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# Thinking differently with Chinese medicine: ‘Explanations’ and case studies for a postcolonial STS

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1–21

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[journals.sagepub.com/home/sss](https://journals.sagepub.com/home/sss)Wen-yuan Lin<sup>1</sup>  and John Law<sup>2</sup>

## Abstract

In Mandarin, the English word ‘nature’ translates as ‘*ziran*’ (自然 *zìrán*) in science, biomedicine and everyday life. At the same time, *ziran* indexes a second older set of meanings that make little immediate sense in English. Current in many Chinese medical practices as well as in classical Chinese philosophy, these include ‘what is spontaneously so’ or ‘let the character of the self unfold’. In this article we explore how these two families of meaning are related by particular Taiwanese Chinese medical practitioners as they describe how they negotiate the relations between biomedicine and Chinese medicine in daily professional practice. At the same time, inspired by related logic-shifting writing in anthropology, postcolonial studies and postcolonial STS, we draw on the ‘art of patterning’ (辨證 *biànzhèng*) to understand how *ziran*-nature relations are specified in those accounts. Patterning is the art of specifying the shifting arrangements and misalignments that lead to ill health. Treating this as a way of thinking about *ziran*-related overlaps between biomedicine and Chinese medicine, we show that patterning attends not to objects ‘out there’ but to appearances (象 *xiàng*, *xiàng*). Put into use as an STS term of art it therefore shifts the epistemological basis of inquiry because case-stories no longer reveal underlying mechanisms, but instead narrate patterned appearances. One implication of this is that any particular pattern diagnosis lies alongside a galaxy of alternatives that might be equally good to think with. Within the limits set by referential academic conventions, we thus attempt a postcolonial shi (勢)-inflected STS in this paper by resisting the use of a single analytical framework, instead setting different forms of patterning alongside one another.

## Keywords

patterning, postcoloniality, Chinese medicine, appearances, *ziran*, nature<sup>1</sup>National Tsing-Hua University, Hsin-chu, Taiwan<sup>2</sup>The Open University, Milton Keynes, UK

## Correspondence to:

Wen-yuan Lin, Centre for General Education, National Tsing-Hua University, 101, Kuang-Fu Road, Sec 2, Hsin-chu 300, Taiwan.

Email: [wylin1@mx.nthu.edu.tw](mailto:wylin1@mx.nthu.edu.tw)

If you fall ill in Taiwan you may go to a biomedical doctor or a Chinese medical clinic. Alternatively, you may visit both. Dr Chen works in a Chinese medical clinic in Hsin-chu county.<sup>1</sup> She completed her postgraduate training five years ago, but she thinks traditional ways of learning are best, so she continues to study with her master. At the same time, she is familiar with biomedicine because her undergraduate training was in pharmacology, and because many of her patients are also receiving biomedical treatment. Wen-yuan asks her how biomedicine and Chinese medicine relate. Talking of hypertension, she says that ‘Western medication represses. It does not deal with the root problems of the body’ because it has no way of sensing the person as a whole. But precisely because it represses, when she treats her patients she reduces biomedication only gradually because if she does this too quickly ‘the illness will bounce back’. Her aim, however, is to shift her patients to Chinese decoctions. Only the latter work on what she calls the ‘bigger picture’ because only they ‘modify the propensities at work in and through the body’ by enriching *yin* and calming hyperactive *yang*.

Like many other ‘local experts’, Chinese medical practitioners have strategies for working around, assimilating, relating to, avoiding, and/or modifying high status science-based forms of knowledge and practice. In this paper we reflect on such strategies by offering interview material about how biomedicine is handled by particular Chinese medical practitioners. The physicians we talked to often do this in ways that make little biomedical sense. Dr Chen’s account of treating hypertension is a case in point. We do not need to know about *yin* and *yang* to recognize that these have no place in most forms of biomedical practice. However, our paper is not simply empirical. We are also interested in how our own storytelling carries particular agendas. So, for instance, STS usually assumes that the analytical categories of the discipline are more or less transportable,<sup>2</sup> that they may, for instance, be applied to Chinese medicine. It is also usual to treat the narratives and practices of people such as Dr Chen as data rather than asking whether they might also have academic STS heft. These are kinds of assumptions and agendas that we want to trouble in this paper.

Wen-yuan lives partly in the lively world of Chinese medicine. He has been on biomedical dialysis for thirty years, but twelve years ago in an episode of life-threatening illness, both biomedicine and Chinese medicine played a dramatically important therapeutic role. Since then he has regularly consulted with a Chinese medical practitioner. However, like his co-author he is a Western-trained STS practitioner, and we are both shaped by Western-inspired university institutions and write for similarly shaped academic publications. How we write (this paper is no exception) is therefore Western-formed. However, in what follows we are inspired by the anthropological logic-shifting experiments of authors such as Farquhar (1994, 2015), Scheid (2002) and Zhan (2009, 2014) to use a term of art from Chinese medicine as a social science resource. That term is 辨證 (*biàn zhèng*), ‘pattern differentiation’ or ‘patterning’. A diagnostic approach widely used in contemporary Chinese medical discourse and practice, patterning is used to diagnose the shifting arrangements and misalignments that lead to ill health. It is also used to understand and manage the interactions between Chinese medicine and biomedicine. But (this is the shift that we attempt) it may also be reimagined as an STS resource for understanding those overlaps.

This is not easy for there are no exact analogues for *biàn zhèng* in English. Briefly, however (we explore this in the conclusion), to press the logic of patterning is to shift the epistemological and ontological ground of social science inquiry. For instance, the character of what we take to be a ‘case’ changes. It is no longer a ‘case of’ an underlying reality or mechanism that might with luck be described. Instead, as Farquhar and Zhan observe, it becomes the patterned narration of appearances at a particular time and place. Cases in Chinese medicine resonate with general assumptions about how the world works, including the dynamics of *yin* and *yang* and imbalances in the flows of *qi*. To that extent, they might be understood as ‘cases of’. However, there are so many different diagnostic and therapeutic approaches that few practitioners believe it is possible to grasp or theorize those dynamics overall, which is why cases tell of appearances rather than of fundamental mechanisms. To what extent a case is similar to or different from another is contingent on the diagnostic approach. Instead, each case becomes a possible diagnostic resource that stands alongside others in a galaxy of possibilities. Thus, though individual physicians tend to draw on particular clusters of cases in diagnosis and treatment, they also draw on different cases in different ways in different circumstances. To put it simply, diagnoses may shift not only between diseases, but also between physicians, circumstances, locations and moments in treatment for the same physician. And, most important, this is entirely unremarkable, for to practise Chinese medicine is to practise in a world in which knowing is self-evidently situated (Haraway, 1991). This, then, is our question: What would happen if STS were to adopt a version of this diagnostic logic?

For decades, authors in postcolonial studies have noted the specificities of Western or Northern ways of knowing. They have explored the fantasizing projections of orientalism and its ambivalences, sought out subaltern voices, and struggled with the political and epistemological limits set by Western practices for knowing.<sup>3</sup> Decolonial writers have argued that modernities and colonialities are co-produced. They have also reflected on how knowing differs between centre and periphery.<sup>4</sup> Authors in indigenous studies have similarly challenged the limits and the agendas set by Western knowing practices. They have unpacked the material, political, institutional and epistemological conditions that sustain these, and have experimented with alternatives.<sup>5</sup> Though these three traditions differ, our argument draws on each. In particular, we assume that if the colonial dynamics between different ways of knowing are to be successfully reworked, it will also be necessary to shift what we have elsewhere called the ‘analytical-institutional’ context of academic production (Law and Lin, 2017) by sustaining and/or (re)creating spaces for quite different forms of knowing practice (see also Joks et al., 2020).

Differently, we also draw on anthropology. With its colonial origins, the discipline has struggled from its inception with difference, overlap and how to understand the other. In the face of their seeming irrationality to colonial Westerners, anthropologists often narrated the integrity and workability of ‘alien belief systems’. And/or they spoke for the colonial other (e.g. Evans Pritchard, 1937). As a part of this they engaged in a sustained reflection on the character of translation, its distortions, its limits and its very possibility (Asad, 1986). More recently, many anthropologists have assumed that different practices generate not only different ways of knowing but also alternative realities (Viveiros de

Castro, 2004). If this is the case, then perhaps translation and overlap become the art of holding on to realities that cannot be put together (de la Cadena, 2015). Or (another version of this?) it is a matter of juxtaposing several narratives, simultaneously holding them apart and weaving them together; and/or, in a further reflexive twist, storying the anthropologist-author as just another part of that weave.<sup>6</sup> In what follows we draw freely on these anthropological experiments in multiplicity and multivocality.

Authors in STS have likewise made their arguments by weaving different kinds of narratives together, and as a part of this, have asked how different ways of knowing overlap.<sup>7</sup> They have also attended to the agendas and performativities of knowing that generate epistemological, ontological, political, normative and practical forms of power, to the making of thinkability and unthinkability, to realities that expand or get suffocated, and to the analytical domination of the English language (Law and Mol, 2020; Turnbull, 2000; Verran 2001). Shedding suspicions of the stories of those whom they study (that they learned in ‘studying up’ to science and its rationalizations), they have woven versions of those stories into their explanatory narratives<sup>8</sup> and have started to recraft STS as an epistemologically postcolonial project. So, for instance, Anderson (2008) borrows from the Fore in his work on kuru, Scheid (2002) reworks Pickering’s (1995) dance of agency by drawing on Chinese medicine, while Jensen and Blok (2013) use techno-animist cosmograms to think about Japanese ‘natures’. Our own work has likewise taken the form of a series of postcolonial experiments on the possible character of a ‘Chinese-inflected’ STS (Law and Lin, 2011) in which we have reflected on the analytical-institutional constraints of Western academic practices (Law and Lin, 2017), and the potential of Chinese literary forms (Law and Lin, 2018). As a part of this we have explored alternatives to causal forms of explanation (Law and Lin, 2018; Lin, 2017), drawing ‘correlative’ terms of art from early sinology<sup>9</sup> (Lin and Law, 2014) and attending to the character of propensity (*shi* 勢) in Chinese medical practice.<sup>10</sup> These experiments are not necessarily cumulative. Indeed, like cases in Chinese medicine, they are better thought of as lying alongside one another, possible resources for creating space for a particular postcolonial and *shi*-inflected STS. And this is the context for the present paper where, in a further examination of *shi*, we explore how Chinese medical practitioners ‘pattern’ overlaps between biomedicine and Chinese medicine and revisit how this might be used to shift the explanatory style of STS.

## Chinese medicine, ziran and nature-facts

Though versions of biomedical nature often appear within Chinese medicine in more or less transmuted versions, as we suggested above, Chinese medicine diagnoses and treats illness in ways unlike those of biomedicine.<sup>11</sup> Drawing on interviews conducted by Wen-yuan between 2014 and 2017 in and around Hsin-chu in Taiwan with practitioners and scientists committed to Chinese medicine, we follow our interviewees by patterning their accounts and telling four case-stories. Licensed Chinese medical practitioners in Taiwan now learn biomedicine, either taking courses with exams after they have trained,<sup>12</sup> or as an integral part of their courses in Chinese medical college. This exposure to biomedicine is particularly relevant in Hsin-chu, which has many high-tech companies where well-educated professional engineers present themselves as patients to both biomedical and Chinese medical practitioners. As we have seen for Dr Chen, such practitioners need

to take biomedicine and how it works into account both in their practice, and in how they talk with their patients (林文源, 2018).

As a part of this, most practitioners speak of *ziran* (zìrán, 自然). There are complex historical genealogies for this word and its translations that we cannot explore here.<sup>13</sup> However, the term is widely used to translate Western ‘nature’ into Mandarin in and beyond clinical consultations. At the same time, however, *ziran* is also, and often more appropriately, used quite differently in ways that make little immediate sense in English. Possibilities for translation include ‘self-so’, ‘what is spontaneously so’ or ‘let the character of the self unfold’ – locutions that resonate in some measure with Daston’s ‘specific nature’ (2019: 7ff). However, the larger story is that *ziran* in this second family of senses indexes Chinese philosophical and medical assumptions about unfolding forms of balance and imbalance in flows of *qi* that are more or less foreign to European thought and practice.<sup>14</sup> And, here’s the complexity, Chinese medical practitioners often make use of both versions of *ziran* when they talk with patients. (For clarity in what follows we sometimes call these ‘*ziran*-nature’ and ‘*ziran*-self-so’ – and we also talk of ‘nature-facts’ – without implying any strong commitment to any of these phrases.) So how, then, do Chinese medical practitioners relate biomedicine and Chinese medicine? And how do they use the term *ziran* as they do this? These are the topics that we differentiate as patterns in the case-stories below.

Before moving on, we need to offer several cautions. First, the scope of the article is limited. We want to show that there are many different ways of doing patterning. What we do not discuss here, either in the context of Chinese medicine or STS, is the efficacy of particular patterning diagnoses. Second, Chinese medicine has been asymmetrically entangled with biomedicine for at least 200 years. To divide the two is therefore potentially misleading because it risks implying that each is a homogeneous category or set of practices. (Related strictures apply to such pairings as ‘China’ versus ‘Europe’, ‘science’ versus ‘indigenous knowledge’ and ‘Chinese’ versus ‘Western’ metaphysics [Lei, 2014b]). It is worthwhile repeating, then, that biomedicine and Chinese medicine are each diverse, historically contingent, and constantly shifting weaves that cannot be reduced to simple and internally coherent formulae.<sup>15</sup> At the same time, since these categories are mobilized in health care practices in Taiwan, it is also unhelpful, indeed impossible, to altogether abandon them. A third limitation is that what practitioners tell us in interviews relates uncertainly to what they actually do, though the significance of this in a world of patterning, of ‘cases’ rather than ‘cases of’, is also a matter for discussion. And, a final qualification, this paper does not add to the extensive scholarly literatures in anthropology and sinology on Chinese medicine and its historical and metaphysical contexts.<sup>16</sup> Our focus, as we have noted, is how to think about overlaps between biomedicine and Chinese medicine by exploring the character of patterning, and then to ask what this suggests for a possible postcolonial STS.

## **Ziran as containing nature**

Chinese medicine has coexisted with Western biomedicine in Taiwan for more than a century, but after Japan colonized the island in 1895, many took the view that Chinese medicine should be modernized or eliminated. Refused regular accreditation during the

half-century of Japanese rule, at the end of the Second World War in 1945 when Taiwan was taken over by the nationalist government based in China, Chinese medicine found itself in a precarious position. With the fall of that government and its retreat to Taiwan in 1949 the situation changed. At least one of the newly arrived Kuomintang leaders supported Chinese medicine, and a private Chinese medical college was established in 1958. However, the asymmetry between Chinese medicine and biomedicine continued in changed form, as state policy sought to scientize Chinese medicine and integrate it with biomedicine. Subsequently, after decades of struggle, policy changed again. In 1995, Chinese medicine was included in the National Health Insurance scheme, a crucially important step even if 96% of the budget remains committed to biomedicine (林昭庚, 2004; 衛生福利部, 2020)

If Chinese medicine in Taiwan has been under institutional pressure for over a century, it has also been under intellectual attack. Sivin (1987) argues that biomedicine created new facts and destroyed the facticity of Chinese medicine. Others argue that *ziran*-nature has merely been added to the mix that makes up Chinese medicine, and that *ziran*-self-so remains alive and well (Kim, 2006; Lei, 2014a; 林淑娟, 2009). Nevertheless, there is continuing biomedical scepticism about Chinese medicine even amongst those committed to it, though how the two traditions relate is understood in many different ways. For instance, some scientists and doctors from both biomedicine and Chinese medicine seek to demonstrate that Chinese medicine is not just therapeutically but also theoretically sound (Hsu, 2011; Scheid, 2014; Scheid and MacPherson, 2012; Taylor, 2001), and this concern is shared by many in government, the Chinese medical colleges in Taiwan, and by our first interviewee:

Shyang Chang (張翔) works in one of the leading engineering departments in the National Tsing-hua University, but also studies Chinese medicine. He was trained and qualified with a master acupuncturist when he was young, but he did not take the oath of secrecy required to become a formal apprentice and enter clinical practice, because he wanted to do scientific research on Chinese medicine. Later, and also qualified in aviation physics and communications, he worked at Bell Labs in the USA before becoming a professor in bioelectronic engineering back in Taiwan. Currently, though he is not a licensed practitioner in Taiwan, he is internationally accredited, and has used acupuncture for decades in experimental and teaching situations.<sup>17</sup>

In interview Professor Chang tells Wen-yuan that critics reject Chinese medicine for three reasons: first, because its theories cannot be verified by modern instruments, second, because it cannot be mathematized, and third, because it cannot be explored within the logic of analytical reasoning. Like Joseph Needham he is interested in the distinction between Eastern and Western world views: ‘the Chinese world view is about *qi* ... [it] is committed to a wave world view..., [while] the European commitment to a particle-based cosmos combined with mathematical tools, ... made European advance possible....’

At the beginning of his book on Chinese medicine, Chang cites the entirety of Chapter 25 from Laozi’s classic Daoist text, *Dao De Jing* (道德經) (張翔, 2018: 11).<sup>18</sup> He argues that in the world of Chinese medicine classical philosophers such as Laozi accurately described nature-*ziran*: ‘space and time in TCNP [traditional Chinese natural philosophy] which contains the basic ideas of Qi, Yin-Yang and Five-Phases, cannot be separated and they are not independent of each other’ (Chang, 2015: 3). He also argues that though they

were (his word) ‘primitive’, for nearly two millennia these classical interpretations of *qi*, *yin-yang* and the five-phases worked efficiently in practice in Chinese medicine. However, in a world dominated by Western science they are no longer ‘self-sufficient’. At the same time, the wave view of the world implied by *qi* is simply too complicated to be traced within the analytical logic of division of that science. ‘In order to respond to modern criticism of these [Chinese] concepts as pseudoscientific, a rigorous mathematical representation of them is imperative.’ And he has worked on this for many years to create what he calls a chaotic wave theory of fractal continua.

To put the concepts of *qi*, *yin-yang* ... in terms of the language of modern dynamic systems ... *qi* stands for the fractal continua of vapor and water, and the complex dynamics of phase change in the water cycle. Without loss of generality, we can define *qi* as a mathematical dynamic system .... The ancient meaning of *yin-yang* was actually referring to two fundamental operations in the universe or a dynamic system, with one dominating for a time, and then the other, in a wavelike succession. Hence, they could be modelled by a pair of sinusoidal functions with a relative phase difference. (Chang, 2012: 508–509)

This mathematization describes how everything is fractally related and expresses the ways in which wave interactions have endlessly many effects. This allows Professor Chang to say that, understood mathematically, nature-*ziran* in Chinese medicine is not mysterious but simply more comprehensive than its Western counterpart. Natural science recognizes no more than the special case in which the world is composed of lifeless atoms that collide and have single relations of cause and effect on one another. And this has only been achieved because ‘the emphasis [in science] has been shifted to the control exercised through experimental observation for the sake of control of nature’ (Chang, 2015: 9). In short (and here his thinking resonates with contemporary STS) he argues that instead of ‘passive observation of Nature’s activity’, it is *nature* that has been rendered passive by the methods of science. Though, that said, he also makes strategic use of controlled experimental laboratory methods when this seems appropriate (e.g. Chang et al., 2009: 72).

In sum, Professor Chang knows well the limitations of modern science, technology and medicine, but he justifies and strengthens Chinese medicine by relating it to Western practices and narratives that generate truths, or nature-facts – for instance in the form of mechanisms: ‘Before proposing any valid theory of acupuncture mechanism, important acupuncture effects must be heeded and taken into consideration’ (Chang, 2013: 17). He seeks to make *qi* real in the face of scientific power by weaving it into and expressing it through powerful laboratory and mathematical techniques. Perhaps he is articulating the latter in theoretically innovative ways, and *qi*-relevant inputs are also bending originally Western conceptual apparatuses. However, whether or not this is happening, one consequence of his strategy is also to re-enact those Western intellectual tools, narratives, and the world of nature-facts – a dilemma widely explored in the postcolonial literatures mentioned above (see Scheid, 2002: 26).

### **Ziran as apart from nature**

This, then, is one pattern. One case-story. But others are different. They do not depend on the techniques and narratives of biomedicine or physics. Dr Jin-long Hsu (許金龍) is

a senior Chinese medical practitioner who took courses on biomedicine for three months thirty years ago, after qualifying by examination as a Chinese medical physician. He works in his own traditional clinic in a rural area of Hsin-chu. The name of the clinic is displayed in horizontal calligraphy outside, and inside there is a big wooden cabinet with a large array of small drawers for storing herbs of the kind found in many traditionally styled Chinese medical pharmacies. In his consulting room he has a big bookcase of Chinese medical texts and classics. Indeed, though he works as a doctor, he is much more interested in the origins of Chinese medicine, and in interview he forcefully asserts a Daoist understanding of *ziran*:

Unlike the mechanical civilization of modern medicine [i.e., biomedicine], Chinese medicine has its own way .... I have gradually come to realize that it preserves most of traditional Chinese culture, and directly presents the essence of [that] culture. ... [T]he logic of the culture is the 'admiration' [崇拜] of *ziran* ... this comes from Daoism. Daoism is all about *ziran*, ... Laozi said that the *Dao* [the way] follows *ziran*. So the whole development [of Chinese medicine] ... [since the classical era of] *The Yellow Emperor's Inner Canon*, ... grows out of the idea of *ziran*.

As Dr Hsu talks, he takes books from his shelves and points to their pages and his marginal notes. No longer in the realm of natural science, we are now in a world in which classic texts are read and used as interpretive resources to assimilate Chinese medicine to a Daoist *ziran*. Here the wisdom of the past is respected without any detour into Western science. So in the classics, the world (萬物, ten thousand things) transforms endlessly through the workings of *qi* (蔡璧名, 1997). And indeed, in those classics, Daoism is crucial to the genealogy of *ziran* where *zì* means 'self' and *rán* means 'the way it is', 'let things be themselves', or 'let their nature unfold' (Laozi, 2003: 68-70). Understood in this way, *ziran* is about return to the *Dao* (Laozi, 2003: 69) – that is to the spontaneous and appropriate transformation of the ten thousand things. That said, over two-and-a-half millennia the term has been endlessly contested, layered and transformed (楊儒賓, 2014). We cannot trace that genealogy here, but as we noted above, in the nineteenth century *ziran* also began to connote 'nature' in a more or less Western materialist sense. By the beginning of the twentieth century, the term was popular in this second sense in natural history and botany,<sup>19</sup> while in many contexts in the contemporary Chinese world this *ziran*-nature has substantially replaced its alternatives (林淑娟, 2009).<sup>20</sup>

Dr Hsu and Professor Chang both assume: that the world – and the things in the world – are filled with *qi*; that this circulates and resonates in the dynamics of *yin* and *yang*; that *ziran* is about the smooth flowing and balancing of *qi*; that it is about how things are meant to be and are supposed to unfold; that Chinese medicine detects and corrects imbalances in *qi* to restore *ziran*; and that the logic of biomedicine is different because its object is to control particular pathologies rather than to rebalance flows. As is clear, however, they are also very different. As we have seen, Professor Chang conducts experiments and uses wave mechanics to mobilize a nature-*ziran* that grows out of Western physics and biomedicine. He creates a set of alternative nature-facts. By contrast, Dr Hsu draws on classical texts to mobilize a quite different Daoist *ziran* that has nothing to do with nature-facts.

In practice, Dr Hsu's position is a little more complicated. Alongside the classics on his bookshelf there are also biomedical and Chinese medical journals, and he also publishes in journals of Chinese medicine. But the way in which he writes is quite unlike Professor Chang. This is partly – perhaps mostly – because his primary interest is in articulating relations between Chinese medicine and biomedicine not in theory, but in the context of practical clinical intervention. Here is Wen-yuan's translation of an excerpt from one of his papers:

*Tianran* (天然, the way of heaven, see below) food is important for supporting the *qi* of the spleen and stomach .... Nowadays, food has lost most of its natural nutrients (自然營養素) ..., so we need to take vitamin compounds....

According to research by experts in nutrition ... vitamin A can protect the tracheal and gastric mucosa ..., vitamin B can help to relieve pressure ..., and vitamin C can ... strengthen cell membranes and resist viral attack .... When working with [vitamins] A and B, [vitamin C] can effectively resist the invasion of 'external evil [*qi*]' (外邪) .... Herbs such as *fuling* ... for fortifying the spleen and enhancing *qi* (健脾益氣) [in Chinese medication] are different [from food and vitamins] but just as effective .... (許金龍, 2000)

Here Dr Hsu first uses the language of nutrition, and then, in a phrase that hardly belongs to biomedicine, adds that vitamins 'can effectively resist the invasion of external evil [*qi*] ...'. And then – as he shifts to talk about *fuling* – he seems to move again, this time to a wholly Chinese register. So why does he write this way? One likely answer is that since many of his patients are professional engineers it makes more sense to explain Chinese medicine by relating this to biomedicine than to Chinese philosophy. Perhaps, then, he is writing for fellow practitioners who find themselves in a similar position. However, what he is effectively doing is making space in biomedicine for parts of Chinese medicine and, *vice versa*, room in Chinese medicine for specific biomedical phenomena. And to do this he is working with two quite different vocabularies or narratives. But despite their differences, in his practice they do not displace or exclude each another. Unlike Professor Chang, he makes no systematic comparisons, but he weaves them together in particular therapeutic contexts without ever pushing them into a single framework: *tianren* goes just fine with vitamin A – which implies that *ziran*-self-so also fits just fine with *ziran*-nature. His concern is effective therapy, and his translations between them are pragmatic. So this is another pattern. It is not like Prof Chang's strategy of using Western mathematical tools to contain nature as a special case, or his own initial separation of nature and *ziran*. It isn't like Dr Chen's strategy mentioned in the introduction either, that of slowly weaning patients off biomedical pharmaceuticals. Instead, this is a pattern in which there is room for *ziran*-natures within Chinese medicine, and versions of *ziran*-self-so within biomedicine.

### **Ziran as patterning**

A third case-story. A further pattern. Dr Wang (a pseudonym) was an engineer before studying at Chinese medical college as a postgraduate and had been practising for five years when he met with Wen-yuan. He works in a large clinic headed by a famous

doctor in the centre of Hsin-chu. The clinic is conspicuously modern with neon lights and LED monitors advertising its name and those of the doctors together with their specialities. After consultations, patients are usually prescribed ‘scientific Chinese medicine’ (科學中藥). Unlike the herbal preparations hand-made in older forms of Chinese medical practice, this too is ‘modern’, industrially manufactured, and is bought over the counter.

Like Dr Chen, Dr Wang is adept at explaining the overlaps and relations between biomedicine and Chinese medicine to his former engineering colleagues. ‘Most of them’, he says, ‘just don’t understand Chinese medicine, and they are constantly challenging us.’

The world is different in the two systems. While Chinese medicine follows *yin-yang* and the five phases, biomedicine follows positivist science. Biomedicine is about [things] fighting [one another] ..., but it is pointless to try to fight the germs [that are taken to be the cause of any particular disease] .... [Biomedicine] ... kills and cuts whatever is regarded as bad. It might be good at uncovering problems, but this is not the way to solve them. Take antibiotics. These are said to be able to kill germs and cure disease. ... But [when] *ziran* [*ziran*-self-so] changes ... antibiotics do not work as well as they did because biomedicine cannot predict how germs will change in the future.

Chinese medicine does not work this way ... If you have a burglar breaking into your house ... to scare him off all you need to do is to make a noise ... [so] all you need to do is to change the environment in the body so that it becomes inhospitable to germs ... or to use medication to make a way out [of the body for those germs]. ... The difference [compared with biomedicine] is that none of ... [the medications of Chinese medicine] is specific ... there is no specificity in *ziran* [*ziran*-self-so], so that germs [are] not [forced to] change. When [fever and aches are] ... wind-cold (風寒) we [use Chinese medication to] ‘dispel [ie disperse] the wind by resolving the exterior’ (祛風解表), and if ... [they are] wind-heat (風熱) ... we ‘clear heat by resolving the exterior’ (清熱解表). [Using this medication, we] find a way out for the cold and heat... [It is] ... all very simple. You don’t need to fight them.

Dr Wang does not justify Chinese medicine ‘scientifically’. Instead, he thinks about biomedical interventions by displacing and absorbing these into his practice where it is not productive to direct treatment at biomedical objects – at nature-objects or nature-facts. So he does not focus on bodies or germs. Instead, by attending to what is happening *between* these as *ziran* changes, he softens biomedical *objects* into *relations* that include ‘symptoms’ or ‘appearances’ (*xiang*, 象) such as ‘cold *xiang*’ or ‘hot *xiang*’.<sup>21</sup> He also does this in a way that extends beyond particular things (this *fuling*, that *qi*, or those germs) by attending to contextually shifting patterns and contrasts – to the *appearances* that form part of a dynamic web that unfolds between patient, body, physician and environment.

Dr Wang says that the art of intervention is to do more by doing less. As a part of this, he uses the term *ziran* (*ziran*-self-so) to catch the clinical complexities of the patterning appearances between many things as these unfold. As a result, his treatment strategies are flexible, and he has no interest in treatment targets. These, like nature-facts, are too specific. For him, therefore, patterns in shifting relational appearances replace what we might think of as the *referential*

*essentialism* commonly found in biomedicine: the aspiration, often unrealized, of achieving sound empirical descriptions (nature-facts) that can also be moved without distortion because they point to objects or processes out there in the world that are taken to have specific context-independent properties.<sup>22</sup> So, for instance, to talk of ‘dispelling the wind by resolving the exterior’ is to replace ‘out-there’ nature-facts with patterned *xiang* relations between cold and heat within the dynamics of *ziran*. And as we have seen, this is also the case for the divisions between the *ziran*-self-so of Chinese medicine and the nature objects of biomedicine. Here, too, there are shifting and contextual patterns that unfold between patient, body, environment and physician as those patterns are re-woven in a collaborative process of treatment. Intervention is about discovering actionable patterns in dynamic and unfolding relations. This set of practices is often called ‘pattern differentiation and therapy determination’ (辨證論治, *bianzheng lunzhi*) (Farquhar, 1994: 36–37), another phrase with a complicated genealogy. However, it is one of the re-invented organizing principles of Traditional Chinese Medicine in mainland China, and is also taught and used by many practitioners in Taiwan (馬光亞, 2006).<sup>23</sup>

## Ziran as appearance

Our final case-story. Our final patterning. Dr Huang is a successful Chinese medical practitioner who owns and runs a large clinic in the centre of Hsin-chu that looks much like a modern biomedical surgery. Dr Huang graduated from Chinese medical college with a double training in biomedicine and Chinese medicine and is licensed to practise both. Initially he worked in biomedicine on complex and difficult neurological and immunological conditions. However, ten years ago he turned to Chinese medicine, and has since made his name treating biomedically intractable conditions, such as spinocerebellar ataxia and systemic *lupus erythematosus*. Indeed, at least one biomedical centre refers patients to him:

... in biomedicine... when they discover a disease, they give it a name. [And there are more and more...] .... So you have *lupus erythematosus*, the class of rheumatoid arthritis, hepatitis, and so on. Then they explore the immune system, antibodies, DNA and RNA, and so on, and so on .... [So] Western medicine goes deeply into details, but in Chinese medicine we see the body as a whole. Then, sorry, all your details are just a single term for me: the loss of the intrinsic regularity of the relations between *yin* and *yang* (陰陽失調). When you don’t follow *yin* and *yang*, *ziran* fights back. This is the general picture, and I don’t need to know what your [biomedical naming and treatments are] messing up. It is easy for me. I need only to rebalance your *yin* and *yang* ....

So Dr Huang simplifies. He attends not to the details or the names important to biomedicine, but to the dynamics of *ziran* (*ziran*-self-so), to *yin* and *yang*, and to the unfolding balances and imbalances in the flows of *qi*. But this simplification demands much of the practitioner. The classic text in Chinese medicine, *The Yellow Emperor’s Inner Canon*<sup>24</sup> says that physicians should learn from the complexity of the diverse flows that make up everything in the world (the ten thousand things.) These flows are situated differences, endlessly contexted contrasts between passive and active, night and day, low and high, contraction and expansion, or female and male (the list goes on), all of which can be talked of in terms of *yin* and *yang*. Everything is subject to and reflects this dynamic. In the context of medicine, *yin* and *yang* relate to the movements of *qi*. It is their balance, imbalance and various dynamic configurations that form the

basis of health and illness, so physicians care for patients by looking for patterns in these unfolding configurations.

One of Dr Huang's specialities is spinocerebellar ataxia, a disease that is biomedically incurable even though its genetic origins have been described. But for him it can be cured. For instance, he says that in 'one patient I diagnosed "kidney *yin* deficiency (腎陰虛損) and damp-heat in the liver meridian" (肝經濕熱) and treated this using the principles of clearing (清) and supplementing (補) including "clearing liver heat" (清肝熱) and "enriching (kidney) *yin* and bearing down on fire" (滋陰降火).'

Here naming the specificities of diseases is beside the point. Indeed, Dr Huang's choice of words suggests that he bypasses nature-facts, the realities of disease as detailed by biomedicine, and by implication the practices of biomedicine that generate nature-facts.<sup>25</sup> Here none of these is significant. But – this is important – his attention to meridians does not lead him to what we earlier called referential essentialism. In his world, meridians are not nature-facts, medical objects to be uncovered, pointed at and named.<sup>26</sup> Instead, what is important is the specific appearance, *xiang*, of *ziran*, *yin* and *yang*, and balance. Dr Huang is proud of the fact that he learned this as an undergraduate from his master, Guang-ya Ma (馬光亞).<sup>27</sup> Here is a passage from Dr Ma's book, translated by Wen-yuan:

Chinese medicine ... is accumulated from experience,... implicitly building on and systematizing the fundamental principle that 'the full will empty and the depleted will grow' (盈虛消長) ... . Chinese medicine understands disease in [terms of] *ziran*. When a person is ill, there will be patterns (證) and appearances (象)... and these patterned appearances are the basis of our diagnosis.

Different configurations of appearances can be differentiated into [patterns of] deficiency or excess, cold or heat, and [we can] 'supplement the deficiency', 'purge the excess', 'warm the coldness', and 'clear the heat'.' (馬光亞 2006: 4)

Farquhar (1994) and Zhan (2009) are among those who have described the simplicity but also the demanding complexity of pattern differentiation, and here we see this at work again. Skilled practitioners are experienced, they know and deeply respect the classics, and they are familiar with both the historical and contemporary collections of medical case histories (醫案) that tell the many different kinds of patterned appearances. Faced with the unfolding contextual dynamics of the web of symptoms and circumstances presented to them, they use this experience to draw on, mobilize, and adapt from the huge range of possible shape-shifting names (for instance the meridians or the visceral systems) that are proxies for the balance and imbalance of *yin* and *yang*.<sup>28</sup> It is this that makes possible therapeutic intervention. And crucially, it is the *patterns* that are important in this *process*, not the names.<sup>29</sup>

This means that pattern differentiation is quite unlike one of the most obvious versions of biomedical common sense, which searches for diagnostic disease objects and causes in the hope of establishing generally applicable guidelines. Instead, it takes us to processes of *associative mobilization* that make sense of appearances. The various flows of *qi* that shape the ten thousand things and manifest themselves in the shifting and

complicated movements of *shi*, the propensities of things (Law and Lin, 2018; Lin, 2017), it is these that are used in pattern differentiation to detect what goes with or resonates with what in specific unfolding circumstances (Lin and Law, 2014; see also Kaptchuk, 2000: 43–46). To mislead just a little, we might say that to do this is to draw skilfully from a huge and diverse range of metaphorical or analogical associations or names. And as a part of this, it is to draw from classics compiled primarily in the form of medical cases with commentaries by further author-practitioners. And it is also, like Dr Chen, to follow the casework of masters familiar with versions of patterning. ‘The pattern before me is like these other patterns that I have met before in my reading of cases in the classics and in my clinic.’ But to talk of ‘metaphor’ or ‘analogy’ is not entirely appropriate because a case is not an instance *of* an underlying pattern. It is not a ‘case of’. Rather, as Farquhar and Zhan observe, the names of patterns *are* the relational resources available to practitioners to help them sort out how to intervene in the thicket of complexities that make up any particular case. And these are names that may point to a whole range of very different intuitive, analogical, inductive or conductive patterning associations. This means, as we have suggested above, that they do not necessarily imply anything about specific underlying mechanisms, for in pattern differentiation there is no distinction between the empirical, on the one hand, and the words for understanding what is happening, on the other. Instead, as Zhan (2009) puts it, the empirical *is* conceptual (though the words that name appearances also do much work that is not conceptual in a Western scientific sense.) From one case to another, from one school of medicine to another, and from one master to another, the distinctions between what there is, and the words for knowing it are on the move (Farquhar, 1994). And this leads to complexity, for even within an individual clinical school there are endlessly many cases and endlessly many patterns to choose from. And therein lies the skill of the practitioner: to be able to assess the unfolding appearances in the clinical encounter by selecting and mobilizing the particular associations that will be useful from the galaxy of possible cases. There are no reductions here. To return to the metaphor we used a moment ago, this is not about what is *causing* imbalance, but rather what usefully *resonates* with the imbalances in the context at hand.

## Conclusions

### *What do these case-stories suggest?*

We might think of the accounts of these practitioners as diagnostic tools for making sense of putatively fundamental differences between biomedicine and Chinese medicine, as illustrative ‘cases of’ that reveal aspects of the underlying dissimilarities between these two traditions. We might observe, for instance, that much of biomedicine aspires to analytical and referential diagnoses that point to anatomical, physiological or pathological mechanisms (nature-facts) that hopefully make it possible to intervene in those mechanisms. Against this, we might say that these case-stories show how Chinese medicine works holistically or relationally to pattern dynamic flows, their propensities, and their imbalances both within and beyond the body, in order to detect the propensities and nudge them back into balance (*ziran*-self-so). Then (a second ‘case of’ option) we might

also treat these stories as instances of the resistance, the working around, or the accommodation made by Chinese medical practitioners when their practices overlap with those of biomedicine. And/or (to make the intervention larger) as ‘cases of’ resistance and/or accommodation by non-Western knowing practices as they face up to the domination of technoscience. But what happens if we treat patterning in Chinese medicine as a candidate tool for *doing and thinking* STS differently? What happens if we take this into our own social science practice?

One analytically conservative response also sticks with the ‘case of’ logic. It is simply to add the notion of patterning to the existing STS toolkit. Because STS attends to relations and how these hold together, this is not difficult: patterning can be turned into an additional tool for describing how practitioners weave relations in contexts, for instance, where analytical coherence is of relatively little importance. So – and this is just one possible example – the term might be treated as a tool for thinking about modernity. If modernity is committed to coherence, purification and the reproduction of such binary divides as nature and culture, in practice, as many have noted, it also trades on more or less messy entanglements (Latour, 1993). In this way of thinking, patterning might help us to think about how different entanglements are practised alongside one another in modernity in the absence of any overall rationale.

But there is an alternative. Following Farquhar and Zhan, we might attend seriously to what is implied by ‘appearance’, by *xiang*, for STS. But shifting from thinking in terms of ‘cases of’ to ‘cases’ is radical because it erodes the character of social science explanation. In her essay ‘Metaphysics at the bedside’, Farquhar describes how the prominent Chinese medical practitioner and intellectual, Lu Guangxin, uses the related term *duixiang* (對象, *duì xiàng*):

[This term] is literally translatable as the *image we face*. It is a perceptible element of the manifest world, but not necessarily a massy object, and it is irreducibly relational. A *duixiang* exists only in relation to a perceiver or an actor .... A *duixiang* is a complex entity that emerges from practice, but it does not do so merely as a product of the investigator’s imagination ... The *thing* is thus a site at which specific processes (always more than one process, and never fully under the control of one actor) converge. Such a thing is by definition spatio-temporally unique and requires a situated perceiver. *Duixiang* things are our partners in perception, not the mere object of our perception. (Farquhar, 2015: 231–232)

*Duixiang* is a common word in Mandarin: It is used, for instance, to signify ‘partner’ as in marriage partner. Here, however, Farquhar transports us into an epistemology and metaphysics that will destabilize STS.<sup>30</sup> To see this, it will help to think about the kinds of commitments that underpin that STS. Here’s one observation. Yes, the *words* are unfamiliar (*xiang*, *duixiang*) but, as Farquhar shows, the *sentiments* are not so very strange. This is because in STS we tell ourselves that knowing arises in shifting processes, relations, practicalities, performativities and asymmetries, that it is situated, and that knowledge is a tool. Indeed, it is precisely commitments such as these that secure the partial legibility of terms such as *xiang* or *duixiang* to an STS reader. At the same time, here’s the difficulty: The words in our relational STS also carry their own quite different metaphysical baggage. A ghostly commitment to realism? A continuing sense that abstract

concepts matter? That words are separate from what we see? That descriptions like our cases point to things out there? That there are realities or process or causes or mechanisms behind appearances? That knowing well is pretty transportable so that truths about fundamentals are likely to be much the same in Lancaster and Hsin-chu? As STS practitioners, we do not necessarily *believe* these things but given the character of academic practice it is very difficult to avoid *doing* them. Which, however, is not how it is with *xiang* or *duixiang*.

To see what is at stake, it will be helpful to think briefly about the conditions of STS scholarship. Thus what you are reading is an academic paper that works in a very specific way. Arguably, like others of its kind, much of it might be written and read as empirically or theoretically referential (histories of Chinese medicine, the stories of interviewees, citations, literature reviews). There are theoretical, methodological, normative, epistemological and linguistic conventions that give this putative referentiality a proper shape (assumptions about the status of interview data, citation practices, well-crafted histories, appropriate theories, and a preference for narratives – and cases – that weave together and unfold in linear and coherent ways.) As a part of this, there are professional structures such as refereeing that secure such conventions. But if we put these conventions together with the material arrangements that circulate textual immutable mobiles through the networks of STS, whatever we believe or say, we are, in addition, enacting an international and potentially colonial version of referentiality: for instance, the assumption that if the paper is valid or flawed *anywhere* then it is putatively valid or flawed *everywhere* within this network.

All this reminds us that pulling against referentiality is very, very difficult. Nonetheless, a second, more radical, way of learning from Chinese medicine might be to chip away at institutionalized metaphysics by looking for ways of reading and writing appearance, *xiang*. But what might this mean? As we have indicated, any response to this question will take us beyond the comfort zone of the discipline, but here are some suggestions. First, in a patterning-inflected STS no case-story would be written or read as theoretically or empirically referential. No ‘cases of’. Instead, it would simply join the galaxy of available appearances for knowing and intervening. Second, as we earlier noted, the case at hand awaiting diagnosis and narration would resonate with the galaxy of textual cases in many possible ways. It might (not so surprising) be patterned in different ways by different scholars. It might also, however, be patterned in different ways by the same scholars in different circumstances. This is because *duixiang* are partners in perception, not independent objects, and the webs of *shi* (which include the practitioners) are always changing. Third, then, in this way of reasoning, consistency would be of little significance. Different case-stories, different patterning appearances would resonate in ways that might shift not only between but also within our own texts. In short, we would take narratives to be additive instead of analytical, and the concern would be with efficacy – with how to intervene well – rather than with referential truths.<sup>31</sup> And finally, a somewhat separate thought, all of this would presumably be easier if alternative and less obviously referential literary forms were also cultivated (Law and Lin, 2018).

We have presented just a few case-stories, appearances, *xiang*, or partners in perception, *duixiang*. Are they ‘cases of’? Do they point to underlying mechanisms? In this way of thinking they are not, and they do not. Instead, they are just cases. They are patterns

or pattern-resources, lying alongside one another. They might or might not resonate with other appearance stories in which Chinese medicine overlaps with biomedicine, *ziran* with nature, or low status ways of knowing with those of technoscience. They might or might not be useful (non)analogues in these other contexts. We have presented just a few such patterns. The first, from Professor Chang, expands that which is ‘non-scientific’, *ziran*-self-so, to contain that which is scientific, *ziran*-nature, by *assimilating both to methods* that also enact the scientific. In pattern two, from Dr Hsu, *ad hoc links* between science and that which exceeds science (*ziran*-self-so) are pragmatically being created. In pattern three, Dr Wang reshapes objects or binaries with *alternative knowing resources* (such as appearances or propensities.) In pattern number four from Dr Huang, partners in perception soften objects by mobilizing *non-Western not-quite metaphorical* and/or *metaphysical* patterns. And in pattern number five Dr Chen (whom we described in the introduction) treats overlaps between different kinds of medical intervention in ways that lie (like *shi*) *beyond the imagination of science or social science*.

Understood in this way, these stories are patterned appearances. In the mode of Chinese medicine, we would ask that these be read alongside one another. That they simply be imagined as possibilities within a galaxy of possible partners in perception, shorn of the idea that any particular story is referentially valid. This means that we do not want to say that there are no other ways of telling the struggles of those we have met. Neither do we want to say that our interviewees are consistent in how they handle those struggles. We do not even want to claim that the narratives we have woven in this paper necessarily hang together to reflect, for instance, an underlying asymmetry in the relations of power. Instead, by trying to run different appearances alongside one another we have sought to write in ways that start to dissolve the ghosts of reference and realism so powerfully reproduced in the institutional structures and literary practices of STS. So, we end this story by asking what might happen if you, our reader, were also willing to participate in this experiment. Do you recognize similar or different patterns in your own cases in other circumstances? What might happen if you were to experiment by shifting from the referential practices of STS to attend to appearances? Is this possible? Is it possible to conceive of a *shi*-inflected STS? An STS of *patterning* instead of *analysing*? Or – as is surely the case for what we have written here – to craft ways of knowing that mix the two together? These are the troubling patterning-inflected postcolonial questions with which we end.

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## ORCID iD

Wen-yuan Lin  <https://orcid.org/0000-0002-3103-3329>

## Notes

1. We anonymize the names of the interviewees, except for those whose publications we cite.
2. Anderson and Adams (2008) describe this as a ‘Mary Celeste’ form of scientific travel.
3. See Said (1991), Spivak (2008), Bhabha (2004), and Chakrabarty (2000). For STS-related introductions see Anderson (2002) and McNeil (2005).
4. See, for instance, Escobar (2008), and for an STS-oriented account, Harding (2016).
5. On indigenous methodology see Smith (2012). On the uses and limits of statistics see Walter and Andersen (2013). For a sample STS-related study see Tallbear (2013).
6. See, for instance, Clifford (1998), Maurer (2005), Raffles (2020); and in the context of Chinese medicine, Farquhar (1994) and Zhan (2009)
7. Examples include Callon et al. (2009) and Bonneuil et al. (2014) on environmental and agricultural controversies, and (Gill et al., 2017) on debates in and around care.
8. ‘Heterogeneity’ is part of life for system-builders (Law, 1986), ‘tinkering’ for those who work in care (Mol et al., 2010; Pols, 2005), while ontological multiplicity is probably more readily seen in the clinic than in the purifications sought (if never achieved) in laboratory science (Anderson 2002).
9. Though we used the term in Lin and Law (2014) we now place ‘correlative’ in inverted commas to emphasize that the term was invented to contrast Chinese philosophy with its ‘analytical’ western counterpart. See, for instance, Needham (1956).
10. For the limits of STS ways of knowing in Taiwan see Law and Lin (2011); on the analytical-institutional character of Western academic practice, Law and Lin (2017); for ‘Chinese’ literary forms, Law and Lin (2018); for correlativity, Lin and Law (2014); for propensities, Lin (2017) and Law and Lin (2018).
11. For anthropological introductions see Farquhar (1994) and Scheid (2002).
12. Until 2011 those wishing to practise were able to secure a licence by passing qualifying examinations.
13. See 楊儒賓 (2014). For an account of the comparable Japanese term, *shizen*, see Jensen and Morita (2017).
14. *Qi*, 氣, or *ch’i*, is central to diagnosis and treatment in Chinese medicine. Sometimes translated into English as vital energy, influences, vapour or movement (Farquhar, 1994; Hsu, 1999; Sivin, 1987: 46–53; Unschuld, 1985: 67–100;), *qi* fits poorly with both common sense and metaphysics in most English language contexts. Many scholars avoid translating the term, preferring to show how it is used in Chinese practices.
15. See Hsu (2011), Scheid (2002) and Zhan (2009). For anthropological exploration of the interweaving of social science and the narratives and categories of those being studied see Maurer (2005).
16. In addition to Farquhar (1994), Scheid (2002) and Zhan (2009), see also Sivin (1987) and 楊儒賓 (2014).
17. He was earlier licensed by the World Federation of Acupuncture-Moxibustion Societies and his online lectures are accredited as continuing education units by the California Acupuncture Board.
18. This book marshals 100 arguments to show that ‘Chinese medicine is better than Western (bio)medicine’ (張翔, 2018: 11).
19. In one of the earliest English-Mandarin dictionaries, *A Dictionary of the Chinese Language in Three Parts*, *ziran* denoted nature (Morrison, 1815–1823). This was also the translation in the 1908 *An English and Chinese Standard Dictionary* (顏惠慶, 1908).

20. Related classical terms such as *wuli* (wù lǐ, 物理; principles of things) (楊儒賓, 2014) and *tian* (tiān, 天; heaven) are also used to (mis)translate ‘nature’ in modern Mandarin.
21. The names of patterns discussed in this paper are *xiang*, a term that can be translated as ‘appearance’ or ‘similar’. So, for instance, cold and hot are ‘cold-*xiang*’ and ‘hot-*xiang*’.
22. For Latour (1990) such representations are immutable mobiles.
23. Among the many schools of diagnosis, pattern differentiation achieved its current prominence in the People’s Republic of China in the 1950s. See Scheid (2002: 228–237) and Unschuld (1985: 252–260). Its history is different in Taiwan, where it developed in contexts that were also clinical and academic but less directly political.
24. *The Yellow Emperor’s Inner Canon* is the foundational text of Chinese medicine, and is the legacy of many different schools. Much of the work was probably written in the five centuries before the common era and was compiled later.
25. Instead of tackling the cerebellum or genes, Dr Huang works with the liver and kidney meridians to clear damp-heat in the liver and supplement the kidney vacuity. There are many complexities here. For instance, along with *yin* and *yang* he also attends to the imbalanced and blocked circulation of *qi* between the visceral systems of the five *zang* (五臟) and the six *fu* (六腑). *Qi* circulates and correlates these with the dynamics of five phases. When this circulation is severely depleted serious problems result.
26. For instance, it is the dynamic relation between kidney (water) and liver (wood) that is important, for lack of water means that wood is not nourished and tends to get too hot. What is important is not the meridians *per se*, but their interaction and the circulation of *qi*.
27. Dr Ma, who died in 2005, was a distinguished Taiwanese Chinese medical practitioner well known in both Taiwan and China. He practised Chinese medicine from the 1950s and taught at the Chinese Medical College from 1972.
28. *The Inner Canon* suggests that it is not the names of *yin* and *yang* but how these interplay that is significant. Chapters 3, 5, 6 and 7.
29. This is called *qǔxiàng bǐlèi* (取象比類) or ‘taking (similar) appearances and making (patterned) analogies’. In classical Chinese writing 象 (appearances, image) is equivalent to 像 (similarity, analogy). This is an art mentioned in *The Inner Canon* in chapters 76, 77 and 78. See also 潘毅 (2019). Note that *qǔxiàng bǐlèi* is conventionally translated into English as ‘correlativity’ though it has nothing to do with statistical correlation.
30. As Farquhar shows, these were concerns for Lu Guangxin in the context in which he was writing.
31. ‘[T]he hoary absolutes within which Western science developed – Nature, Truth, and Law – are markedly absent [in Chinese medicine]. Instead, the social values of effectiveness, responsiveness, and service and the personal values of virtuosity and connoisseurship – goodness in several senses of the word – dominate Chinese medical texts.’ (Farquhar, 1994: 174).

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## Author biographies

Wen-yuan Lin is a Professor at the National Tsing-Hua University, Taiwan. He is a sociologist and a STS practitioner by training. He uses STS material semiotic approaches to explore the politics of the emerging alternative knowing spaces in contemporary Chinese medical practices. Currently, he also uses perspectives from the humanities and social sciences to explore Covid-19 pandemic interventions, and ‘AI for the social good’.

John Law is Emeritus Professor at the Open University, UK, Visiting Professor at the Sámi University of Applied Sciences, Norway, and Honorary Professor at the National Tsing-Hua University, Taiwan. He works in postcolonial STS with Sámi colleagues on environmental struggles and indigeneity. The present paper is part of a long-term collaboration with Wen-yuan Lin on a possible *shi*-inflected postcolonial STS. His website is [www.heterogeneities.net](http://www.heterogeneities.net).