

Introduction

The project will examine the histories of yoga, ayurveda and rasaśāstra (Indian alchemy and iatrochemistry¹), focussing on the disciplines' health, rejuvenation and longevity practices. The goals of the project are to reveal the entanglements of these historical traditions, and to trace the trajectories of their evolution as components of today's global healthcare and personal development industries.

Yoga, ayurveda and rasaśāstra are three closely-related South Asian cultural disciplines that have deep literary pasts and thriving contemporary practices. Millions of people worldwide have integrated the concepts and practices of yoga into their daily lives, and multi-billion-dollar yoga industries have arisen in consequence (Singleton and Byrne 2008:1). In India, pharmaceutical industries selling products based on rasaśāstra and ayurvedic formulations have become a significant factor in the country's economic growth and their products are becoming increasingly important in the global market (Sharilal 2009: 45), partly due to the demand for them by practitioners of yoga.²

The proposed five-year study sets out from the observation that many yoga practitioners understand yoga and ayurveda as intimately connected traditions that developed in tandem in the deep past. This assumption reflects the fact that yoga and ayurveda are linked in contemporary practices. For example, while claims related to the health benefits of yoga practice are most often expressed in a biomedical idiom ("yoga for sciatica", "yoga for carpal tunnel syndrome", "yoga for migraine"³), some yoga practices directly integrate ayurvedic humoral theory, relating certain postures to effects on the humours. See, for example, Illustration 1, that visually asserts a superimposition of yoga postures, humours and physical elements.⁴ Prominent yoga gurus, such as Swami Ramdev and Sri Sri Ravi Shankar, promote extensive ayurvedic pharmaceutical businesses as part of their teachings on yoga (see Illustration 2). And in India, where the education and practice of yoga and ayurveda are regulated



Illustration 1: Swami Ramdev endorses his ayurvedic line of products against a modern urban background.



Illustration 2

through the Ministry of Health and Family Welfare's [AYUSH](#) department, the connection between yoga and ayurveda is endorsed through the inclusion of materials on the therapeutic effects of yoga postures and breathing techniques in the ayurvedic [curriculum](#).⁵

Within modern Indian commercial and governmental institutions, rasaśāstra is considered a subsidiary branch of ayurveda, although historically it was a tradition in its own right. It is also taught as part of the ayurvedic syllabus, and several ayurvedic universities and colleges have rasaśāstra departments. Rasaśāstra formulations are used extensively by Indian pharmaceutical companies, but the discipline is much less well known among the general public than the more prominent ayurvedic tradition.

Our knowledge of the historical connections between these three traditions is imperfect. The relevant

¹ The Sanskrit term "rasaśāstra" can refer to the historical discipline of Indian alchemy that united a range of proto-chemical ideas with esoteric aims and rituals. It can also refer to the modern, institutionalized discipline, which is dedicated to pharmaceutical research and production, albeit based on the formulations developed in the historical tradition. To address problems with terminology in European alchemical traditions, many historians of science have adopted the practice of using the term *chymistry* to refer to a shared domain of alchemy and chemistry (Principe 2013: 85). Since this is yet to become standard usage, however, and may not be fully applicable to the Indian traditions, I have for simplicity's sake interchangeably used either the term "alchemy" or the Sanskrit term "rasaśāstra" in this proposal.

² Many yoga journals incorporate sections on ayurveda and ayurvedic products. See, for example, the widely distributed [Yoga Journal's section on Ayurveda](#).

³ See, for example, Appendix II 'Curative Asanas for Various Diseases' of the iconic *Light on Yoga* by BKS Iyengar (1965: 288-306), which lists the health benefits of a number of yoga postures (asanas). The biomedicalization of yoga practices in the 20th century has been the subject of a number of studies (see State-of-the-art in this proposal).

⁴ Also see, for example, the article "[Yoga for Your Dosha](#)" in the *Yoga Journal*.

⁵ See point 7. Swasthavritta & Yoga (Preventive, Social Medicine & Yoga) of the first-year ayurvedic syllabus of the [Central Council for Indian Medicine](#).

source materials, i.e., haṭhayoga literature and the contemporaneous ayurvedic and rasaśāstra literatures, have so far not been given much scholarly attention, particularly not in regard to examining commonalities between the disciplines. Virtually no studies exist on the interrelatedness of yoga and ayurveda, or ayurveda and rasaśāstra⁶. However, our preliminary research has shown that historical links between yoga, ayurveda and rasaśāstra do indeed exist and can be traced in their literatures. This exciting discovery has the potential to revolutionize the modern interpretation of yoga as well as illuminating the hitherto occluded historical background of the contemporary ayurvedic pharmaceutical industry.

To study the disciplines of yoga, ayurveda and rasaśāstra in isolation from each other, as almost all previous research has done, is to miss what is in fact a deeply entangled history of divergent and intersecting concerns, goals and technologies. The project aims to document these mutually implicated histories from the tenth century to the present, focussing in particular on practices aimed at achieving health, longevity and rejuvenation. These practices first appear in the early ayurvedic texts, where they are called rasāyana. In later ayurvedic literature (c. tenth century onwards), the term kāyakalpa is often used instead of rasāyana, and this is also the term used in alchemical and yoga literature. Our **central hypothesis** is that these practices and their explanatory models constitute a key area of exchange between the three disciplines, preparing the ground for a series of important pharmaceutical and technological innovations and also profoundly influencing the discourses of today's medicalized forms of globalized yoga as well as of contemporary institutionalized forms of ayurveda and rasaśāstra. This project constitutes the first systematic program to investigate these entangled histories in depth.

The research team will draw upon the primary historical sources of each respective tradition as well as on fieldwork data, including participant observation and oral-history interviews, to explore the shared terminology, praxis and theory of yoga, ayurveda and rasaśāstra. We shall examine why, when and how health, rejuvenation and longevity practices were employed; how the discourse and practical applications of each discipline related to those of the others; and how past encounters and cross-fertilizations evolved into contemporary health-related practices.

For the PI, this project constitutes a major career step, not only in terms of expanding the scope and visibility of her research by assembling and directing an outstanding team of researchers, but also in terms of leading towards a tenured position in European academia. This project is a crucial part of her larger aim of generating a new grounding in the study of South Asian scientific and cultural history that relates past events to contemporary cultural forms.

State-of-the-art

There exist very few scholarly studies on the history of alchemy in India. Among the first of these was P. C. Ray's *History of Hindu Chemistry* (1902-1909), which gives an introduction to rasaśāstra literature with a focus on the development of chemistry. This work contains examples of a number of chemical processing methods found in alchemical works, and also includes citations from several of the oldest alchemical treatises. David White's *The Alchemical Body* (1996) gives an account of the links of Indian alchemy with yoga traditions, pointing to both disciplines' tantric roots, shared theoretical foundations and common body of literature. While a very important study, the focus is on the alchemical texts' soteriological teachings and esoteric metallurgical practices and White only mentions in passing the existence of medical practices in the alchemical texts. G. J. Meulenbeld's *History of Indian Medical Literature* (1999-2002) will be of great importance to this study, as it lists hundreds of both medical and alchemical works and gives synopses of a great number of lesser known medical works of the early modern period as well as of several important rasaśāstra works, providing a solidly-researched starting point for our investigation into the links between medicine and alchemy. Editions of both ayurvedic and alchemical works of the research period have become available in recent years, and to a lesser extent also translations into English (there are fewer translations of alchemical than of ayurvedic works). The editions will be used extensively in the project (see the list of a first selection of works in the reference section).

Recent research (e.g., Maas 2008, Wujastyk 2011) has confirmed the mutual influence of ayurveda and yoga in India's classical period. However, there is no published scholarship on the interplay of these disciplines in the medieval or early modern period, despite the fact that the terminology of ayurveda is apparent in Sanskrit yoga texts of that time.⁷ There are a few studies on major yoga works from this period, including editions and translations of original works (e.g., Mallinson 2004, 2007a, 2007b, Birch 2011, 2013),

⁶ See, however, White (1996: 3--4) for a theory on the historical connections between rasaśāstra and yoga.

⁷ The use of the terms "medieval" and "early modern" in this proposal follow the conventions of periodization used for analyzing European history, as no broad consensus exists on an alternative periodization for Indian history. See, however, Thapar (2002: 29-32) for an alternative division of periods in Indian history.

and these will form the basis of the study's examination of alchemical and ayurvedic elements in haṭhayoga literature.

In the last decade, an increasing amount of scholarly attention has been paid to the history of yoga and ayurveda in the modern period. Much of research on yoga has focused on the encounter between colonial powers, the growth of the global dominance of biomedical thinking, and the conceptual sanitization and re-presentation of yoga (e.g., Newcombe 2009, Alter 2004, Singleton 2010, de Michelis 2004). There has been some attention to how the ayurvedic traditions were re-framed in the colonial period to exist in departments alongside biomedical sciences (e.g., Wujastyk 2008, Mukharji 2011, Berger 2013, Sivaramakrishnan 2006, Brass 1972, Leslie 1998 [1976], Bala 1991, Kumar 1998, Hochmuth 2006, Pati and Harrison 2001) and some anthropological fieldwork has been done in India that examines the contemporary practice of ayurveda in India (Langford 2002, Warriar 2011). In recent years there have also been some important publications on the development of the pharmaceutical industry in India (Bode 2008, Banerjee 2009). None of these studies has discussed the impact of historical connections between yoga, ayurveda and rasaśāstra on their contemporary forms. The health-based claims of the major global gurus Swami Ramdev and Sri Sri Ravi Shankar, who both promote their own brands of ayurvedic and rasaśāstra pharmacopeias, have also not yet been the subject of scholarly research.⁸ Likewise, while the biographies and innovations of Krishnamacharya and his students have received some attention in isolation (e.g., Sjoman 1996, Singleton 2010, Singleton and Fraser 2014), there has been no study of this lineage's discourses on the curative aspects of yoga postures and its use of alchemical and ayurvedic metaphors and substances.

Aims and Objectives

The overarching aim of this project is explore the theoretical foundations of health, rejuvenation and longevity practices in yoga, ayurveda and rasaśāstra in order to generate a better understanding of the historic connections between the three disciplines and their impact on contemporary medical practices in milieus of yoga, ayurveda and rasaśāstra. Research activities will be divided into three interlinked areas:

1) **Research area 1** will examine the reciprocal influence of ayurveda and rasaśāstra on each other, exploring in particular the development of iatrochemical formulations and their use in applications in health, rejuvenation and longevity therapies. Based on hypothesized broad trends within the disciplines' literary histories, the study will focus on two periods: First, the tenth to thirteenth centuries. In this period, rasaśāstra emerged as a literary discipline in its own right, while ayurvedic texts started incorporating descriptions of procedures for processing metals, minerals, gems and herbal substances for medical use. Second, the thirteenth to eighteenth centuries. This period may be considered a period of a merging of alchemy and medicine, as mercurial, mineral, and plant preparations came to be increasingly applied to various sorts of medical therapies in alchemical texts, while medical texts displayed an increasing use of iatrochemical formulations and alchemical processing methods. According to Meulenbeld (1999-2000, IA, 4), the genres became so intimately connected with each other in the course of time that "many texts can only be classified as intermediate between the two or as belonging to both at the same time."

A key line of enquiry will be to explore whether these hypothesized trends can in fact be verified or whether different trends emerge from a close reading and analysis of the source materials. A detailed survey and comparison of diseases and disease categories, medicinal substances, processing methods, recipes and applications, and an analysis of the discourses used to explain them in the respective literatures, will serve to create a broad overview of the medical themes arising in the disciplines and to show if or how the developments in each discipline triggered developments in the other. The analysis of ayurvedic and alchemical pharmacologies will also address questions concerning the potentially differing roles of ayurvedic physicians and alchemists as therapists.

2) **Research area 2** will examine the influence of ayurveda and rasaśāstra on haṭhayoga traditions which rose to prominence from the twelfth to fifteenth centuries and underwent a transformation from an auxiliary practice into a fully-fledged yoga tradition from the fifteenth century onwards. Preliminary research has shown that several key haṭhayoga texts incorporated ayurvedic terminology in descriptions of meditative states and used medical theory to justify prescriptions of various yogic techniques. For example, the Haṭhapradīpika introduced six therapeutic techniques called the ṣaṭkarma, which are widely believed to have been derived from ayurveda because they involve emesis and purging treatments (which are a key feature of ayurvedic therapy). A systematic survey of such accounts will reveal the extent of ayurvedic terminology and theory known to the pioneers of haṭhayoga and will allow for an analysis of the importance of medical

⁸ See Waghorne (2014: 283--307) on Sri Sri Ravi Shankar's teaching, and Sarbacker (2014: 351--371) on Swami Ramdev's political approach to yoga. Neither article discusses the place of ayurvedic thought and remedies in these yoga gurus' teachings or their organizations' infrastructures.

knowledge for the yoga traditions of these periods. Since the period in which hathayoga literature appears is contemporary with the period in which ayurvedic and alchemical thought seems to have merged, instances of medical thought in hathayoga literature could have their roots in alchemical medicine or indeed represent a synthesis of ayurveda and alchemy. A close comparison with results from research area 1 will shed light on the question of the roots of medicine in the yoga literature of this period.

3) **Research area 3** will explore the more recent history of interactions between ayurveda, yoga and rasaśāstra in institutionalized urban and transnational settings, examining continuities and disjunctures of aims and practices in the colonial and post-colonial period with the medieval and early modern forms of ayurveda, yoga and alchemy examined in research areas 1 and 2. This part of the study will highlight elements of the transformation of health, rejuvenation, and longevity practices from hathayoga and rasaśāstra traditions into the institutionalized yoga and ayurveda of the Indian department of AYUSH. Research will be focussed on the narratives and practices developed in the colonial and post-colonial period and will examine the extent to which the elements of hathayoga and rasaśāstra were reframed to serve new ends. This research area will further examine the role that medical and alchemical thought have for the teachings and organizations of prominent yoga gurus in India, such as Swami Ramdev, Sri Sri Ravi Shankar, and the gurus associated with the teaching lineage of Krishnamacharya (B.K.S. Iyengar, Pattabhi Jois, T.K.V. Desikachar, and their successors).

Research questions

Diseases and disease categories

Drawing on a selection of primary source texts (and in the case of research area 3, data gathered from fieldwork and archival work), we will examine which diseases were considered important or were prevalent at the time the source texts were written. Based on this epidemiological profile of pre-modern South Asia, we shall identify differing trends in the therapeutic disciplines in terms of their specializations. Were there specific conditions that patients would rather take to an alchemist or a yogic practitioner than to an ayurvedic physician? Did alchemical or yoga therapies prevent, alleviate or cure disease, or were they aimed at establishing nonspecific wellbeing? Did alchemy or yoga offer new solutions to old problems, perhaps promising cures for previously incurable diseases with new, more potent metallic formulations? Did they propose a different understanding of disease that represented a significant disjuncture from established medical theory? And how did developments in alchemical or yoga medicine impact on ayurvedic medicine and its understanding of disease and treatment methodology?

Medicinal prescriptions, processing methods, recipes and applications

One of the defining features of alchemical therapy is the prevalent use of metals and minerals rather than the plant substances favoured in older medical texts. Some ayurvedic texts already record the use of metals and minerals, and also describe first attempts at processing these substances to make them fit for medical use. However, both the use of such substances and the procedures for their processing seem to have been more highly developed within the alchemical tradition. A survey of substances used and methods of processing them in alchemical literature will show commonalities with and disjunctures from ayurveda and the changes in each literary tradition over time. In the case of yoga, some late medieval compendiums incorporated rejuvenation treatments (kāyakaḷpa) which combine elixirs containing various herbs, oils and metals, including mercury, with the standard yogic components of yama, niyama, āsana, etc. The six cleansing practices (ṣaṭkarma) of hathayoga were expanded to include blood-letting, surgery for abscesses and various medications which were to be combined with the repetition of mantra and meditation. Here again, a tabulation of substances used and methods of application will highlight instances of exchange with ayurveda and/or alchemy.

Patient demographics

Should trends of specialization become evident, this could provide insight into the realities of the medical market in each time period. Alchemists and yogis who practiced medicine and ayurvedic physicians may have been competitors, addressing (perhaps in differing ways) both the same medical conditions and a common clientele. It is also possible that the three disciplines complemented each other, each addressing different conditions and/or a different patient demographic. Another possible scenario is that alchemical or yogic treatments were aimed at practitioners of each respective discipline, rather than at clients paying for treatment. Self-treatment would have provided an independence from the medical establishment and its practitioners and may have also addressed differing aims. In the modern period, previously un-researched government reports may provide more details as to clientele demographics for indigenous medicine practitioners. The examination of contemporary yoga gurus will provide an exceptional opportunity to gather real-time information on the different client groups and ideological appeal of each diversification of the

tradition.

Continuity of interaction in contemporary forms of yoga, alchemy and ayurveda

Can we trace a continuity in contemporary medical practices, technologies and ideologies with those resulting from interactions between the disciplines in the medieval and early modern periods? Did patterns of exchange continue to be replicated in the modern period or did they gradually or even radically change? What role did the institutionalization of yoga, alchemy and ayurveda into modern educational establishments and regulated health-care providers play for the interaction of the disciplines? How do such structures impact on or differ from other significant groups dealing with the disciplines? The continuation of intermingled alchemical, yogic and ayurvedic traditions in globalized modern yoga practice is of particular interest here, as several of India's most prominent yoga gurus (e.g., Swami Ramdev, Sri Sri Ravi Shankar) promote extensive pharmaceutical businesses with ayurvedic and rasaśāstra formulations alongside their teachings on postural and meditational forms of yoga. The entanglement of theological and medicinal aims of these and other yoga gurus will be considered in the light of the historical material provided by research areas 1 and 2.

Ground-breaking features

This research project will be the first to investigate historical links between the three traditions of yoga, ayurveda and rasaśāstra. Research area 1 will offer insight into a body of literature that has hardly received any scholarly attention despite its importance for South Asian culture. Since philologically-informed, accurate English translations of most of the alchemical and early modern ayurvedic works are rarely available, relevant text passages will be translated from the Sanskrit into English, making these important texts available to a wider readership for the first time.

Similarly, research area 2 will examine medieval and early modern Sanskrit yoga texts that to date are little-known and that therefore have not been taken into account in histories of yoga. Preliminary research suggests that these texts' treatment of yoga includes an incorporation of medical concepts and methods and may therefore represent the missing link between today's health-oriented postural forms of yoga and the more metaphysical tenets of classical yoga. Studies in recent years (e.g., Singleton 2010) have pointed to non-South Asian influences to explain the disjuncture between classical and modern and global forms of yoga, a viewpoint hotly contested by modern yoga groups who emphasize their traditions' connectedness with a deep past. The texts we propose to study offer the means to arrive at a more nuanced view of the roots of contemporary forms of yoga.

Research area 3 will break new ground by opening up the large question of the transitioning of the pre-modern therapeutic regimes to modernity. It will gauge the extent to which contemporary medical practices in yoga circles are authentic reimaginings of genuinely archaic practices, or opportunistic inventions influenced by the marketplace and popular demand. Area 3 will evaluate the historical continuities, if any, that underpin the emergence of multi-billion dollar industries connected with yoga, ayurveda and rasaśāstra.

A crucial feature of this project is that it allows interaction between the three research areas and unites their findings, documenting both the continuities and discontinuities between them. Yoga, rasaśāstra and ayurveda have been studied on their own terms as discrete domains of knowledge with separate bodies of literature and differing groups of practitioners, but there has thus far been no serious attempt to map the ways in which they have mixed, merged and informed each other. The collaborative nature of the project will enable project members to examine the big picture and to compare and adjust their findings as work proceeds, with each research area feeding into the others. This interaction will provide both a wider perspective and a more in-depth understanding of issues arising within the context of each discipline.

The proposed project therefore offers

1. access to previously untranslated foundational works of the yoga, ayurvedic and rasaśāstra traditions,
2. an analysis of the contents of these texts that will generate new knowledge of the history of these disciplines,
3. a study of how historic connections link to present forms of yoga, ayurveda and rasaśāstra, and especially to contemporary practices among yoga communities led by prominent yoga gurus.

This project opens new horizons for research into an extremely wide and hitherto poorly conceptualized set of connected themes. This research interrogates the deepest levels at which well-being, personal transformation and spiritual freedom have been historically conceived as a unified complex of wellness cultures in South Asia. Almost uniquely in human history, ideas and practices that began to evolve over a thousand years ago are still daily currency for hundreds of millions of citizens in South Asia and vast consumer-base internationally. This project will lay down the theoretical foundations for understanding this present in relation to the deep cultural past. It will offer a reasoned and secure basis both for future historical

research and for informed policy-making amongst health professionals today.

Methodology

Research in areas 1 and 2 will apply the methods of text-historical hermeneutics to the translation and analysis of selected Sanskrit alchemical, ayurvedic and haṭhayoga texts. The archival and textual work of research area 3 will include the analysis of government reports, institutional documents and local media articles. Its primary emphasis will, however, be on the literature produced by contemporary yoga groups. Where appropriate, this will be supplemented by participant observation and oral-history interviews with key figures relating to the modern yoga movements. Data analysis will consist in standard statistical methods for quantitative data, and an array of different methods for qualitative data. Thus, key themes will be identified in textual documents as well as in interview and participant observation transcripts, and further analyzed. The PI and her team have the necessary language skills for the majority of sources materials (Sanskrit, Hindi, English, German, French) and will make use of translation services for materials outside their language competence.

The primary sources

The earliest Indian medical texts predate alchemical ones by up to a thousand years.² The oldest surviving ayurvedic texts date to roughly the first centuries CE. Some thirty-one medical works (that we know of) were composed between the beginning of the Common Era and 1000 CE. Of these, four date to the first half of the first millennium CE and twenty-seven to the second half of the first millennium.⁹ In the following centuries, literary production increased with about eighty works written in the period 1000-1500 CE and several hundred works added from the sixteenth century up to the present.¹⁰

The earliest systematic alchemical treatises are thought to date to about the tenth century with the period between 900 CE to 1600 CE being considered the flourishing period of Indian alchemy (White 2011, 489). However, alchemical treatises continued to be produced until the beginning of the twentieth century. Meulenbeld (1999-2002, IIA, 593-738) describes some twenty works written between the tenth and the seventeenth century in some detail, but also lists more than six hundred alchemical works on which little more than their name is known.

It is not possible to consider the contents of all ayurvedic and alchemical works (which are in any case not all available in either print or manuscript form). Any study attempting to discern trends within the history of ideas of these traditions will be limited by choices made as to which texts are taken into consideration. However, a careful selection of texts based on their availability and their importance for each tradition will deliver a fairly accurate picture of broad trends. The texts of both ayurvedic and alchemical literature are connected by a dense network of intertextuality. Newer ayurvedic texts quote older ayurvedic treatises, and newer alchemical texts quote older alchemical works. Later medical works also borrow content from alchemical texts, and it will be part of this study to verify whether alchemical texts also borrow from medical works. This network of citations gives us insight into which ideas became prominent in each respective tradition. It also provides traces of works that might not otherwise be available.

We shall apply several criteria for identifying a work as important. For example, the importance or popularity of a text is indicated by how often its manuscripts were copied, how often it is quoted in other medical works, how many commentaries were written on it, whether it was translated into other languages, and finally, whether it is still used in education, research, and practice today. This lets us arrive at a somewhat more manageable though admittedly not universally accepted list of core texts. Regarding the lesser-known alchemical literature, we shall also use the work of the few scholars who have researched this literature as a starting point for establishing a preliminary selection of works which will be adjusted in the light of our discoveries.

An initial selection of rasaśāstra works to be examined includes the 10th-century *Rasahrdayatantra* of Govindabhagavatpāda, the 11th-century *Rasārnava* (one of the most important alchemical classics), the

⁹ It is often not possible to date ayurvedic works with any accuracy, since the texts (especially the older ones) often have complicated transmission histories and rarely furnish the reader with any information on when they were written. The dating of ayurvedic works is in such cases based on clues from within the texts that point to the place or time of their composition or on the texts' relative chronology to each other. The same is true for alchemical and haṭhayoga works.

¹⁰ Figures derived from Meulenbeld's comprehensive survey of the corpus of Sanskrit medical literature (Meulenbeld 1999-2002).

12th- to 13th- century *Bhūtiprakaraṇa* of Gorakṣanātha, the *Rasendramāṅgala* of Nāgarjuna, the *Rasaratnākara* of Nityanātha and the anonymous *Kākaçaṇḍeśvarīmata* (White 2011, 489). The dating of the last three works is uncertain, though they were probably written before the 15th century. Further important alchemical works that will be considered in the study include the *Rasaratnasamuccaya* (14th-16th century), the *Rasendracūḍāmaṇi* (14th century), the *Ānandakanda* (>14th century), the *Rasamañjarī* (16th century), the *Rasaprakāśasudhākara* (c. 16th century) and the *Rasakāmadhenu* (17th century).

A first selection of ayurvedic works includes Cakrapānidatta's *Cikitsāsamgraha* (or *Cakradatta*, c. 11th century), Vaṅgasena's *Vaṅgasenasamhitā* (or *Cikitsāsārāsamgraha*, c. 11th/12th century), Śārṅgadhara's *Śārṅgadharaśamhitā* (c. 14th century), Bhāvamiśra's *Bhāvaprakāśa* (16th century), Ṭodaramalla's *Āyurveda-saukhya* (c. 16th century), Hastiruci's *Vaidyavallabha* (17th century), the anonymous *Yogaratnākara* (c. 18th century) and Govindadāsa's *Bhaiṣajyaratnāvalī* (18th/19th century). In some cases, the more prominent texts may be supplemented by lesser known texts if there is reason to believe the text to be of particular importance. One such text is the *Kalyāṇakāraka*, a medical treatise composed by the Jain monk Ugrāditya that possibly dates to the ninth century. If dated correctly, this little-known text contains very early descriptions of procedures for detoxifying heavy metals, which may predate similar descriptions in alchemical works.

At present, scholarly research on medieval and early modern yoga (and, more specifically, haṭhayoga) literature is in its infancy. Only a limited number of texts are known and available in editions and even fewer in translation. Lists of texts considered to belong to haṭhayoga vary.¹¹ In recent years, several scholarly projects have been dedicated to editing and translating medieval and early modern yoga texts, including editions prepared by one of the project's team members, Jason Birch. Efforts in this area are energetic, so that an increasing number of works is becoming available. These editions will form the foundation of our enquiry and will be supplemented by works only available in manuscript form. Texts that will be considered in the project include early treatises that mention haṭhayoga, such as the *Amanaskayoga*, *Amarāghaprabodha*, *Candrāvalokana*, *Dattātreyayogaśāstra*, *Gorakṣaśataka*, *Śārṅgadharaḥpaddhati*, *Śivayogadīpikā*, *Vasiṣṭhasamhitā*, *Vivekamārtaṇḍa*, *Yogabījaprakaraṇam*, and *Yogayājñāvalkyā*, as well as the classical haṭhayoga treatise, the *Haṭhayogapradīpikā* (the root text of much of later yoga literature), and later works, such as the *Gheraṇḍasamhitā*, *Haṭhasamketacandrikā*, *Upāsanaśārāsaṅgraha*, *Yogacintāmaṇi*, and *Yogamārgaprakāśikā*. The fifteenth-century *Haṭhayogapradīpikā*, seventeenth-century *Yuktabhavadeva* and eighteenth-century *Ṣaṭkarmasamgraha* will be given special attention, as preliminary research has shown them to contain large sections on therapeutic interventions that may be based on ayurvedic techniques and theoretical principles. A further work of interest is the syncretic *Āyurvedasūtra*, which is dedicated to integrating ayurveda and yoga. Though this work's main frame of reference for yoga seems to be the classical Yogasūtra (3rd/4th century CE), it also mentions concepts that belong to a later period and are typical of haṭhayoga, such as the cakras, or the nāḍīs.¹²

A number of editions and translations of relevant alchemical, ayurvedic and haṭhayoga works are commercially available. Others can be accessed at public and university libraries, including the library of the host institution. The [British Library](#) and the [Wellcome Library](#) in London, and the [Bodleian Library](#) in Oxford have copies of some of the rarer works, while further important works can only be found in archives and libraries in India. The following archives in India have relevant materials:

- Adyar Library and Research Centre, Madras
- Bhandarkar Oriental Research Institute, Pune.
- Bharat Itihas Samshodak Mandal, Pune
- Benares Hindu University
- Government Oriental Manuscripts Library, Madras
- Gujarat Ayurvedic University, Jamnagar
- Gyantirth, Koba Tirth, Ahmedabad
- L. D. Institute, Ahmedabad
- Oriental Institute, Baroda
- Rajasthan Oriental Research Institute, Jodhpur
- Sampurnanda Sanskrit Library, Varanasi
- Saraswati Mahal Library, Tanjore

Further archives may be added to this list as the selection of works to be consulted is adjusted. The collection

¹¹ See, for example, the differing lists of haṭhayoga works by Rosen (2012:263-269), Briggs (1998 [1936]:252-253) and Birch (2011:527-529).

¹² See Meulenbeld 1999-2002: IIA, 500. Cakras and nāḍīs are described as points and channels in the subtle body in haṭhayoga literature.

of source materials will necessitate visits to the U.K. as well as to India.

Archival sources and fieldwork

Archival work in research area 3 will focus on government reports, institutional documents and local media articles that document the practices of ayurveda, rasaśāstra and yoga in the 18th to 21st centuries. There will also be a thematic analysis of primary source ideological, instructional and promotional materials produced by the more contemporary yoga groups. Many of the historical documents are available at the British Library as well as at the Wellcome Library while Inform maintains a collection of files relating to the contemporary yoga gurus.

A key document for examining the diversity of health, rejuvenation and longevity practices in the various forms of Indian medicine is the 1923 Usman report. This report provides a pan-Indian survey of 183 written replies and 40 oral interviews with practitioners of indigenous medicine during that year which describe their 'medical traditions, their importance and value for their patients, and their basic tenets' (Wujastyk 2008: 49-51). The unique primary sources offered in the appendix of this report will be contextualized by other governmental reports of the colonial period and secondary literature relating to this period (e.g., Berger 2013, Sivaramkrishnan 2006). The focus of enquiry will be on arguments made in regard to the relationship between yoga, ayurveda and rasaśāstra as well as on any information regarding specialized health, rejuvenation and longevity therapies.

Research area 3 will also consider the continuation of health and longevity practices in globalized modern yoga practice. There will be two parts to this exploration:

a. An analysis of the literature and medicinal products produced by Swami Ramdev and Sri Sri Ravi Shankar as longevity/rejuvenation therapy. This research will be augmented by participant observation and oral history interviews where appropriate. The self-reported aims of these gurus will be considered alongside attention to the perception of diseases and disease categories, medicinal substances, processing methods, recipes and applications, and clientele. These two contemporary gurus are interesting figures: both have large Indian followings, teach asana (yoga postures), pranayama (breathing exercises) and meditation, as well as promoting extensive pharmaceutical businesses. The theological and medicinal aims of both gurus will be considered in light of the historical material provided by the other two parts of this project. There will be a focus on how both gurus negotiate their engagement with biomedical science as well as with the ayurvedic and alchemical traditions.

Swami Ramdev (born c. 1965) is based in Haridwar, North India and has gained notoriety both for the popularity of his yoga message and his vocal support of Hindutva politics. His books are particularly interesting because they link yoga, pranayama (breathing exercises), and cures from ayurveda. Ramdev's movement has gained prominence largely since 2003 when he began regular appearances on Indian television. Despite Ramdev's widespread popularity in India and the diasporas, there have been relatively few discussions of his movement by academics and none that specifically discuss his pharmaceutical brand.

Sri Sri Ravi Shankar (b. 1956) is based in Bangalore and has a much more international following than Swami Ramdev. He was associated with the Maharishi Mahesh Yogi, but established The Art of Living Foundation in 1981. His social vision has been more inclusive than Ramdev's, inspiring more devotees outside India, while maintaining a strong base of popular support in his home country. In 2009, Shankar was named by Forbes Magazine as the fifth most powerful leader in India. His signature teaching is a breathing exercise, Sudarshan Kriya and he also runs a successful line of ayurvedic remedies.

b. The three main modern yoga traditions stemming from T. Krishnamacharya (1888-1989), are those of Pattabhi Jois (1915-2009), T. K. V. Desikachar (b. 1938) and B. K. S. Iyengar (b. 1918). Their schools engage in different ways with biomedicine, ayurveda and rasaśāstra, and these differences will be the subject of critical enquiry. None of these gurus have directly promoted pharmaceutical products. However, they have emphasized the therapeutic and rejuvenatory potential of postural and breathing practices. All of these 'Modern Postural Traditions' (de Michelis 2004) have global followings and, in contrast to the gurus of part a, focus on orthopraxy rather than orthodoxy.

Fieldwork will involve participant observation and qualitative interviews (semi-structured and open-ended) and will be conducted in the five international headquarters of each of the gurus where key figures able to narrate the history of each tradition and its engagement with ideas of health, rejuvenation and transmutation will be identified and approached. These headquarters will also be the sources of influential literature produced by the groups themselves. To understand the global appeal of these traditions, supplementary fieldwork and interviews will also be undertaken in the cities of London and Vienna. One element of the fieldwork will be attending any public events, e.g., an open yoga lecture, in these locations and taking down

rough details of the numbers, demographics of those in attendance and taking down the content of public talks. A second element will be identifying key people who might be willing to provide information on the recent history and current practices of the group's aims of achieving health, physical rejuvenation and transmutation. In the first instance appropriate institutional 'gatekeepers' will be identified and approached in person at the international headquarters locations. Other individuals holding significant sources of information relevant to the project may be identified during the course of fieldwork and might also be approached for interviews.

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