CHAPTER 1

Menjor, Materiality, Artisanship

This chapter introduces *nüpa* in practice, focusing on amchis and their interactions with substances from sourcing, transforming, and potentizing, to prescribing medicines. Its ethnographic heart presents two detailed examples of *menjor*. The first centers on a medical practitioner in Ladakh processing limestone, referred to in Tibetan as a type of *chongzhi*; while the second documents a similar process but using different techniques, conducted by a private Tibetan physician near Dharamsala. The sourcing and processing activities involved in the transformation of *chongzhi* into a medicinal substance lend themselves particularly well to analysis using the lens of "making and growing" (Ingold and Hallam 2014) and the concept of "artisanal epistemologies" (Smith 2004, Smith, Meyers, and Cook 2014). Our focus is on the ordinary, both in terms of practices and substances. Limestone is commonly used, widely available, and relatively easy to process, even though its preparation can involve astrological considerations and ritual consecration. We wish to highlight that *menjor* is not always exotic and highly complicated like mercury processing (Gerke 2021). To the contrary, it is largely an everyday activity for amchis, who spend much of their time making common medicines for common diseases. Crucial insights concerning the properties of substances and the crafting of potency can thus be drawn from the study of quotidian materials and practices.

Chongzhi can be steered toward becoming a cooling or a warming medicine depending on the techniques used. The different ways that amchis work with it thus exemplify how skilled processing directs the *nüpa* of substances through certain techniques. In our initial discussion on processing, we touch upon a method that involves the boiling of *chongzhi* rocks to accentuate its warming properties. In our more detailed ethnographic examples, we document how, during the full moon of the eighth Tibetan month, *chongzhi* is processed to generate greater cooling effects. Both the process and the end product are known as "moonlight *chongzhi*" or *chongzhi daö* (*cong zhi zla 'od*). The entire *menjor* process thus rests

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on the amchi's skill in transforming and enhancing the capacities of a substance to make it more potent and digestible in accordance with the desired medicinal use. *Chongzhi daö* is never used singly but is added to specific formulas. As the final part of this chapter explores, processed *chongzhi* is also used as a pill coating for certain formulas.

Skillfully processing *chongzhi* is not just about "making" or finishing a pill. It also concerns what Tim Ingold and Elizabeth Hallam (2014) refer to as a phase in the life story of a substance. Starting out as a piece of rock that "grows" in remote mountain areas, *chongzhi* is then collected by amchis and processed or "tamed"—in Tibetan *tülwa* (*btul ba*)[16]—in their pharmacies. While the Sowa Rigpa practitioners we met all acknowledged that *chongzhi* and other substances have inherent qualities, they understand *nüpa* as the capacity to have an effect. This means that substances and their potencies must be purified, compounded, transformed, and directed in order to manifest the desired properties in the form of beneficial medicines. In what follows, we explore how interactions between maker and material unfold in *chongzhi* processing.

The growing and making of *chongzhi*

In *Making and Growing*, Ingold and Hallam (2014) challenge rigid distinctions between organisms and artifacts, and making and growing, arguing that the latter are both continuous, entangled processes of transformation. Substances like *chongzhi* that are used in crafts or medicine are not inert materials but have life courses shaped by their environments, whether they are growing in soil, forming in rock, or transforming in an artisan's workshop. The artisans' role is not to impose form but to engage with the evolving lives of the materials they work with. We sensed this deeply when grinding *chongzhi* from the high Himalayas; touching these fossilized remnants of ancient oceans revealed long timelines embedded in the materials.

On the Tibetan Plateau many forms of gypsum (a calcium sulfate mineral) are identified as *chongzhi*, but in the areas where we conducted fieldwork, the carbonate mineral calcite and other forms of Himalayan sedimentary limestone were used. The most common natural forms of calcite are chalk, limestone, and marble. However, *chongzhi* is not simply "calcite" or "gypsum"—though frequently translated as such—as these minerals appear in various forms, including in combination with other minerals, that amchis do not recognize as *chongzhi*. We chose limestone

16 *Tülwa* is the past tense of the verb *dülwa* (*'dul ba*, "to tame").

Figure 5 A large piece of *chongzhi* rock that Amchi Nawang Tsering carried from the high mountains in Ladakh to his pharmacy. Nee, September 2018. Photo courtesy of T. K. Shor (all rights reserved).

as the most apt vernacular and inclusive term for the *chongzhi* processed at our fieldsites (e.g., fig. 5), where it is harvested from the prevalent sedimentary rock formations predominantly composed of calcium carbonate ($CaCO_3$). However, it should be noted that not all calcite (or gypsum) originates from sedimentary rock formations. Marble, for instance, is metamorphic and anhydrite (another form of calcium sulfate) is evaporitic, while chalk is primarily composed of compressed, sedimented microplankton, with only some coral and shell fossils.

Calcium carbonate is a chemical compound used in the manufacture of many products. It is used as a filler and whitening pigment, and in products like food supplements, baking powder, toothpaste, and antacids. Limestone, along with related carbonate rocks like aragonite and dolomite, exists in many natural forms, each with a unique composition. Similarly, Sowa Rigpa recognizes different characteristics of *chongzhi*, including appearance, texture, taste, and varying degrees of warming or cooling properties. The amchis we met selected diverse types of limestone for processing, depending on availability and perceived potency.

In Sowa Rigpa, *chongzhi* is one of the quintessential stomach medicines (*pho ba'i sman*), akin to an antacid. It appears in texts detailing multi-compound formulas for indigestion in the fifteenth century (Zurkhar Nyamnyi Dorjé 2005, 521–23). This whitish calcium-rich rock is processed using a hot, cold, or wild

method, each influencing the *nüpa* of the material, either enhancing the digestive heat, or *medrö* (*me drod*), or instilling slightly cooling or neutral properties to alleviate excess stomach acid. The Tibetan physician Karma Choden, who had her clinic in Leh and was teaching at the Sowa Rigpa Department of the Central Institute for Buddhist Studies (CIBS), Choglamsar, in 2018, explained the meaning of *chongzhi*: "*Chong* comes from *chongné* [*cong nad*, also *gcong nad*], which translates [broadly] as indigestion;[17] *zhi* means pacifying. So *chongzhi* actually means 'pacifying indigestion.'"[18] A contemporary Tibetan formulary lists around twenty formulas that include *chongzhi* as their primary ingredient (Ridak 2003, 488). The gut medicine Druptop Rilkar (*grub thob ril dkar*, "Siddha White Pill"), known as Drupril, is a well-known formula containing *chongzhi* as a key ingredient as well as an additional coating in many cases.

Medicine making in Sowa Rigpa follows distinct phases outlined in the *Four Tantras* (IV, 12) as the Seven Essential Practices for Cultivating Medicinal Quality (*sman la gces par 'os pa'i yan lag bdun*). The seven practices address: (1) collection location, (2) timing, (3) removal of toxins, (4) drying environment, (5) storage, (6) refining characteristics, and (7) compounding based on specific properties (see Chapter 3). Each step contributes to shaping a substance's potency (Hofer 2014, 50–51; Yutok Yönten Gönpo 2006, 696–700). In comparison, Ingold and Hallam (2014) approach the story of materials through three phases: separation (sourcing things from nature), transition (processing substances), and reincorporation (distributing and imbibing medicines). In what follows, we have chosen to structure our discussion around the phases of sourcing, processing, and distribution/ingestion, since they logically speak to the changes that the substances undergo, allowing us to highlight how potency is sculpted throughout this emergent process.

First, materia medica must be sourced. They are removed from their former lives in soil, water, trees, mountains, and so forth. Place is important in how a substance's potency is conceptualized; substances sourced from sacred sites are considered to have extra potency. But contemporary practitioners are also pragmatic. In the ethnographic examples that we present, Amchi Nawang Tsering narrates his story of collecting *chongzhi* from the high mountains near Nee, while Dr. Penpa Tsering, who trained at the Men-Tsee-Khang (MTK) in Dharamsala, sources his *chongzhi* from the wholesale market in Amritsar.

Second, materials are processed in the pharmacy, which is the amchi's artisanal workshop. None of the amchis who we met bought ready-made, chemically pure calcium carbonate powder from a supplier, as is done by PADMA in Switzerland for

17 *Chongné*, which literally means chronic illness, is rooted in indigestion (*ma zhu ba*).

18 Dr. Karma Choden, interview with Gerke and Van der Valk, Leh, September 25, 2018.

use in their Aciben/AciTib food supplement that mirrors the formula Chongzhi 6.[19] Amchis considered it essential to process *chongzhi* themselves. This phase in particular highlights how *menjor* depends on experiential learning, experimentation, and improvisation, rather than straightforward adherence to textual authority, which is—by design—incomplete. In this chapter, we therefore start our discussion of processing by introducing the notion of "guided rediscovery" (Ingold 2001) to conceptualize the interplay of written formulas and experience in knowledge and learning. We then ethnographically document the transformation of limestone into moonlight *chongzhi* in two small-scale Himalayan pharmacies, which operate under different climatic and labor conditions.

Finally, substances continue their life stories after leaving the workshop; medicines are distributed, prescribed by amchis, and ingested. As *chongzhi* interacts with the human gut it unfolds its potency. We show how the preparation of medicine for consumers can incorporate the *nüpa* of *chongzhi* in different ways by examining its use as not only an ingredient but also a coating for the popular Drupril formula.

Sourcing substances

Tibetan medical literature mentions many types of *chongzhi*, illustrating the importance that amchis place on their diverse environments, lineages, and the sourcing of their substances. At Urgyen Tsewang Dorjey Rinpoche's Sowa Rigpa clinic in Shey, near Leh, the amchis used a rare type of "male" *chongzhi* or *pochong* (*pho cong*) called "*chongzhi* that resembles broken horse teeth" (*rta so chag pa 'dra cong zhi*) (fig. 6), which leading *menjor* scholar Gawé Dorjé identifies as a form of rhombohedral calcite (2018, 51). Amchi Tsultim Gyatso in Leh utilized a type of "son" *chongzhi* or *buchong* (*bu cong*), a form of limestone sourced from hot springs in Ladakh (fig. 7). At the Sowa Rigpa Department at CIBS in Choglamsar, a half-hour-drive south of Leh, the classroom had cabinets filled with materia medica samples. Among them were five types of *chongzhi* (fig. 10) out of the more than twenty described in modern Tibetan medical literature (Kelden Nyima 2010, 90–97; Gawé Dorjé 2018: 51–54).

However, not all the amchis we spoke with knew the exact type of *chongzhi* they were using. Most amchis in Ladakh referred instead to the particular place where they had collected *chongzhi* for generations. They sourced it from various mountain sites, following their respective lineages and teachers (Blaikie 2014,

19 Herbert Schwabl, conversation with Gerke, Wetzikon, Switzerland, June 29, 2019.

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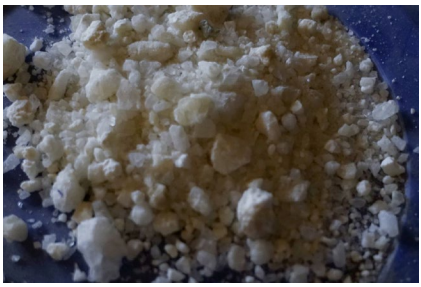

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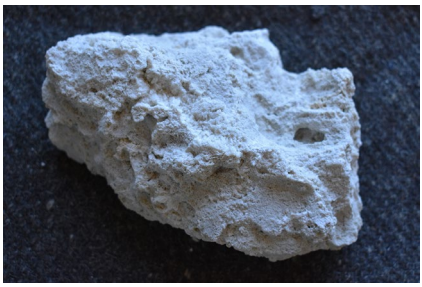

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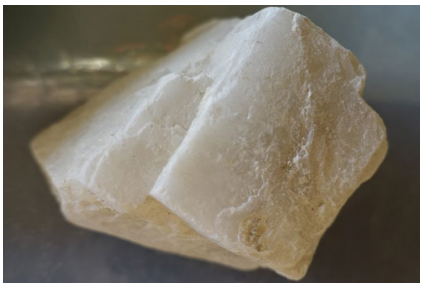

Figures 6–9 Four types of *chongzhi* used in *menjor* (from top left): *pochong* that resembles broken horse teeth at Urgyen Rinpoche's clinic in Shey (fig. 6); Amchi Tsultim's *buchong* sourced from hot springs (fig. 7); Amchi Nawang Tsering's *chongzhi* collected from high mountains near Nee (fig. 8); Dr. Penpa Tsering's *chongzhi* bought in Amritsar (fig. 9). Ladakh and Sidhpur, 2018. Photos B. Gerke (figs. 6, 8, 9) and J. van der Valk (fig. 7) (CC-BY-SA 4.0).

154). Amchi Nawang Tsering from Nee embarked on a perilous trek to a high mountain range once every few years to collect large pieces of *chongzhi* for his pharmacy (figs. 5, 8), sufficient for several years of *menjor*. It was such a hazardous journey that before embarking he would write a will and give instructions to his wife in case he did not return. In contrast, for many other contemporary amchis, wholesale spice markets in India are often the main source of many ingredients. Dr. Penpa Tsering sourced his *chongzhi* from Amritsar without knowing either its exact type or origin (fig. 9).

When Gerke discussed types of *chongzhi* with Dr. Penpa Tsering, showing him the illustrations from Kelden Nyima's book, he explained:

> Everyone uses what they can get without knowing if it is *po*, *mo,* or *maning chong* [*ma ning cong*]. It does not matter; we cannot identify the type from the books. It is too complicated; there are too many types. The Men-Tsee-Khang used to source *chongzhi* from Spiti, then later from

Figure 10 Five types of *chongzhi* samples at the Sowa Rigpa Department at CIBS. Choglamsar, Ladakh, 2018. Photo B. Gerke (CC-BY-SA 4.0).

> Dehradun where it was more yellowish. I get my *chongzhi* rocks from the wholesale market in Amritsar … we have to use whatever type we can get.[20]

Contemporary practitioners tend to take a pragmatic approach to sourcing raw ingredients. When seeking out *chongzhi*, they focus primarily on availability and color, generally favoring the whitest varieties, which are described as "finest" (*rab*) in the texts (see, e.g., Gawé Dorjé 2018, 51).

Processing substances

In her Making and Knowing Project, Pamela Smith's students made extensive use of experimentation to address gaps in sixteenth-century French artisanal texts (Smith 2016, 2022). Similarly, in Sowa Rigpa, gaps in instructions (oral or textual) may encourage students to experiment. We propose that written recipes for *menjor* can be viewed as scripts for "guided rediscovery," a concept developed by Ingold that emphasizes the dynamic nature of learning and making. Ingold (2001) suggests that rather than following instructions rigidly, artisans engage in processes of copying, imitating, and improvising, adapting their methods to the specific conditions they encounter (141). Using the example of a cookbook, he argues: "The information in the recipe book is not, in itself, knowledge. Rather, it opens up a path to knowledge, thanks to its location within a taskscape that is already partially familiar by virtue of previous experience" (137). Similarly, the

20 Dr. Penpa Tsering, interview with Gerke, Sidhpur, November 21, 2018.

recipes that amchis "read" for medicine making—or that other artisans use for their crafts—are not fixed sets of instructions but are instead flexible frameworks that guide practitioners toward rediscovering the making process in ever-changing environments. As environments and materials evolve, so too do techniques, requiring ongoing adaptation and creative problem-solving rather than mere repetition (see also Smith 2022).

Amchis study medical texts in classical Tibetan, but many *menjor* skills are transmitted orally and formulary texts are often quite brief. This keeps medical knowledge secret, protects artisans and their skills, and binds students to their teachers for longer periods of time. It can also encourage experimentation, despite the greatest value being placed on emulating one's teacher as closely as possible. Anthropologist Tatiana Chudakova (2021) describes how Buryat amchis (emchi) learn through trial and error when key steps are intentionally omitted by teachers. One student, Aleksandra, struggled to tame *chongzhi*, only later discovering that it needed to be quenched in milk or vodka while red hot. The resulting substance, resembling thick sour cream, emerged through hands-on experimentation rather than detailed instructions (249). This shows how experiential learning and improvisation fill the blanks in oral or written instructions, aligning with the trial-and-error approach employed by Pamela Smith. It is also an example of how incomplete recipes lend themselves as tools for guided rediscovery of medicine making.

Chongzhi recipes as guided rediscoveries

One of the processing methods we followed with Amchi Tsultim Gyatso was called "hot taming of *chongzhi*" or *chongzhi tsadül* (*cong zhi tsha 'dul*). Its description in a twentieth-century Tibetan textbook serves as an example of a written *chongzhi* processing script that guides rediscovery of making medicines, rather than providing a fixed set of instructions. Short and pithy, the text gives little detail on variations in timings and measurements, requiring an experienced teacher to put it into practice:

> Take approximately 1,000 units of crushed *chongzhi*, pour it into [a bowl of] water, and add ten units of saltpeter [*ze tshwa*]. Boil it for three hours. Pour off the yellowish liquid. Change the water and rinse [the *chongzhi*] ten times with cold water. In the end, the water should have no color. Dry it. It can [then] be used in medicine for beneficial application.[21]

21 Gerke's translation of Tupten Tsering 1990, 361, 14–17: *cong zhi khe 1000 rgya sran tsam brdungs nas chu nub par blugs pa'i steng ze tshwa khe 10 btab ste chu tshod gsum btsos*

The same textbook also includes a similarly sparse textual description of the cold taming of *chongzhi*, called *chongzhi drangdül* (*grang 'dul*) or *"dzomo* milk" (*mdzo 'o*):[22]

> Continue as before and first make the hot taming of *chongzhi*. Then, grind it into fine powder, pour in the milk of a high altitude *dzomo* and thoroughly knead [the mixture]. After forming [the mixture into] lumps, let [them] dry in the shade. Then they should be used in medicines for beneficial effect.[23]

Dr. Penpa Tsering clarified that in Tibetan *menjor* books, *chongzhi* usually refers to *chongzhi tsadül*.[24] Specific variations such as moonlight *chongzhi* are called *chongzhi daö* or *chongzhi dzo* (*cong zhi mdzo*) and would be specified when used in formulas.

Gerke discussed these textual sources with Dr. Penpa, specifically regarding how the processing would change the *nüpa* of *chongzhi* so that it becomes a warming or cooling medicinal substance. While sitting together in his living room, Dr. Penpa opened a copy of the *Four Tantras* and read from the chapter on ash medicines (*thal sman*) (IV, 8), which are warming in nature and used to treat cold diseases (Yutok Yönten Gönpo 2006, 684). That chapter describes two methods of processing *chongzhi*: *trültel* (*'phrul thal*), which translates to "magical ash," and *götül* (*rgod btul*) or "wild taming" through the sudden application of heat. Both techniques reveal forms of skilled artisanal practice.

Trültel exemplifies a special type of *chongzhi* processing particularly suitable for essence extraction therapies aimed at rejuvenation (see Chapter 2). Dr. Penpa recited the relevant verse from the *Four Tantras* and then explained the process.[25] *Chongzhi* is added along with a few other ingredients into a pot along with sulfur

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rjes btsos khu ser zhas can de phyir 'pho la cong zhi chu grang gis thengs bcu tsam bshal nas mthar chu'i mdog ma gtogs ser khu don rgyu med na skam nas sman nang bed spyod dgos.

22 A *dzomo* is a female yak–cow hybrid; *dzo* (*mdzo*) is the male version.

23 Gerke's translation of Tupten Tsering 1990, 361, 18–20: *cong zhi grang 'dul lam mdzo 'o ni / gong bzhin byas pa'i cong zhi tsha btul de phye ma zhib par btags rjes mdzo mo yar ma'i 'o ma blugs la 'dam 'thag legs par zin nas 'phang lo bzos te grib skam btang rjes sman nang bed spyod byed dgos.*

24 Dr. Penpa Tsering relied on the *Four Tantras* (Yutok Yönten Gönpo 1982) and the *Dütsi Bumzang* (Khyenrap Norbu 2007), of which he used an early copy from the 1980s, published by the Department of Religion in Dharamsala.

25 *Trültel* was also included in the famous fifteenth-century medical collection *Relics of Countless Oral Instructions* (*Man ngag bye ba ring bsrel*) (Zurkhar Nyamnyi Dorjé 2005, 521–23).

(*mu zi*); the pot is then sealed with mud and heated on a charcoal fire. The text states that "the indication it is cooked fully is when the sulfur smell has cleared,"[26] which Dr. Penpa clarified as meaning that the burning process is complete when the sulfur has dissipated. The ash is then further ground into a fine powder and mixed with white sugar. We note the artisanal timestamp involving the sensory engagement of smell. Following Smith (2004), we interpret this as a form of artisanal literacy.

Dr. Penpa then moved on to explaining *chongzhi götül*, known for its heating qualities. Discussing the semantics of the term *gö* or "wild," Dr. Penpa explained that a wild animal is considered more robust than a domestic one. *Götül* thus refers to the wild or stronger potency created through this taming method. Despite its potential for enhancing digestive heat, *chongzhi götül* has a sharp potency (*rno ba*) that can make medicines excessively hot; Dr. Penpa said that it is therefore used sparingly and with caution in medicinal formulations. It acts more as an add-on (*kha tshar*), than a main ingredient. Dr. Penpa clarified that most published formulas that include *chongzhi götül* mention large amounts of it, but nowadays no one uses such quantities because it would render the *nüpa* of the medicine far too hot. This left us pondering whether, historically, formulas were made that perhaps needed to be more potent to address different therapeutic needs in different geographies or if bodies might have changed over time.

Dr. Penpa's explanation of the *chongzhi götül* process also illuminates the intersections between medicinal preparation and broader artisanal practices known across the Himalayas and beyond. *Chongzhi* pieces are heated over a charcoal fire until they adopt a whitish hue, and then rapidly cooled in a liquid medium, which according to the texts should be fermented barley beer (*chang*) or buttermilk (*dar ba*), although nowadays Dr. Penpa uses water. This method not only alters the physical state of *chongzhi* but also changes its potency and hence its medicinal properties. The transformative moment is marked by a distinctive hissing sound as the hot *chongzhi* meets the cold liquid and turns into powder. This is reminiscent of the process used in creating whitewash paint, a substance popular across the Himalayan region for protecting and decorating buildings, and known for its brightness. In both cases, the interaction between heat, material, and a sudden change in temperature plays a critical role in achieving the desired outcome—whether it be a medicinal powder or a protective coating for walls. This parallel is not merely coincidental but speaks to a deeper understanding of materials and their interactions that pervade day-to-day skills, and the overlapping of techniques shared between amchis and other craftspeople. The artisanal knowledge embedded

26 Gerke's translation of Yutok Yönten Gönpo 1982, 596/1: *mu zi'i dri sangs 'tshos pa'i tshad yin 'don* (translated in conversation with Ploberger 2015, 134 and MTK 2011, 109).

within these practices, which all involve manipulation of material properties to leverage changes in temperature and state, serves both everyday practical crafts and therapeutic purposes.

Looking at these processing techniques with a focus on making and growing involves more than simply emphasizing the physical act of making; it requires us to follow how the life processes of both substances and artisans develop, mature, and evolve in unpredictable and contingent ways. Making (as human directed) and growing (as natural and autonomous) are intertwined (Ingold and Hallam 2014). This will become more evident in the two detailed accounts that follow. The amchis' interactions with limestone as they transform it from a grown rock to a processed and storable moonlight *chongzhi* "cake" highlight their experimentation—with different ingredients, various types of milk, or shapes of *chongzhi* cakes—and artisanal literacy. We specifically pay attention to their perceptions of *nüpa* and how it is directed and sculpted through different processes, or in Ingoldian terms, how makers and materials interact and coevolve.

Moonlight *chongzhi* in Ladakh

Amchi Tsultim Gyatso invited Gerke and Van der Valk to make *chongzhi daö* with him in Leh in September 2018. A Gelukpa monk from Nubra, Amchi Tsultim graduated from MTK in 1973 before its enlargement and institutionalization led to a greater separation between the pharmacy and the medical college (Pordié and Blaikie 2014). He thus received extensive *menjor* training, learning hands-on with senior teachers such as Lamenpa Jamyang Tashi of Tsona (1918–1986), who studied in Lhasa and later became head of the MTK pharmacy and the Fourteenth Dalai Lama's personal physician.[27] When we visited, Amchi Tsultim was living alone in a large building with rooms for drying, storing, and processing medicines, and saw patients in the adjacent Chirde Sorig Khang clinic, where he prescribed about seventy types of handmade pills and powders (fig. 11). His altar room, which housed his library of Buddhist and medical literature, was used for drying and consecrating substances and reciting prayers. Amchi Tsultim collected raw ingredients from far and wide, going into the mountains, buying them from collectors, and trading them with colleagues. In Sowa Rigpa, a minimum of three and up to over a hundred raw ingredients form a medicine. The vast majority are individually preprocessed before adding their specific *nüpa* to the synergy of the formula.

27 *Lamenpa* (*bla sman pa*) is the honorary title given to personal physicians of lamas and rinpoches, notably the Dalai Lama.

Figure 11 Amchi Tsultim dispenses medicines to a patient in his clinic. Leh, September 2018. Photo B. Gerke (all rights reserved).

Amchi Tsultim makes *chongzhi daö* once a year during the most auspicious and brightest full moon, which occurs in the eighth month of the Tibetan calendar, typically late August or September. The following narrative is based on Gerke and Van der Valk's fieldnotes:

> During the first day at Amchi Tsultim's clinic, it took us two hours to crush two bags of solid rock *chongzhi* into small pieces. About ten percent of the rocks were waste. The good parts looked whitish and hard, the bad parts dark and soft. Sometimes we found green, orange, and gray pieces. The process to remove the harmful, dark parts is called *dukdön* (*dug 'don*). Amchi Tsultim silently demonstrated what we should do: hit the *chongzhi* rocks carefully but firmly to break them down into smaller pieces, about the size of the tip of our thumb. The goal was to create pieces of roughly the same size without reducing too much of the rock to fine dust.
>
> While grinding *chongzhi* we contemplated the life cycles of substances: their becoming, growing, and transformations. While using our hands, we realized that *making* seems to be more about the process than its final form, and that making requires unmaking (fig. 12).
>
> We discussed how this *chongzhi* was actually an old seabed of corals and shells. Crushing it now after millions of years, we continued the

Figure 12 J. van der Valk crushes *chongzhi* rocks into smaller pieces. Leh, September 2018. Photo B. Gerke (CC-BY-SA 4.0).

transformation of organic fossilized creatures into medicine. We saw worm-like burrowing holes, corallic columns, and imprints of shells (see fig. 13). We felt awed by the eons of time we held in our hands and by all things constantly interacting with their environment. *Chongzhi* is the result of that ongoing process. Processing is based on interaction between the artisan and substance over time. Under the weight of our round working stones, we realized that *chongzhi* can be used and processed because it is relatively soft. Amchi Tsultim said it is the easiest of the rock medicines (*rdo'i sman*) to process. If it were as hard as granite, its use would differ. Crushing and grinding pearls, turquoise, or lapis lazuli is a lot more difficult. Properties of materials are not merely ideas; they are what amchis work with.

Figure 13 An unprocessed piece of *chongzhi*. Leh, September 2018. Photo B. Gerke (CC-BY-SA 4.0).

When reflecting back on our fieldwork experiences, we discussed Ingold and Hallam's (2014) questioning of where acts of making begin and end, and how this troubles notions of completion, fulfillment, and "end products." They propose that making things is akin to storytelling, without a clear beginning or end. The story is not only that of the makers who intentionally work with materials and who are deeply involved in the transformation of matter, but also that of the material itself. This approach resonated strongly during our fieldwork, as we further immersed ourselves in the life story of *chongzhi*:

> We worked the entire morning, new to the practice, and slow. Fortunately, a local woman who had been assisting Amchi Tsultim for more than ten years, guided us. Her movements looked smooth and easy, and she ground most of the rocks in much less time than we did. By noon, we had crushed twenty kilos.
>
> In the afternoon, we moved these twenty kilos of rocks into a large aluminum pot (fig. 14), which we then filled with water. We boiled them several times on a gas stove. Each time, Amchi Tsultim changed the water, until after four rounds of boiling, the water looked clear (see figs. 15–18). This way of processing is known as "hot taming of *chongzhi*" or *chongzhi tsadül*.
>
> Amchi Tsultim explained that the *nüpa* of *chongzhi* comes from its nature, called *ngowo* (*ngo bo*), not its taste, *ro* (*ro*).[28] The process of

28 See Chapter 3 on the distinction between *ngowö nüpa* (*ngo bo'i nus pa*), "essence potency," and the "potency of taste" (*ro yi nus pa*), also known as "material potency" or *dzé kyi nüpa* (*rdzas kyi nus pa*).

Figure 14 Amchi Tsultim and Gerke prepare crushed *chongzhi* rocks for boiling. Leh, September 2018. Photo J. van der Valk (all rights reserved).

boiling, called *chongzhi dukdön*, does not change the nature of *chongzhi*, it simply removes the *duk* (*dug*). In this context *duk* is not poison, but "what we don't want": dirt, other minerals, impurities of all kinds. Through boiling, the *chongzhi* becomes clean (*gtsang ma*). Amchi Tsultim said: "We don't use unclean materials in medicine, as this makes the medicine rough and difficult to digest." During the boiling, we saw soap-like yellowish frothy bubbles. This was the *duk*. With each round of boiling, the water became less murky and yellowish, and fewer bubbles appeared. During the third round of boiling, the water in the pot became clear enough to see the rocks underneath. After the fourth round, the water was almost transparent and not yellowish anymore. After the boiling, the pieces had to be soaked and washed in cold water four times and then laid out to dry.

Amchi Tsultim explained that this *dukdön* process had been carried out by generations of expert amchis, who gained experience by doing it. Jan asked if they also relied on texts. Amchi Tsultim smiled, saying that, "the text *is* experience."

Five days later, we returned for another two days of grinding. This time, the boiled *chongzhi* rocks had to be ground into fine white powder.

Figure 15 First round of boiling *chongzhi*. Leh, September 2018. Photo J. van der Valk (CC-BY-SA 4.0).

Figure 16 Amchi Tsultim pours out the water after the second round of boiling *chongzhi*. Leh, September 2018. Photo J. van der Valk (all rights reserved).

Figure 17 The water looks clearer after the third round of boiling. Leh, September 2018. Photo J. van der Valk (CC-BY-SA 4.0).

Figure 18 The water appears clear after the fourth round of boiling. Leh, September 2018. Photo J. van der Valk (CC-BY-SA 4.0).

Figure 19
Grinding the pre-boiled and dried *chongzhi* pieces by hand into fine powder. Leh, September 2018. Photo B. Gerke (CC-BY-SA 4.0).

Figure 20
Sifting the ground-up *chongzhi* powder. Leh, September 2018. Photo J. van der Valk (CC-BY-SA 4.0).

We used the same stone trough and round pebbles as before (fig. 19) and then passed the powder through a metal sieve into clean plastic sacks (fig. 20). It was a dusty affair, and we used gloves and masks. Amchi Tsultim showed us some techniques. His rapid hitting of the sieve against the palm of his hand was very efficient, causing much less dust to escape since the bag containing the fine powder was moved less. We were unable to imitate the elegance and efficiency with which he accomplished his fine grinding; we realized this takes years of practice.

The next day, we brought our sleeping bags, since the *chongzhi daö* processing would happen during the night of the full moon. We spent the afternoon making *chongzhi* powder. In the evening, Amchi Tsultim

Figure 21
View from the rooftop of Amchi Tsultim's clinic. Leh, September 2018. Photo B. Gerke (CC-BY-SA 4.0).

prepared a simple but delicious meal: flatbread *roti* with green beans. He told us to eat well, since we had hard work ahead of us. At around 8 p.m., we went up to the rooftop of his building (fig. 21).

This housing colony had grown steadily over the years. Its roofs were littered with satellite receivers, prayer flags, plastic sheets to prevent rain from seeping in, rubble, and water tanks. When it got dark, we started using our head torches. The moon was covered by a thin layer of cloud.

Amchi Tsultim had organized six liters of fresh *dzomo* milk, which had already been boiled. He started mixing some of the white *chongzhi* powder with the *dzomo* milk in a large metal bowl (fig. 22). When he judged that the consistency was right, he gave each of us a pile of wet *chongzhi* dough in a smaller shallow metal bowl, so we could knead the mixture. The three of us sat in a row, facing the moon, each with our bowl in front of us. We could hear dogs barking in the streets below. As instructed by Amchi Tsultim, we wore disposable gloves to prevent our hands from getting soaked, which would be very unpleasant when kneading *chongzhi* for three and a half hours. The mixture was not as elastic as clay, and heavier and less sticky than bread dough. The predominant sensation was its coldness. Amchi Tsultim explained that this was a combination of the mixture's exposure to the cold night air and to moonlight, which "is always cold." Indeed, the main aim of our kneading was to thoroughly expose every particle of the mixture to the moonlight, while reciting the Medicine Buddha mantra.

We specifically asked if the *nüpa* of the *chongzhi* paste would change. He explained that the mantras added the potency of mantra, *ngak kyi*

Figure 22
Amchi Tsultim mixes boiled *dzomo* milk with the *chongzhi* powder. Leh, September 2018. Photo B. Gerke (all rights reserved).

nüpa (*sngags kyi nus pa*), and the light of the moon increased the *chongzhi*'s cooling power. We asked if the *dzomo* milk had an influence. He explained: "It adds nutrition or *chü* [*bcud*]. It makes the *chongzhi* more nutritious, but does not significantly influence the cooling/warming balance because it is considered neutral. *Dzomo* milk has a balanced *nüpa*. Cow's milk, on the other hand, is more cooling."

Amchi Tsultim described to us how he visualized the eight Medicine Buddhas in a horizontal row, facing him, together with all of the dharma and medicine teachers who had been kind to him, including the Dalai Lama (his root guru). He requested them to bless the medicine, since this is believed to add more *nüpa*. Amchi Tsultim said: "Making medicine generates merit, we should rejoice in that. It is not like selling wine. It is meaningful because you are helping sentient beings." This idea added an extra dimension to what seemed like arduous, repetitive, ordinary work.

We stopped kneading at around 11:30 p.m. and formed and placed round, uneven *chongzhi* cakes—some with holes—on clean plastic sheets. In the end, we had more than a hundred donut-shaped cakes spread over four plastic sheets on wooden planks. These were exposed to the light of the full moon throughout the night (fig. 23). Tired and happy, we retired to our sleeping bags. Early the next morning, before sunlight directly touched the cakes, we moved them into the shrine room to dry in the shade for six or seven days. Once dry, they were ground into white powder that could be stored for use in specific formulas.

Figure 23
Chongzhi cakes in the morning after their immersion in the light of the full moon. Leh, September 2018. Photo B. Gerke (CC-BY-SA 4.0).

Making *chongzhi daö* with Amchi Tsultim showed us that only by doing and making could we get a sense of the intricacies of the amchi's skills, dexterity, and empirical knowledge, as well as the practical necessities and limitations involved. Only by engaging in each of the constituent processes could we really begin to understand the dynamic interactions unfolding between the substances, the practitioner and—in this case—the power of moonlight.

Moonlight *chongzhi* in Himachal Pradesh

One month later, in October 2018, Barbara Gerke documented the *chongzhi daö* process with Dr. Penpa Tsering. It was the full moon of the ninth Tibetan month, which in the lower Himachal regions typically offers clearer skies than the monsoon cloud-covered full moon of the eighth month. After his training at MTK, Dr. Penpa spent years working in its pharmacy before establishing his own. While

still based in the Dharamsala region, he had become a supplier of many Sowa Rigpa formulas to privately practicing amchis worldwide. The following narrative is based on Gerke's fieldnotes:

> On the afternoon of the full moon day, Dr. Penpa took me around the pharmacy, showing me the various types of processed *chongzhi* and the preliminary *dukdön* he had already completed to make the moonlight *chongzhi*. He explained that he had boiled the *chongzhi* pieces for three hours in water with saltpeter to make the stones "smoother," which means they would be easier to digest.[29]
>
> One of his skilled assistants had then ground the clean, dry *chongzhi* rocks using an electric grinding machine. Most amchis in Ladakh told us that *chongzhi* must be manually ground to avoid clogging up the grinding machine. Dr. Penpa adopted a gradual approach. He added small amounts of *chongzhi* to the machine and monitored its sound to determine when the substance was sufficiently ground. Overloading the machine with *chongzhi* not only risks jamming it but also leads to the loss of valuable raw materials in the form of dust. Proper machine maintenance and operational skill are critical to avoid these issues and ensure the production of very fine *chongzhi* powder. Dr. Penpa's team included sixteen Indian workers, trained over a decade. He had one skilled assistant who knew the grinding machine so well that he had ground 154 kilos of very fine *chongzhi* powder in preparation for the *chongzhi daö* without clogging the machine.
>
> On the rooftop, sacks of *chongzhi* powder were mixed with milk by a group of laborers (fig. 24), who worked overtime in exchange for extra tea and a taxi ride home. They began kneading in the late afternoon, kneeling around large plastic bowls (fig. 25), using the full force of their upper bodies to mix the powder and milk by hand (fig. 26). Dr. Penpa instructed them to wash their hands frequently. Unlike Amchi Tsultim, Dr. Penpa was concerned about the chemicals in disposable gloves and avoided using them, fearful of contaminating the medicines. Every four kilos of *chongzhi* required one liter of milk. Forty bags, each containing one liter of dairy cow milk from the Punjab had been readied for processing. Since this milk was pasteurized, no precooking was necessary. Dr. Penpa acknowledged that cow milk possesses cooler properties than *dzomo* milk, but explained that its use was acceptable given that the full

29 This is also a common method for preprocessing precious stones (Gerke 2019a, 101).

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Figures 24–29 Processing *chongzhi* with Dr. Penpa Tsering. Sidhpur, October 24, 2018. Photos B. Gerke (all rights reserved).

moon processing also increased the cooling *nüpa* of the *chongzhi*. What troubled him more were the undisclosed additives like soybean powder, which is added by Indian dairy farms to milk labeled as "fortified with Vitamins A and D, containing Solids-Not-Fat [e.g., lactose, vitamins, calcium] and milk fat" (fig. 27). Dr. Penpa explained that obtaining forty liters of fresh milk in his area was impossible, making commercially packaged milk the only available option. It was a pragmatic compromise. He clarified: "You cannot always follow the text, but have to use what is available."

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Figures 30–32 Processing *chongzhi* with Dr. Penpa Tsering. Sidhpur, October 24, 2018. Photos B. Gerke (all rights reserved).

As dusk fell, the workers—who had already spent several hours mixing *chongzhi* powder with milk—laid out large plastic sheets on the rooftop (fig. 28). Dr. Penpa checked the consistency of the paste and instructed his assistants when to add more milk or powder. Over the years, Dr. Penpa adapted his techniques to suit the climate and materials. Unlike the round *chongzhi* cakes with holes typical in Ladakh, and the round flat cakes made by MTK, Dr. Penpa preferred to have his assistants flick pieces of *chongzhi* paste onto large clear plastic sheets (figs. 28, 30). He invited me to assist in this. The paste felt cold to the touch and had a perfect consistency—not so firm as to break, yet not overly liquid. We discussed the size of the pieces. If they ended up slightly large, they could simply be broken into two once dried, offering some flexibility and speed in our work.

We discussed the doughnut-shaped *chongzhi* cakes I had seen in Ladakh. Dr. Penpa acknowledged that they dry faster but said he had not seen that technique in Himachal Pradesh. At MTK, they traditionally made flat cakes without a hole; he made one to show me its size and shape (fig. 29). They first made *chongzhi daö* in exile in the 1980s. Dr. Penpa recalled facing many difficulties, since they had to

do everything manually on rough grinding stones and the newspaper on which they placed the cakes stuck to them while they were drying. Nowadays, everyone uses clean plastic sheets. He believed his method of creating flaked pieces not only allowed the paste to dry better in the humid climate but also significantly reduced labor time. For comparison, we made one Ladakhi-style doughnut with a hole and placed it with the flat MTK-style shaped cake to dry on one corner of the plastic sheet (fig. 31).

Dr. Penpa emphasized the importance of experience and experimentation and wondered how amchis figured out how to process *chongzhi* hundreds of years ago: "We do not have machines like modern science to test our methods." This led to a discussion on the use of the human body and its senses. We wondered how amchis historically identified *chongzhi*'s utility for stomach ailments. Did they associate whiteness and coolness—milk, *chongzhi,* and the moonlight all being white and having cooling potentialities—with the relief of hot-natured conditions like gut acidity, despite most stomach ailments needing warming potencies?

We talked about how calcium carbonate is now widely known as an antacid, and how *chongzhi* from the Himalayas originated from coral and seashells on the ocean floor before the Indian subcontinent's uplift brought them to the high altitudes of the Himalayas. For Dr. Penpa this made his *chongzhi* original, even if it is chemically identified largely as a form of calcium carbonate, which he could buy in sacks from a chemist store. Thinking about this transition from sea level to mountainous heights over millions of years added to his sense of the unique properties of *chongzhi*. His *chongzhi* was also unique in its material makeup, considering that limestone is not just calcium carbonate, and milk is not just "milk."

Since his workers were Hindu and not Tibetan Buddhists, his *chongzhi daö* practice had no obvious ritual elements such as those we observed with Amchi Tsultim in Leh. Dr. Penpa performed his prayers by himself in the morning and consecrated his medicines by adding blessed substances such as *mani rilbu* (*ma Ni ril bu*) and *dütsi chömen* in small quantities to his formulas. He acknowledged that nowadays amchis do not have the time to perform all the rituals for consecration. Adding blessed substances to each batch was a way to imbue blessings while keeping up with a demanding manufacturing schedule.

By 7:00 p.m., the full moon rose above the Dhauladhar mountain range. The workers had prepared five large plastic sheets, each laden with more than thirty kilos of *chongzhi*, now denser with the added forty

liters of milk. These *chongzhi* pieces would be left out for exposure to the moonlight (fig. 32). The laborers were done for the night and packed up to go home. Dr. Penpa would cover the *chongzhi* pieces by 6:30 a.m., before sunrise. By 9:00 a.m., his workers would move the sheets of *chongzhi* into the pharmacy's drying rooms.

When we met again a month later, I inquired about our experiment of forming the two *chongzhi* cakes. He laughed, recounting how they had broken while the sheets were being transported to the drying room the following morning. His technique, it turned out, was the most suitable one for the place and the amount of *chongzhi* made during that full moon event.

Distributing and imbibing substances

Processed *chongzhi* can be stored safely for longer periods until used in medicines. Some amchis regrind the cakes into powder for storage, while others prefer to keep them in larger forms and only grind them when they are ready to prepare medicines. Once the *chongzhi* formulas are made, these materials have become medicines and leave the amchis' workshops on the next stage of their journey. Some find their way into local dispensaries or to practitioners across South Asia, while others are shipped worldwide to Sowa Rigpa clinics. These medicines are then prescribed by amchi practitioners or sold over the counter before being ingested by patients. Thus, cycles of growth and making transition into a phase of transference that culminates in the potencies of substances being imbibed into the bodies of patients, skilled production meeting with digestion. In the skill of coating, we see a different way of reincorporating the *nüpa* of *chongzhi* into the body as a medicine.

Coating pills

Preprocessed *chongzhi* powder (not exposed to moonlight) is used to coat certain pills or *rilbu* (*ril bu*), giving them a distinctive, beautiful white finish. Slightly different concepts of potency apply when *chongzhi* is used as a primary ingredient in a medicine than when it is used as a pill coating. As a primary ingredient processed for its warming capacity, it will enhance digestive heat (see Chapter 3), while the examples we have presented here show it being steered toward becoming a slightly cooling medicine. Amchis listed several reasons why and how *chongzhi* is also used as coating. It initially acts in the stomach and concurrently preserves the

intrinsic *nüpa* of the pills' components, but it is also used for its whitening capacity. While the other ingredients in a formula can alter a pill's final color, achieving a certain aesthetic is an integral aspect of this coating technique. According to Amchi Nawang Tsering, color also matters to patients who, for instance, expect a Siddha White Pill, or Drupril, to be white.[30]

The Drupril formula has been documented in Tibetan medical texts since the fifteenth century and continues to be produced today. In Amdo, it has become a popular over-the-counter (OTC) remedy for stomach acidity (Nianggajia 2015), while in India, MTK produces it in a granular form sold as the OTC digestive Men Sum. Another formula with a *chongzhi* coating is Rilkar Pedong or Rilpé, which combines Drupril and the golden flower of *sergyi metok* (*gser gyi me tog, Herpetospermum pedunculosum*). The whitening of the pill is achieved with a *chongzhi* coating using hot-tamed *chongzhi tsadül*.

Our collection of Drupril samples from various pharmacies revealed that this coating process is labor intensive, leading some pharmacies with limited manpower to skip it. Moreover, the coating is an art marked by unpredictability. During Van der Valk's visit to Nee in 2022, Amchi Nawang explained that he sometimes applied up to four layers of *chongzhi* coating: "It depends on the process. Sometimes we succeed with one coating, sometimes we need three; it is not fixed. It is also a luck factor. Sometimes, coincidentally, everything is going right; sometimes, however much we care, it is not going the right way."[31]

Van der Valk had observed this process in 2018, watching Amchi Nawang applying consecutive layers of *chongzhi* coating onto roughly rolled brownish Drupril pills (figs. 33–36). His fieldnotes summarize the process, pointing out some of its intricacies while also necessarily skirting over many details:

> Nawang had mixed very finely ground preprocessed *chongzhi* powder with water to make a yogurt-like paste. He added about three or four soup spoons of this paste to a bowl containing around 1,500 Drupril pills, rhythmically stirring and turning them. He noted that adding too much paste makes the pills too wet, so the coating process has to be done in several layers. Sometimes the coating achieves a good white result, sometimes not. The *chongzhi* coating container was covered with a lid to shield it from too much sunlight, while the pills were turned in the sun to dry them more quickly. This batch was enough for a year's supply.

30 Van der Valk, fieldnotes, October 2, 2018.

31 Amchi Nawang Tsering, interview with Van der Valk, Nee, August 9, 2022.

Figure 33 Extremely finely ground pre-processed *chongzhi* powder mixed with water to make a yogurt-like paste for pill coating. Nee, August 2018. Photo J. van der Valk (CC-BY-SA 4.0).

Figure 34 Amchi Nawang Tsering's layered *chongzhi* coating; there is already a clear color difference between the uncoated and partially coated batches. Nee, August 2018. Photo J. van der Valk (CC-BY-SA 4.0).

Figure 35 Amchi Nawang Tsering immerses partially coated Drupril pills in a *chongzhi* paste to add another layer. Nee, August 2018. Photo J. van der Valk (all rights reserved).

Figure 36 Amchi Nawang Tsering's best quality Drupril with *chongzhi* coating: milky white and smooth. Nee, August 2022. Photo J. van der Valk (CC-BY-SA 4.0).

> After the stirring, Amchi Nawang rolled the pills in a large dark blue cloth bag, tied shut, while reciting Medicine Buddha mantras. The rolling must be gentle to avoid rubbing off the coating, but firm enough to ensure the pills dry while developing a smoother surface. Once rolled, the pills were laid on a rack to dry indoors at the pharmacy. Nawang explained that the *chongzhi* coating protects the pills much like chalk whitewash protects houses from extreme heat, cold, and moisture. The coating helps preserve the pills' potency, and the white color is what patients expect.[32]

These observations highlight some of the challenges of amchi artisanship. Patients expect a beautiful white pill, but labor limitations and the variables of dilution, adhesion, drying, pill rolling, and interactions between ingredients do not always bring the desired results. Among all the Drupril pills we collected, Amchi Nawang's were the whitest and most beautiful. When Gerke showed some to Dr. Penpa, he acknowledged their fine craftsmanship, achieved by a single dedicated amchi in the most remote pharmacy we visited.

In 2018, Van der Valk and Gerke visited Orgyen Dongak Shedrup Ling, locally called Urgyen Rinpoche's Gompa, in Ladakh (fig. 37). Established by the Nyingma lama Urgyen Tsewang Dorjey Rinpoche, it houses a monastery with monks and nuns and a Sowa Rigpa clinic where medicines containing *chongzhi* are prescribed to patients. In 2018, the clinic was managed by two women: Urgyen Rinpoche's late sister Amchi Sherab Dolma (d. 2020) and Ani Oeser from the Ladakh Nuns Association, who studied Sowa Rigpa at Chagpori Tibetan Medical Institute in Darjeeling. We had the opportunity to visit these two female amchis multiple times. During the September full moon, while we were with Amchi Tsultim, they were preparing *chongzhi daö* in Shey, making only a few kilos since they still had cakes from the previous year. We saw their cakes still drying in the gompa when we visited the clinic a few days after the full moon (fig. 38). Made with the superior white *pochong* variety of *chongzhi* and two liters of *dzomo* milk, the doughnut-like cakes appeared beautifully white and creamy, each uniquely shaped and of varying size.

The amchis incorporated the cakes into some of their *chongzhi* formulas (fig. 39), grinding them in an electric grinding machine instead of by hand on a grinding stone. Due to their limited staff, they utilized the machine for most tasks. During our visit to the dispensary (fig. 40), they showed us their Drupril

32 Van der Valk, fieldnotes, October 2, 2018.

Figure 37 Urgyen Rinpoche's Gompa with the Sowa Rigpa clinic on the right. Shey, September 2018. Photo B. Gerke (CC-BY-SA 4.0).

Figure 38 *Chongzhi* cakes drying inside Urgyen Rinpoche's Gompa. Shey, October 2018. Photo B. Gerke (CC-BY-SA 4.0).

Figure 39 Two formulas containing processed *chongzhi* at Urgyen Rinpoche's Sowa Rigpa clinic: Drupril, which both contains and is lightly coated with hot-tamed *chongzhi* (left); and Dashel Dütsima, which contains moonlight *chongzhi* but has no *chongzhi* coating (right). Shey, October 2018. Photo B. Gerke (CC-BY-SA 4.0).

Figure 40 The two female amchis working at the busy dispensary of Urgyen Rinpoche's Sowa Rigpa clinic. Shey, October 2018. Photo B. Gerke (all rights reserved).

Figure 41 Lightly coated Drupril pills at Urgyen Rinpoche's Sowa Rigpa clinic. Shey, October 2018. Photo B. Gerke (CC-BY-SA 4.0).

pills. Despite containing and having been lightly coated with hot-tamed *chongzhi,* they were still quite dark (figs. 39, 41).

Discussion

We have seen that *chongzhi* can yield a spectrum of effects—from slightly cooling to warming—depending on the preparation method employed. This ability to direct therapeutic action by altering the *nüpa* of ingredients reflects a complex interplay between textual instructions, material properties, and amchi artisanship. The concept of modifying a substance's qualities through processing is not unique to *chongzhi*. It is part of a far broader set of *menjor* practices, such as *sek* (*bsregs*), a process involving the burning of substances into ash medicines, which enhances their warming properties to treat cold diseases (*Four Tantras* IV, 12).

Amchis' engagements with materials and reliance on a range of knowledge transmission methods—reading, seeing, memorizing, direct instruction, hands-on experience, and, at times, experimentation—are emblematic of what Ingold calls skilled practice. They help us understand *chongzhi* processing in Sowa Rigpa as a dynamic interplay between the textual and the experiential, with written scripts acting as gateways to deeper, embodied forms of knowledge. *Chongzhi* processing is not merely about replicating a set of instructions. It involves improvisation that draws from both collective and individual experience, as well as lineage transmissions. Through this lens, we can begin to see how knowledge is a set of skills developed through active engagement with materials and environment, a process that Ingold terms "enskilment." We explore this further in the next chapter, when we look at the making of medicinal butter. Moreover, we can better appreciate the complexity of *menjor* in which the potency of substances like *chongzhi* emerges from a confluence of material engagement, environmental attunement, and skilled practice.

Our exploration of *nüpa* in practice shows that the concept of potency extends far beyond isolated active ingredients within a substance. Potency is not fixed.

It is a dynamic capacity that can be crafted through the meticulous process of medicine making. *Nüpa* is not solely inherent. It is something that continues to emerge and is enhanced as substances undergo their transformative journey from raw material to ingested medicine. This process of becoming, as shown in the practices and insights of various amchis, again illustrates how *menjor* craft is guided by skill, material properties, and environmental conditions.

Smith's work on artisanal epistemology gives us four key insights that help us understand this process. They also resonate with the theoretical contributions of Ingold and Hallam. First, skills are constantly refined through practice. Smith (2016, 2022) shows how the intimacy between practitioner and materials is fostered through sensory engagement, reconstruction, and experimentation. We saw this in Dr. Penpa Tsering's innovations when he employed a process of gradual mechanical grinding to produce larger quantities of fine powder without clogging the machine or losing valuable raw materials, or when he reshaped *chongzhi* cakes to dry them more easily. These skills embody the intimate and responsive relationship between practitioner and material. Each cake is shaped differently and each batch of *chongzhi* coating is unique.

Second, Smith (2010) reminds us to take seriously the "lived theory" (48) of early artisans and the underlying principles of their workings with materials, even if these are hard to put into words. If substances are considered alive and transformable (Smith 2010), they speak to the artisan in many ways. Different kinds of milk (cow, *dzo*, processed milk with additives) feel different and act differently when mixed with *chongzhi*. Each brings their own *nüpa* into the processing—adding, changing, and transforming the cooling and warming properties and consistency of the final paste.

Third, we should acknowledge a specific artisanal literacy among amchis. In this chapter, we followed what Smith calls "nontextual materials and processes" (2019, 22). This has allowed us to answer some of our questions about the specific instances of *chongzhi* processing in which we engaged, but offers no singular blueprint or protocol that could be universally applied. How exactly should the rocks be ground? What are the precise parameters for the subsequent boiling? How long should *chongzhi* be exposed to the light of the full moon? What is the most effective way to knead the paste by hand, and how might the use (or not) of gloves affect the outcome? Different answers to these questions would result in quite different processes and thus in different final products, yet such detailed processing questions are rarely addressed in Sowa Rigpa formulary texts (see also Van der Valk 2019). We see these as integral parts of each amchi's artisanal literacy. They are passed on through guiding explanations or *tri* (*khrid*), a lineage of practical experience or *laklen* (*lag len*), and engaged observation or *tongwé gyü* (*mthong ba'i rgyud*). This often includes aspects that are transmitted orally through

pith instructions or *men-ngak* (*man ngag*), some secretly (*gsang ba*). We note that a lot of Sowa Rigpa *menjor* knowledge is enacted rather than written down, often transmitted as tacit knowledge in what Smith describes as "nontextual, even a nonverbal literacy" (2004, 8) or, more recently, as a "material imaginary," that is, a practice-based knowledge system, partially written down in recipes but also emerging "out of the experience of practitioners working with materials" (2022, 13).

Fourth, imprecision in recipes (and other texts) makes sense. Smith (2010) highlights how artisanal recipes and treatises employ many measurements that sound imprecise and unfamiliar, "as they attempt to put into words the experiential and sensory knowledge of artisans that was almost always left unarticulated" (32). These textual imprecisions are not a limitation but rather an invitation to engage with the material language of artisans. For example, amchis' measurement of time does not always correspond to clock time. Amchi Tsultim boiled *chongzhi* four times, guided by sensory cues such as the quality of the bubbles and the changing color of the water, even though he generally knew it would take three hours. Time indicators are complex. Dr. Penpa Tsering's assistant could hear by the sound of the grinding machine whether the *chongzhi* was sufficiently ground. In *menjor* texts, we often find imprecise descriptions, such as "boil it for the amount of time it takes to boil a soup" (*khu ba thon nges skol*) or "boil until the color has changed" (*mdog 'gyur tsam du btso*).[33] And recall Dr. Penpa's explanation of how the disappearance of the sulfur smell indicated the readiness of an ash medicine. Ethnographically, we have paid attention to and tried to learn the artisan's material language, a form of knowledge that imprints on our hands, bodies, and senses.

By focusing on the skilled practice, lived theories, and material language of artisans like Amchi Tsultim and Dr. Penpa, we discover that, in Sowa Rigpa, it is the processes of dealing with the properties of substances that make for their potency. As we have seen, this involves negotiation, adaptation to new environments, and the use of substitutions, such as cooling cow's milk instead of balanced *dzomo* milk. The way that *chongzhi* cakes are variously mixed and formed in different *menjor* settings exemplifies this process of experimentation and adaptation. In Himachal Pradesh, using pasteurized packaged milk from the Punjab and making smaller *chongzhi* flakes allowed Dr. Penpa to craft *nüpa* and produce the best possible long-lasting processed *chongzhi* pieces in a climate with high humidity. Here, we note the role of embodied practices-in-environments in shaping human engagements with materials, something that Ingold highlights

33 Gerke discusses this elsewhere in the context of processing precious stones (Gerke 2019a, 104).

in his call for a more ecological perspective on craft—one that views materials as active agents in the making and unmaking of things.

Broader economic, social, and political contexts also shape potency. Factors such as labor availability, economies of scale, technology access, regulations, market demands, and raw materials influence what is practically possible and when deviation from what might be considered ideal may be required. These constraints shape amchi practices, becoming part of their artisanal epistemologies. Labor limitations affect many tasks in cottage industry production, since workers may have varying connections to Sowa Rigpa, such as religious commitments (e.g., Hindu laborers not reciting Buddhist mantras), or limited availability. For instance, at Dr. Penpa's facility, *chongzhi* could not be kneaded during the full moon night as traditionally intended because the workers could only stay one extra hour. Potency, then, is not only a matter of textual knowledge and skill, but also about navigating the limitations of production in specific social and economic settings. It should be noted that our examples in this chapter have shown highly experienced amchis at work. Though aided by long-term assistants, none of them trained students in their pharmacies, which raises questions about the state of contemporary *menjor* education and the passing on of medicine-making skills, a topic we discuss in Chapter 4.

To conclude, the skillful art of the practitioner and the potency of the substance cannot be separated. There is no dichotomy between a substance's innate capacity and the potency that is shaped through processing. As Ingold and Hallam (2014) argue, we must move beyond artificial binaries between organisms and artifacts. Potency is a dynamic process of becoming in which properties emerge through skillful practice. Potency thus materializes from a field of practice where latent properties are recognized, enhanced, activated, and directed to restore balance in the body.