Visual Dynamics of Contagion

Poisons and Antidotes in Tibetan Medical Paintings of the Seventeenth Century

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Abstract How does one visually depict the spread of disease? Tibetan artists at the turn of the seventeenth century must have asked themselves this very question when they prepared a series of medical scroll paintings, one of which will be discussed here. They were painted to illustrate the medical writings of the Fifth Dalai Lama's regent, Desi Sangyé Gyatso, specifically his commentary on the *Four Tantras*, an important medical treatise dating back to the twelfth century. Sangyé Gyatso oversaw the preparation of these scroll paintings in Lhasa. They were designed for educational but also political purposes. At the heart of this visual narrative is the depiction of an Indic origin myth concerning poisons, exploring the themes of elixirs in the pursuit of immortality. The painting presented here steers an inquiry into the interconnectedness of medical ideas of poisoning within the broader notions of disease transmission. The images reveal Tibetan medical ideas of potency, interlinking the poisonous with the medicinal in intriguing ways: poisonous substances could also be used as antidotes to poisoning when properly processed, but they could also be "cast" to cause intentional poisoning. Through existing reproductions of these visuals, this paper explores and analyzes the dynamics between forms of poisoning and the antidotes used to treat poisoning. What understanding of poisoning and contagion can we draw from this almost four-hundred-year-old medical painting?

Keywords Tibetan medicine (Sowa Rigpa) – contagion – poisoning – medical iconography – *Four Tantras* (*Rgyud bzhi*)

Introduction

Recent discussions on the COVID-19 pandemic have brought questions on contagion to the forefront, also within the history of Asian medicines (Hanson 2022). This paper contributes to the relatively unexplored domain of disease transmission in Tibetan medicine (Sowa Rigpa). It does so by highlighting visual representations and unraveling the intricate layers of Tibetan perceptions surrounding "poisons" and "contagion." The notion of "contagion" here refers to disease transmissibility in a broad sense, encompassing numerous activities that appear as crucial in Sowa Rigpa in the transmission of disease, for example touch, pollution, poisoning, animal bites, as well as miasmic vapors.[1] The primary visual focus of this inquiry centers on one of the seventy-nine scroll paintings, known as *thangkas* (*thang kha*), a unique collection and the first and only comprehensive visual representation of medical knowledge in historical Tibet (Gyatso 2014: 199).

The original set of *thangkas* was prepared in Lhasa over a period of sixteen years, between 1687 and 1703. Work began while Desi Sangyé Gyatso (1653–1705), the regent of the Fifth Dalai Lama Ngawang Lozang Gyatso (1612–1682), wrote *The Blue Beryl* (*Vaiḍūrya sngon po*) medical commentary (Sangyé Gyatso 1982). Completed in 1688, it explains and elaborates the *Four Tantras* (*Rgyud bzhi*), a foundational Tibetan medical text in four parts largely compiled during the twelfth century (Yutok Yönten Gönpo 1982). Desi Sangyé Gyatso initiated the painting of the seventy-nine *thangkas*, which visually encapsulate the structure and content of both works.

While the original *thangkas* have been lost, various reproductions from the early twentieth century have been published in the 1990s, providing a rich field for scholarly analysis (for example, Avedon & Meyer 1998; Jampa Trinlé *et al.* 2008 [1994]; Parfionovitch *et al.* 1992). Researchers have analyzed several aspects of them over the years accentuating, for example, Tibetan anatomy and the subtle channels (Garrett & Adams 2008; Gerke 2012, 2013; Gyatso 2015a; Saber-

NIG 2019), surgical instruments (MCGRATH forthcoming), embryology and gender (GARRETT 2008; GYATSO 2010–2011, 2015a; YOUNG 2011), as well as the structure of the various versions of the existing sets (ZHEN AND CAI 2019), together contributing historical, textual, and ethnographic insights to our knowledge of these medical paintings.[2] To date, JANET GYATSO (2015a) has written the most elaborate historical textual analysis of the paintings and their making. While her theoretical analysis remains contested, she analyzes many of the Buddhist medical interfaces of the images and how the *thangka* set is representative of the science and religion debate in Sowa Rigpa, which I discuss in the context of mercury processing in *Taming the Poisonous* (GERKE 2021: 134–35). An art historical analysis of the existing *thangka* sets is still awaited.

Tibetan ideas of poisons and poisoning are part of a more complex corpus of contagiousness ideas in Sowa Rigpa. The geographic location of historical Tibet and its exchange with its Asian neighbors led to a historical development of medical thinking that was highly heterogenic in nature. Textually, various chapters of the *Four Tantras* disclose Indian ayurvedic and/or early Tibetan providence (YANG GA 2010). Thus, it comes as no surprise that Sowa Rigpa discourses on infectious disease historically come from different sources and are spread across several chapters of the *Four Tantras* and the *Blue Beryl*.

Concepts akin to what we would now term "contagion" are found in the chapters on fevers, skin diseases caused by demons, the chapter on "pustule disease" or *drumné* (*'brum nad*, often translated as smallpox[3]), and other infectious diseases clustered under the Tibetan terms *rimné* (*rims nad*) and *nyenrim* (*gnyen rims*). Notably, visual representations of disease transmission appear in at least three of the seventy-nine *thangkas*. The Tibetan history of infectious diseases is complex and multilayered and has left different visual traces on these *thangkas*. Since their analysis would be extensive, I will only focus on one of them here in detail (*Thangka* 51).

GYATSO mentions this *thangka* only briefly in one article (2014: 215), where she highlights its expression of heterogeneity concerning the medical practices in Tibet in relation to India. This *thangka* portrays an Indic origin myth involving the search for the elixir of immortality through the churning of the milky ocean from which poisonous substances emerge. It lists the substances that cause and treat poisoning, as well as modes of transmitting poisons. I previously analyzed this *thangka* in the context of the transformation of mercury into an elixir, emphasizing the essential message that poisons cannot only be transformed into elixirs, but can also be used to make antidotes to treat poisoning (GERKE 2021: 49). Here, I explore and analyze the visual dynamics between poisons and their antidotes. What kind of ideas of disease transmission emerge from individual images of this almost four-hundred-year-old medical painting? How does poisoning relate to disease transmission and what does this tell us about medical concepts of contagion in Tibet?

Why paint medical texts?

DOMINIQUE TOWNSEND (2021), in her examination of the monastic educational system at Mindröling Monastery in Tibet, highlights a distinctive feature of the Buddhist model of education. Unlike medieval European universities that excluded medicine from their seven "liberal arts" model of learning, the Buddhist approach included medicine as one of their "ten sciences" (*rig gnas bcu*) (TOWNSEND 2021: 165).

During the time these medical *thangkas* were crafted monastic education in Tibet was very comprehensive. It included medicine, grammar, dialectics, and Buddhist doctrine, poetics, composition, the study of synonyms, drama, astrology, as well as arts and crafts. *Thangka* painting was a craft in itself and played a significant role, with monasteries decorating their walls portraying Buddhist stories, symbols, and deities. While the idea of preparing a scroll painting of medical images was not entirely new in the seventeenth century, it represented an innovative endeavor. What makes these images even more unique in the larger Asian medical context is the absence of comparable pre-modern medical paintings or drawings in Ayurveda.[4] Artists in China produced numerous medical drawings and diagrams (LO & BARRETT 2018), but none comparable to the comprehensive set of Tibetan medical *thangkas*.

The purpose behind preparing the seventy-nine *thangkas,* meticulously outlined by Janet Gyatso (2014; 2015a: 40–47) can be succinctly summarized. Primarily, they serve as educational illustrations of the *Four Tantras* and the *Blue Beryl*. Since the *Four Tantras* is a poetic work, partially memorized by medical students (even to this day), painting the content was chiefly a mnemonic method. The arrangement and sequence of images facilitates students to memorize the order and content of each chapter. Desi Sangyé Gyatso himself emphasized the efficacy of using illustrations as a pedagogical tool, stating that "pointing a finger" at the images would enhance the learning experience (Gyatso 2015a: 44).

However, at the same time the *thangkas* also represented the authority of the text itself involving the Tibetan state, which sponsored the project. They thus underline the political significance of a medical tradition during an important historical period, namely the rise of the Fifth Dalai Lama's Ganden Podrang Government in Lhasa (Gyatso 2014: 200, 2015a; Schaeffer 2003). While the Desi was enthusiastic about the Mahayana ideal of helping others and taught himself the *Four Tantras*, his political vision, shaped by his long relationship with the Dalai Lama, aimed at the establishment of Buddhism as a state religion also through the field of medicine (Gyatso 2015a: 94–96). Gyatso argues that, beyond their political role, the scroll paintings also displayed "a distinctively medical perspective on Tibetan culture overall" (Gyatso 2014: 199), illustrating the absence of strict boundaries between religious and secular life in Tibetan Buddhist society at the time. They might have also been part of "merit publishing," similar to what Vivienne Lo describes in the context of Buddhist publishing in China (Lo 2018: 13). This refers to a practice through which the sponsoring of publications would generate merit for the donor. In summary, the *thangka* set illustrates a unique creative and innovative endeavor of Tibetan medical art, steered by Desi Sangyé Gyatso himself, and fulfilling various purposes.

Creativity in the medical paintings

Buddhist *thangka* painting is known for its rigor and adherence to tradition, which could potentially be seen as lacking individuality and original conception. However, its primary purpose is to ensure the continuity of religious authority and the authenticity of Tibetan art (Jackson & Jackson 1984: 42). Because it required artists to translate elaborate details from the chapters of the *Four Tantras* into visual imagery, a task previously unexplored by Tibetan artists, the medical paintings allowed for greater individuality and creative composition. Janet Gyatso (2015a: 23–39) specifies how the making of these medical *thangkas* diverged from the more typical Buddhist imagery. They opened an imagining of the medical world not only of *materia medica* and specific medical practices but also of the sociality of sick and healthy people along with the medical ethics concerning daily behavior. Sangyé Gyatso and his team of artists must have comprehensively thought about how to transport textual information into visual representations. While certain textual sections proved challenging to depict visually, others were translated word by word with intrinsic picturesque features, incorporating images of plants, animals, minerals, and people. It seems likely that the artists behind the poison *thangka* (Fig. 1), discussed below, drew inspiration from existing mythical stories of poisoning, extensive *materia medica*, and various symbolic representations from daily life to render intricate ideas of poisons and their cosmological origins from text to image.

A vedic myth on the origins of poisons and elixirs

In brief, the myth tells this story (summarized from Parfionovitch *et al*. 1992: 117):

The gods (on the top left of Fig.1) and *asuras* (usually translated as demons or antigods; here on the top right) in their desire for immortality decide to cooperate. They want to obtain a vase containing the elixir of immortality that is lying at the bottom of the ocean. Mount Meru (top center) is used as a churning staff and the serpent Vāsuki as a churning rope. The serpent is wrapped around the mountain and pulled from one side by the gods and from the other side by the *asuras*. Brahmā presses down the mountain and Viṣṇu manifests as a turtle to support it from below. Thus, they churn the milky ocean for a very long time. In the process wonderful things emerge from the

Fig. 1 The poison thangka (Plate 51), depicting three chapters from the *Four Tantras*. For this article the images are reproduced from this scroll painting, which was created by the Dharmapala Thangka Centre, School of Thangka Painting, Kathmandu (Nepal, www.thangka.de). This thangka was previously published under an open access license (Dharmapala Thangka Centre 2019/CC-BY-SA 4.0 in Gerke 2021: 48).

ocean: the sun, the moon, a horse, an elephant, and a wish-fulfilling tree, Goddess Laxmi, and a gemstone. Most of these are taken by the gods and enjoyed in their abode as their common property (top left). A beautiful goddess of wine also appears – weaving an origin myth of wine into the story – but the wine can only be drunk by the gods.[5]

Then, a terrible-looking creature with yellow hair and fiery eyes emerges from the ocean (depicted at the center). It is Kālakūṭa or Halāhala, the manifestation of poison. It can only be subdued with the mantra syllable HUM, which Brahmā and the gods recite. Through the power of HUM, Halāhala's body is shattered and its pieces are dispersed around the world. An alternative account mentions that Viṣṇu swallows the body of Halāhala and falls unconscious, but Śiva comes to his rescue and swallows the poison. However, the poison obstructs his throat and his neck turns blue, hence he becomes known as the "blue-necked one" (Skt. Nīlakaṇṭha, Tib. *mgrin pa sngon po*).

Eventually, the vase with the elixir of immortality emerges from the ocean, but is seized by Rāhu (an *asura* who has disguised himself as a god). Viṣṇu hurls a disk at him and decapitates him. As a consequence, some drops of the elixir fall on the ground and give rise to various medicinal herbs such as myrobalan, and garlic (which is made from the elixir mixed with Rāhu's blood).

The painting includes yet another version of the myth depicting Śiva spilling elixir across the earth, giving rise to substances that could serve as antidotes to poisoning. These, especially aconite, hold particular relevance for medical practitioners. From Halāhala itself the category of "actual poisons" (*dngos dug*) emerges, exemplified by substances like black and yellow aconite. Additionally, "compounded poisons" (*sbyar dug*), designed to inflict harm, can be derived from various gems, metals, and minerals.

To sum up the story: both elixirs and poisons arise from a common source. Since they arise from the same source, poisons can be transformed into elixirs; and medicinal substances crafted from drops of the elixir, mixed with the blood of an *asura*, possess the unique ability to transform poisons into elixirs, but also to make antidotes to treat poisoning. Certain substances featured in the *thangka* serve dual roles, appearing both as poisons and as components of antidotes.

The prominence of the myth in the painting

The poison *thangka* illustrates the three chapters on poisoning (chapters 87–89 of the third section of the *Four Tantras*), with a particular emphasis on the poison myth from the Indian epic Mahābhārata. The painters here gave prominence to Hindu cosmology and drew the characters of the Vedic myth of the churning of the milky ocean, a well-known narrative found in various versions in the Mahābhārata and the Purāṇas. Multiple renditions of this myth exist in Tibetan medical and tantric literature (McGrath 2017: 308–31), which Desi Sangyé Gyatso must have been familiar with. Despite the brief mention of the myth in the *Blue Beryl* commentary and the *Four Tantras*, the *thangka* gives it central prominence. This aligns with the typical inclusion of Indian origin myths in tantric Buddhist teachings and the tendency in Tibetan iconography to position the deity at the center of the events. The primary figure, Halāhala is depicted in a style reminiscent of Tibetan *thangkas* portraying wrathful protectors. However, in this medical painting, Halāhala is not intended as a visual aid for meditative visualization practices.

Instead of conducting an iconometric analysis, my focus is on exploring the embeddedness of the myth within the medical knowledge surrounding the figure of Halāhala. I aim to raise questions about additional reasons, beyond the typical trope mentioned earlier, for why the poison myth assumes such a central position in depicting Tibetan medical perspectives of poisons and contagion. Since we cannot talk to the artists or Desi Sangyé Gyatso himself to find out their potential motives, my discussion remains speculative.

First, for the myth to be painted in such detail, it is likely that Sangyé Gyatso drew upon various sources. While the mythical land of Tanaduk (featured in Plate 1) is mentioned in Abhidharma cosmology (Gyatso 2015a: 158), the poison myth (Plate 51) also appears in the Purāṇas and in Tibetan tantric texts (for example, the Gāruḍa Tantra) with variations (McGrath 2017; Slouber 2017). Additionally, early commentaries on the *Four Tantras*, such as the *Eighteen Ancillary Branches* (*Cha lag bco brgyad*; Yutok Yönten Gönpo 1999), which Sangyé Gyatso was familiar with, include reference to the poison myth. Sangyé Gyatso does not mention the poison myth specifically in

his own account of creating the *thangkas* (Sangyé Gyatso 2010: 338–45). But the fact that the *thangka* merges several versions of the Indic myth into one story says something about Sangyé Gyatso's storytelling choices and decision-making, warranting further research. Sangyé Gyatso, being both a politician and a physician-astrologer with training in Buddhist philosophy, although not an ordained monk, possessed the skills to combine diverse fields of knowledge, including art and painting, as is also evident from his patronage in these domains (Cüppers *et al.* 2012: 3–4).

Second, Tibetan medical scroll paintings, much like the associated texts, underscore the importance of understanding Buddhism and whatever came from the land of the Buddha itself – India. This emphasis on the source of medical and Buddhist knowledge is apparent in various ways in Tibetan medical texts, and in the medical *thangka* set it is notable in at least two paintings (Plates 1 and 51). For example, the first scroll painting of the set features the mythical land of Tanaduk with the Medicine Buddha at its center, combining ideas of the mandala with the cosmological and sacred geography of medicinal substances. It also illustrates the much-debated origin myth of the Medicine Buddha teaching in the *Four Tantras* (see Gyatso 2015a: 35–36, 149, 158). While the poison myth does not seem to have given rise to such contestations among Tibetan authors, its visual prominence pays homage to India as a source of medical knowledge, extending beyond the realm of Buddhism. This Vedic myth underscores the heterogenous nature of medical knowledge in Tibet and acknowledges it, which is a known trope in Tibetan medical writing (Gyatso 2014: 215; Yoeli-Tlalim 2021: 37; Yang Ga 2010: 235–38).

Third, stories are not only good to think with but also good to paint with. They have plot, a cast of characters, and might lend themselves to produce more exciting imagery than lists of substances. While it might be argued that the figure of Halāhala itself was painted in a rather conventional style that one can also observe in other paintings of dharma protectors, the ways in which his figure is embedded in this poison-specific medical context was quite creatively done and offers interesting aspects for analysis.

We can see that the artists took great effort to depicting the details of the story's characters (Brahmā, Rāhu, the gods and *asuras*, and the torn body parts of Halāhala in the milky ocean). However, the bowls of substances surrounding the story do not consistently exhibit the same level of detail. In some instances, though great care was taken, it would be difficult even to identify the substances based on their sketches. While this artistic focus may be justified from the artist's technical standpoint, it does not fully account for the substantial canvas space allotted to the myth. The *thangka* portrays thirty-six substances used in compounding poisons, all intricately connected with thin golden lines to parts of Halāhala's torn body pieces in the milky ocean. In practical terms, drawing linear connections between thirty-six substances and Halāhala necessitates representing the poison god in a central position.

Fourth, looking deeper into the narrative's content, an important element of hope arises from the poison myth. The fact that there is a remedy for poisoning which at the same time has elixir qualities and promises longevity if not immortality, might help ease fears concerning intentional poisoning – a persistent aspect of political rivalry in Tibet (Czaja 2013: 86). The extensive list of antidotes and anti-poisoning formulas in the *Four Tantras* shows that poisoning was a genuine threat, and a physician had to know how to treat it (Czaja 2019: 288).

The myth emphasizes that the strongest poisons can be the best elixirs, and that there is medical potential in the existence and usage of poisonous substances in medicine. The central message of the myth is: The more potent the poison the superior the elixir. It suggests that anything harmful can be turned into something beneficial through skillful means, may they be of ritual, tantric, or pharmacological nature. This combination reveals an immense potential for creating potent medicines through combining religious and medical methods, as exemplified in the consecration rituals of "accomplished medicines" (*sman grub*). Metaphorically speaking, the nectar-poison analogies of the *thangka* further underline the primary objective of Sangyé Gyatso's *thangka* project, a point also emphasized by Schaeffer (2003): Buddhism could be firmly established as a state religion, also through the field of medicine.

This combination of depicting the Indian myth, its medical theory of poisons, and their antidotes

also underscores a point made by Janet Gyatso (2015b) in her Aris Lecture: "It is the case, historically speaking, that Tibetan intellectuals tended to regard anything coming from India as authoritative and a sign of high culture…" Simultaneously, Tibetans acknowledged the value of certain great literary works from India, with Gyatso specifically referencing the Daṇḍin's Kāvyādarśa – a classic work on poetics – as "theoretically sophisticated and interesting, quite beyond its coveted 'Indian origins'."

Expanding on Gyatso's observation, one might consider how Tibetans came to include Indian origin myths into their medical texts and paintings. While speculative, it could be that the Tibetan medical establishment, particularly around Sangyé Gyatso, found the narrative of poisons as potential elixirs through the tantric and medical transformations of substances intriguing for practical reasons – antidotes. This notion may have contributed to the myth's visual prominence in this *thangka*.

Depicting the "casting of poisons"

Next, let us explore how the transmission of disease, here called "casting poison" (*dug bskur ba*), is depicted in this *thangka*. The term poison, in Tibetan called *duk* (*dug*), has a broad meaning beyond mere toxicity. It also denotes a substance that is difficult to digest. Even substances without *duk* can become *duk* for the body if consumed together, such as milk with radish. Therefore, *duk-dön* (*dug 'don*) the process of "removing the *duk*," is an important part of Tibetan medicine-making or *menjor* (*sman sbyor*). It aims at rendering substances digestible and usable in multi-compounds, removing or transforming their *duk* and unlocking their medicinal potencies. One of my central research questions here is: How does the *thangka* portray themes of disease transmission and how are these related to notions of *duk*?

Tied to this analysis is also the well-known methodological question on retrospective disease identification: How to interpret a seventeenth century artifact depicting forms of disease transmission without reading our own understandings of "contagion" retrospectively into it? How can we understand the ideas conveyed in images painted in the seventeenth century that depict a text written in the twelfth century, or even earlier? In the process of "reading" the images, I navigate between them and their textual descriptions, attempting to convey the visual message in context without retroactively identifying what is being transmitted. Unfortunately, we miss out on Sangyé Gyatso's oral sources that informed the creation of the *thangkas* (Gyatso 2010–2011: 226).

The images reveal three visual domains related to aspects of "casting poisons": (1) drawing the poisonous substances themselves (animals, metals, minerals, and herbs); (2) sketching five ways of transmitting *duk* through "poisonous air," human touch, and activities related to hospitality; (3) illustrating the motivation for intentional poisoning. All of these domains exhibit creativity and ingenuity by the artists, who combined different ways of painting objects, human emotions, and the everyday human world, including a range of *materia medica*. In the following I analyze each of these three domains.

Poisonous substances

As mentioned earlier, the *thangka* depicts thirty-six substances used in compounding poisons. These substances are connected to Halāhala's body parts through thin lines, indicating their origins in the manifestation of poisons. Since they derive from poisons, they can be used in compounding poisons, even though some of them are not considered to have *duk*, and most of them are known to have medicinal potency when properly processed. Among the thirty-six substances are plants (primarily various types of aconite, Fig. 2), metals (mercury, lead), mineral substances (sulphur, cinnabar) (Fig. 3), and meats (a list of animals is mentioned including scorpions, spiders, goats, dogs, horses, and so forth) (Fig.4).

The twelve precious metals and minerals are portrayed in bowls (Fig. 3 partially identifiable by their shape (e.g., limestone has the form of standing crystals) or color (e.g. white for limestone, red for cinnabar, yellow for sulfur). However, most of them lack sufficient detail to be recognized without their captions. Lead (*zha nye*) and iron (*lcags*) are painted blue in unusual shapes.[6] Gyatso (2015a: 56) observes that, "While there can be little doubt that the Desi and his team obtained some real examples from which to draw, we are not sure

how much of the set was actually executed with live models in sight." While we do not have access to the Desi's original set of this *thangka* from the seventeenth century to make a definite statement, I note that when compared to plants, animals, and humans, the depictions of metals and minerals in this *thangka* are often vague, and some substances (e.g., limestone and cinnabar) seem to adhere in shape more to the classical *thangka* painting motifs of drawing rocks (Jackson & Jackson 1984: 158) than to live models.

Meats are important in this section and are depicted in the form of live animals (Fig. 4a & b), which provide the meat for intentionally compounded poisons and are also sources of naturally occurring poisons such as snake venom. Poisons are derived from animal blood, bile, hair, and bones. Painting the animals from which these substances are sourced makes them easier to identify.[7] Many of the animals depicted in the section of compounded poisons (Fig. 4a) reappear three rows further below in the images referring to chapter 89 on naturally occurring poisons (Fig. 4b): a tiger, a scorpion, a worm, and a rabid dog, symbolized by a red collar. A patient suffering from "dog poisoning" or rabies (*khyi dug*) is painted with yellowish skin (Fig. 4b, bottom right).

This section also provides practical guidance on meat poisoning, depicted in everyday activities such as handling contaminated meat (Fig. 5) and poisoning through the consumption of incompatible foods (Fig. 6).

Fig. 2 The poisonous plants depicted on the thangka as ingredients of compounded poisons are black and yellow aconite (*btsan dug*), datura (*thang phrom*), and madar grass (*bsi dug*) (Identifications follow Parfionovitch *et al.* 1992: 273).

Fig. 3 The precious metals and minerals used in compounding poisons (from top to bottom, left to right): precious metals: gold (*gser*), copper (*zangs*), mercury (*dngul chu*), bronze (*'khar*), iron (*lcags*), lead (*zha nye*); minerals: "frog-back" iron hydroxide ore (*sbal rgyab*), zinc (*ti tsha*), limestone (*cong zhi*), cinnabar (*mtshal*), sulfur (*mu zi*), and galenite (*pha wang*) (Identifications follow Parfionovitch et al. 1992: 273).

Ways of transmitting and contracting *duk*

The *Four Tantras* list five ways through which *duk* can be transmitted, ranging from practical hygiene to gendered ideas of pollution (see Fig. 7 and 8). Accordingly, *duk* can be transmitted: 1) by sunrays through sight (*mthong ba nyi ma'i zer la bskur ba*); 2) by wind filled with poisonous smoke (*dur rlung gi rdzir bskur ba*), for example, from funeral rites; 3) through inhaling the vapor of the earth where one is accustomed to tread (*'goms pa'i sa'i rlang la bskur ba*), resembled by blue, red, orange, and yellow-colored rays emerging as round and straight shapes from three yellow steps; 4) by touch through oil (massage) or other contacts (*reg pa'i snum sogs kyi rtar bskur ba*), referring to sitting on contaminated cushions/seats (*gdan*), symbolized by a carpet, and having contact with women

who carry impurities; and 5) internally through diet (*khong par zad la bskur ba*), sharing alcohol (*chang*), plates of food (*sder ma*), and cups (*phor ba*).

Figure 7 depicts colorful thin, straight, and curly contaminated rays coming down from a bright orange sun (left). This image refers to the power of magic (*mthu nus pa*) by which the practitioner transmits *duk* through sun rays that the victim looks at. The white-bluish smoke arising from a strong red fire (center) and green-shaded wind (right) ornately depict the transmission of a poisonous smoke. Here, the artists made use of known styles from landscape *thangka* painting, such as the sun, flames, and clouds (Jackson & Jackson 1984: 154–60). We also find this style on other medical *thangkas* depicting the humoral wind (for example, Plate 44).

Fig. 4a A list of animals that provide substances for compounding poisons.

Fig. 4b Some of the same animals are listed as causing poisoning in humans.

Fig. 5 Visual depiction of meat poisoning. Meat might be contaminated by a butcher's blood (left). Eating a calf taken from a dead animal's body might cause meat poisoning (right).

Fig. 6 Examples of food incompatibilities (from left to right) from Chapter 88: consuming curd (*zho*) with wine (*chang*), frying mushrooms in mustard oil (*ser sha yungs mar brngos pa*), and eating chicken with curd or fresh milk (*khyim bya'i sha zho 'o rlon pa*).

Fig. 7 Transmitting poisons through sunrays (left), and through wind filled with poisonous smoke (center and right).

In Figure 8, poisonous vapors (*slangs*) are sketched in round circular forms, emanating from a staircase, embellishing a woman's belly, circulating on a carpet, or hovering over a red jug of barley beer. The artists employed a combination of bright yellow, green, blue, red, and orange hues, along with round shapes in spiraling circles to visually represent what we might term miasmas[8] or noxious air, while also including social layers of pollution. The woman is naked with long, curly hair, distinct nipples, and a spiraling miasmic sign on her lower belly, signifying impurities related to menses and sexuality. This image should be interpreted within existing analyses of misogynistic depictions of female bodies in medical *thangkas* (Gyatso 2010–2011, 2015a), where impurities in women parallel their lower status in society.

During my ethnographic research project on mercury processing (Gerke 2021), I had the opportunity to question contemporary Tibetan physicians in India and Nepal on the five ways of transmitting poison shown in this *thangka*. The responses varied. Some delegate such harming activities to the distant past, acknowledging that sending poison through sunrays required special skills, which people today do not possess. Others discuss this section while attributing great wisdom to their ancient texts that predict air and environmental pollution, which today they claim to treat with the antidotes and remedies already outlined in the *Four Tantras*. Still others offer present-day interpretations of harmful sunrays. The Tibetan physicians Tidwell & Gyamtso (2021: 110) note, "Light radiation relates to a subset of virulent infections in which sunlight radiation may play a significant disease progression role. For example, in Herpes simplex virus, sunlight is a potent stimulus for reactivation or recurrent flare-ups and extended exposure in direct sunlight may also induce immunosuppression." While these examples raise questions of retrospective disease identification, they also demonstrate innovative ways of Sowa Rigpa practitioners interpreting the concept of "casting poison" from contemporary perspectives of biomedicine, environmental pollution, and radiation.

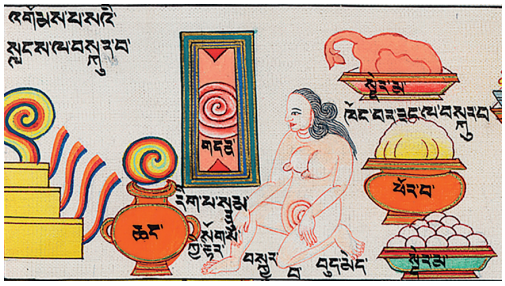

Fig. 8 Transmitting poisons through inhaling the vapor of the earth where one treads (left), or by touch, such as sitting on seats (center top) and having (sexual) contact with women (center) who carry impurities. Internally, *duk* is transmitted through diet, sharing wine (the red round flask in front), plates filled with food (top right and bottom right), and drinking vessels (middle right).

A question of motivation: intentional poisoning

Intentional poisoning appears to have been a concern in Tibet, since the first of the three chapters on poisons elaborates on "compounded poisons" or *jarduk* (*sbyar dug*). *Jarduk* are toxic substances that are intentionally compounded and used to harm others. We need to understand the complex socio-political contexts in which poison practices were employed as political tools, and specialists such as physicians or Buddhist lamas had to treat them. Compendia by Tibetan Buddhist teachers often include protection rituals and mantras to counteract poisoning (for example, Kongtrul & Barron 2003: 523). Diverse poison cultures exist in Tibetan societies, some of which may not be explicitly mentioned in medical texts. Ethnographic studies in Eastern Tibet (Da Col 2012) discuss practices of poisoning through hospitality to exploit the economic fortune of the victim. Charles Ramble & Naljor Tsering (2020) recently analyzed a range of poisoning practices in the Tibetan Himalayan regions, in an effort to place and contextualize a rare manuscript on toxicology found in Mustang. Notably, the existing fragments of this manuscript closely relate to the poison chapters in the *Four Tantras*, discussed here, suggesting the popularity or more wide-spread use of Tibetan medical knowledge on poisoning across the Himalayas.

To continue, chapter 87 in the *Four Tantras* mentions emotional reasons for intentionally ap-

plying poison. The artists faced the challenge of depicting human motivations to become poisoners as illustrated in Figure 9. Through a combination of text, symbols, and imagery, the intentions unfold: A person, half-naked and exuding hatred (*zhe sdang*) is portrayed next to a snake representing both hate and the poison itself (left); another individual driven by an inferiority complex (*ster rgyu mtho dgos*; center right) is set apart from others by a bare upper body and short hair. The victim suffering from poisoning (right) is depicted with yellowish skin, with his head tilted down and hair standing up.

In summary, the images analyzed in this section illuminate the narrative aspects of everyday experiences in Tibetan cultural life, specifically related to poisoning. These experiences involve both visible and invisible forms of *duk*, which are either intentionally cast or encountered unintentionally in daily interactions with air, animals, food, people, and places. Ideas of "contamination" emerge as a means of transmitting *duk* that can destabilize life and health. Substances may become toxic or indigestible through compounding, sharing, social interactions, or carelessness. Animals, plants, minerals, and metals can cause poisoning but also provide substances to counteract poisoning. The depicted transmission of *duk* suggests that poisons are inherent in people's lives and should be understood by physicians to effectively treat various forms of poisoning.

Conclusion

In conclusion, I want to highlight the idea of the antidote, known as "opposite" or *nyenpo* (*gnyen po*) in Tibetan, representing the process of "neutralizing poison" or *dukjom* (*dug 'joms*) in a Tibetan medical context. The nature of poisons and their antidotes reveals Tibetan medical ideas of potency, intricately linking the poisonous with the medicinal: poisonous substances can serve as antidotes to poisoning when appropriately processed. The discourse on antidotes and elixirs emerges as an important element in understanding the art of medicine-making, where numerous substances have to undergo a *dukdön* process to transform the *duk* into something digestible and beneficial – medicine or *men* (*sman*). Notable examples from the *thangka* include various types of aconite, highly poisonous roots with the capacity to act as both a poison and a treatment for disease. This poison-medicine spectrum also translates into the ways in which certain Tibetan formulas are compounded (Gerke 2021; van der Valk 2019).

Themes of shared identities between poisons and their antidotes take us back to the myth: both poisons and the substances used to compound them, as well as their antidotes, originate from the same milky ocean of existence. It is a question of processing and transformation skills whether a poison, an elixir, or an antidote emerge. It takes a lot of churning of milk to make butter. Likewise, it takes a lot of skilled processing to turn poisonous

Fig. 9 Sketches of human motivations to become poisoners (left and center right) and a patient suffering from poisoning (right), making use of symbolism.

substances into beneficial medicines. The myth itself does not discuss "contagion" or transmission of disease, but offers the medical potential encapsulated in the duality of the nectar-poison spectrum – the existence of an antidote. In this sense, the *thangka* fulfills its educational purpose by visually explaining this fundamental idea of Tibetan medical toxicology.

Generally, we can conclude that Tibetans conceptualized disease transmission in part as poison-related. The poison *thangka* reveals very specific ideas of disease transmission clustered as "casting poisons." This transmission can occur accidentally or intentionally. The poison *thangka* has a strong focus on substances and individual disease transmission. It would be valuable to compare this emphasis with the ways disease transmission is depicted in other chapters and *thangkas*, for example the *rimné* chapters on fevers, which deal with widespread and virulent infectious disease,[9] or images of patients with "pustule disease" or *drumné* and other skin diseases (Sab-

ERNIG 2022). These *thangkas* and related texts reveal different facets of contagiousness.

In sum, the ideas surrounding disease transmission and the casting of poisons in the poison chapters and related images appear to be more connected to daily experiences rather than to the poison myth. While the origin myth traces back to India, the other images depict practical day-to-day scenes from Tibet. Culturally familiar encounters with poison affliction provide insight into every-day realities reflecting a distinctive medical orientation, which GYATSO calls "medical mentality" (GYATSO 2015a, 16). We saw visual advice on avoiding meat and other food poisoning (not consuming old dead animals or incompatible foods), refraining from sharing plates, and so forth. These indicate an awareness of potential health risks. The images highlight toxicological knowledge about poisonous bites, stings of animals, dog bites, and the naturally occurring poisons in certain plants. Embedding this knowledge in the narrative of a myth offers broader explanations and a set cosmology that explains why there are poisons and elixirs in this world in the first place. The images also point to existing knowledge of substances that were used to mix poisons intentionally, which was probably widespread across the Himalayan region as attested by the Mustang manuscript fragments on poisoning analyzed by RAMBLE & TSERING (2020) and other studies on poison practices in the Tibetan world (for example, DA COL 2012). Unlike in South Asia where local knowledge of poisoning steered different debates in their encounters with colonialism (ARNOLD 2016), in culturally Tibetan areas, this knowledge survived in fractured manuscripts, classical medical texts, medical paintings, and informs Sowa Rigpa medical practice to this day. As such it is an example of how toxicology is critical to the study of medicine, also in classical Asian medical traditions such as Sowa Rigpa.

While the modes of transmission (being bitten by animals, touching contaminated things, eating incompatible foods) are clearly depicted in the *thangka*, does this reveal an underlying theory of contagion? Questions about contagion theories in Asian medicines have been explored by historians, as seen in the edited volume *Contagion* (CONRAD & WUJASTYK 2000). Aligned with several authors in this volume, I would argue that even if we can decipher some visual metaphors illustrating the casting of *duk* through "poisonous smoke" (*dur rlung)* or "earth vapor" (*sa'i rlang*) as forms of disease transmission, it does not necessarily imply a distinct and separate entity akin to an external "pathogen" being transmitted. In other chapters of the *Four Tantras,* the vapor appears as "mouth vapor" or *kalang* (*kha rlang*), considered to be expelled by demons (*gnyan*) and causing a variety of widespread diseases or *rimné.* In the poison *thangka,* the poisonous vapor – often translated as miasma – seems more interwoven into the fabric of being part of the world, rather than defining an external "pathogen." Thus, the *thangka* reveals a range of ideas on disease transmission. Notions of "miasma" and "contagion" passed on through proximity or touch do not appear as mutually exclusive ideas. Overall, these English terms seem limited in encompassing the ethical and social dimensions of "casting poisons" depicted in these paintings.

I conclude, based on the preliminary analysis of this Tibetan scroll painting, that Tibetan medical textual and visual depictions of poisons and poisoning of the thirteenth to seventeenth centuries cannot be reduced to modern ideas of a pathogen transmission. Disease transmission was conceptualized on broader and multi-layered levels, encompassing the exchange of virulent "poisonous air" between non-humans, the environment, and humans, involving the effects of environmental disruptions of spiritual abodes on human health. It also involved accidental or intentional acts of "casting of poisons." This led to a set of disease categories clustered under "poisoning" or *dukné*, which included conditions like "dog poison" (*khyi dug*; probably rabies), food poisoning (*gyur dug gyi nad*), and forms of toxicity resulting from ingesting compounded poisons, contaminated or incompatible foods. The specific nature of the *duk* transmitted in each case is not addressed in the poison *thangka,* but could be further understood within the broader medical contexts of humoral physiology described in other chapters. Additionally, the ideas concerning which substance could counteract *duk* also constituted a diverse *materia medica* of animal, mineral, metal, precious stones, and herbal origins utilized in the making of "medicines neutralizing poisons" or *dukjom kyi men* (*dug 'joms kyi sman*). *Dukjom* in

itself should also be understood as a specific category of potency, describing a substance's potential to become an antidote to poisoning when appropriately processed.

Taken together, we see that a comprehensive knowledge of various aspects of toxicology existed in seventeenth century Tibet. It was colorfully illustrated by artists in the medical *thangkas*, by incorporating existing *materia medica* and everyday life experiences. My findings also speak to the broader recognition of the diverse poison/medicine spectrum described by historians across Asia, spanning from medieval to colonial times, addressing the importance of poisons as traded substances and antidotes, and poisoning as a cultural, often subaltern practice (see, for example, Arnold 2016; Liu 2021). While the *thangka* images are fixed in time on canvas, they also present material for comparative analysis in terms of larger trans-cultural narratives of disease and poison transmission. Additionally, they offer insights into the ambiguity of artisanal practices involving the compounding of poisons and contribute to the overall discourse on poisons as medicines.

Further research on the history of infectious disease in Sowa Rigpa should acknowledge this complex, multi-layered nature of disease transmission, challenging neat alignment with modern perspectives of pathogen-based contagion. The point to take home is that toxicity in Sowa Rigpa is part of a larger contagion complex and has multifaceted socio-political, gendered, and historical dimensions. The intricacies at hand dealing with text and imagery of past notions of disease transmission not only conflate concepts of poisoning, their antidotes, and the ethics of casting poisons, but also reveal an embeddedness in socio-historical dimensions of illness severity and the suffering inflicted upon individuals and entire communities.

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Notes

1 See the Introduction in Conrad & Wujastyk 2000 for a discussion on "contagion" in Asian medical contexts.

2 For a brief essay on a Tibetan medical exhibition, including *thangkas*, at the Rubin Museum of Art, New York, see Hofer (2023), and for the extensive exhibition catalogue see Hofer (2014).

3 Sangyé Gyatso himself received the transmission of a text titled *Experience of Treating Black Pustules through Mantras* (*'brum nag snags bcos nyams yig*), probably referring to smallpox, which he included in the upper cartouche of Plate 9 of the paintings (Dorje 1992: 15). On the history of smallpox in Tibet see Yongdan 2016, 2021.

4 Email communication Dominik Wujastyk, February 2, 2023.

5 The term *asuras* means "those unable to drink wine" or "those without the wine goddess" (Parfionovitch *et al.* 1992: 117).

6 We do not know if the original version of this painting also depicts these metals in blue. The *thangka* painted by contemporary artists (for example, in Avedon & Meyer 1998) or by the Dharmapala Thangka Centre (www.thangka.de) depict iron and lead in blue; older *thangka* replications used whitish-grey bluish colors (for example, Jampa Trinlé *et al.* 2008 [1994]: 381, 384). Janet Gyatso (2010–2011: 220) notes that "it seems the original iconography was so expressive that the various copies continue to retain a freshness and human liveliness that approaches that which exudes from the earliest versions."

7 Compare with Janet Gyatso's observations on the painting of live animals in the *thangkas* (2015a, 26–27).

8 Miasma is a polysemous term widely used for various types of disease-causing vaporous emanations associated with pollution, atmospheric changes, smoke, and foul smells.

9 William McGrath is currently researching these chapters in detail as part of the FWF-funded project "Pandemic Narratives of Tibet and the Himalayas" at the University of Vienna.

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