlines two distinctive tendencies in the emergence of Indology in connection with Indian philosophy in 19th century Germany: first, a clear paradigm shift in the reception of Indian antiquity in the 19th century, namely from the romantic and popular ideas, represented especially in the early romanticism by Schlegel, Novalis, and others as well as by the well-known proponents of German intellectual history at the turn of the century and the beginning of the 19th century, such as Herder, Johann Wolfgang von Goethe, and Alexander von Humboldt, to the more philologically and philosophically oriented conception of Indologists. The reference here is the scholarship and works of the two most prominent Indologists of the late 19th and early 20th centuries: Paul Deussen and Richard Garbe. Second, the diverging attitudes of the Indologists, Deussen and Garbe, in their perception and preference of the well-known opposing philosophical systems of India, namely the non-dualistic-metaphysical *Advaita Vedanta* of Sankara and the dualistic-rationalistic *Samkhya* of Kapila.

The first part of the essay discusses Swami Vivekananda's encounter with Deussen in Kiel and Bremen and Vivekananda's resulting essay *On Dr Paul Deussen* (written for the *Brahmavâdin* in 1896). Vivekananda welcomes the transition or transformation of Indology in 19th century Germany from the initial glorification by the romanticists and the philosophical discrediting of Indian culture and philosophy by G W F Hegel into a systematic–disciplinary philology in the second half of the 19th century, which was accomplished particularly in the works and translations of Deussen. Vivekananda points to a paradigm shift in the discipline of Indology, in which a new type of Sanskrit scholarship emerged, thanks to the studies and research of scholars who were friends and admirers of India, like Deussen.

Malinar's study seems to be in some respect consistent with Michaels' essay. Both point to the need for Indology to free itself from traditional classical-philological or Sanskrit-oriented confinements and include cultural facts and their historicity and contemporary nature. While Michaels emphasises a more philological-transitory paradigm shift—that is, the increasing consideration of modern Indian philologies—Malinar's investigation unfolds more in a philosophical framework, as represented in the contrast between Deussen's preference for *Advaita-Vedanta*, which has been dominated by the philologically inclined Brahminic-orthodox schools of thought since Sankara's non-dualistic re-establishment of Hinduism, and Garbe's prioritisation of the dualistic-rational doctrine of *Samkhya*, the development and impact of which is more likely to be imagined in an ethnically diverse and realistic cultural space. Malinar's views on the subtle contrasts between the world view of Kshatriyas and that of Brahmins, as reflected in their attitude towards the people and their own cultures, tacitly refer to this.

### In Conclusion

This anthology outlines the main features of a unique transnational and transcultural constellation in history

that came about without the direct influence of colonisation. The reciprocity of scientific and cultural affinities between India and the German-speaking countries had its genesis and exponential development as early as the 19th century and has now lasted for more than two centuries. It has found its felicitous expressions in the disciplines of classical philology and philosophy, and also in modern science, humanities, and technology. This anthology sheds light on many nuances of deep cultural differences and similarities between two disparate worlds and the paradigms that governed their scholarly-disciplinary encounters, exchanges, collaborations, and confrontations, as well as the paradigm shifts in a historical framework. Although this work—a composition of different perspectives on the disciplinary development of knowledge on the global level—refers to the past, it manifests the topicality and the future potential of the symbiosis between two linguistically and culturally different spaces in the world.

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### NOTES

- 1 In a speech, Bhatti referred to the anticolonial motif in the development of Indo-German scientific cooperation in the 20th century,

especially in the humanities and philology that incidentally led to the establishment of German studies as a subject and the founding of German departments in India. This speech was held at an event in Pune in 2014 to mark the 100th anniversary of the founding of the first German Faculty at the University of Pune.

- 2 "For there cannot be much doubt that Bose's distinction comes close to one particular conceptual opposition that evolved in the 19th century and can be found in Brahmo Samaj circles and with Bankimchandra Chattopadhyay, Vivekananda, and others, namely that between *bahirbisayak/bahirmukh* and *antarbisyak/antarmukh jnan* (knowledge directed towards outer and inner objects). This schema has been taken to task for explaining nothing less than colonial domination: while the Indians had excelled in 'inner knowledge,' it was the West's mastery of 'outer knowledge' (science, technology) that had caused India's colonial subjugation, and an assimilation of this outer knowledge was the historic task, accomplishing which India would arise again and attain freedom" (p 230).

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