THE ORGANIZATION OF PRIMARY CARE CONSULTATIONS (ACUTE VISITS) IN CHINESE PUBLIC HOSPITALS

by

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ABSTRACT

The Organization of Primary Care Consultations (Acute Visits) in Chinese Public Hospitals

By
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This research is one of the first studies of Chinese primary care doctor-patient communication. The study collected a large data corpus of video-recorded acute-visit consultations from two outpatient clinics of an ordinary Chinese hospital. The analysis uses primarily conversation analysis (CA) method to uncover the moment-by-moment interactional and sequential patterns during primary care encounters; in doing so, contributing to our understanding of the social organization of Chinese primary care medicine. The analysis combines ethnographic descriptive accounts, to situate the fine-grained CA analysis in the wide context of how Western medicine is actually practiced in the Chinese medical system.

The research focuses on the diagnosing process in which the physician talks the patient through the diagnostic analysis; and in which the patient responds in various ways to the professional's explanations. The findings reveal that 1) Chinese primary care physicians routinely use the exclusionary approach in making diagnoses 2) medical tests (by clinical examinations) are routinely included in primary care consultations to achieve fully certainty of the emerging diagnosis 3) patients may misalign with the doctors' assessments primarily manifest in their symptom descriptions 4) the diagnosing activity is observed to be an evolving process infused through almost all stages of the collected consultations.

The findings point to a nuanced understanding of the concept of 'diagnosis' – rather than a restricted stage (as proposed in the prior literature, e.g. Byrne & Long, 1976), diagnosing may extend over a series of turns, and it should be considered an infusing activity that is extended over a long sequence (i.e. assessing the symptoms, explaining the symptom cause, providing a provisional diagnosis, and making an conclusion of the final diagnosis).

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Chapter 1 – Introduction

1. Introduction

In this thesis, I investigate a topic that is understudied yet a matter of widespread concern, both among the Chinese population and also in the media – that is, how primary care medicine is actually conducted and practiced in China. My research is not designed to address the complete complexity of Chinese primary care services; instead, focusing on a single dimension that can easily and fully reveal the essential characteristics of Chinese primary care practices – namely, doctor-patient acute-visit interactions.

In this introductory chapter, I shall provide the ethnographic contextual features of Chinese primary care provision, that are necessary to understand the interactions collected for this study. I shall explicate the relevant social settings and structure, for facilitating the understanding of some of the practices which may be characteristic of Chinese medicine. The key points for this chapter are 1) the overview of hospital-based primary care service 2) the challenges to Chinese primary care medicine 3) patients' routine visits to an ordinary hospital.

2. The research background

Research based on conventional sociological approaches and conversation analysis (hereafter CA) provided us a considerable range of findings about primary care communication between healthcare provider and patients. However, most of the existing research (e.g. Byrne & Long, 1976; Strong, 1979; Heritage & Maynard, 2006; Robinson, 2006) has focused on British and American medicine, with several studies of other European health systems. The few publications, written in Chinese language on Chinese medicine, were not based on systematic investigation of any naturally occurring data. In other words, there has been no published research found on primary care communication in China. Chinese primary care interactions remain an unstudied field.

Yet, China's healthcare has already been a widely reported or debated topic in news reports, interviews and documentaries. These journalistic anecdotal accounts point to the issues and difficulties of the current Chinese medical system – the large number of patients seen each day, the underpaid doctors, the chaotic circumstances, even the patient-against-doctor violence (e.g. 'Under the Knife', Beam, 2014; 'Police to guard Chinese hospitals to stop attacks on doctors',

Campbell, 2016) – the system has been portrayed as 'broken', 'deeply stratified', or 'in crisis'.

However, none of them have gone into any depth to explain why such problems exist, or more crucially to provide empirical evidence for their propositions that Chinese primary care is deeply troubled. In fact, some of these reports have taken rather biased and unbalanced positions (e.g. 'Inside China: China's ailing healthcare system'[1]; 'The Chinese hospital experience'[2]). It is evident from a real need for research into the actual characteristics and conduct of Chinese medicine, from a dispassionate, balanced and scientific position. The need for a more scientific account of how medicine works and is conducted in Chinese primary care provides the background of my thesis.

My research is one of the first studies, using video-recordings and direct observational methods, to answer: 1) What actually happens in Chinese hospital-based primary care visits? 2) How is Western-style medicine practiced in ordinary Chinese hospitals?

3. The overview of the Chinese medical system

Under the motive of conducting a scientific objective research on Chinese primary care medicine, I set out to investigate the interactions which took place in the outpatient clinics of a popular Chinese hospital. In this section, I shall briefly discuss how the Western style medicine developed to be the mainstream medical practice for most of Chinese medical institutes, why Chinese medicine is a hospital-led system and the primary care consultations mostly happen in large urban hospitals (rather than in lower-level facilities).

The Western medicine in China

Western Medicine has gone through three chronological phases, settlement, imperialism, and modernization (Loudon, 2001, p.250), to become the mainstream approach for the majority of healthcare institutes in nowadays China. It was first introduced to China in the 19th century by medical commissionaires, as an adjunct to the priority to establish Christian and diplomatic connections. It was adopted more widely under Western (British) imperialist control during the Opium Wars, gaining increasing popularity during the Republic Era (from 1912 onwards).

[1] Source: a CNBC report, https://www.youtube.com/watch?v=z3qV7-cD3vQ, 2015.
[2] Source: http://rubyronin.com/the-chinese-hospital-experience.

Despite the ambivalent feeling towards Western Medicine (which is regarded as embodying capitalist bourgeois ideology, yet modern scientific advances), the Communist government under Mao Zedong's leadership (from 1950s onwards) encouraged medics to 'synthesize Western and Eastern practices of medicine' (Chen, 2001; Loudon, 2001). This brought the rapid development of primary care especially in rural areas, for instance, the burgeoning cadre of 'barefoot doctors'[3].

Under the influence of 1978 marketization trend, the medical system witnessed the rapid development of hospitals. The healthcare development shifted to large urban hospitals in urban areas, instead on urban primary levels (as previously encouraged by Mao's government). This is called the 'Great Reversal' in the history of the Chinese medical system (Chen, 2001; Hinton, 1990). Since the 1970s, Western-style Medicine achieved broad acceptance to the mainstream medical practice of China, although traditional Chinese medicine[4] remained a major component of healthcare throughout the history.

The hospital-based primary care medicine

In the hospital-led medical system, it is natural for Chinese patients to choose large urban hospitals over grass-root facilities (i.e. rural clinics or community health centres). This is perhaps the most obvious difference from the British medical system (the NHS), in which GP service (of primary care medicine) treats the most patients.

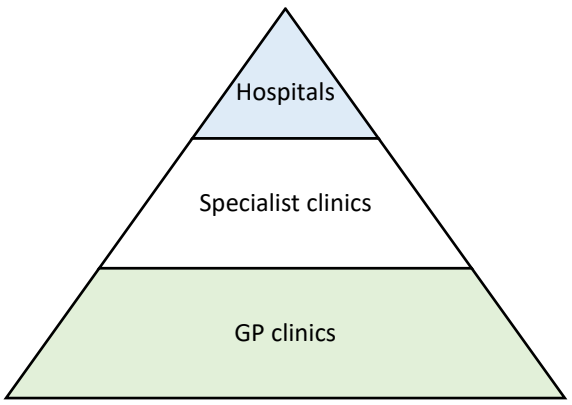

Figure 1.1 Distribution of patients of the NHS

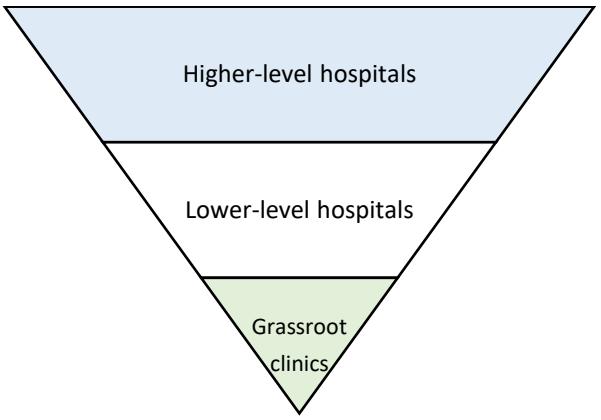

Figure 1.2 Distribution of patients of the Chinese system

[3] Source: https://en.wikipedia.org/wiki/Barefoot_doctor.
[4] Traditional Chinese medicine refers the kinds of culturally unique approaches, such as herbal treatments, acupuncture, massage and such like (see https://en.wikipedia.org/wiki/Healthcare_in_China).

These two figures show that the NHS and the Chinese medical system are similar in terms of the three-tiered structure. However, they exhibit sharp different trends in terms of patient throughput.

For the NHS[5] (figure 1.1), the GP clinics, as the first point of contact, serve a strict gate-keeping role, and deal with the majority of patients in the British system. In ordinary circumstances, only with a GP's referral can patients gain the access to the secondary care provided by the specialist clinics (e.g. medical care for chronic serious conditions, such as oncology; or for emergency cases, such as fracture). Thereby, compared with GP services, the specialist clinics of secondary care show much fewer patient visits. Hospitals, the main institutes for tertiary care (for instance of surgeries, such as, cardiac surgery, neurosurgery) have the least volume of patient visits, so more resources can be directed to research and education. All in all, the distribution of patient throughput for the NHS shows the shape of 'a balanced pyramid'.

The Chinese medical system (figure 1.2) is also organized according to a three-tiered structure[6] (Hu, et al., 2016; Wu et al., 2017b). The grassroot clinics (i.e. the lower-level facilities in communities or the countryside, targeted for primary care service), which are supposed to carry the largest number of patients, in fact are least visited by patients. Whilst, large urban public hospitals (i.e. the tertiary care), which are supposed to carry the least number of patients, actually deal with the largest number of patients. These features contribute to the 'top-heavy inverted pyramid', a trend rather contrasting to the NHS.

That is to say, although theoretically the Chinese medical system has this three-tiered organization, in practice the primary-care lower-level facilities hardly exercise any gatekeeping functions. The division among different tiered healthcare is blurred; and the lack of a strict referral system is evident. With enough medical payment, Chinese patients can shop around different doctors among the three tiers, regardless of the urgency and seriousness of their symptoms. A recent nationwide survey showed that 36% of the primary care visits happen in the upper-level hospitals[7]. The current Chinese medical system is *a hospital-led system*; and the Chinese primary care medicine is essentially *a hospital-based practice* (my rationale for

[5] Source: http://www.dgadvocacy.co.uk/primary-secondary-and-tertiary-care.
[6] Sources: https://en.wikipedia.org/wiki/Classification_of_Chinese_Hospitals; https://en.wikipedia.org/wiki/Healthcare_in_China.
[7] The figure is based on the 2012 Yearbook of China Ministry of Health (see http://www.moh.gov.cn).

selecting a hospital for conducting the data, see chapter 3 for the study-specific context).

4. The ethnographic contextual features

The important role of hospitals

Under the influence of 1978 marketization trend, the Chinese medical system experienced a radical change to almost completely opposite of the early established system. In a word, the change of orientation from grassroot facilities to large urban public hospitals, are called the 'Great Reversal' in the history of Chinese healthcare development (Chen, 2001; Sidnel, 1993).

The purpose of healthcare provision (between the 1960s and the 1970s under Mao's government) is to serve a mass population. Primary healthcare expanded fast, with the appearance of a vast cadre of 'barefoot doctors' (i.e. village paramedics who are trained in basic medicine, capable of prescribing Western and traditional Chinese medicines). Their roles are similar to the roles of British GPs; they are responsible for providing primary care to particularly the rural population. Chinese medicine in this period gained control over infectious parasitic diseases and effectively lowered health cost; the 'barefoot doctor' system was acknowledged as one of the important inspirations for advancing primary healthcare worldwide at the 1978 WHO conference (Chen, 2001; Jamison, et al. 1984; Yang, et al. 1991).

With the impact of the market economy in the 1980s and 1990s (under Deng's government), the medical system shifted from developing the primary healthcare in rural areas to developing the hospital infrastructure in urban areas. This is manifest in particularly, the orientation of health expenditure to public hospitals, and the abolishment of barefoot doctors in the countryside. The purpose of healthcare has changed from serving the general mass to a competitive market-oriented ideology (Chen, 2001; Cheung, 1995; Sidel, 1993). The consequences are two-fold.

First, it is the robustness of higher-level hospitals. Hospitals receive the major proportion of government expenditure, which means, hospitals have more resources for purchasing medical equipment and hiring skilled practitioners. Naturally, Chinese doctors prefer to work in higher-level hospitals for better salary and brighter career path; many grass-root clinics experience a

shortage of staff. Patients' preference of tertiary hospitals and distrust of rural primary care clinics are well-found. Despite geographic inconvenience, they would rather see doctors in urban hospitals, rather than spending money on outdated and less desirable treatment in neighbourhood clinics.

Second, it is the consumerist approach of the medical practice. The NHS, in the 1990s, brought about the policy of 'GP fundholders' that diverted more resources to primary care, for offering free equitable services (Annandale & Field, 2001) – in general, the NHS is *centralized* practice. Compared with the British counterpart, the Chinese system is more of a *decentralized* practice. Since the late 1990s, the policy was adjusted to restrict the government subsidy for public hospitals. Hospitals continued to receive most of government funding (the focus of healthcare development); yet, because of the cut of government expenditure they have to be more accountable for their own profit and loss than before.

The consumerist approach of hospitals

Year	Government spending	The spending of individual citizens	Society spending	Total expenditure (100 million RMB per unit)
1978	**32.1%**	**20.4%**	47.4%	110.21
1980	36.2%	21.2%	42.6%	143.23
1985	**38.6%**	28.5%	33.0%	279.00
1990	25.1%	35.7%	39.2%	747.39
1995	18.0%	46.4%	35.6%	2155.13
1997	16.4%	52.8%	30.8%	3196.71
1999	15.8%	55.9%	28.3%	4047.50
2001	15.9%	**60.0%**	24.1%	5025.93
2002	**15.7%**	57.7%	26.6%	5790.03

Figure 1.3 China's healthcare expenditure (1978 – 2009)[8]

As shown in the above figure, the proportion of healthcare expenditure experienced dramatic change between 1978 and 2002. The proportion of government spending continued increasing

[8] Source: the 2002 China's Healthcare Statistics Yearbook, http://www.moh.gov.cn/publicfiles//business/htmlfiles/zwgkzt/ptjnj/index.htm.

between 1978 and 1985 (from 32.1% to 38.6%); however, it fell sharply by 22.9% in the seventeen years between 1985 and 2002. In contrast, the proportion paid by individual citizens increased from 20.4% in 1978 to 60% in 2001. The comparison is made solely between the proportion of health expenditure spending by the government and the proportion of the spending of individual citizens (the last column indicating the expenditure paid by society is included to show completeness and is not the concern here).

A more recent interview[9] reports that the government subsidy for public hospitals dropped by 90 percent between the year 2000 and 2016; hospitals themselves have to make up the gap in the revenue by their profit.

The healthcare funding and insurance

The system of Chinese medicine was established in the 1960s, and went through a series of reform with China's transition to market economy since the late 1980s. One of its achievements is that basic medical insurance has become available to most people – by 2011, more than 95% of the Chinese population is covered by such insurance scheme (Le Deu, et al., 2012).

The Chinese system has a multi-layered insurance system of[10]: the basic insurance system; the supplementary system (i.e. Civil Servant Subsidies, Supplementary Company Insurance, Target Group Insurance and Commercial Medical Insurance); and the safety net (i.e. Urban and Rural Public Medical Assistance). The apex of China's medical insurance system is the basic insurance system, under which there are the Urban Employees Basic Medical Insurance Scheme (UEBMIS), the New Rural Cooperative Medical Scheme (NRCMS), and the 'Urban Residents Basic Medical Insurance Scheme (URBMIS). Features of each schemes are summarized in the next figure.

[9] Source: 'Closer to China' (the 17th January 2016), https://youtube/-PXEYeE7zM8.
[10] Source: China's Healthcare System – Overview & quality improvements, 2013, https://www.tillvaxtanalys.se/download/18.5d9caa4d14d0347533bcf93a/1430910410539/direct_response_2013_03.pdf.

Starting time	Scheme	Beneficiary	Reimbursement level	Funding sources
1997	UEBMIS	**Urban** employees	**70% reimbursed**	Compulsory; employee & employer contribution
2007	URBMIS	**Urban** residents	**50% reimbursed**	Voluntary; household contribution, government subsidy
2002	NRCMS	**Rural** residents	**40% reimbursed**	Voluntary; individual contribution, local government subsidy
The beginning of the system	Medical allowance of civil servants		**More than 70% reimbursed**	Government subsidy
The beginning of the system	Medical assistance for the extremely poor households		Aiming to reimburse 90%	Government & social sector funding

Figure 1.4 Features of China's insurance schemes[11]

The system has reduced out-of-pocket payments of individuals, and the number of households falling into poverty incurred through catastrophic medical costs. Medical insurance coverage has reached 90% of Chinese rural residents by 2009, in comparison to only 10% who had it between 1980 and 1986 (Renshaw, 2014).

Note having insurance did not translate into free subsidised medical care for all Chinese citizens (Nundy, 2014, 2016). What is clear in the above figure is that the system seems to emphasize the interest of civil servants; more than 70% of their medical costs can be reimbursed. Moreover, the system seems to give more importance to the urban residents rather than the rural residents (70% reimbursement rate for the urban employees and 50% reimbursement rate for the urban residents VS 40% reimbursement rate for rural residence). These disparities, in terms of profession and region, are obvious. The schemes are actually the *basic* sort of insurance, which means, for complex expensive treatments the system can cover the partial cost, and patients themselves have to pay for the rest.

Note medical services are routinely charged against patients themselves. Public funding automatically follows a patient's visit to a hospital; the hospital can charge the patient for testing or medicine, simply against her medical allowance, insurance or out-of-pocket payment. It is easier for patients to get reimbursement in large hospitals than in grassroot clinics, as most

[11] Source: Nundy, 2014, p.16; Health International, 2010, p.56; Ministry of Health, undated.

hospitals have much better financial systems – this is also one of the key reasons why patients prefer to get treated in hospitals.

5. The challenges to Chinese hospitals

The expansion of medical insurance brought severe challenges to China's healthcare facilities. As reported by both internal and external media (e.g. 'Closer to China'[12], January 2016; 'Overkill', May 2015), Chinese medicine is in crisis, as displayed in the tension between doctors and patients. At the heart of the issues with Chinese medicine lies the challenges facing Chinese primary care. In this section, I outline the specific challenges, and highlight the importance of investigating doctor-patient communication.

The sheer volume of patients

We have seen that the Chinese medical system was first established in the 1960s and went through several reforms with the transition to market economy since the 1980s / 1990s. One of its achievements is that basic medical insurance has been made available to most people (95% of the population) by 2011 (Le Deu, et al., 2012).

However, the soaring number of patients for seeking professional medical care has created a dilemma for hospitals. The pressure, first of all, is caused by serving the world's biggest population (about 1.3 billion). The newly-insured prefer to visit higher-level hospitals for the convenient reliable reimbursement of their medical treatment. Second, by including the newly insured into the system, Chinese hospitals today face the challenge in providing appropriate quality healthcare for a wider population (given that hospital services are already constrained by an enormous patient throughput). For instance, the doctors' offices may become noisy and crowded when many patients and companions are present. The lack of patient privacy entails hurried consultations, that means it could be difficult for doctors to deliver careful treatment or to communicate sufficiently with each patient.

Financial autonomy

We have seen that large urban public hospitals are the most important medical facilities under the current Chinese medical system; they receive the majority of the

[12] Source: 'Closer to China' (the 17th January 2016), https://youtube/-PXEYeE7zM8.

government funding, at the same time, the government encourage hospitals to be financially self-sufficient by reducing expenditures.

Reducing government funding improved hospital efficiency; meanwhile brought about intense competition among hospitals. Some hospitals have to drop non-profitable preventive care, to offer curative care to fill in their financing gap (Chen, 2001; Cheung, 1995; Henderson & Stroup, 1998). With the introduction of the bonus system (that physicians are paid according to their performance and the hospital profit), expensive medicine and complex tests (e.g. X-ray examination; MRI) are prescribed, partly because they can generate profit and mark-ups (Liu & Mills, 2005).

This is rather different from the practice of the British medicine. For British medicine, medical costs are charged against the limited funding of the NHS trust. Rather than generating more profit, testing can *consume* the pre-allocated funds which means a drain of finance. Therefore, British GPs are usually constrained from ordering tests, so to save funds for treating patients with more serious conditions (Foot, et al., 2010; Robertson et al., 2017).

Medical testing, however, is routinely included in Chinese primary care encounters. The more tests doctors prescribe, the more profit they earn for their hospitals (which means more bonus for doctors themselves). Because part of a hospital's income is derived from medical testing, my direct observation suggests that Chinese doctors are more inclined to prescribe tests during acute visits than British doctors do (e.g. for the phenomenon of over-prescribing / over-testing also see Chen, 2007; Cornelius-Schecter, 2016; He, 2014; Liu, 2006; Yuan, 2014).

The pressure of Chinese doctors

Most hospital doctors have to see an overwhelming number of patients every day. Moreover, doctors are widely underpaid, and some of them have to rely on bonuses or the kickbacks from pharmaceutical markups. Doctors may find themselves in an awkward position, on one hand they have to earn profits for hospitals, on the other hand they may employ some defensive practices to avoid being portrayed negatively by the media.

Doctors' salaries follow the salary system of civil servants, which means their salaries are based on ranks rather than performance. In 2011, the average salary of doctors is only 1.19 times

higher than what is earned on average of the Chinese society[13]. The average salary of Chinese doctors is reported around RMB 5000 (about £500) a month[14]. This is significantly lower compared with, for instance, American doctors (Peckham, 2013).

Tension in doctor-patient relationship

With the commercialization of Chinese medical care, doctors ('service provider') find themselves selling hospital service to patients ('buyers'). As medical care became 'profit-driven entities' (Wu & Lam, 2016, p.241), patients may hold high expectations that the condition can be quickly and fully addressed with one-off treatment, and their expectations tend to be unrealistic (He & Qian, 2016; Tucker, et al. 2015; Xu, et al. 2016; Wu, et al. 2017a). Whilst being underpaid themselves, physicians have to earn profit for their hospitals. Owing to these factors, being a hospital doctor is widely regarded as a high-pressure profession.

Less consumerist elements can be seen in British medical practice, and perhaps less overt tension normally in the British doctor-patient relationship (though there are circumstances in which there appears to be greater tension, for instance, between GPs and patients with medically unexplained symptoms, tension that is implicit in a term commonly used to refer to such patients, 'heart sink patients', see Ariss, 2009; Salmon, 2000; Salmon et al., 2007).

The lack of gate-keeping function

In the Chinese medical system, the priority on tertiary hospitals and the underutilization of primary care facilities are evident. Chinese medicine is found to be a fragmented system and the biggest challenge facing the system appears to be the lack of primary care gatekeeping and referral function (Liu et al., 2017).

Despite the three-tiered classification like the NHS (as illustrated in figures 1.1 &1.2), Chinese primary care facilities hardly perform gatekeeping and referral functions; the boundaries among different levels of care to become blurred. Th pressure of 'soaring demand for quality medical care'[15] has been taken on mostly by hospitals. In many Chinese provinces, a higher proportion of the first point of contact occurs in hospital outpatient clinics (McCollum et al., 2014);

[13] Source: https://www.ft.com/content/0501f7ac-d8b2-11e6-944b-e7eb37a6aa8e?mhq5j=e1.
[14] Source: https://www.ft.com/content/0501f7ac-d8b2-11e6-944b-e7eb37a6aa8e?mhq5j=e1.
[15] Source: How sick are the world's healthcare system, *the Guardian,* 2014, https://www.theguardian.com/society/2014/oct/29/how-sick-are-worlds-healthcare-systems-nhs-china-india-us-germany.

whereas, primary care facilities are much less visited. Being under-resourced, rural primary care facilities experience problems such as shortage of doctors and training researching opportunities (Wu & Lam, 2016).

Under the consumerist practice of the medical system, Chinese patients seem to have high levels of 'freedom' in seeking professional help – that they frequently bypass primary care and self-refer to tertiary hospitals, for the kind of diagnosis / treatment that they desire (for the evidence, see Hillier & Shen, 1996; Liu, et al, 2017; Wang, et al., 2012; Wu, et al., 2016).

A well-functioning referral system (e.g. the NHS) is found to be the key in balancing resources, and facilitating coordinated care (Bowerma, et al., 2000; Enthoven, 1985). The latest reform (since 2009) sets the reforming of primary healthcare as the critical step in improving the overall medical practice, and in encouraging ordered healthcare seeking behaviour (Chen, 2001; Wu & Lam, 2016).

All in all, we have seen the problems and challenges of the Chinese medical system, and the key with those problems lies in the change in primary care medicine (both in large hospitals or small clinics). Whilst British primary care is reasonably well understood from the existing research literature, there is no research that I am aware of into Chinese primary care – hence the originality of my research.

6. Routine visit to Chinese hospitals

In this section, I discuss the typical features of an ordinary Chinese hospital; then illustrate a patient's journey of visiting a hospital outpatient clinic.

The physical setting of a hospital

Chinese hospitals generally operate according to a department-clinics structure. An ordinary hospital is composed of the departments of internal medicine and external medicine, and within each department there are different clinics. Internal medicine treats problems that are in those internal organs, and are less visible to the doctor. External medicine treats symptoms that are visible and are more easily observable to the doctor. For instance, a patient with blood circulation symptoms will see a physician in the Diabetes Clinic of internal medicine, whilst a patient with a swollen throat is advised to visit the ENT Clinic of external

medicine. Before explaining the procedures for seeing a hospital doctor, here I include the following two pictures to highlight the issue of the lack of patient privacy that is associated with most Chinese hospitals.

Figure 1.5 Typical scenes in Chinese hospitals (the registration hall [left], the doctor's office [right]) (Pictures at https://goo.gl/images/q4w1S4; https://goo.gl/images/2uq37i)

The first picture shows what it is like in the registration hall. To see the 'best' specialist or a highly ranked doctor, patients have to queue for long time to make appointment. The lack of privacy can be common with several patients present in the room waiting for their turn to see the doctor (visible in the second picture. As a result, patients may not receive any extensive examination within the consultation itself; the extensive examination procedures have to be conducted outside the consultation in another room (also see chapter 6 further testing recommendations).

The patient's journey of going to see a doctor

Figure 1.6 below is included here to illustrate each step a patient has to go through to see a hospital specialist.

Registration	Consultation	Clinical examination (optional)	Consultation	Prescription collection
				
In the registration hall, a patient makes appointment to see a doctor of a particular clinic. An e-card and medical record book are issued.	In the consulting room, the patient presents the problem. The doctor records the patient's medical history; if necessary, refers the patient to further testing.	In the examining room, the nurse runs clinical tests. When test results are ready, the patient collects them from the registration hall.	In the consulting room, the patient revisits the doctor to review the test results, asks for the professional opinion of diagnosis and treatment.	In the registration hall, with the medical record book and e-card, the patient collects her prescription from the pharmacy.

Figure 1.6 The patient's journey (Pictures at https://goo.gl/images/q4w1S4; https://goo.gl/images/PN7v9M; http://roll.sohu.com/20121125/n358601629.shtml; https://goo.gl/images/MJ4Cs9)

- *Registration.* Upon arrival, a patient should first register at the registration counter. The assistant will allocate the patient to a particular clinic, and issue her an e-card and medical record book. In order to choose the appropriate clinic, the patient should have some initial idea of what might be the matter; a medical assistant can also offer advice in this regard. From such triage system, it can be seen that specialist care already starts at the primary care level for Chinese medicine. This is different from British medicine, that GP primary care are general practice.

- *Consultation.* A consultation usually last for five to fifteen minutes. They are similar to British primary care interactions, in terms of the phased structure: presenting problems, taking history, conducting physical examination, delivering diagnosis and recommending treatment (Byrne & Long, 1976; Robinson, 2003).

Figure 1.7 The outpatient clinics (Diabetes [left], ENT [right]; the anonymized stills of my video corpus)

In the meantime, they are different from British medicine, insofar as they are not as private. There seems no clear opportunity for doctors to conduct an examination alone with the patient, with other patients close by during the on-going consultation (visible in figure 1.7). Extensive physical examinations generally have to be done outside of the consultation in an examination room; in which case, the consultation will be carried out in two sessions (i.e. pre-examination and post-examination stages). Whilst for British medical practice which emphasizes patient privacy, patients would expect a full consultation, including any physical examination. As tests engender vested financial interests or doctors' bonuses, doctors may be inclined to recommend extensive examination, even though a relatively definite diagnosis can be made on simple examination.

- *Medical testing (optional).* Doctors may recommend clinical tests for three main reasons: 1) the difficulty in conducting extensive examination, because of the lack of privacy 2) the biomedical concern to confirm or discount an incipient diagnosis, in order to be on the safe side 3) the financial consideration of earning profit for the hospital. Patients should see the nurse for the matter of taking detailed tests. They then have to revisit the clinician to discuss the test results. Patients are allowed to keep the test sheets for any potential revisits.

- *Prescription collection.* Finally, patients visit the pharmaceutical counter in the registration hall, hand in the e-card to the pharmacist, collect the prescription. A number-calling system is used in the pharmacy to help manage patients to get their prescription in an orderly manner.

7. Research focus and methods

Many journalistic accounts (e.g. 'Face to Face', March 2013; 'Under the knife', August 2014) highlighted the tensions and miscommunication between doctors and patients. Rather than taking a critical approach like these reports, my research focuses on documenting the patterns of communicative behaviour during primary care interactions; as well as investigating different communicative practices can result in different consultation outcomes.

The data is collected from the outpatient clinics of a Chinese hospital where primary care

consultations frequently happen. Through the five-month fieldwork, I have collected of video-recordings of clinical consultations and for this research, I focused on analysing the video-recordings of ENT Clinic (249 interactions) and of Diabetes Clinic (411 interactions). Both clinics are noted to practice Western-style medicine. This research explores the patterns and practices of the communicative behaviour of doctors and patients in acute encounters. This research is the first study of its kind in three ways:

- One of the first studies to investigate how primary care consultations are conducted in ordinary Chinese hospitals;
- One of the first studies to investigate how western-style medicine is practiced in Chinese medical institutions, particularly characteristically diagnostic approaches;
- One of the first studies to use qualitative, observational methods to investigate doctor-patient communication in Chinese medicine.

The research does not aim to offer an evaluation the performance of doctors or the efficiency of medical care. The research focuses on documenting the interactional patterns and features in the practices of Chinese primary care medicine. The research does not aim to offer a comparative angle with what has been found for British / American primary care medicine. The findings of the research literature of the British / American counterpart were merely used as theoretical background for conducting analysis.

My data were collected through video-recording, which can fully capture the interactions (verbal or embodied communication) taking place in potentially crowded environments. The collected interactions were analyzed through CA direct observation descriptive methods, in exploring the fine features of the moment-by-moment interactions. The ethnographic descriptions in this chapter offers further support and facilitate the readership in understanding my analysis of doctor-patient communicative features.

A primary care consultation is organized by different stages progressively – problem presentation, history taking, physical examination, diagnostic delivery and treatment recommendations. Each component was treated as a ‘stage’ delivered through a single turn by early CA studies of medical interactions (Byrne & Long, 1976; Waitzkin, 1991). My research takes a different position, that components should be seen as ‘activities’ taking a series of

sequences to accomplish (Robinson, 2003).

However, the principal focus of my study is how diagnosis is managed over sequences of interactions, what might be termed *the logic of diagnosis,* or the interactional structure of diagnosis. There are quite extended sequences of talk in my corpus, in which doctors progressively share the diagnostic analysis with patients, and patients respond extensively to the doctors' diagnoses. Diagnosis becomes more of a *process* than a single stage. Diagnoses in my data sometimes start quite early from history taking and extend over a long sequence – including checking symptoms, checking possible causes, informing patients of tentative diagnoses, and possibly running some tests.

Most of the existing research (of diagnosis) focused on the linguistic formats of diagnostic delivery (Peräkylä, 1998, 2002), and how diagnoses are delivered in a single turn-at-talk and occasionally in brief sequences (Heath, 1992; Maynard, 1992; Stivers, 1998). Format analysis has been the focus of these studies. The 'making of diagnosis' in my research is a matter of sequential management.

Robinson (2013) showed diagnosis to be an activity that is accountable insofar as it lays the grounds for the subsequent treatment stage. My analysis will show that diagnosis is accountably insofar as it rests on and is developed through preceding activities (e.g. history-taking, physical examination). In other words, diagnosis is constructed or revealed through history taking sequences, rather than simply being delivered in service of a certain treatment. The different constructions of doctors' diagnoses have sequential consequences; this research will investigate the interactional features of patients' responses, especially their attempts to resist doctors' diagnoses. This research addresses three main questions:

- What is the typical interactional structure of a primary care consultation?
- What are the typical diagnostic approaches of Chinese primary care doctors?
- What role do patients play in deciding the analysis and conclusion of a diagnosis?

8. Chapter summaries

In this thesis, I aim to explore what happens in naturally occurring primary care consultations of a Chinese hospital; to uncover the communicative patterns in these

consultations; and to report on the practices of Chinese western-style medicine. My analysis unfolds along the overall progressivity of consultations [doctors diagnose by discounting method] + [doctors recommend tests] + [patients' responses to doctors' discounting diagnoses]. Each analytic chapter has its own focus and contributes to the overarching theme of 'the making of diagnoses'. Next, I outline the structure of the thesis and the primary focus of each chapter.

Chapter 1 – Introduction

In this chapter, I mainly discussed the research focus and methods; I have presented the key ethnographic contextual features of Chinese hospital-based primary care medicine. The ethnographic description is derived from my direct observation made during the five-month fieldwork, during which I collected notes of observations, spending time in different clinics talking to clinicians and patients. The chapter offers a preview and a link with ensuring empirical analysis.

Chapter 2 – Literature review

I offer a review of the research literature on medical interaction, particularly on the subject of primary care doctor-patient interactions that is the main concern of this research. I focus particularly, though not exclusively, on CA studies of medical interactions. The chapter is organized around three themes: 1) medical authority 2) patient centred medicine 3) CA studies of medical interaction.

Chapter 3 – Data and methods

I outline the guiding methodology of this thesis combining CA and ethnographic descriptions. I aim to provide the reader with a clear understanding of the nature of my fieldwork, and the processes of transcription, and of analysis. The chapter has four principal parts: research design, data collection, ethics considerations, analysis and transcription methods.

Chapter 4 – The pattern of diagnosing by exclusionary method

In the first empirical analysis, I present a routine pattern of Chinese doctors making diagnosis in acute visits. It connects with the background that Chinese doctors involve patients in the process of arriving at a diagnosis, reassuring the patient, and forecasting the need to take tests to rule out a possible condition. The pattern involves a possible diagnosis being excluded implicitly and then explicitly before clinical testing, termed as 'the exclusionary diagnosing

practice'. During the history taking, the physician issues questions to check whether the patient's case is consistent with the typical symptoms of a possible condition. If the patient is observed not having these symptoms, then inconsistency is established. The physician discounts the possible condition with evidence. My data showed three mechanisms to which physicians may resort in collecting inconsistent diagnostic evidence. The findings suggested diagnosing as an evolving and interwoven activity. The chapter is the first study to report on the diagnosing by exclusionary approach with empirical evidence of primary care consultations.

Chapter 5 – The pattern of recommending tests

The second analytic chapter builds on the first analytic chapter. It documents the pattern that doctors recommend patients to take certain tests at the end of history taking. The pattern consists of 1) outlining a possible diagnosis 2) recommending tests 3) introducing test expenses. Doctors are found to justify their recommendations from a biomedical angle (to discount or confirm a possible diagnosis); or from a financial perspective. The findings further showed that doctor-patient misalignment is another factor that leads into medical tests: 1) whilst doctors emphasize the need of tests, patients may minimize the need; 2) whilst doctors minimize the need of tests, patients may emphasize the need. The chapter is one of the first studies to investigate the talk on medical tests in consultations.

Chapter 6 – The pattern of patient resistance

Differing from the preceding two pieces of analysis investigating the diagnosing before physical examination, the third analytic chapter examines the diagnosing at various points throughout a consultation. The focus is on the misaligning moments of doctor-patient interaction in making diagnosis. I report on doctors' medical assessment in terms of whether symptoms are considered normal or abnormal, and patients frequently misalign with the doctor, pushing for their desired outcome of the diagnosis. Both the way physicians diagnose and the way patients resist the doctors' diagnoses are indirect, which are done through their divergent symptomatic descriptions. My analysis further showed the dimensions of physicians constructing symptomatic accounts and of patients resisting physicians' assessments. It suggested a certain extent of freedom in patients' choice, which is found to be consistent with my ethnographic observation that without a strict referral system, Chinese patients may have easy access to different levels of medical care.

Chapter 7 – Conclusion

I offer the overarching findings of presenting the sequential structure of making diagnosis, identifying the interactional patterns of diagnosing, and describing the doctor's and patient's roles in diagnosing. The thesis provides empirical interactional evidence for a nuanced understanding of 'diagnosing' in primary care consultations. Instead of being a restricted stage, which occurs in the end of a consultation, diagnosis should be understood as an evolving and interwoven process, that may proceed from the early stages of a consultation. The video corpus of Chinese primary care consultations constitutes empirical evidence for the western-style medical practice in China.

Chapter 2 – Primary care doctor-patient interactions: A literature review

1. Introduction

It is widely recognized that effective medical communication can have a profound impact on the outcome of healthcare delivery (e.g. Korsch & Negrete, 1972; Drew, et al. 2000; Maynard & Heritage, 2005; Heritage & Maynard, 2006). Medical outcomes (e.g. the accuracy of diagnosis, the appropriateness of treatment decisions, patients' commitment to treatment regimes, and patient satisfaction) depend significantly on the communication between doctors and patients during the consultation.

As outlined in chapter 1, the data for this thesis are primary care doctor-patient interactions collected from a Mainland Chinese hospital, of western-style medical practice. In line with the nature of my research, this chapter focuses on reviewing the CA studies into doctor-patient interactions in primary care consultation. The discussion centres on three themes: a) *medical authority* b) *the emergence of patient centred medicine* c) *CA studies of medical interaction*. My aims are three-fold: 1) to highlight the significance of investigating practitioner-patient conversations, for improving the quality of communication and healthcare outcome; 2) to discuss the core findings of existing research, and their implications for medical; 3) to discuss how CA has grown into a robust approach of scientific enquiry into medicine after 50 years of research, and the relevant key topics and issues.

2. Medical Authority

The interview format

The medical consultation routinely follows an *interview format*: the doctor initiates questions, putting the patient in the position of providing responses, and the patient returns the floor back to the doctor. This Question-Answer turn-taking system appears to be an invariant feature, for many professional-client settings, such as news interviews (Clayman & Heritage, 2002; Heritage & Clayman, 2010), and trial examinations (Atkinson & Drew, 1979).

West and Frankel (1991) found that 91% to 99% of the total questions asked during the consultation are asked by doctors. The majority of doctors' questions are polar questions (Frankel, 1984; Roter & Hall, 1992; Roter, et al., 1997; West, 1983). The physician's questioning shapes the patient's response to answer in a minimal yes-no manner (Strong, 1979; Sharrock, 1979; West, 1983; Hughes, 1982). This observation is confirmed by Heritage and Clayman (2010), that the grammatical design of physicians' questioning unavoidably sets preferences for either affirmative or negative response. Patient-initiated questions are generally dispreferred by doctors, as manifest in the lack of uptake by physicians (Frankel, 1983, 1990; West, 1983). Patient-initiated talk is frequently obstructed or transformed by physicians, in an attempt to maintain the symptomatic-related agenda (Frankel, 1995; Suchman, et al., 1993).

The turn-taking system of doctors asking questions and patients offering answers is the essential backdrop for *doctor-centred* medicine. Through the management of questioning, doctors control the overall agenda, and that contributes to their medical authority over patients (e.g. Byrne & Long, 1976; Frankel, 1984; Korsch et al., 1968; Roter et al., 1997; West, 1983; Heritage, 2005). Doctor-centred medicine has been a significant theme in the early sociological studies on consultation. In line with doctor-centred style, the *bio-medical approach* has been the dominant medical practice (since the end of the 18th century). This approach has the features including: a) diseases are treated as distinct entities, inspected through 'signs' and 'symptoms' exclusively (Atkinson, 1998, p.80); b) patients are regarded as the 'passive site' of disease manifestation, and psychosocial and lifestyle factors are neglected (Atkinson, 1998, p.80; Inerney, 2002); c) medical authority and the efficacy of medicine are overplayed (Nettleton, 2013; Annandale, 2014). The approach is effective in the control of acute infectious illnesses (Havelka, et al., 2009; Nettleton, 2013), though it received criticisms as being a reductionist model. In other words, the approach should be combined with perspectives of other factors, in offering treatment (Engle, 1977).

Relying on the notion of 'ritualistic behaviour' of social encounters, and 'face work' involved in managing daily interactions (Goffman, 1967a, 1967b), Strong (1979) explored the organization of outpatient consultations (in paediatric hospitals). He proposed the 'ceremonial order' of clinical interactions, that during medical interviews, doctors and patients can claim, construct different identities, or impose different identities upon each other. Influenced by the notion of 'situated role' (Goffman, 1955), Strong used discourse analysis methods and categorized the doctor-patient relationship into four types of role formats (i.e. bureaucratic,

charity, clinical and private), with bureaucratic format being the most obvious in the medical interview. His study provided empirical evidence that many consultations are *doctor-centred*.

Through analyzing naturally-occurring GP consultations, Byrne and Long (1976) found the 'habitual patterns' of consulting, that most doctors tend to work through a recurrent framework to cope with different patients. They proposed a six-phase sequence of the consultation: 1) establishing a relationship with the patient (*opening*) 2) finding out the patient's presenting concern or their reason for attending (*problem presentation*) 3) conducting the verbal and physical examination (*history taking*) 4) considering and delivering diagnosis (*diagnosis delivery*) 5) detailing treatment (*treatment recommendation*) 6) terminating consultation (*closing*). They coded doctors' style according to how they diagnose a condition and prescribe medicine and found that the majority of GP consultations are doctor-centred. This staged sequence offered convenient framework for researchers to investigate primary care communication. However, this staged structure tends to be rigid, insofar as it may not occur in real consultations (e.g. diagnosis starts quite early on in a consultation; Drew, 2006).

Control of medical agenda

The ways in which doctors handle the interaction indicates an inclination to intercept the patient-initiated talk, thereby sidelining and overriding what the patient is trying to say (e.g. Beckman & Frankel, 1984; Fisher & Todd, 1986; Mishler, 1984). The *asymmetrical* relationship between doctor and patient in the consultation is revealed through the doctor's control over topic and floor by questioning devices (Frankel, 1983; West, 1983; Zimmerman & West, 1975). There are three different understandings of physicians' control of medical interaction in previous literature.

Building on Freidsonian (1970a, 1970b) convictions of 'professional dominance' and 'functional autonomy', Bloor (1976) and West (1976) reported the doctors' *strategic control* of proceedings, during general conflicts in professional-client relationship. By studying observational data from ENT clinics, Bloor (1976) argued that the specialist's routines for organizing the consultation according to her own agenda are the key mechanism for maintaining medical authority. Professional routines are a means to exclude the patient's influence at critical points of decision making in the consultation. Based on observational data from paediatric clinics, West (1976) documented the physician's strategies to preserve

legitimacy and authority of their position, facing challenges on their clinical assessments, from the patient's parents, in child epilepsy cases. Both studies are important in pointing to medical authority by strategic control, particularly, the interactional mechanisms by which physicians anticipate patients' attempts to seize the initiative during misaligning moments.

A critical paper by Sharrock (1979) offered a different and broader interpretation of the issue of physicians' control. Sharrock challenged the propositions by Bloor (1976) and West (1976), that medical authority has to be accomplished by continual reaffirmation and negotiation, through the doctor's management of the consultation. Instead, Sharrock claimed that the physician's control should be considered as derived from their *institutional professional dominance* by default. Institutionalized deference to the doctor's authority is a key explanation of the patient's passiveness. For instance, patients understand the time to consult the professional should be as little as possible, constrain themselves only to relevant topics, and are prepared for the situation that their attempts to get answers could fail (Sharrock, 1979). Sharrock recognized the connections between interactional management and doctor-patient disagreement, but he suggested these conflicts are rare and easily overridden. In this sense, he played down the significance of the interactional management of a consultation.

The third and more recent study by Hughes (1982) suggested that the control of proceedings has to do with the patient's *lack of medical knowledge and competence*. Hughes, more influenced by the interactionist views of Bloor and West, was much concerned with the consultant's use of local management practices to accomplish 'control' over patients. By investigating first and follow-up cardiology interactions, Hughes proposed that the discernible form of talk in the consultation emerges from the concern to help patients, who have limited medical competence to produce topically relevant and orderly talk. His viewpoints reflected the collaborative nature of physician-patient interactions.

Physicians' control of the agenda of the consultation is wielded primarily through *interception* and the *premature termination* of the patients' talk (e.g. Fisher & Todd, 1983; Kollock, et al., 1985; Mishler, 1984; Todd, 1989; Waitzkin, 1991; West, 1984). This could not only cause barriers in patients describing their concerns and forwarding their agenda, but also adversely influence the consultation outcome. One of the obvious consequences of the doctor's control over the medical agenda is what is often known as the *unvoiced or hidden agenda* of patients (Duffy, et al., 1980; Platt & McMath, 1979; Stoeckle & Barsky, 1981; Waitzkin & Stoeckle,

1972). That is, the patient's unannounced or delayed health or psychosocial concerns, which may be secondary to and often hidden by the patient's initial presenting concern (Roter & Hall, 1992). Patients' tendency to withhold mentioning secondary medical concerns often results from: 1) the patients' individual volition and motivation 2) physicians' influence, for instance, the physician's attempt to solicit the patient's concern during the opening of a consultation (Beckman & Frankel, 1984; Marvel, et al., 1999; see also below Heritage, et al., 2007). The critical position on the connection between the effectiveness of doctor-patient interaction and healthcare outcome seems evident in the early studies. By examining 800 paediatric consultations, the research by Korsch and her colleagues, found that after the consultation, nearly a fifth of the parents are sceptical of doctors' diagnoses, and nearly a half of the parents seem confused about the cause of their child's problem (Korsch & Negrete, 1972). They found that the lack of interactional opportunities is the major reason, that parents fail to present their primary concerns.

Mishler (1984) considered patient-provider discourse not as mere talk but as the central mechanism for doing the work of 'doctoring' and 'patienting'. His study criticised mainstream sociological approaches that rely on a pre-categorized coding scheme. He adopted a selection of analytic frameworks, including non-mainstream approaches (at that time of) interactional methods, Halliday's model and the text-bound interpretive process, aiming to achieve an 'empirically grounded and theoretically meaningful understanding' of medical interviews (Mishler, 1984, p.7). He identified two kinds of voices in clinical interactions, 'the voice of medicine' and 'the voice of lifeworld' (with 'voice' referring to the combined presuppositions of language, appearance, attitude and reality; also see Silverman & Torode, 1980).

His analysis showed that the voice of the lifeworld (grounded in patients' personal experiences and preoccupations) only *occasionally* breaks through or interrupts the voice of medicine (grounded in the doctor's overriding agenda). Whereas, the impersonal decontextualized voice of medicine *repeatedly* interrupts the personal narratives of patients' illness experience. Mishler proposed that medical interviews are about 'the struggle of dominance', and consultations are dominated by doctors' voice primarily through questioning routines. His findings suggested that it is important physicians listen to the voice of the lifeworld (i.e. patients' accounts in their own terms), rather than concerned with solely bio-medical agenda and perspectives. Mishler took a critical position towards the medical profession and how medicine was practiced during that time. The findings of his study underlined the criticisms against

doctors (particularly between the 1970s and mid 1980s), that they rely on medical authority to great extent to make diagnosis, failing to listen carefully to or show empathy to patients.

His study showed two limitations. First, his study was rather generalizing in its interpretations, with observations made on basis of five cases. The value of his study falls short, as his analysis relies solely on the reanalysis or secondary analysis of other scholars' data (Waitzkin & Stoeckle, 1978). Second, Mishler's study considered 'interruptive behaviour' as the kind of competitive, or even argumentative conduct, where doctors interrupting patients for the control of consultations – this reflects the idea of power in conversation. Whereas, interruptions are primarily *co-operative* and *affiliative* sort of conduct, reflecting speakers' attempts to attend closely to what is said, and to maintain the flow of conversation (Drew, 2009).

Moreover, it is often at *the end of the problem presentation* when the doctor intercepts the patient with polar questions, shifting the direction of talk to be a more doctor-centred format (e.g. Beckman & Frankel, 1984; Boyd & Heritage, 2006). By analysing 74 consultations of American primary care, Beckman and Frankel (1984) focused on the physician's role in eliciting the patient's concerns. They defined the completion of the patient's opening statement as a full account of his or her concerns, signalled with brief expressions like "That's all", or "Could this be serious?" In *almost two thirds* of the visits, doctors interrupted the patient's statement and redirected questions towards the medical agenda. For *less than a third* of the visits, patients were provided with adequate opportunities to complete their account. Closed-ended questions were found to be frequently used to intercept patients' talk. Based on these findings, they proposed that doctors' interruptions may restrict the range of what count as appropriate response. Early hypothesis testing (i.e. treating incomplete account as the basis for diagnostic hypothesis) might cause hidden agenda and affect the eventual outcome.

Medical knowledge

It has been established that *epistemic authority* of doctors determines the asymmetry between doctor and patient. Parsons (1951) proposed the notion of 'the sick role' which gives particular rights and obligations to patients. Patients' subordinate position in the consultation comes from a number of considerations, such as, fear or humiliation associated with malfunctions, dependence on physicians. He asserted that the asymmetry in medical practice should be ascribed to doctors' specialized medical knowledge, their technical skills and the

prestige of the doctor's role. Freidson (1970a, 1970b, 1986) proposed that with the unusual degree of skill and knowledge involved in the training, doctors are the 'principal agents' for formal knowledge, and formal knowledge is 'an instrument of power'. Strong (1979) discerned the bureaucratic format as exclusive to the organization of the medical interview. The rituals of medical interview may derive from patients' idealization of physicians' medical competence. Strong recognized that patients may often be treated as ignorant, in most of the bureaucratic formatted interactions.

Starr (1982) identified what he called 'the surrender of private judgment': when receiving doctors' advice, patients are inclined to abandon their own theories of medical problem. He attributed the phenomenon to two sources: it arises from the patient's dependence on the physician, and from the physician's authority. He claimed that the physician's authority, derives from their training in diagnosing and treating complex symptoms (cf. Barnes, 1982; Kuhn 1962, 1977), and in their knowledge of how certain medical techniques operate. These factors empower doctors in detecting the illness and its causes.

There seems a clear competence gap between doctors and patients. Patients, in relative ignorance, assume a subordinate position; whereas, doctors assume a superordinate position (Waitzkin & Waterman, 1974). Patients lack the medical knowledge to be equal partners in medical situations (Hughes, 1982). These earlier discussions highlighted the imbalance between the roles of doctor and patient, reflecting that participants do not communicate as equals (Szasz & Hollender, 1956).

Medical dominance

The exercise of medical authority is central to the physician-patient relationship, as long been noted by medical professionals themselves, and by sociologists of medicine. This central feature is manifest in several ways: a) the relatively rigid question-answer turning-taking system (e.g. Beckman & Frankel, 1984; Frankel, 1984) b) stages of consultation progression led and driven by doctors (e.g. Byrne & Long, 1976) c) diagnosis and treatment remaining largely doctor's purview (e.g. Fisher, 1984) d) visual and vocal aspects of the interaction exhibiting doctor-centred style (e.g. Heath, 1986). All these factors put the doctor in a stronger position, so that decision making is heavily weighted in the doctor's favour (Fisher, 1984).

With the emergence of new drugs and advances in complex surgical techniques, there came the 'golden age' of doctoring in the 1980s (Mckinlay & Marceauy, 2002), when the status of medical practitioners reached its zenith (Shorter, 1985; Freidson, 1986b). Medical practice helps to maintain the hierarchical structure of society and its institutions, and medical interactions project micropolitical characteristics (Henley, 1977; Fisher, 1984). Doctors are, it is sometimes claimed, agents of social control acting to preserve the status quo.

In the 1990s, among NHS practitioners and researchers, there was a shift of focus from doctor-centred to *patient-centred medicine*. Roter (1984) found eight communication-transforming principles to achieve 'reciprocal empowerment', to acknowledge and appreciate doctors' own and professional perspective and competence as well as the patient's perspective. In challenging conventional modes of doctor-patient communication where only the practitioner's voice is defined as 'expert', Roter & Hall (1992) sought the legitimization of patients' expectations.

The decline of professional authority became more apparent with the emerging *consumerist culture* in medicine. This is manifest in the capacity of patients shopping around and being prepared to evaluate or disagree with doctors' medical judgments (Bury, 1997; Coulter, 2002; Freidson, 1986b; Guadagnoli & Ward, 1998; Roter & Hall, 1992). By comparing different communicative styles, Levinson and Roter (1993) found that the patient-centred style (e.g. by asking more open questions, listening more carefully to patients' views, sharing more bio-medical information) has positive influence on the outcome (especially for enhancing patient satisfaction).

Let us now recapitulate where this evolution of the research into medical interviews had brought us, from the 1960s to the early 1990s. Here are perhaps the most obvious (interconnected) dimensions, that came to characterise the earlier studies into medical interactions:

- The findings of early sociological research highlight the ***interview format***, which appears to be a rather recurrent model of the turn-taking system for clinical interactions. Medical interaction is the central mechanism for the working of doctoring and patienting. The bio-medical model is not the only valid approach, and early studies directed our attention to

investigate medical communication as an important area to study medicine, or to enhance medical care.

- The interactional routine of the interview format, that doctors initiate questions and patients provide responses, indexes ***doctor-centred interviewing style*** for medical consultations. This is an important theme in early sociological research.
- ***The questioning device*** is the primary mechanism for doctors' control of the overall medical agenda, and doctors' authority over patients.
- ***Closed-ended questions*** constrain the patient's replies to minimal yes-no answers, and restrict the range of appropriate answers.
- ***Patient-initiated questions and utterances*** are dispreferred and sanctioned in medical consultations. Doctors tend to ***intercept*** the patient and ***override*** the patient's agenda, contouring the consultation strictly to medical-symptomatic agenda.
- The obstruction and premature termination of the patient-initiated talk done by doctors can obstruct the patient's problem presentation, leading to ***the hidden agenda*** or ***the patient's unvoiced agenda***.
- The critical strand of research treats the medical consultation as ***asymmetrical and unequal***, following a course which is ultimately controlled by doctor rather than by patient. ***The imbalance of power*** in doctor-patient interaction derives from: ***institutionalized deference*** to medical professionals; ***the competence gap*** between doctors and patients in discussing matters concerning medical knowledge; ***interactional management practices***.
- ***Doctor-centred medicine*** and ***medical authority*** are the predominant themes in assessing the relationship and communication doctor and patient. This theme emerged from particularly from a more critical standpoint.
- ***The expression of medical dominance and medical authority*** has been another major dimension for medical sociological research. The critical and technical strands of research have pointed to the training of communicative styles to ***empower the patient***, which are the early signs of ***patient-centred medicine***.
- The key contribution of early sociological research lies in proposing and emphasizing ***the importance of doctor-patient interaction*** for researching into medicine.

3. Patient centredness

An extensive body of research in the past 50 years or so has focused on various forms of doctor-centred medicine, in which the doctors seem to have ultimate control over the

interaction – in terms of managing questioning exchanges, setting agenda and making treatment decisions. The interactional style featured by 'the doctor knows best' or 'one size fits all' was common and traditional for medical practice, at any rate up to the 1980s. Doctor-centred medicine implies the kind of practice that physicians do not adapt to the needs and concerns of individual patients, but rather apply 'generalized' routines and treatment disposals to different consultations. The doctor-centred strand of research, which focused in various ways of medical control, has as its corollary 'censuring medical practice' by silencing the voice of patients - that the patients' concerns tend to be sidelined, only becoming factors for decision-making to the degree that doctors permit (Drew, 2001, p.262).

The overemphasis of the doctor's role at the expense of the patient' role is the central cause of the problems found in general practice, particularly regarding miscommunication (May & Mead, 1999). Patient adherence to treatment plans can be largely jeopardised because of a certain communicative failure on doctors' part. For instance, doctors' inability to recognize patients' knowledge and experience for their own illnesses (Tuckett, et al. 1985), doctors' unwillingness to offer adequate medical explanations (Korsch, et al. 1968), and a doctor's failure to seek the patient's consent for a medical decision (Stimson & Webb, 1975).

The critical strand of research (e.g. Fisher, 1984; Mishler, 1984; Barry, et al. 2000, 2001) called for a greater recognition of the legitimacy of lay knowledge and patient autonomy. As the reaction to medical dominance, contemporary medicine (since *the 1990s*) witnessed a changing focus to promote a *patient-centred* approach to healthcare – the sort of clinical practice which can be accountable to patient-as-person experience, and which underlines the agency of patients and patients' choices in managing their own illnesses (Gardner, 2017; May & Mead, 1999; Mead & Bower, 2000).

Research on patient-centredness began to take a more holistic and interactive approach, in which power and responsibility are to an extent shared and balanced between doctors and patients. These studies promote a moral shift in doctor-patient relationship, from *paternalistic model* (Parsons, 1951), to a more equal *mutual participation model* (analogous to a relationship between adults) (Szasz & Hollender, 1956). 'Patient empowerment', 'concordance', 'negotiation' and 'user involvement' have been the keywords of the health policy from the 1990s (e.g. Department of Health, 1991; NHS Executive, 1996; as cited in Mead & Bower, 2000).

It may be worth highlighting some of the key issues for patient-centredness research, which could foreground the importance of attending to patients' needs and concerns; in some way representing strategic re-direction away from the earlier studies of physician dominance. These issues are:

Patient participation

The level of how patients are involved in treatment decision-making is the first important dimension that distinguishes patient-centred medicine from the traditional approach (i.e. the approach which is related to doctor-centred or illness-oriented medicine). Patients change from traditionally being 'passive recipient', to now being 'active consumer' or even in some situations 'potential critics' towards medical professional (Mead & Bower, 2000). Patient-centred medical approach implies that patients are entitled to be treated with more respect, to receive fuller medical information, and to be more involved in treatment decisions.

Meanwhile, there is an emphasis on patients taking the *initiative* in seeking professional assistance – through presenting concerns (of medical / non-medical problems) (e.g. Collins, et al., 2005, 2007; Gafaranga & Britten, 2007; McWhinney, 1985; Smith & Hoppe, 1991), through enquiring on hypotheses about what could be wrong (e.g. Frankel, 2001; Gill, et al., 2001), or through expressing expectations about what to achieve from the consultation (e.g. Henbest & Stewart, 1989; Mead & Bower, 2000; Pieters, et al., 1994). Lipkin et al. (1984) emphasized the importance of the kind of consulting style that is open to patients' hidden agenda; and the importance of encouraging patients to voice their ideas in promoting collaboration. We begin to see in research that patients' talk exhibit initiatives and expansions that are not framed by physicians' questioning or physicians' agenda, but rather breaking the mould of the presupposed format (Drew, 2001; Stivers & Heritage, 2001).

A biopsychosoical understanding of the patient's problem

The second theme supporting the trend of patient-centredness is the new biopsychosocial model (Engel, 1977, 1980), which is characterized as a *holistic* understanding of the patient's condition. Patient-centred medicine considers patients as 'experiencing individuals' rather than objects of disease entity (Mead & Bower, 2000, p.1089). Recognizing the patient's story involves exploring the patient's accounts of both medical and non-medical problems (Lipkin et al. 1984; Smith & Hoppe, 1991; Stewart et al., 1995), and making efforts

to elicit each patient's theories, concerns and expectations (Levenstein, et al., 1986). Some of the non-medical concerns may seem irrelevant from a medical point of view, but are nonetheless real for the patient; taking time to resolve these concerns and to reassure the patient can enhance the outcome (Frankel, 2000).

Meanwhile, illnesses are explained not only from a biological angle, but also from social and psychological perspectives, appropriate to the diversity of problems that might be encountered in primary care (Stott & Davis, 1979; Stewart et al., 1995). The remit of medicine is also broadened from organic disease to a much wider range of dysfunctional state of health (Silverman, 1987).

Egalitarian relationship

The third dimension associated with patient-centredness is the theme of sharing power and responsibility between doctor and patient. Studies on patient-centredness regard developing *therapeutic alliance* as a fundamental rather than additional requirement, to reach positive outcomes of medical care (Lipkin et al. 1984; Mead & Bower, 2000; Smith & Hoppe, 1991; Stewart et al. 1995). In contrast with the 'one person medicine' of the bio-medical model, patient-centred medicine is 'two-person medicine', which means in their therapeutic relationship, the roles of doctor and patient should not be considered separately (Balint, et al., 1993).

Previous research into patient centredness (Frankel, 2001; Jones, 2001; Jones & Beach, 2005) also suggested that the lay / professional perspective differences are recognizable to patients, who would work with various interactional resources to pursue their own agenda and expectations. By employing strategies to resist the doctor's disposal of their case, patients hold the doctor accountable for more detailed medical explanation, in so doing pushing for their desired treatment.

These then are the key issues that have been explored in studies advocating the development of patient-centred medicine around *the 1990s* – a more communicatively 'active' role for patients became the priority. The key issues and practices identified by these studies can perhaps best be discerned and addressed in furthers exploratory studies using the perspective and methods of CA, which is particularly suited to investigating the fine-grained detail of talk-

in-interaction, and the micro-dynamics of how health care is delivered in the primary care consultation.

4. CA research into medicine: the starting point

From the 1980s, CA has become a particularly influential approach for exploring medical and healthcare communication – with primary care acute visits being the principal site of analysis initially, the renaissance of CA studies turning the focus to the management of consultation activities, and after 2006 the spread of CA to other medically-related fields. In addition, the contribution of a CA approach to medicine has clearly reached beyond the context of British and American medicine to the investigation of medical interactions in many other countries (e.g. Peräkylä, 1998, 2002; Ruusuvuori, 2000; Ruusuvuori & Lindfors, 2009).

Heath (1986) video-recorded naturally occurring consultations, which was the first research in using a CA approach to British primary care interactions. Findings from this study has touched on many important features of medical interactions, which later became themes in subsequent research, including the forms and involvement of patient participation, the use of medical records and computers, physical examination, diagnostic delivery and closing. Heath started from a position that showed more interest in embodied actions; the primary focus of his analysis is the coordination of verbal and visual conduct, displayed by doctors or patients, within the practicalities of the consultation (for instance, a doctor taps the patient's knee to check her reflex whilst speaking). However, his analysis failed to establish connections between embodied actions and the outcome of a consultation, that is to say, he did not show why studying bodily conduct and expressions can contribute to our understanding of medicine – thus, his book has little value for bio-medicine and for medical practitioners. The fundamental concern of analysing medical interactions for understanding medicine is perhaps better addressed by Heath's later works – on patients' reception of doctors' diagnostic assessments (Heath, 1992; also see the later part of this chapter for details); and on how patients employ embodied conduct to describe, demonstrate and in some cases even dramatize symptoms, to seek suitable professional help (Heath, 2002).

Frankel (who studied under Sacks in the early 1970s) started to investigate features of doctor-patient interactions, by audio-recording data in primary healthcare consultations in American internal medicine. Focusing on mutual participation (through verbal and embodied actions),

Frankel (1983) argued that findings and observations from researching actual consultations have significant implications for the improvement of medical training, since many concerns and problems in medical practice emerge and are managed at discourse level. His observations supported the traditional view of medical interviews – that doctor-patient relationships are mostly asymmetrical, in 'favour' of doctors' authority; for instance, physicians ask most questions and these questions tend to be closed questions (Frankel, 1982, 1984); and patient-initiated questions are strongly dispreferred and may even be sanctioned (Beckman & Frankel, 1984; Frankel, 1990).

Perhaps the strongest early research in using CA to study medicine is the AIDS counselling project conducted by Peräkylä and his colleague Silverman, based on 100 taped-recorded therapy sessions that occurred between counselors and HIV-positive clients in Britain, exploring how counselors systematically deploy certain kinds of interactional strategies to converse with their clients. Their studies (Peräkylä, 1995; Silverman & Peräkylä, 1990) found that counselors tend to combine closed and open question forms to encourage and guide clients to describe their experience and emotion. When counselors give advice on potentially delicate issues (e.g. gender orientation, death), they recurrently employ interactional apparatus, such as perturbations at turn-initial position, and paraphrasing the former response (Silverman & Peräkylä, 1990). Such indirect speech features, in managing talk about delicate difficult topics, have also been observed in other CA studies of general interactions (e.g. Jefferson, 1988; Maynard, 1991, 1992; Schegloff, 1988).

These investigations represent the pioneering empirical research that employed CA to study medical interactions. In general, relationships in clinical interactions (whether doctor-patient or counselor-client) are primarily reported as 'unequal' or 'asymmetrical': doctors own medical authority by default, whose talk remains the analytic focus; patients, on the other hand, are subordinate or passive whose utterances are little explained. Moreover, analysis seemed to focus on sequential units (rather than actions or activities) that are noticeable within the setting of a consultation, for instance doctors' questioning. Thus, important connections between interactional practices and medically relevant outcomes were not fully captured by these early investigations of CA and medical interactions.

5. CA research into medicine: the breakthrough

Previous investigations drew our attention to the importance of examining medical interactions and noted that medical authority is preserved and managed through the interview format of the consultation. Over the past three decades or so, CA has grown to become a thriving field of research that has made significant contributions to the medical field. In this section, I will give an overview of recent research according to four principal themes – themes that in some ways can represent strategic re-orientations away from methods employed by previous studies. Recent CA investigations into doctor-patient interaction have shifted away from the staged sequence (of primary care acute visits), towards focusing on *the design and management of actions and activities*. The re-direction to focus analysis on the key activities of stage(s) of the consultation has thereafter made significant breakthroughs in the social scientific investigations of primary care medicine.

Differing from ordinary interactions, primary care interactions (first time consultations involving the presentation of a new medical problem) tend to be highly structured – consultations are organized by logically progressive phases (Heritage & Maynard, 2006). As discussed above, the traditional model proposed by Byrne and Long (1976) is somewhat prescriptive, as medical practice could vary significantly from the suggested model. Moreover, the movement towards 'patient-centredness' has also questioned the 'doctor-centredness' model of traditional medicine – that modern medical practice seeks the voicing of patients' agenda and concerns during medical encounters (e.g. Engel, 1977; Emanuel & Emanuel, 1992; Mead & Bower, 2000).

To seek reasons for the phenomenon of low levels of patient participation in consultations, in American acute physician-patient visits, Robinson (2003) proposed one important explanation: that in primary-care interactions, with the establishment of a new medical problem, an organized project of social actions that contains roughly ordered sequence of activities could be discerned (as illustrated below):

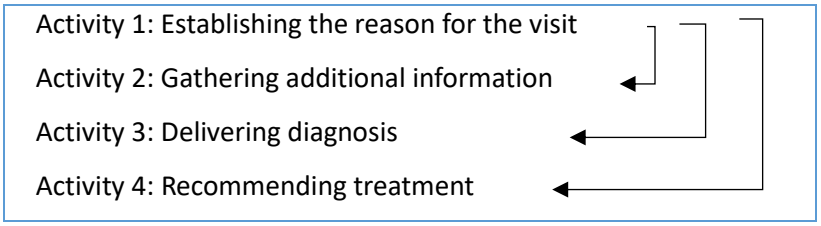

Figure 2.1 The structure of primary care consultation (Robinson, 2003)

This new model of the organization of primary care consultations proposed by Robinson advances research in two ways. Compared with the original staged model of Byrne and Long (1976), this model seems more interactional and applicable to analyse actual interactions. Robinson suggested that when the reason for the visit has been established, a routine sequence of medical activities becomes relevant till the end of treatment delivery. Such a process is referred to as the *project* of a consultation jointly managed by both parties (rather than shaped only by physician behaviour). What is more important, Robinson argued that the sequential constituents should be seen as accountable *activities* rather than linear stages. The model represents only 'normatively' ordered social actions – as sometimes patient and doctor may hold different agendas in which cases they may well break out of this model – activities may be wound back to the previously completed task, or intertwined with another task (Robinson, 2003, p.33).

The aspect of 'management of actions or activities' highlighted by Robinson's study (2003) is fundamental to CA's methodology: it symbolizes the breakthrough for recent CA investigations, moving away from focusing on sequential analysis (i.e. what are the recurrent patterns of sequence), to analyze actions or activities that these sequences have been deployed to accomplish. That is not to say that it is not important to analyze sequences; after all sequence has been regarded as the 'bedrock' of CA, the 'engine room' for interaction, and the 'primary means' through which ordinary social and institutional levels of identities are established and maintained (Heritage & Maynard, 2006; Lerner, 2004; Sacks, et al., 1974; Schegloff, 2007; Sidnell & Stivers, 2012). The levels at which investigators conduct analysis of medical interactions may better be understood to encompass 'action formation', 'sequential pattern', and 'turn design', with action formation taken as the priority. Such a reformed perspective is consistent with the levels of analysis summarized by Heritage and Maynard, which include 1) the overall structure of primary care visit 2) the sequence structures through which particular activities are realized; 3) the designs of individual turns that compose the sequences (Heritage & Maynard, 2006, p.13). It also reflects the key features for CA analysis emphasized by Drew,

et al. (2001): a) utterances are seen to be performing *social actions* (e.g. actions bounded up with broader activities of medical consultation); b) utterances / actions are connected in *sequence* of actions; c) those sequences tend to show stable patterns (Drew et al., 2001, p.59). This progress by more recent CA studies made the connection between the interactional conduct of doctor and patient, and certain trajectories of medical outcomes; in doing so, CA methods continue to show implications for medical research and practice, and to produce even more solid contributions to (primary care) medicine.

The collection edited by Heritage and Maynard (2006) offered a comprehensive vision of the breakthrough of recent CA research into primary care medicine. The chapters in the book are organized in line with the progressive phases of the consultation, as originally proposed by Byrne and Long (1976). The book started from the standpoint that social interactions are determined by the joint performance of 'self-other relations' (Goffman, 1955; Heritage & Maynard, 2006; Heritage & Raymond, 2005; Maynard & Zimmerman, 1984). Medical visits are 'co-constructive' interactional products managed by physicians and patients (Heritage & Maynard, 2006, p.19). The authors argued that it is vital to examine real-time interactional practices of both parties, and CA gets closer than any other methodology to capture precisely how real-time interaction works in consultations; and to identify communicative patterns and techniques of doctors and patients (Drew et al., 2001; Heritage & Maynard, 2006).

Problem presentation

To illustrate analysing interactional patterns in line with action formation (or activities), I will focus on opening sequences, in which patients give account for the reason(s) of the visit.

First, research suggests that the activity, or phase, of *problem presentation* is a crucial stage of medical consultations with its own interactional structure; both physicians and patients orient to the interactional contingencies 'in play' (Heritage & Maynard, 2006, p.18).

Through investigating US primary care acute consultations, Robinson and Heritage (2005) found that participants mutually orient to certain interactional norms which mark the completion of the problem presenting activity. After the presentation of 'current symptoms' (i.e. new symptoms presented as being experienced at the moment of the consultation), both physicians and patients treat the locus as being transition-relevant to proceed to the next stage

of gathering history information. The findings suggested that previous research (e.g. Beckman & Frankel, 1984; Lipkin, 1997; Marvel, et al., 1999) on doctors 'interrupting' patients appear to over-estimate the frequency of interruptions; their study found that patients generally completed their presentations unhindered (78%). That being said, they maintain that it is necessary to reduce the frequency (22%) of 'interrupted' problem presentation for patient satisfaction; and one solution would be for clinicians to employ more open-ended general-inquiry questions (a format which suits the normative requirement of problem presentation activity).

Doctors' questioning

Second, research suggests that physicians' questioning can shape patients' responses in the phase during which they present their concerns; and different design of questions may be understood and responded differently by patients.

Heritage and Robinson (2006a) found that there is association between the question formats of physicians' solicitations and patient satisfaction based on US primary care data. The evidence is that physicians' open-ended general inquiries are found to generate much longer accounts of concrete symptoms from patients (27.1 seconds), compared with cases of physicians' closed-ended confirmatory questions (12 seconds). It suggests that primary-care physicians should use more open-ended questions in soliciting presenting concerns.

Besides open-ended or closed-ended formats, Robinson (1999, 2006) identified subtler distinctions in how clinicians design soliciting questions: 1) *What can I do for you today?* -type questions inquire about new concerns; 2) *How are you feeling?* -type questions imply follow-up concerns; 3) *What's new?* -type questions index chronic-routine type of visits. The format should be 'appropriately fitted to' the reasons why patients are visiting physicians (Robinson, 2006, p.45). If the question is heard to be ill-fitted, patient can hold the physician accountable by correcting its presupposition. Robinson (2006) suggested that the appropriateness and accountability of physicians' questions are important, as they can shape the ensuing communication and aspects of health outcomes (e.g. patient adherence).

Patients' descriptions

Third, research suggests that primary-care patients tend to have more balanced control

in terms of content and direction of the talk by 'extended narratives' of problem presentation; and physicians might be trained to provide sufficient structural opportunities for patients to present the concerns, instead of rushing into history taking (Robinson & Heritage, 2005).

The problem presentation is the primary interactional space in primary-care consultations, which represents the institutionally designed or ratified opportunity for patients to describe the agenda in their own terms (Heritage & Clayman, 2010; Heritage & Robinson, 2006b). Heritage and Robinson (2006b) was the first sociological research to use CA to investigate the presentation practices of patients, with video-recorded acute-visit data collected from US outpatient of family and internal medicine. They observed three types of medical problems in primary care consultations, including, *routine problems*, *recurrent problems* (with these two also referred to as *known problems*), and *unknown problems*. At the beginning of the visit, patients face the tension between their own and physicians' versions of judgement (Bloor & Horobin, 1975), and the task of establishing their concerns as 'doctorable' (i.e. worthy of medical attention, worthy of assessment as a medical condition, worthy of medical treatment when necessary; also see Heritage & Robinson, 2006b, p.58). If the physician does not acknowledge the patient's concerns as doctorable, the patient's 'sick role' (Freidson, 1970b; Parsons, 1951, 1975) and the grounds for seeking medical care can be endangered; consequently, in these cases no medical treatment will be warranted. Moreover, the authors identified three essential practices of patients use to justify the visit, i.e. offering a candidate diagnosis, invoking third parties, and trouble resistance (the practices will be exemplified in the next section).

Stivers (2002a) made similar observations about US parent-physician paediatric acute-visit interactions. Her study identified two recurrent practices of parents' descriptions for presenting a problem; and these alternative practices can communicate different actions and have different influence on physicians' disposition. 'Symptom only' presentation embodies a position for seeking physicians' assessment of their children; whereas 'candidate diagnosis' presentation embodies a stance to seek confirmation of diagnosis treatment for a particular condition. Stivers found that the parents' extended narratives that included a candidate diagnosis can exert indirect pressure on physicians, pushing for antibiotic prescription as the desired treatment.

6. The development of CA research into medicine: doctorability

We have seen some of the early sociological research talked about physician authority followed from the dominance of their professional and specialist knowledge (e.g. Freidson, 1970b; Parsons, 1951; Sharrock, 1979); some examined the bureaucratic routine of medical interviews (e.g. Byrne & Long, 1976; Bloor, 1976; Strong, 1979); and some concentrated on questioning and answering behaviours of doctor and patient in medical interviews (e.g. Beckman & Frankel, 1984; Frankel, 1983, 1995). Compared with the nuanced CA approach, most of these early investigations did not explore doctor-patient interaction in as systematic and moment-by-moment way as CA does. They tend to approach data from *why* rather than *how*; whilst, the *how* question is more important for uncovering communicative features, especially for CA approach (e.g. *how* is medical authority exercised, and *how* patients orient to medical authority in real interaction).

Recent CA studies have observed that all consultation activities are suffused with the exercise of medical authority; patients' orientation of physicians' authority may start as early as making up one's mind to visit a doctor, up until diagnosis and treatment if the symptoms are medically significant (Heritage, 2005; Heritage & Clayman, 2010). During problem presentation, patients face the dilemma to describe concerns / symptoms in a way for the best result of getting their desired treatment. Meanwhile, they have to consider the risk that examination may find their problem 'not doctorable', i.e. they have no legitimate grounds for having come to see the physician. Accordingly, patients' talk is constantly balanced between sufficiently caring for one's physical state (the legitimacy of the concerns), and not appearing to be over-reacting (often by 'normalizing' actions). An orientation to 'doctorability' seems particularly relevant for the problem presentation phase (e.g. Heritage & Clayman, 2010; Heritage & Robinson, 2006b). The theme of doctorability is central to the contemporary vision of medical authority.

As observed by Heritage and Robinson (2006b), patients tend to give extended accounts of symptom discovery in recurrent style, particularly concerning 'unknown problems' (the kind of problems that are not as clear-cut as routine or recurrent problems; for which patients feel they may be of questionable legitimacy). In what follows of this section, I shall focus on the characteristic practices for patients justifying their visit to the doctor, during problem presentation of acute-visit encounters.

Unmotivated noticing

First, patients' descriptions of symptoms are not, to begin with, overdramatic, as over-acting may have connotations of imagining the problem. Halkowski (2006) identified two similar patterns of normalizing practices in patients' narration of 'realizing the illness', to display their problems as of 'doctor-relevance'. Patients sometimes report with 'At first I thought X' sequences (Jefferson, 1988; Wooffitt, 1992). For instance, the problem presentation starts with *At first I thought it was some uhh cramps...*, followed up with more serious hypothesis depiction, 'This is something else' (Halkowski, 2006, p.96). In other times, patients frame their account with unmotivated noticing sequence – for example, the patients' course of actions for realizing the illness is presented as *the initial noticing* at the first in a sequence of *more intrusive noticing* ('I noticed I would have this pressured feeling in the bottom of my stomach… it did that one day and then it didn't do it'; contrasted with 'The next thing I noticed… I'm spotting blood').

Through these two patterns, rather than providing dramatic explanations straightaway, patients first presented their symptoms from an ordinary or normalizing perspective. Then, patients followed that up with an account of the sudden escalation of symptoms, shifting to an upgraded version of problem presentation. This balancing practice (*normalizing* then *upgrading* problem description) successfully projects the accountability and rationality of the patients in seeking professional medical care.

Symptom description

Rather than beginning with their worst fears, patients tend to show how their more benign hypotheses did not work out prior to seeking professional assistance. It is frequently observed that patients combine the description of trouble-resistant efforts with their symptom presentations. This is often displayed as two trajectories: a) patients talk about self-medication, and the temporality of the symptoms; b) patients talk about the factual significance, such as the symptoms abnormality, and prior history. Both aspects are glossed as the projection of 'trouble resistance' (Jefferson, 1988), 'stoicism' (Maynard, 2003) or the normalizing attempts from the patient.

First, Heritage and Robinson's study (2006b, p.79) offered us a clear case for the escalation of symptoms. For instance, in an acute visit encounter (the 'ringworm' case), the patient presented

self-medication ('calamine lotion') for a persistent sensation caused by an insect bite; however, turning to highlight the escalated symptom – *it's like bigger than half a dollar. I bet it's like (bigger than half a dollar).* The interplay of self-medication and the persistence of symptoms indicated that she has already tried over-the-counter methods before finally deciding to seek professional help; thereby, projecting the atypicality of her symptom and building the grounds for her decision to see the doctor.

Second, the 'atypical migraine' case in Heritage and Robinson's study (2006b, p.77) exemplifies the use of 'prior history' in patients' presenting problems. An atypical case is clearly established through, first, the talk about duration (*I been having some headaches since Sunday*), and occurrence ('off and on for the last four days'). By depicting the history of the symptom, the patient implies that she did not visit the physician impulsively; instead she waited and observed until the symptom (the level of its atypicality) became diagnostically legitimate to seek professional care.

Third party noticing

Heritage and Robinson (2006b) observed that patients frequently mention a third party in presenting their concerns for the visit, thereby portraying the decision to visit the physician as a shared responsibility with another person, which may raise the legitimacy of the patient's problem; at the same time, this practice attenuates the patient's agency if the physician considers her case as not warranting medical attention (Gill & Robers, 2012; Heritage & Robinson, 2006b). Consider a problem presentation (extracted from the 'questionable lesion' case) from Heritage and Robinson's study (2006b, p.59). The patient found a potentially problematic symptom of a 'mole' on her back. The way she presented this matter is to invoke her husband as the person who noticed it, *I asked my husband yesterday. And he thought I better let you know*, in effect claiming for the credibility of this concern.

This feature of referring to third parties during presenting problems has also been observed in the opening of after-hours calls to British GP (Drew, 2006, p.434). In the 'mumps' case, the caller (i.e. the wife) invoked the third party's talk (*my husband said ta phone ya because I'bi-hh 'cause I se-if I give'er Calpo:l*), serving to frame the action of ringing the GP as decided by both the husband and herself.

Patients' self-diagnoses

Diagnosis is commonly believed to be the task of the doctors who in a sense 'own' the proper medical expertise; patients may seem inhibited from voicing their own theories. Heritage & Robinson (2006b) observed that for visits where patients complain about recurrent problems, this inhibition may be overridden by consideration of doctorability: patients may propose their own judgement of the possible condition, and cite previous experience as justification for such candidate diagnosis. Thus, the device of including a candidate diagnosis in problem presentation is taken as the 'trump card' for claiming doctorability and warranting the desired treatment (Heritage & Robinson, 2006b, p.68; Stivers, 2002a; Robinson, 2003).

In an 'ear pain' case (Heritage & Robinson, 2006b, p.62), besides the description of the symptom, the patient cautiously ventured her hunch about feeling a possible condition (*So I figured maybe I had the ear infection*). In the 'kidney infection' case (Heritage & Robinson, 2006b, p.91), in response to the physician's opening question, the patient provides a candidate diagnosis straight away (*I (.) j's think I have a kidney infection*), and subsequently marked out that it has been a 'repeated problem' for her ('e-= See I get them all thuh t:ime…'). The design of such a diagnostic account is often cautiously managed and indirectly communicated. Through presenting candidate diagnosis right at the beginning of medical visits, patients raise the bar of their problem in terms of the docotorability and even treatability concerns (Stivers, 2002a; Stivers, et al., 2003).

Thus, the matter of doctorability (i.e. the consideration of whether the presented concerns are treated as medically significant) makes relevant the progression to next medical activities. Heritage and Clayman (2010) pointed out that the concern about doctorability is not confined to the opening stage; that is to say, the whole consultation can be suffused with interactions whether the case is medically significant or relevant. In effect, the matter of 'treatability' (a similar form of doctorability) appears to be rather significant for primary care doctor-patient interactions, regarding whether a presented problem should be managed as treatable for medical intervention, and what form of medical intervention (i.e. from mild form like lifestyle advice to invasive form like surgery) would be suitable for the patient's case.

Treatability and lifestyle advice

Three key studies (Connabeer, 2017; Heritage & Sefi, 1992; Sorjonen, et al., 2006) on

advice-giving behaviour of medical professionals are included here to exemplify the theme of 'treatability'. Treatability involves problem management on the level of an interplay among three important elements – the way a problem is treated by the professional, the way the problem is represented by the patient, and claiming authority based on knowledge/experience of the professional or of the patient.

Heritage and Sefi (1992) investigated the behaviour of initiating and receiving advice in the interactions between health visitors (HVs) and first-time mothers; they made the observation that requesting and giving advice during initial healthcare visits can be rather difficult or problematic. The subject of baby care is oriented to as an object of evaluation (i.e. whether the mother displays sufficient competence in looking after the baby). They identified the *trouble elicitation* sequence, that is, a sequence which is designed to elicit a problem that the mother may have regarding the healthcare of the baby (e.g. *He is enjoying that, isn't he?* to elicit the information whether the baby is fed enough). If the mother's answer shows some kind of trouble, the HV can deliver the advice as a way of resolving the problem. However, if the sequence does not elicit a problem statement, then the HV's advice would tend to be met with a certain amount of resistance on the part of the mother (e.g. unmarked acknowledgement, or competence assertions). They further observed that in the majority of cases there seems a collision of claims of authority. The key reasons are: 1) advice is given without evidence of a problem; 2) advice is not fitted to the health needs of mothers. For these cases, they suggested that HVs tend to act on a presumption of systematic doubt about mothers' competence (p. 413). HVs' advising could be more productive if more efforts are made to accommodate advice to mothers' responses.

Establishing or indicating a 'problem' by symptom presentations, or by requests for doctors' advice, to project doctorability, is moreover reported in Finnish primary care interactions (Sorjonen, et al., 2006). They identified two environments for lifestyle discussion; and found that participants tend to align with each other for a judgement on lifestyle matters. In the cases where the patient gives non-problematic answers, although the physician may pursue further answers, the physician seldom evaluates and only gives neutral acknowledgements. In the cases where the physician provides a problematic formulation (by announcing examination findings as significant) before asking lifestyle question, the patient's answer would display an explicit orientation to the problem. They also find that without a prior indication of a medical problem, the lifestyle advice alone can convert the patients' lifestyle that has been treated as a non-

problematic one to a problematic one. These findings on how medical history is collected have two implications: a) physicians should respect the credibility in patients' answers, and only offer advice when patients depict his or her habits as problematic; b) physicians' question asked subsequent to a formulation of a medical problem are hearably more 'serious' than questions asked as a part of history-taking.

A more recent study by Connabeer (2017) focuses on the practice of advice-giving of British GPs, particularly the pattern of advice-tailoring. Although the advice talk is often distal from the patient's problem presentation, the physician's advice and tailoring talk exhibit an orientation to the presented problem. Her investigation identified three types of tailoring talk: pre-advice tailoring; post-advice tailoring; pre- and post- advice tailoring. For pre-advice tailoring, the tailoring segment is in more close and direct connection to the presented problem of patient. For post-advice tailoring, it is often triggered by an emerging or triggered medical problem, one which was not initially presented as the reason for the visit. Physicians employ post-advice tailoring in a way to pre-empt potential patient resistance, in doing so facilitating patient adherence. Her study has uncovered the pattern by which physicians recurrently tailor, fit or accommodate their advice to the problem that the patient shows, either built on the initial problem presentation, or built on the incipient problem that emerges during the consultation. Advice-tailoring pattern thereby is an effective practice for enacting processes of 'patient-centredness' in primary healthcare.

Treatability in interactions with MUS patients

The theme of doctorability, in terms of 'treatability', has been reported in several studies of interactions between doctors and patients with medically unexplained symptoms (MUS patients). After reviewing a series of studies on the interactions between GPs and MUS patients, Salmon (2000) considered 'the empowered patient' as an important factor in treatment decision-making. Patients' own sensory experience and knowledge of symptoms contribute to their perceived authority over doctors. This can be displayed in their 'catastrophising' accounts of symptoms, which exerts pressure on doctors to provide their desired treatment. Salmon's study suggested that treatment plans may go beyond physical intervention, to include convincing medical explanations, followed up with emotional support and reassurance; and a new model of medical communication is needed to explain the decision-making in consultations with MUS patients. Furthermore, Salmon, et al. (2007) coded the interactions

between GPs and MUS patients, to investigate the connection between patients' psychosocial talk (of how symptoms are depicted) and physicians' decision regarding medical intervention. Specifically, patients' contributions were coded according to two classes: 1) patients' description of symptoms in the attempt to push for treatment; 2) patients' further pursuit of symptom depiction in the attempt to engage their doctors – with the latter more likely to recruit somatic responses from the physicians (i.e. prescription, referral or tests).

Compared with the previous two studies, Ariss (2009) conducted a more micro study of the UK primary care interactions between physicians and frequently attending (or MUS) patients. His observations on the interactional features first highlighted the feature of how patients' talk exerts pressure on physicians for a desired outcome. Moreover, the study identified the different responses from physicians – including, agreeing with patients, elaborating on the topic, not engaging with the topic, to simply disagreeing with patients. The findings offered empirical evidence of the asymmetry in doctor-patient interactions, especially asymmetric claims to epistemic authority – doctors exhibit a more active role in determining the trajectory of the interaction, especially in situations of misaligning exchanges and sudden topic changes. Ariss's study highlighted that doctorability, in terms of whether the presented problem is treatable, and how the presented problem should be treated, is collaboratively achieved in these consultations.

7. The development of CA research into medicine: turn design

As reviewed earlier, due to the redirection to focus on analysing how actions and activities of the consultation are managed, recent studies (i.e. since the 2000s) have witnessed a revival in using CA to study primary care communication. There is by now considerable evidence for the connection between the communicative behaviour of physician and patient, and its medical significance (e.g. the outcome of the consultation; patient adherence; patient satisfaction). CA investigations uncover how the recurrent interactional features or patterns emerge and become recognizable practices, based on naturally-occurring doctor-patient interactions (Gill & Roberts, 2012). Derived from CA's analysis of ordinary interactions, CA investigations into medical interactions encompass three key elements:

- *Action* – CA studies believe that language delivers action. The analysis should start from focusing on a particular action (e.g. announcing a diagnosis, recommending a treatment);
- *Turn design* – to investigate how the turn at talk is designed to deliver that action (i.e. the

format of the turn);

- *Sequence* – to examine how the action is managed sequentially (i.e. sequential consequences following from a design 'format'), through the response of the other (e.g. how patient responds to the different formats of treatment decision).

For these concepts underlying CA medical investigations, *action focus* is the initial and overriding consideration (Drew & Heritage, 1992). Moreover, *turn design* lies at the heart of the constellation of all three key concepts; analysing turn design involves the selection of an action and how that action is constructed with language (ibid.).

Heath (1992) was the first researcher to analyse the different designs of diagnosis delivery in British primary care interactions. For example, diagnostic turns constructed with question format; with tentativeness (e.g. 'It's not a totally typical story of a wear and tear arthritis, but I think…'); and with *In fact* / *Actually* prefix. Heath found that these formats of medical assessment could invite patients' reply; thus, having the potentiality to involve patients more actively during the diagnostic process.

The point that different designs of diagnostic delivery affect a patient's reception has also been observed in Peräkylä (1998). Based on video-data of Finnish primary care, his study identified three formats of how physicians deliver diagnostic news: 1) *plain assertion,* directly announcing the condition (e.g. 'That's already proper bronchitis.'; Peräkylä, 1998, p.305) 2) *evidential verb constructions*, incorporating inexplicit evidence (e.g. 'Now there appears to be infection at the contact point of the joint.'; Peräkylä, 1998, p.305) 3) *descriptions* of explicit evidence, of what has been seen, felt or heard during physical examination (e.g. 'The pulse can be felt in your foot. So there is no, in any case, no real circulation problem.'; Peräkylä, 1998, p.306). These features suggest that the physicians do not claim absolute authority – the complexity of diagnostic statements arises from the physicians' balancing act between authority and accountability. Peräkylä's subsequent study (2002) found that the diagnostic statements formulated with evidential basis are more likely to invoke extended responses from patients than those without evidence being explicated.

The research on the opening of primary care consultation (Heritage & Robinson, 2006a; Robinson & Heritage, 2006) found an association between physicians' questioning formats and patient satisfaction. As discussed in section 4 (on doctors' questioning), Heritage and Robinson

(2006a) found that compared with close form enquiries (e.g. *It's in your left leg that's bothering ya?*), open form enquiries (e.g. *So what can I do for you today*) offer patients the opportunity to describe their symptoms in their own terms, assisting 'full disclosure'. Patients' presenting concerns are more extended and complete when responding to open form enquiries. Robinson and Heritage (2006) confirmed the observation that physicians' opening questions that are open-ended formats help to invite patients' problem and increase patient satisfaction; though the relationship is an indirect one (i.e. patient satisfaction may be affected by other factors, for example, treatment decisions).

It is common that patients may present multiple concerns in the consultation, yet some of their concerns cannot always be fully addressed during visits. The interactional consequence of physicians' question formats at the end of a consultation was investigated by two studies (Heritage & Robinson, 2011; Heritage, et al., 2007). The researchers of these two studies designed a quasi-experimental study to see if there is association between *how* doctors ask questions and the expression of patients' additional concerns. Twenty family physicians (US primary care visits) were randomly assigned to ask one of the two question formats, after the problem presentation of a chief concern: a) *Anything else* format (e.g. Is there anything else you'd like to address in the visit today?); b) *Something else* format (e.g. Is there something else you'd like to address in the visit today?). These formats are different in terms of valences: *something else* questions tend to favour a yes-response, and therefore encourage patients' presentations of additional concerns. The pre-visit and post-visit surveys showed that the implemented *Something else* format significantly reduced the incidence of unmet concerns (78%) and did not obviously affect visit time.

Taking into consideration what has been found regarding doctors' questioning in primary care, Thompson, et al. (2016) examined 134 psychiatrist-patient consultations and found that the differentiation of open- and closed- format questions could not apply to the questioning practices of psychiatrists. Using the coding method, they identified the four candidate questioning formats in psychiatry ('wh-' questions, declarative questions, yes/no interrogative and tag questions). Declarative questions, particularly formulated with the *'so-' prefix*, could closely attend to patient experience (Waitzkin, 1991) and building mutual understanding. Although the application of 'wh-' general enquiries is very much encouraged in primary care interactions (e.g. Heritage, 2010; Robinson 2006; Robinson & Heritage, 2006), they found in psychiatry interactions, that the 'wh-' questions – presupposing less understanding and inviting

an extended response – were associated with poorer patient alliance. The 'so-' prefixed questions display understanding, empathy and active listening, therefore are considered a more effective question design for improving psychiatrist-patient relationship and patient alliance (ibid., p.7). The study additionally implies that the investigation of medical questioning is not yet exhausted; more studies should be done of questioning practices in different medical settings.

The trend to analyze the variations of a particular turn design and its consequences is vividly reflected in the latest study on 'treatment recommendation' by Stivers et al. (2017). Starting from the position that different designs realize different actions, their investigation aims to explore how physicians formulate the recommendation for medication, as well as, whether and how patients respond. The data consist of two large sets of UK and US primary care interactions. Five action types and the respective formats have been identified; including *pronouncements*, *proposals*, *suggestions*, *offers*, and *assertions.* These features are closely related to the expression of medical authority – for instance, the *pronouncement*-format (e.g. 'I'm gonna start you on X.') presents direct expressions of authority; whereas, the *proposal*-format (e.g. 'Shall we start with X and see how it goes?') implies a reduction of medical authority. Stivers et al. found that American physicians tend to use the more assertive format (*pronouncements*), whilst British physicians are more likely to use the less authoritative formats (*proposals*, *offers,* and *assertions*) to deliver treatment.

8. The development of CA research into medicine: patient participation

Recent research documented a much more 'active' role for patients than previously acknowledged, and medical activities are collaboratively managed by both parties (Drew, 2001; Robinson, 2003). I turn now to review the trend towards exploring *patient participation* in the consultation. Some of the research emphasizes the various means whereby the patients' talk helps to shape the progression and outcome of the consultations; others focused more directly the physicians' design of talk to inform and advise, yet also orient to and accommodate the priorities raised by the patients.

Patient-initiated actions

As reviewed in the last section, the lack of patient responses to diagnoses is related to the design of diagnostic utterances. However, recent studies have identified the particular

environments in which patients do respond more extensively other than showing silence and minimal acknowledgements to the physicians' diagnoses. The particular environments are 1) when there is an incongruence between the physician's diagnosis and what has been expressed or implied by the patient; 2) when the legitimacy of the patient's concerns is undermined; 3) when the diagnosis exhibits obvious 'uncertainty' (Gill, 1998; Heath, 1992; Peräkylä, 1998, 2002; Stivers, 2000).

Stivers and Heritage (2001) drew on the propositions made by early studies that patients tend to answer doctors' questions minimally during comprehensive history-taking, given the restrictive design of 'checklist' exchanges (e.g. Fisher & Todd, 1983; Mishler, 1984; West, 1984). Through a case study of a US primary care doctor-patient consultation, Stivers and Heritage (2001) uncovered the ways that patients are likely to expand their answers in history-taking – by addressing difficulties in responding, by adding supporting details, by pre-emptive telling against possible negative inferences, or by displaying narrative departure. Rather than answer exclusively to what the doctor asked, the patient treated history-taking answers as a resource for bringing in her own objectives, for instance, to talk about life circumstances, or to indicate what is on her mind. The implication is that doctors may choose between attending or disattending the issues raised or suggested by patients' narratives; doctors might consider the underlying significance of the 'narrative expansions' to learn more about the patient and to ultimately facilitate clinical care.

The interactional structure of consultation activities (see figure 2.1 in section 5) has also provided an explanation for low patient participation, particularly during diagnosis. It involves more project-based pressure in the activity of diagnosis against patient-initiated actions; after the physician delivers a diagnosis, it becomes relevant to progress to the next stage of treatment (Robinson, 2003, p.51). It is around the possible completion of the consultation, that is, the possible completion of treatment, that patients are more likely to initiate talk about their unresolved concerns (ibid., p.52). Compared with the diagnosis phase, treatment recommendations overwhelmingly require endorsement and acceptance from patients; patients have more available communicative resources to raise an issue towards the physicians' recommendation (Heritage & Clayman, 2010; Robinson, 2003; Stivers, 2000, 2002a, 2002b).

Physicians' orientations to patients' agendas

The first important impetus in researching the doctors' management of patients' agenda was the 'online commentary' project, on American primary care interactions, in the 1990s. The project first originated from the 'prediagnostic commentary' study. Stivers (1998) observed that in veterinary consultations, diagnosis and treatment are not necessarily delivered in order; but presented in conjunction as negotiable options. A distinctive diagnostic practice is identified, occurring before the delivery of the formal diagnosis, in which the veterinarian describes what she / he has seen or felt, anticipated or speculated about during the examination – which Stivers named as 'prediagnostic commentary'. It is found that the use of prediagnostic commentary helps forecast to clients the diagnosis (also see Maynard, 1996), and in doing so, to allow negotiation for treatment options.

Through examining paediatric and adult primary care consultations, Heritage and Stivers (1999) termed the physicians' communicative practice *online commentary* – the contemporaneous remarks of the sensory evidence about the physical examination findings. They found that patients exert pressure for prescriptions as early as presenting their problem. Physicians perceive patients as expecting antibiotics, and prescribe against their better judgment (Mangione-Simith, et al. 2003). Online commentary is an important device to reduce patient resistance for non-antibiotic treatment, because of three features: a) online commentary is given simultaneously with the on-going medical examination, during which it is hard for patients to make any inference; b) the description of absence of signs, or of insignificant signs forecasts a non-serious or 'no problem' case; c) it falls into the physician's authority and rarely requires patient acknowledgement (Heritage & Stivers, 1999, pp.1503-1504). No-problem online commentary is found to be an effective communicative technique to reduce unnecessary antibiotic prescription (Heritage et al., 2010; Heritage & Stivers, 1999; Mangione-Simith, et al., 2003). Meanwhile, doctors may acknowledge the legitimacy of patients' concerns that they are reasonable to seek professional help, even though their concerns turn out to be unfounded (Heritage & Stivers, 1999).

Patient misalignment

Prior research (e.g. Fisher & Todd, 1983; Mishler, 1984; Roter & Hall, 1992) pointed to an important feature of doctor-patient interactions, which is, the patient's 'voice' on life-world concerns may be overwhelmed by the doctor's 'voice' of medicine. Failure to attend to

the patients' perspectives may undermine the effectiveness of shared decision-making in the consultations. The trend of patient-centred healthcare techniques emerged as a reaction to the earlier research which is predominantly doctor-centred (Drew, 2013). The studies reviewed next represent a recent adjustment to examine the role of patients – including the ways patients participate, how they are involved in the medical decision-making process, reflecting the more 'genuinely interactive' approach, than early studies (Drew, 2001).

Drew (2006) identified the communicative patterns displayed in diagnostic questioning, of after-hour calls to a British GP, including: 1) callers pursue dramatic symptom descriptions; 2) callers and doctors display different sense of symptom severity; 3) callers and doctors display different assessment of the potential illness (Drew, 2006, pp.424 – 425). Drew observed that the symptoms which are treated by callers as abnormal and hence alarming are quite likely to be considered by the doctor as normal signs indicating a non-significant condition. In this sense, these patterns are the key evidence for misalignment between callers' perception and physicians' perception about the 'urgency' of the patient's condition. It is clear in the data of this study that callers called with the objective to request for home visits; in response, the physician may not align with the caller's request to visit promptly – instead, embarking on diagnostic questioning, and in most cases offering only advice about treatment by the carer. These misaligning patterns, Drew argued, are not to be regarded as forms of conflicts or dissatisfaction. Instead, they are the manifestation of diverging lay and professional assessments, on abnormality or seriousness of the patient's symptoms.

As revealed in recent CA research, patients employ various communicative strategies in attempts to convey their theories and concerns, which are often observed in contradiction with physicians' emerging diagnosis and treatment position. This suggests that differences between their own and doctors' perspectives are indeed recognized by and salient to patients. Studies found that patients may treat their initiatives as 'delicate' – not exactly in terms of morality, but insofar that their language exhibits a certain level of implicitness and cautiousness, that does not overtly challenge the doctors' authority (Drew, 2001).

The subtlety of patients' initiatives is manifest in the implicit and careful manner primary care patients make requests for certain medical interventions, for instance, asking for tests, or for the renewal of prescription; the phenomenon is well captured in the title of the study by Gill, et al. (2001), 'accomplishing a request without making one'. Through a case study of the

interaction between a primary care patient and her physician, Gill, et al. (2001) documented the interactional dynamics involved in making and responding to medical requests for a HIV test. Throughout the consultation, the patient made no explicit requests for a test; instead she first portrayed her questions and concerns with a series of reports (invoking 'her children' as the third party who are concerned); then volunteered an unknown new symptom, so as to upgrade the doctorability of her concerns, and to build a case for a 'medically actionable' matter (ibid., p.75). We also see that the physician at first undercuts the legitimacy of the patient's concern, later granting a test in order to reassure the patient. Robinson (2001) examined two cases of primary care physician-patient interactions, focusing on how patients ask for renewal of a certain prescription (potentially addictive drugs). Similarly, the action involves no explicit request; instead it is delivered as 'reports' (e.g. 'there was some *discussion* about …'; indexing a controversy and implicating request for 'resolution'), and further extended accounts (e.g. defending against potential over-use; claiming deference to the doctor's emerging disposition). Robinson concluded that medical requests are frequently interactionally extended and complex, which could contribute to the understanding of asymmetry of initiatives in primary care encounters.

The delicateness of patient's initiative talk has also manifested in the misaligning exchanges regarding diagnostic assessments in the consultation. Based on the observations of diagnostic talk in primary and secondary care, Drew (2013) found that patients frequently voice their concerns, after or during the doctor's diagnosis delivery, when the patient's perspective is significantly different from the doctor's. Three interactional patterns of doctor-patient misalignment regarding diagnostic decisions have been identified. First, in follow-up checks of ENT oncology clinics, patients may volunteer incongruent information which indirectly questions the doctors' explanation. The second pattern drew on the doctors' design of diagnostic formats and patients' response (Peräkylä, 1998, 2002). In primary care consultations, doctors employ overwhelming 'plain assertions' to announce diagnosis, in which circumstances patients do not reply or respond only minimally (such as 'mm'). However, when physicians explicate the grounds for their conclusion, patients tend to reply at length. Sometimes, patients explain why they agree with the physician; in many other cases, giving more details about their symptoms, or through other means overtly resisting the diagnosis. Resistance can cause the physicians to reopen (verbal) examination, to readdress the unsettled concerns. Last, in ENT oncology interactions, when doctors outline a no-problem or an assessment that the concern is not (medically) significant (or 'optimistic projections'; see Drew, 2013, p.304), patients would

initiate new concerns, resisting the optimistic prospect conveyed through the doctors' diagnosis. This study highlights the importance of taking patients' symptomatic and other concerns into account during the course of reaching diagnostic decisions.

Patient resistance

Studies have found that treatment recommendation is the phase during which patient resistance frequently occurs. Stivers (2007) observed that physicians seldom respond to patients' resistance to diagnosis. In order to get a response from the physician, patients may push against a physician's judgement more explicitly through questioning resources (e.g. news-marks, questioning about symptoms, questioning about the diagnosis itself). Whereas for treatment decisions, physicians are inclined to show responsiveness to patients' resisting response, and to seek patients' acceptance before moving onto the next stage (Heritage & Clayman, 2010). The studies discussed next illustrate the theme of how patients resist treatment recommendation and how this affects physicians' course of action, treatment decision in particular.

Based on US paediatric primary care consultations, Stivers (2002a) investigated two practices of patient presenting concerns (i.e. symptom-only; candidate diagnosis), and the consequence on the treatment outcome. In circumstances that parents frame their problem presentation with what they think could be wrong (either implicitly or explicitly), physicians respond by addressing the accuracy of diagnosis, or emphasizing the appropriateness of using antibiotics, or both. There is statistical evidence (see Stivers, et al., 2003) that physicians perceive the patients' action of suggesting candidate diagnosis as pushing for antibiotic treatment.

Stivers (2002b) further studied how antibiotic treatment decisions are negotiated between physician and parent, identifying the four ways in which parents advocate for antibiotics in the consultation, including *direct requests* for antibiotics, *statements of desire* for antibiotics, *inquiries* for antibiotics and *mentioning past experience* of taking antibiotics. Stivers noted that these formulations vary in directness, and parents tend to employ indirect designs to seek antibiotics. She also noted that all these formulations raise antibiotics as the issue for discussion, and overtly convey parents' positions of seeking antibiotic medication. Stivers found the cases in which physicians altered the initial plan, to prescribe antibiotics sometimes against their better judgement. The findings suggested that during the treatment stage, parents may apply

communicative pressure for antibiotic prescription, and the pressure can affect the physicians' treatment decisions. The implication is that doctors should encourage patient participation increasing patient satisfaction, whilst not giving in to pressure to inappropriately prescribe – which Stivers phrased as, the 'balance' in physicians' treatment decision (Stivers, 2002b, p.1112).

Stivers (2005a) proposed that patient resistance to a physician's recommendation should be understood as patients' communicative resource to initiate negotiation about the treatment plan. Differing from the proposition that patients show passivity and have to be invited to participate in primary care interactions (Braddock, et al., 1999; Elwyn, et al., 1999; Tuckett, et al., 1985), Stivers (2005a) holds that patients do impact treatment decision-making. Not only does patients' talk display various types of responses to treatment recommendations, but also when there is absence of an endorsement, physicians do pursue patient acceptance. Stivers has also shown that in response to patient resistance, physicians may retreat to previous activities (for instance, re-examining the patient or restating the diagnosis); and in other cases, may offer concessions and adjustment to the initial decision.

Focusing on the practice of non-antibiotic treatment recommendation, Stivers (2005b) identified two delivery formats that physicians frequently use in acute care paediatric encounters. Recommendations *for* particular treatment (i.e. affirmatively formatted) are found to be less likely to invoke patient resistance. Recommendations *against* particular treatment (i.e. negatively formatted, rejection to antibiotics) are found to be more likely to engender disaffiliation. She shows that patient resistance to the physician's initial recommendation can cause physicians to alter the agreed treatment plan, to retreat to previous activities (e.g. to re-conduct verbal / physical examination), or to suggest future plan (e.g. 'Watch and see.'). Based on the analysis of the two delivery formats and the effect on patients' responses, the study proposed that when recommending a non-antibiotic medication, physician may first offer a *specific positively* formatted recommendation, and follow that up with recommendation *against* antibiotics and the corresponding justification. Stivers argued that such a design will help to warrant parents' acceptance and minimize resistance, insofar as showing responsiveness to parents' concerns, meanwhile educating parents about the grounds for excluding antibiotic treatment.

9. Conclusion

In this chapter, I have highlighted some of the key themes in the sociological literature, principally in the period from the 1960s to the 2010s, which focused on practitioner-patient communication and the relationship between doctors and patients. I have considered the major themes informing more recent interactional research, particularly research from a CA perspective that focused on primary care interactions up to about 2006, after which CA research broadened from primary care to include physician-patient communication in other medical settings. The themes reviewed in this chapter include: 1) medical authority (or doctorability); 2) patient participation (in forms of patient-initiated actions, patient misalignment and such like); 3) the overriding analytic approach to focus on medical actions / activities; 4) the connection between turn design and health delivery outcomes. These themes in CA research are highly significant for my own research project, which is to investigate how primary care is actually conducted in ordinary Chinese public hospitals through physician-patient communication in naturally occurring consultations.

What I have reviewed has covered the key works on medical communication. There is other work of CA and medical research, particularly studies combining CA and formal coding (e.g. Stivers, 2015; Stivers, et al., 2003; Stivers, et al., 2018; Stivers & Majid, 2007), and studies of quantification for implementing CA results (e.g. Heritage, et al., 2007), which is becoming an increasingly prominent research strand. In this review chapter, I have not included research of quantification of medical interactions, as my analysis does not involve quantification.

In this review, I have sketched some of the early work in medical interaction, looking at the traditional sociological research between the 1960s and the 1990s – which took a rather paternalistic view of doctor-patient relationship, and are mainly concerned with medical authority in consultation. Since the 1990s, research on medical communication has become more patient-centred, and concerns with the interactive roles of both the doctor and patient. The traditional view of different consultation stages (Byrne & Long, 1976) appears rather rigid for analyzing natural interactions. A more nuanced view of the management of actions / activities (that the staged sequences are deployed to accomplish) has significantly reoriented recent CA and medical research. This nuanced approach is effective in connecting communicative patterns (i.e. recurrent interactional features of how activities are achieved) to healthcare outcomes.

Chapter 3 – Data and methods

1. Introduction

In this chapter, I will mainly discuss the research process of the fieldwork that is conducted in a Chinese hospital for this research. There are four principal parts 1) research design 2) data collection 3) ethics considerations and 4) analysis and transcription methods.

In the first part, I will outline the design of this research, specifically where my data were collected, the types of participants, and how these video recordings were collected. In the second section, I will explain what the data corpora consist of and the procedures for managing a relatively large corpus. In the third section, I will discuss how some of the ethics concerns were managed during my fieldwork, and the specific procedures employed for gaining ethical clearance. In the fourth section, I will explicate some considerations and decisions involved in the transcribing and initial analyzing processes, especially on how I used Jefferson's CA conventions to transcribe Mandarin Chinese data.

The aim of this chapter is to provide the reader with a clear understanding of the nature of my fieldwork, and the transcription and analysis processes involved in understanding the interactions of Chinese primary care consultation.

2. Research design

The significance of large urban hospitals & the research site

My fieldwork was conducted in two Chinese mainland public urban hospitals for five months. In China, the outpatient clinics of hospitals have been the most prominent facility for delivering medical care to most people (as explicated in chapter 1). In view of this observation, I did not follow my initial plan to collect data from grass-roots primary care facilities. I collected data of primary care interactions from an ordinary mainland Chinese hospital.

Grading	Approximate number (across the country)	Outpatient (per year)	Inpatient (Bed utilization)
Level III hospitals (large urban provincial hospitals)	**1,230**	**520,000**	**100%**
Level II hospitals (medium city / district hospitals)	6,520	120,000	80%
Level I hospitals (township hospitals)	5,110	30,000	55%

Figure 3.1 Hospital utilization[16]

It can be seen large urban (level III) hospitals are fewest across the country (1,230), yet showing the largest volume of patient (520,000 outpatient cases annually; whilst, lower-level small hospitals show only 30,000 cases per year). If we compare the inpatient percentage, Level III hospitals in urban areas are 100% utilized; whilst, the Level I hospitals in rural areas are only 55% utilized.

These features also point to the distribution of 'top-heavy pyramid' of Chinese medical care see figure 1.2 of chapter 1), that large urban hospitals take a central role in healthcare delivery; whereas, lower-level hospitals are less visited or even deserted by Chinese patients. The primary healthcare is heavily tilted toward the large urban hospitals, which is also the reason why I choose the outpatient clinic of a popular large hospital to conduct the fieldwork for this research.

The chosen hospital is rated upper-intermediate in performance and service[17], and is quite popular with regular and large volume of patients. The province of these hospitals is relatively well-developed in respect of industry and agriculture. There is a narrower financial gap, in terms of the pay differential in a population, compared with other provinces. Based on the popularity of these hospitals and the socio-economic features of this province, these hospitals can well represent the general situation and practice of ordinary Chinese hospitals.

The setting of the clinics

In order to study how primary care consultations are actually conducted in Chinese

[16] Source: China Health Statistics Book 2008; https://en.wikipedia.org/wiki/Classification_of_Chinese_Hospitals.

[17] The rating of hospitals (indicating particularly hospital's reputation) is based on the 'National Accreditation Guidelines', established by MOH (Ministry of Health) in 1989 (Wagstaff, 2009). The rating system is built on a range of criteria, including medical technology, medical equipment, patient safety, service quality, etc. (see https://en.wikipedia.org/wiki/Classification_of_Chinese_Hospitals). There are altogether 9 levels (consisting of three main and three subsidiary levels). The chosen hospitals of this project are rated 2AA (i.e. upper-intermediate level).

hospitals, I recorded consultations which took place in the outpatient clinics of diabetes, ENT. For Chinese hospital outpatient clinics, there are two types of settings for a consulting room, the 'closed clinic' and 'open clinic' which I illustrate with the next two pictures:

Figure 3.2 Physical settings of a consulting room (closed clinic [left], open clinic [right])
(Pictures at https://goo.gl/images/8ptQjN, https://goo.gl/images/Je2GAZ)

The first picture illustrates the setting of a closed clinic, usually involving one doctor and one patient (and a companion). It is generally the case that there could be more than one patient (and a companion) present. For my research, diabetes clinic consultations happened in this sort of closed clinics. An 'open clinic' (the second picture of figure 3.2) usually involves multiple doctors, patients and patient companions. Consultations conducted in this sort of setting are called 'parallel consultations'. The ENT clinic consultations, for this research, happened in the open clinic setting. Figure 3.3 further illustrates the features of the setting of the clinics where I collected my data.

Figure 3.3 Outpatient clinical setting (These are two anonymized stills of the video data. Each still is of an acute visit. The left is a consultation in Diabetes Clinic. The right is a consultation in ENT Clinic. Present in each still is the physician and patient sitting together at a table, and the patient companion standing or sitting by the side.)

- *Affordance of objects.* Desktop computers and patients' medical records are routinely used to keep track of patients' (prior) medical conditions; thereby physicians may refer to, write or type down medical information, while interacting with patients.

- *Room configurations.* The layout of the diabetes clinic (the left picture of figure 3.3) is similar to that of the British GP consultation room, consisting of mainly a desk (on which there may be a few examination tools) and a couch. The ENT clinic (the right picture of figure 3.3) has more resources adjacent to where doctor sits, including a large complex desk equipped with various examination tools. Hence, to arrive at diagnoses, ENT clinicians could easily provide medical assessments based on evidence gathered through brief check-ups. Whereas, by contrast, diabetes clinicians are more likely to refer patients for a clinical examination, which is done in the examining room (also see chapter 6 doctors' testing recommendations for details).

- *Specialist care at the level of primary care.* The diabetes clinic is considered part of internal medicine, dealing primarily with internal symptoms, such as liver, kidney or blood problems that will generally require detailed checks. The ENT clinic is regarded as external medicine, specializing in external symptoms, for instance relating to ear or nose problems which the clinician can simply check by direct observation. Specialist care is noted to start from primary care level in many Chinese hospitals.

Participants

Participants (doctors and patients) are of different ages, genders and socio-economic status. I noticed that doctors' communicative and diagnostic styles could be affected by their educational level, rank or position, and their experience of practicing medicine. Evidence for this observation is that patients are sometimes asked to choose between a 'general type' consultation and a 'special type' consultation – with the former offered by physicians of lower rank (e.g. an intern doctor with little experience); the latter given by doctors of higher rank (e.g. the dean or the vice dean who has practiced medicine for many years). Thus, consultations conducted by doctors of different ranks were collected to ensure the representativeness of the data. The two tables below outline the overall demographic features of the doctors and patients (gender & age) (also see appendix 2 for the details of the participants).

Demographics	*Number of doctors*
Male	3
Female	3
30 - 39 years old	2
40 - 49 years old	2
50 - 59 years old	2
Total number of doctors	*6*

Table 3.4 Doctor characteristics

Demographics	*Number of patients*
Male	290
Female	194
0-9 years old	48
10-19 years old	70
20-29 years old	90
30-39 years old	75
40-49 years old	70
50-59 years old	31
60-69 years old	50
70-79 years old	50
Total number of patients	*484*

Table 3.5 Patient characteristics

Recording method and devices

My data collection involved video recording whenever possible; most of the video recordings were backed up with audio recordings. The advantage of video-recording is that first it enables the researcher to capture not only verbal, but non-verbal communication, for instance, direction of eye gaze, or how a patient is examined, and what is actually happening during long pauses or silences (e.g. did one of the participants nod, smile or shake their head). Second, consultation rooms could be noisy and crowded. Besides the doctor and patient, other people were frequently present (e.g. companions, medical assistants, other patients). Video recordings can easily capture rich interactions, occurring among those participants. Although my analysis does not rely heavily on interlocutors' nonverbal behaviours, a precise record of what happened for both verbal and nonverbal interactions during the consultation provides important clues,

observations and propositions.

The choice of recording devices aligns with my motives to ensure high recording quality and clarity. Recording devices involved a mini video recorder with wide-angle lens (*Canon Legria*), with tripod stand (*Hama Star 75*); most consultations have audio back-ups (*Sony ICD-TX50 audio recorder*). Recorders were placed at relatively discreet places on the doctor's desk, so as not to create any obstruction to 'naturally occurring' doctor-patient talk. Each participant was offered a choice, to opt for either video or audio recording. Additionally, audio backups were made to ensure sound quality – in the later stage of analysis, these audio recordings were easily processed through Audacity software, to produce precise transcriptions for inspection.

3. Data collection

Data overview

I have collected video-recordings from mainly two clinics: ENT Clinics (249 cases), Diabetes Clinics (411 cases). Amongst these 660 consultations (of the ENT and Diabetes), I have formed the data corpus of 484 consultations, which are first-time acute-visit consultations, or consultations with suddenly aggravated symptoms. My research has focused on these 484 cases and investigated the salient patterns or practices across this corpus.

All consultations were conducted in Mandarin, the official Chinese language. I have also collected data from dentistry and neurology clinics, however they were either too characteristic of their clinics, or they were audio-recordings, thereby I did not include them for this project.

Data selection and management

The first step in managing a relatively large data corpus is to categorize the data. I logged each session according to these categories: the video name, the data number, the information of participants (gender & age), the nature of consultation (first or follow-up visits), the presenting concern, the additional concern, (if it included) physical examinations, the outcome of the consultation, (if there was any) diagnostic problem, the length and quality of the video-recorded session. *Tables 3.6-3.9* below show the diverse number and types of primary care visits (consultations) that have been collected for this research (also see *appendix 3* for more details of the collected data samples of ENT and Diabetes clinics).

	Number of visits (consultations)
First-time visits	290
Revisits with suddenly aggravated symptoms	194
Total number of visits (consultations)	484

Table 3.6 The type of primary care visits

	Number of consultations
Diabetes	150
Thyroid problem	94
Kidney problem	50
Heart problem	40
Liver problem	10
Upper-respiratory tract problems	160
Other (unclassified)	30
Total number of consultations	484

Table 3.7 The topics of the presented concern

	Number of consultations
Treatment prescribed	387
No treatment prescribed	97
Total number of consultations	484

Table 3.8 Whether treatment was prescribed

	Number of consultations
Test recommended	314
No test recommended	170
Total number of consultations	484

Table 3.9 Whether further testing was recommended

Heritage and Clayman (2010) proposed the kinds of medical problems that can fall into the category of primary care concerns – 'known' and 'unknown' problems. The 'known' problems can be further categorized into two groups: 1) *routine illnesses* – common illness, for instance of upper-respiratory illnesses 2) *recurrent illnesses* – recurrences of previous diagnosed conditions. 'Unknown' illnesses are new and unknown conditions that are often presented as beyond what patients may know or have experienced before. All three kinds of problems are

only considered to be primary care concerns when they are presented as acute symptoms during first time visits, or as a sudden aggravation of a recurrent condition during revisits. Following their categorization, I selected only these primary care visits including 1) the visits in which patients complain about certain symptoms for the first time 2) the revisits in which patients complain about persistent (or chronic) though suddenly aggravated symptoms.

I also used other criteria to select samples for analysis, to maintain the research focus:

- Whether the consultation is a first-time visit (since my research is on primary care interactions)?
- The nature of presenting concerns, or additional concerns.
- Whether the diagnosing process involved physical examination? If yes, what kind of examination? Was it the simple kind or the extensive kind?
- Whether the consultation involves diagnostic problem or difficulties.
- My initial assessment of the suitability for analysis, based on the length, and recording quality of the consultation.

For primary analysis, I sampled the data and formed several collections of the noted patterns, according to the particular topic. Further information of sub-sampling procedures (i.e. the identified pattern of the particular topic, and its salience shown by descriptive statistics) will be relevant in each empirical chapter.

4. Ethics

Arranging for access

My fieldwork was conducted in China between November 2013 and April 2014. Initially, I encountered challenges in collecting video recordings, associated with Chinese people being sensitive to having their faces photographed, and also associated with the tension in the doctor-patient relationship as portrayed in media reports (e.g. Beam, 2014 August).

A Reluctance to participate was frequent among both patients and doctors: some were worried that video recording could bring them trouble, such as, being used as legal evidence; some were simply too shy to have their picture and voice recorded. After having recorded several sessions

of consultations, a doctor participant repeatedly made the point to me that she did not want her talk with patients to be read by international readers, and consequently, I have deleted those sessions. Of the 20 doctors with whom I discussed this project, 9 doctors agreed to participate.

To resolve these difficulties, I made efforts to gain the trust of hospitals, doctors and patient participants. I explained carefully the provisions for ensuring absolute anonymity and confidentiality throughout, and the purely academic purpose of my research. When participants were apprehensive about being video-recorded, we discussed the alternative of audio recording.

Ethics clearance

Ethics approval for data collection, including approval of subject consent information and forms, was granted by Loughborough University, the two Chinese hospitals, and the local health and family planning department where the data were collected. Consent forms were signed before video recording proceeded. I have cleared all ethic procedures of Loughborough University. Moreover, I gained ethical approval and support from the Neuro-linguistic Centre of Shandong University China, and from the Health Bureau of Shandong Province. All in all, the research adheres to the UK's strict ethical regulations, and has been conducted according to appropriate ethical standards and guidelines of Shandong Health Bureau. Paperwork for gaining access to data resources include:

- Ethical clearance checklist to ethics approval (human participants) sub-committee of Loughborough University
- Letter of application of ethics approval for hospital committee
- Information sheets for doctors
- Consent form for doctors
- Information sheets for patients
- Consent form for patient

All paperwork is written in English and then translated into Mandarin (see appendix 4 – 10 for details).

5. Research methods

My analytic approach is the naturalistic and qualitative methods of CA (Drew &

Heritage, 1992, 2006). Social interactions embody a distinct institutional order, which links to normative rights and obligations of social institutions, as argued in Goffman's work (1955, 1983). Social interactions are, meanwhile, jointly constructed through 'ethno methods' based on the shared understandings of an interactional organization, as observed by Garfinkel (1967). Inspired by a fusion of these two perspectives, the CA methods investigate practices of the conduct and accountability of practices of conduct in interaction, which are representative of institutional order. CA locates the pattern of practices by comparing across collections of data examples exhibiting similar patterns. In doing so, CA establishes whether the located pattern is cumulative or recurrent (Sacks, 1984; Schegloff, 1992).

In this section, I offer a brief overview of the CA research into ordinary conversation, and fundamental principles for conducting CA analyses. I then focus on the particular methodology concerned with the CA research into medical interactions, and the key approach that informed my analysis.

CA methodology

CA is an empirical discipline of study focused on the 'social facts' of interactions, consisting of the norms, practices and competence underlying the organization of interactions (Drew & Heritage, 2006, p.1; Goffman, 1955, 1983; Sidnell, 2012). Taking CA's perspective on the relationship between the social interaction and social organization, my research examined the communicative details of doctor-patient conversation, in uncovering how Chinese primary care medicine is actually conducted in public hospitals. The consulting interactions happened between physicians and patients represent the 'primordial site' of sociality (Schegloff, 1996, p.4) of Chinese public hospitals. Their language use constitutes a primary resource to address the questions concerning the organization of acute encounters, for instance 1) the structure of routine consultations; 2) the typical diagnosing approach of physicians; 3) the role of patients during diagnosing process; 4) the doctor-patient relationship and so forth.

My data corpus consists of video-recorded primary care interactions. The data are naturally occurring consultations, without any intervention from the researcher. In a few recorded sessions, there were irrelevant people present (e.g. staff from facility management were fixing the heater of consulting room), and these sessions were automatically excluded from the corpus.

I attend closely to the 'natural' sense of discovery for both the data collection and analysis processes. My research followed the principles of CA – using recordings of natural interactions as the basic form of data to conduct naturalistic, observational, micro-analysis of actual verbal behaviour (Heritage, 1984). My analysis took the CA procedures including the observation, description, specification of communicative practices (Drew & Heritage, 2006, p.10). I collected an extensive amount of data to underpin my investigation of systematic practices that are recurrent and ordinary among different cases. My analysis involves some simple counting, though not any real quantification. This is because quantifying the occurrence of an interactional phenomenon could cause certain properties to be overlooked (Drew, 2005).

Naturally occurring interactions have been shown to be highly organized (Drew & Heritage, 2006; Drew & Holt, 1998). The aim of CA research is to look for sequential patterns of conduct in the progressive unfolding of conversations. The basic concepts underlying talk-in-action are *turn taking*, *action*, *turn design* and sequential organization (Drew, 2005). Among these four concepts, CA focuses on investigating the actions performed and managed in talk, and on participants' mutual recognition of one another's actions (Drew, 2005). As Schegloff (1996) argued, investigating conversation is primarily about the actions and activities through which social life is constructed. CA is essentially an approach to *social action*.

The classic discovery procedures of CA involve 1) noticing some pattern of the talk 2) locating other instances for the pattern of interest 3) forming a collection of the instances to evidence the systemic design of such a practice (Drew& Heritage, 2006; Schegloff, 1996). Such a way of developing an analysis (i.e. to identify generic, context-independent interactional features across multiple cases) is a type of comparative study (Sidnell, 2012, p.78). While discerning the commonality of a practice, the analyst is also accountable to the particularities of each individual instance (Sidnell, 2012). My research followed this trajectory in conducting analysis, in detecting participants' actions and their orientations to the actions. My analysis took three major steps: 1) to identify a theme and make initial observations 2) to find further evidence of similar cases 3) to form a collection and specify the recurrent patterns of conduct in interaction.

CA research into medical interactions

Comparing early CA research (between the 1980s to the 2000s) with more recent work (from the 2000s onwards), there is a clear redirection of the analytic approach, focusing on how

interactions are carried out in medical settings.CA research shifted away from focusing solely on *sequence patterns*, focusing on *actions and activities* that the sequence is employed to perform.

Early medical CA research centred on analyzing *sequential units* – for instance, the majority of questions in consultation are asked by physicians; most questions are close-ended questions (Frankel, 1982, 1984); the tendency of physicians to use indirect speech features in discussing about delicate topics (Peräkylä, 1995; Silverman & Peräkylä, 1990). Byrne and Long (1976) proposed that in contrast with ordinary interactions, primary care interactions tend to show a highly organized structure, of logic progressive stages (illustrated in the figure below).

Stage	Activity
1	*Opening*. Doctor and patient establish a relationship.
2	*Presenting complaint.* The patient presents the reason for the encounter.
3	*Examination.* The doctor conducts verbal/physical examination.
4	*Diagnosis.* The doctor assesses the patient's condition.
5	*Treatment.* The doctor proposes treatment or further investigation.
6	*Closing.* The doctor and the patient terminate the encounter.

Figure 3.4 The overall structure of a consultation (Byrne & Long, 1976)

My research utilized the framework proposed by Byrne and Long (1976) to identify the main activity components of a consultation, and to investigate the progression of the consultation (i.e. how participants orient to the boundaries for each activity of the interaction). On the other hand, my analysis attended to the limitations of this framework, and noted that this staged structure is not to be taken as exhaustive and definite classification for any consultation.

Actual medical practices may differ from this framework, in the ways that 1) participants may reopen or reinitiate activities that were previously treated as complete (Robinson, 2003; Stivers, 2005a, 2005b); 2) not every activity will always happen for each consultation (Heritage, 2005); 3) the order of activities may not follow the proposed organization (for instance, diagnosis happens quite early since problem presentation, Drew, 2006; or treatment is produced before diagnosis, Stivers, 1998). Thus, rather than forcing data into the framework, my research used it only as an approximate means for classifying the consultation organization.

My approach to investigating Chinese doctor-patient interactions followed a nuanced view of the staged consultation, documented in recent CA studies (especially Robinson, 2003; see figure 2.1 of chapter 2). Compared with the initial framework initially (Byrne & Long, 1976), the nuanced position lays more emphasis on 'actions' than on sequences. Sequences of utterances are seen to perform *actions*; actions are bounded up with broad medical *activities*. In these ways, recent CA research has established the connection from *sequence* to *actions,* and to *medical activities*. The findings, thereby, would have more potential implications for medicine. Rather than linear stages, the consultation is seen as a cluster of *accountable activities*, jointly constructed by both parties. Taking the more nuanced approach of recent CA research, my analysis attaches equal importance to the role of the physician and of the patient.

6. Transcription

Transcribing methods

My analysis adopted the Jefferson transcription system to transcribe the verbal conduct of doctor and patient that occurred in primary care interactions (Jefferson, 2004; Schegloff, 2007, p.265). The Jeffersonian system was originally developed to transcribe English data. In applying the system to Chinese data, I kept the format as closely as possible to the visual appearance of the Jeffersonian system; on the other hand, minor trade-offs were made in transcribing two language features, particularly for transcribing *pitch* and *character*. Next, I shall explain my decisions and rationale in using the Jeffersonian system to transcribe Chinese data. These observations are based on my own impression, and they are not readily applicable to other research of the similar field.

- *Transcribing pitch variations.* The first decision was not to transcribe tones at character level (i.e. minute lexical tones). My transcription did not attend to the details of inherent tones of Chinese characters, although my transcription did show pitch variations at word level, and at sentence level (i.e. broad intonation movement, for instance of sentence-final intonation contour).

  The primary reason is that lexical tones of the Chinese language are used to distinguish grammatical meaning. They do not serve the pragmatic function of accomplishing certain action(s), or expressing emotions and attitudes, as they do in the English language (Hepburn

& Bolden, 2013). CA transcription was developed for a *non-tonal* language (i.e. English). Mandarin has four kinds of lexical tones, and there is no standard way of transcribing lexical tones. Researchers tend to devise their own convention to transcribe tonal language, for instance, diacritics for simple tonal language (e.g. Hanks, 2007; Moreman, 1988); numbering for complex tonal language (e.g. 1=mid level, 2=high rising, 3=low rising or low level, 4= high falling, 5=mid-falling; Enfield, 2007).

Therefore, it would be unrealistic to add CA notations to a multi-tonal language. Transcribing as the starting point of analysis, should open up analytic possibilities, making interactional features noticeable, rather than causing confusion (Clift, 2016; Kasper & Wagner, 2014).

- *Transcribing from character level.* The second decision is that the marking of CA details starts from character level, rather than from syllable level. Different from English for which syllable is the minimal component for building up a word, character is the basic unit for composing Chinese word. Many Chinese words are made up of multiple characters. Breaking these words into separate characters would change their intended meaning.

  Chinese is a syllable-poor but graphic-rich language. English uses *alphabetic* system, whilst, Chinese uses *logographic* system (Coulmas, 2003; DeFrancis, 1984; Rogers, 2005). Difference in English word meaning, for example, 'knife' and 'knight', is a result of exchange of the phoneme [f] for the phoneme [t]. However, the use of different phonemes cannot distinguish Chinese words. Difference in Chinese word meaning occurs at grapheme level, which is then based on image, sound and meaning of the characters ('Formation of Chinese characters', n. d.).

  Therefore, characters (rather than syllables) are the minimal unit for transcribing Chinese data. Notations of lengthening, loudness and laughter particles within words may not as detailed as those for English language. My transcription using Jeffersonian notations on Chinese language data may therefore look crude to a certain extent.

Presentation of transcripts

I followed the 'three-line' convention in presenting data transcripts (e. g. Hepburn &

Bolden, 2013, 2017; Clift, 2016, for transcribing non-English data; e.g. Kendrick, 2010; Wu, 2004, 2006, 2016, for transcribing Chinese data), as illustrated below:

- Line 1 – *the pinyin Romanization orthography* (the original talk in Chinese spelling system);
- Line 2 – *the literal English gloss* (glossing is included because Chinese language has different word order from English. The glossary followed Leipzig glossing rules[18].);
- Line 3 – *the idiomatic English translation* (my translation balances between delivering comprehensible English and capturing the genuine sense of the original talk).

The three-line convention is used to present transcripts (see appendix 8 for an example) consistently throughout this thesis and for my publication). Chinese characters could be somewhat mystifying for an English-speaking reader. The three-line system helped the reader follow the data more easily and comprehend my analysis. Additionally, for publication in Chinese journal, I use a four-line convention (see appendix 10 for an example): to present the Chinese characters on the first line, the Chinese pinyin on the second line, the glossary on the third line, and the English translation on the fourth line. This allows a Chinese reader to quickly grasp the meaning of the talk, and to inspect pinyin and translations for special symbols of interesting speech feature.

Transcribing process

At the early stage of my analysis, I identified the specific segments in the recordings, that for one reason or another were of particular interest to me. The early transcriptions did not include a high level of CA transcription details. Until the later stage of developing the analysis and putting together collections of extracts around particular themes, I worked with the extracts that were refined into three-line convention system, for which I added CA details (e.g. overlaps, pauses, loudness or stress on the first line of the original Chinese talk, and on the third line of English translation).

This approach, not to be over-concerned with transcription details at first and only to add symbols of speech features later, helped me to avoid spending a lot of time on details, when it may not be necessary. It made it easier to locate points and extracts that could be of potential

[18] See http://www.eva.mpg.de/lingua/resources/glossing-rules.php.

interest among quite long recordings. In addition, the transcripts were refined and updated as the research progressed, as transcription should always be treated as provisional and evolving with the analysis (Clift, 2016).

7. Summary

In this chapter, I have described the process of my five-month fieldwork, in Chinese hospitals, between November 2013 and April 2014 in Chinese hospitals. I have explained the rationale for my research design, especially on why I collected data from the outpatient clinics of urban large public hospitals. During my data collection, efforts were made to maintain the naturalness of data, and to ensure the representativeness of data. I completed all ethical procedures of Loughborough University, and met ethic requirements of the local health bureau of Chinese hospitals. I explained carefully the procedures and purpose of the research to doctors and patients. I have outlined my approach for selecting data and forming collections. My research adopts the nuanced perspectives of recent CA studies that prioritize medical actions and activities in conducting analysis.

The ensuing empirical chapters use conversation analytic methods described in this chapter, to present the communicative patterns and practices located in Chinese primary care. *Chapter 4 of discounting diagnosis* examines one of the typical diagnostic approaches routinely used by Chinese primary care doctors. *Chapter 5 of testing recommendation* examines how medical tests are integrated into primary care consultations. *Chapter 6 of patient resistance* examines their misaligning assessments on presenting symptoms, exhibited in physicians' and patients' talk. These themes are built upon one another, pointing to the accountable and interactional properties of 'diagnosing' in Chinese primary care medicine.

Chapter 4 – Diagnosing by exclusion in Chinese primary care interactions

1. Introduction

In acute visit interactions, medical business generally begins with patients presenting concerns. In response to the problem presentation, the doctor issues a series of diagnostic questions, asking whether the patient actually experiences some of the typical symptoms of a particular possible condition. A pattern emerges in the interactions that is rather distinctive and has not been previously reported in the literature. It focuses on the idea of a provisional diagnosis (of what could possibly be wrong with the patient) and the discounting of that hypothesis.

The pattern involves 1) the doctor explains what the possible diagnoses there are for the presenting concerns; 2) the doctor explicates some evidence, found to be inconsistent with the possible diagnoses; 3) the doctor takes turn to rule out each diagnosis, until the process gets to the most likely condition. Through such a stepwise excluding process, the doctor is able to arrive at a position to begin to focus on a particular provisional diagnosis, or a spectrum of provisional diagnoses. Consequently, medical tests become necessary for the next stage.

Stivers (1998) identified two types of diagnostic talk: 1) *prediagnostic commentary*, i.e. diagnostic utterances typically delivered during physical examination; 2) *official diagnosis*, i.e. diagnosis utterances commonly delivered after physical examination. She noted that prediagnostic commentary serves the function of foreshadowing the eventual diagnosis. Compared with the research on the official diagnosis, the prediagnostic talk is a much less investigated topic, except a few studies of CA and medical interactions. Spranz-Fogasy (2014) used the term 'prediagnostic statement' to refer to the diagnostic talk that happens before final diagnosis and is set up for it. He also pointed out that the diagnostic elements embedded in these statements connect to the subsequent physical examination. 'Online commentary' refers to the doctor's comments about the diagnostically relevant symptoms, which describes what the physician sees, feels, hears, anticipates or speculates in conducting physical examination (Heritage & Stivers, 1999, p.1501). The prediagnostic talk (i.e. diagnostic utterances produced before the eventual diagnosis) is the interest of my analysis of this chapter. Particularly, the interactions on using exclusionary approach to make diagnosis are the focus of my analysis.

Whilst a few sociologists came close to comment on this phenomenon (Henderson & Cohen, 1984; Geest & Finkler, 2004; Spranz-Fogasy, 2014), there are no explicit inquiries and no empirical research found on the topic of diagnosing by exclusion. This is the first direct observational study to document the diagnostic approach of exclusion with naturally occurring video data.

In this chapter, I have two objectives, to document the sequence on the theme of the diagnosing practice by exclusionary method; and to describe the mechanisms doctors employ to justify the exclusion of a certain possible diagnosis. The discounting method is rather a prevalent approach of how Chinese hospital physicians make diagnoses.

The findings of this chapter are based on my analysis of a sub-sample of a large corpus (the 484 acute consultations out of 660 outpatient visits). Primarily, the 200 sessions were selected from the sub-sample, in which discounting diagnosis occurred. I then focused on 30 typical cases, from these 200 sessions of doctors' discounting diagnoses, to exemplify and explicate the doctor-patient interaction on that practice. This chapter addresses the sequential and interactional features of such a practice. The findings can contribute to the understanding of how primary care problems are approached by Chinese physicians, and how western-style medicine is practiced in ordinary Chinese hospitals.

2. Overview of the sequence of diagnosing by exclusion

Diagnosis was first defined as the stage in which 'the doctor, or the doctor and the patient, or the patient (in that order of probability) consider the condition' (Byrne & Long, 1976, p.21). Diagnosis was considered as a separate stage (Byrne & Long, 1976), as a distinct action (Heath, 1992), or as a discrete event (Stivers, 1998). Moreover, diagnoses are delivered after doctors heard the patient's concerns, or after they conducted necessary examinations. In that sense, diagnoses tend to happen towards the end of a consultation (e.g. Heath, 1992; Peräkylä, 1998, 2002).

Comparing with previous research, the features of arriving at diagnoses in my collected data showed different viewpoints. In my data, diagnosis is first observed to be an evolving activity, which may happen early on in a consultation. Diagnosis is moreover observed to be a type of medical activity, which may take a series of turns to accomplish. These observations are made based on the sequential analysis of data extracts.

Extract 1 is included to illustrate the overall sequence of *diagnosing by the exclusionary approach*. Note the process that the physician shapes up a provisional diagnosis through excluding method step by step during the history taking.

#1: X 44_swollen hands & face (D: doctor; P: patient)

01 D: kan tui, zhong ba,
look legs swollen Q
Let me examine your legs, whether they're swollen,

02 P: °tui bu zhong.°
legs N swollen
°No, they are not swollen.°

(15.2) ((Doctor checks Patient's legs.))

03 D: jiu shi jue de(.) shou zhong, lian zhong.
just be feel CP hands swelling face swelling
You feel just(.) hands and face swelling.

04 P: en. shou zhong lian zhong.
PRT hands swollen face swollen
Yes.Just hands and face.

05 D: na ni zuijin you mei you,
then you recently have N have
Then recently have you or not,

06 D: cuo lian you a shenme you mei you huan xin de,
rub face lotion PRT what have N have changed new NOM
Have you changed facial lotion or not,

07 P: mei you. mei you.
N have N have
No. I haven't.

(16 lines omitted)

25 D: yibande zhong shouxian you,(.) youde ren guomin,
usually swelling first have some people allergy
First for some people usually,(.) it is an allergic reaction,

26 D: cuo lian you a huozhe shenme (0.2) zhuangxiu de dongxi a.
rub face lotion PRT or what furnishing ASSC stuff PRT
caused by new facial lotion(0.2) or the smell of new furnishing.

27 D: zai yi ge,(.)tkkh jiushi shuo zhong (.)women cha gan shen.
another one C PRT actually say swelling we test liver kidney
Next,(.) tkkh For swelling(.) actually we test liver or kidney.

(1.8)

28 D: zhege dongxi zhi neng kao jiancha le,=
this thing only can depend tests CR
This can only be explained by testing,=

29 D: =danshi kan zhe shi bu xiang.
though look CP be N like

=Though you don't look like you have liver or kidney condition.

30 P: en.=
PRT
Yeah.=

31 D: =danshi ni bu- bu cha,
however you N N test
=However if you don't- don't take tests,

32 D: wo ye bu hao shuo jiu shi baifenbai paichu.
I also N good say just be one hundred percent excluded
I can't say for sure they are one hundred percent excluded.

33 D: ni yao tongyi cha,
you if agree tests
If you agree to take tests,

34 D: wo gei ni cha ge xue, cha ge niao, kan kan.=
I give you test CP blood test CP urine see see
I'll give you tests on your blood and urine, and see.=

35 P: =A: wo jin zaoshang mei chi fan. cha ge xue xing.
PRT I this morning N eat meal test CP blood fine
=Ah: I haven't had meal this morning. I'll have the tests.

The excluding sequence, represented in the above extract, exhibits a stepwise process of eliminating the diagnostic hypothesis:

- Step 1. The doctor checks on the presence of certain symptoms or triggers, which are often related to some diagnoses (lines 1 – 7)
- Step 2. The doctor rules out the diagnostic hypothesis that does not seem to apply to the patient's case (lines 25 – 26)
- Step 3. The doctor considers the most likely condition (lines 27 – 29)
- Step 4. The doctor recommends the patient to have more tests (lines 30 – 34).

Since symptoms are non-specific and may correspond to several diagnostic hypotheses, the doctor recycles the exclusionary approach to address each hypothesis. Consequently, the possibility that seems inapplicable to the patient's case is ruled out; the diagnosis is narrowed down to the mostly likely condition, for which medical testing becomes necessary. Next, I divide the overall sequence (shown in extract 1) into four components (extracts 1.1, 1.2, 1.3, & 1.4), in order to look into the features of each sequential component.

Sequential component 1 – checking on a certain symptom

#1.1: X 44_swollen hands & face

01 D: kan tui, zhong ba,
look legs swollen Q
Let me examine your legs, whether they're swollen,

02 P: °tui bu zhong.°
legs N swollen
°No, they are not swollen.°

(15.2) ((Doctor checks Patient's legs.))

03 D: jiu shi jue de(.) shou zhong, lian zhong.
just be feel CP hands swelling face swelling
You feel just(.) hands and face swelling.

04 P: en. shou zhong lian zhong.
PRT hands swelling face swelling
Yes.Just hands and face swelling.

Prior to extract 1.1, the patient complained of swelling hands and face. On lines 1 and 3, the doctor asks whether the patient experienced other similar symptoms (swellings), briefly examining the patient's legs ('Let me look at your legs if they're swollen'). Swelling symptoms (e.g. in legs, ankles) are associated with liver or kidney disease. The doctor's enquiries indicate some diagnostic hypothesis, that the swelling problem might be caused by a condition in her liver or kidney. If the patient confirms swelling in other places, it is likely that the patient suffers from liver or kidney condition. However, her reply (lines 2 & 4) disconfirms having swelling legs. Based on that negative answer, the early hypotheses (liver and kidney conditions) could be excluded.

History-taking exchanges (lines 1 – 4) are mostly diagnostically driven, that that they often connect to a symptom to a possible diagnosis. Furthermore, these history-taking questions indicate the physician's efforts to build inconsistency between the patient's case and that hypothesis. From these beginning turns, we can see that the patient does not experience the typical kind of 'swelling', that she has only had swelling symptoms for two weeks (with the length mentioned before this extract). The inconsistency is thereby established for excluding liver or kidney condition. As a matter of fact, the excluding action is made more explicit later on lines 27 and 28 ('Actually, for swelling we would check liver and kidney. But you don't look like you have these conditions').

Sequential component 2 – checking on a certain trigger

#1.2: X 44
05 D: na ni zuijin you mei you,
then you recently have N have
Then recently have you or not,

(.)

06 D: cuo lian you a shenme you mei you huan xin de,
rub face lotion PRT what have N have changed new NOM
Have you changed facial lotion or not,

07 P: mei you. mei you.
N have N have
No. I haven't.

Among these lines, the doctor takes a similar course of action, asking a diagnostically driven question, checking whether the patient changed her facial lotion. The change of facial lotion is associated with an allergy problem. The doctor's questioning indicated her second hypothesis that the patient's swelling could simply be an allergic reaction. This diagnostic hypothesis is made explicit later in the physician's utterances (lines 25, 26, 'usually for some people, swelling is caused by allergy...'). Based on the patient's disconfirmation on line 7, such possibility may be excluded as well.

The initial sequences (lines 1 – 4; lines 5 – 7) displayed a pattern of history-taking interactions, that is, making diagnosis by *implicit exclusion*. The interactional features of diagnosing by implicit exclusion (based on extracts 1.1 & 1.2) include:

- Diagnosing by implicit exclusion is mainly accomplished through history-taking question-answer exchanges. By asking whether the patient actually experiences a certain symptom (typical of a possible condition), it is suggested that the doctor may formed some early hypotheses early in the consultation. The physicians' questions set up the agenda of the possible condition; the patient's answer is the important source for gathering diagnostic evidence which is used to exclude that possible condition. Alongside the verbal examination, the doctor may briefly examine the patient by looking, listening, etc. which can also retrieve inconsistent evidence for exclusion.

- If the patient's talk or physical condition disconfirms the presence of such a symptom or trigger, in which case showing *inconsistent* evidence, it is likely the doctor would

subsequently *exclude* the early hypothesis. If the patient's talk or physical appearance confirms the presence of such a symptom or trigger, in which case presenting *matching* evidence, it is likely that the doctor would subsequently *pursue* the initial hypothesis.

- The excluding of a diagnostic hypothesis is done in *implicit* manner at this stage, through the question-answer turn-taking system. The exclusion will be made explicit later in the consultation. In other words, the history-taking follows a particular trajectory, that the doctor diagnoses by exclusion first in an implicit manner, then in an explicit manner.

- History-taking questions are found to be *diagnostically driven*. Doctors' questions are developed in a branching structure, in which a particular diagnostic hypothesis is pursued further, or ruled out, in the hypothetical deductive process (Elstein, et al., 1978).

Sequential component 3 – explicitly excluding a possible condition

#1.3: X 44

25 D: yibande zhong shouxian you,(.) youde ren guomin,
usually swelling first have some people allergy
First for some people usually,(.) it is an allergic reaction,

26 D: cuo lian you a huozhe shenme (0.2) zhuangxiu de dongxi a.
rub face lotion PRT or what furnishing ASSC stuff PRT
caused by new facial lotion(0.2) or the smell of new furnishing.

27 D: zai yi ge,(.)tkkh jiushi shuo zhong (.)women cha gan shen.
another one C PRT actually say swelling we test liver kidney
Next,(.) tkkh For swelling(.) actually we test liver or kidney.

(1.8)

28 D: zhege dongxi zhi neng kao jiancha le,=
this thing only can depend tests CR
This can only be explained by testing,=

29 D: =danshi kan zhe shi bu xiang.
though look CP be N like
=Though you don't look like you have liver or kidney condition.

30 P: en.=
PRT
Yeah.=

The doctor's comment on lines 25 – 26 is a conclusion that was drawn from the previous exchanges (lines 5 – 7, whether the patient changed facial lotion). Based on the patient's disconfirming reply, the possibility that this is an allergic reaction became unlikely; no tests

were arranged in this respect. The doctor's comment on lines 27 – 29 is a conclusion inferred from the former interaction (lines 1 – 4, whether the patient has swollen legs). The patient similarly replied negatively, and the doctor double-checked by briefly looking at the patient's legs. Both provided inconsistent evidence (i.e. contrary evidence) with the typical swelling of liver or kidney condition.

Not only did the doctor inform the patient of what she thought could be the potential causes, but also she provided the patient with the inconsistent evidence why she considered a certain cause as unlikely (e.g. on line 29, 'but you don't look like you have liver or kidney problem'). The excluding action among these lines was done in an explicit manner. The doctor's utterances of explicitly excluding a diagnostic hypothesis is concluded from the immediately preceding interactions of implicit exclusion. Furthermore, the doctor's talk of explicitly ruling out a possibility also builds the grounds for recommending tests as the next line of action.

Sequential component 4: recommending tests

#1.4: X 44

31 D: danshi ni bu- bu cha,
however you N N test
However if you don't- don't take tests,

32 D: wo ye bu hao shuo jiu shi baifenbai paichu.
I also N good say just be one hundred percent excluded
I can't say for sure_ it's one hundred percent excluded.

33 D: ni yao tongyi cha,
you if agree tests
If you agree to testing,

34 D: wo gei ni cha ge xue, cha ge niao, kan kan.=
I give you test CP blood test CP urine see see
I'll give you tests on your blood and urine, and see.=

The whole sequence ended with the doctor recommending the tests targeted for any conditions that may exist in the patient's liver or kidney. Note the utterances for recommending test are framed to confirm the exclusion of these hypotheses (rather than to confirm the presence of such possibilities), delivered in a reassuring manner ('But if you don't check, I can't say for sure it's one hundred percent excluded.', lines 31 & 32). These turns are designed as seeking the patient's agreement ('If you agree to testing. I'll give you tests on your blood and urine. And see.' (see chapter 6 of testing recommendation for details)).

The whole sequence (extract 1) contains three attempts of the physician to exclude liver and kidney conditions – first, rule out these possible conditions *implicitly* (via history taking questions), second, exclude them *explicitly* (with inconsistent evidence), and last, recommend extensive testing (which is optional, and mainly for reassurance). These attempts of excluding mark that nothing should be medically concerning to the patient. As illustrated in extracts 1.1 – 1.4, the sequence of diagnosing by exclusion has the following interactional features.

- It is a pattern that the physician shares the diagnosing analysis with the patient;
- It arrives at a conclusion of a provisional diagnosis, and sets up the grounds for subsequent tests;
- It is tailored for the patient's benefit. As especially evident in extract 1.4, testing is proposed largely for the patient's benefit (to rule out a potential condition with most certainty); and subject to the patient's agreement (as in the paralleled construction, 'If you don't take tests, …. If you agree to testing, ….', lines 31 & 33 extract 1.4).

Table 4.1 below offers a summary of the sequential components of the pattern of the exclusionary diagnosing approach:

Sequential components	Action
1	Implicit excluding a possible condition (by checking on a symptom)
2	Implicit excluding a possible condition (by checking on a trigger)
3	Explicit excluding a possible condition (based on inconsistent evidence)
4	Recommending further tests (offering patients reassurance, optional)

Table 4.1 The pattern of diagnosing by exclusion

3. The mechanisms for implicit exclusion

In this section, my analysis focuses on the former part of the sequence, in which physicians gathers diagnostic evidence from what patients said (the patients' responses), as well as from how they appear (the patients' physical condition). If the evidence points to the direction that seems inconsistent with (the typical symptoms of) a possible diagnosis, this possible diagnosis may become a null hypothesis; thereby the diagnosis will be ruled out. Whereas, if the evidence appears to match with (the typical symptoms of) a possible diagnosis,

the diagnosis would be included into the physician's consideration, and the diagnosis will be pursued subsequently.

The mechanisms for implicating exclusion are the doctors' questioning and the patients' responses. Here I include three further cases, in which doctors recurrently design the history-taking talk with the four-component sequence, to exclude a diagnostic hypothesis implicitly. In the following extracts (extracts 2.1 – 2.4; extracts 3.1 – 3.4; extracts 4.1 – 4.4), it becomes obvious that a diagnostic hypothesis should be excluded, if the history-taking questions and answers render the hypothesis to be irrelevant.

#2.1: Diabetes 96_hungry feeling

01 D: jia li you de tangniaobing de ma?
family inside have got diabetes ASSC Q
Have any of your family members got diabetes?

02 P: mei you.
N have
No.

03 D: ti zhong you mei you gaibian,
body weight have N have change
Has your body weight changed or not,

04 P: ↑pang le ne:↑bi yiqian.
fat CRS PRT compare before
↑**Heavier**: ↑**than before.**

#2.2: Diabetes 96

(Doctor uses stethoscope to listen to Patient's heartbeat)

05 D: hai shi bu xin huang ah.
still be N heart upset PRT
Actually there isn't any heart palpitation.

06 P: bu xin huang ah?
N heart upset PRT
No heart palpitation?

07 D: ting zhe xianzai bu xin huang, xin lv bu kuai.
sound CP now N heart upset heart rate N fast
It doesn't sound there's heart palpitation for now, Your heart rate isn't fast.

08 P: shi a,
be PRT
Is it,

09 P: lao shi wanshang he [he you dianer xin-

always be night like like have a little heart
It's like often at night [I have a bit heart palpitation-

10 D: [na ni ganjue ma, ni ganjue kuai ma?=
that you feel Q you feel fast Q
[Is that what you feel,You feel it fast?=

11 D: =he xianzai chabie shenme ya?
With now difference what Q
=Compared with now is there any difference?

12 P: en:: wanshang you dianer,(0.2) shi zhe, hoaxing, you dianer xin huang.
PRT night have a bit feel CP seem have a bit heart upset
Emm::at night I feel a bit,(0.2) I feel, it seems, there's a bit heart palpitation.

13 P: shui bu hao, jiu shi zhe xin huang paozao a. jiu shi zhe.
sleep N well just feel heart upset restless PRT just feel CP
If I didn't sleep well, then I would feel heart palpitating and restless. That's how I feel.

#2.3: Diabetes 96

14 D: youyu women zhege e.
because we this hungry
Because we say this hungry feeling.

15 D: shouxian,(.) nei ke, women yao paichu de,
first internal department we need to exclude NOM
First, (.) for the internal medical department, what we need to exclude,

16 D: shouxian shi, you mei you tangniaobing.
first be have N have diabetes
The first point is, whether it's diabetes or not.

17 P: en.
PRT
Yeah.

18 D: zai jiu shi, you mei you jiakang.
next just be have N have hyperthyroidism
The next point is, whether it's actually hyperthyroidism or not.

(4 lines omitted) (Patient gives minimal acknowledgement. Doctor points out that is what she thinks.)

23 D: danshi ta dou shi::(.)yibande na liang ge bing, dou shi shou.
but it both be usually those two C diseases both be thin
But: both are::(.) Usually for those two diseases, patients become thinner.

24 P: SHOU.
thin
THINNER.

25 D: en. danshi ni [mei you shou.

PRT but you N have thin
Yeah. But you [haven't become thinner.

26 P: [wo pang-(.) wo ↑pang le ne.=
I fat I fat CRS PRT
[I've becom-(.)I've ↑become heavier.=

27 D: =en. danshi ni cha zhe hai shi- (.)ting zhe °hai shi >wenti bu shi tai da.<°
PRT but you checked CP still be listen CP still be problem N be too big
= Yeah. I checked actually you don't-(.)Actually you don't sound >you have any serious problem.<°

28 P: en.
PRT
Yeah.

#2.4: Diabetes 96

29 D: danshi zan cha cha zhe zhebiao kan kan.
but we test test these indexes see see
But let's have a test about these indexes and see.

In extract 2.1 (the first component of the excluding sequence), the physician asks whether the patient has a family history of diabetes; the patient disconfirms. The physician then asks if the patient has experienced any change in weight, to which the patient answers that she becomes heavier. Both questions embedded the presupposition of a hypothesis, that the hungry feeling and heart palpitation could be caused by diabetes. This is because having a family member who is diabetic (i.e. the genetic reason), and losing weight sharply, are typically associated with Type I diabetes.

In extract 2.2 (the second sequential component), the physician listens to the patient's heartbeat and gives the assessment ('Actually there isn't any heart palpitation'). The absence of heart palpitation suggested the low chance of diabetes or hyperthyroidism. To the doctor's judgement, the patient's response showed skepticism ('No heart palpitation?' on lines 6; 'Is it?' on line 8), and resistance to the professional judgment ('often at night I feel a bit heart palpitation', 'If I don't sleep well, then I would feel heart palpitating and restless.' in lines 9, 12, 13). The patient's disconfirming reply prompted more questioning by the doctor. Through the initial history-taking sequential components (extracts 2.1 & 2.2), it is clear that the patient has not got any diabetic family member, that she has not lost any weight (instead, she has put on weight), that she does not show with heart palpitation. These history-taking exchanges laid the grounds for retrieving inconsistent evidence for excluding diabetes (or hyperthyroidism).

The doctor in extract 2.3 explicitly mentions the diagnostic hypotheses (diabetes and hyperthyroidism), and excludes these hypotheses with inconsistent evidence gathered from preceding exchanges – that the patient's weight is normal ('Usually for those two diseases, patients become thinner', on line 23; 'But you haven't become thinner', on line 25); and the patient's heartbeat is also normal ('I checked actually you don't- Actually you don't sound you have any serious problem', on line 27). Note these core utterances of the physician's excluding diagnosing action are consistently designed with the description of what has been seen, heard, felt, or detected, during the simple examination of the patient's circumstances. Last, the physician (in extract 2.4, the fourth sequential component) recommends the patient to take the tests to further exclude the possibilities of diabetes and hyperthyroidism and to reassure the patient.

The doctor's attempt to establish inconsistency between the patient's case and a possible diagnosis, through history-taking questioning, is equally observable in the next case (extracts 3.1 – 3.4).

#3.1: Thyroid 59_excessive stool

01 D: xin huang ma?
heart palpitation Q
Do you feel any heart palpitation?

02 P: hai shi ye bu xin huang.
still be also N heart palpitating
Actually I don't feel heart palpitation.

03 D: bu xin huang. ti zhong ye mei bianhua,
N heart palpitation body weight either N change
No heart palpitation. Your weight hasn't changed either,

04 P: en.
PRT
No.

#3.2: Thyroid 59

05 D: guoqu you shenme bing ma, you mei you tangniaobing a,
past you any illnesses Q have N have diabetes PRT
Did you have any illness before, Did you have diabetes or not,

06 P: mei you tangniaobing.
N have diabetes
I didn't have diabetes.

07 D: guoqu shenme bing ye mei you?
past any illnesses actually N had
You actually didn't have any illnesses before?

08 P: a(h)ya. bing shi hen duo na.
PRT illnesses be very many PRT
Ah. I actually had many illnesses.

09 D: shenme bing.
what illnesses
What illnesses.

10 P: guanxin bing. gao xue ya. na ganyousanzhi gao.
coronary artery disease high blood pressure that triglyceride high
Coronary artery disease. High blood pressure. And high triglyceride.

11 D: guanxin bing. gao xue ya. gao xue zhi.
coronary artery disease high blood pressure high blood cholesterol
Coronary artery disease. High blood pressure. High blood cholesterol.

#3.3: Thyroid 59

12 D: xiang ni zhe zhong qingkuang, xue zhi gao de, yibande henshao you jiakang a.
like you this kind situation blood cholesterol high NOM usually rarely have hyperthyroidism PRT
For your situation usually, one whose blood cholesterol is high, rarely has hyperthyroidism.

(5 lines omitted) ((Patient acknowledges minimally to Doctor's judgement.))

18 D: ° yinwei ni zhege kenengxing,° danshi bu shi tai da.
because you this possibility but N be very big
° It is possible,° but not very likely.

19 D: cha cha ba.
test test PRT
Have a test.

20 P: en.
PRT
Yeah.

(26 lines omitted) ((Doctor listens to patient's heartbeat))

21 D: ye bu xin huang ting zhe.
also N heart palpitation listen CP
Actually, you don't sound you have heart palpitation.

22 D: wo kan zhe bushi tai xiang.
I look CP N very like
I look at you. And you don't look like have hyperthyroidism.

#3.4: Thyroid 59

23 D: danshi ni bu cha, wo ye bu zhidao. paichu yixia kan kan.
but you N test I also N know exclude

once see see
Though if you don't test, I can't actually be certain. Test to exclude hyperthyroidism and see.

Prior to extract 3.1, the patient presented the symptom of excessive stool. The doctor's diagnostic talk starts with questioning about whether the patient suffers from additional symptoms (lines 1 & 3). These symptoms that the doctor enquires about (i.e. heart palpitation, change of weight) are often associated with a condition called hyperthyroidism. Thereby, the doctor's questions indicated her initial hypothesis, of hyperthyroidism. The patient answers negatively to both questions, which projected inconsistent evidence for exclusion.

In extract 3.2, the doctor seeks the information of the patient's medical history, with the questions on line 5 ('Did you have any illness before? Did you have diabetes or not?'). Note these are close-ended questions, with the second question indicating a possible cause, that the patient may have diabetes. The patient replied negatively at first, however, with the physician's further pursuit ('You actually didn't have any illnesses before?', line 7), the patient embarks on disclosure three conditions ('Coronary artery disease, high blood pressure, and high triglyceride'). As becomes clear on line 12, the patient's high blood cholesterol is taken into consideration, as another key inconsistent evidence for excluding hyperthyroidism.

The doctor in extract 3.3 rules out hyperthyroidism explicitly by explicating the diagnostic evidence. The doctor remarks that the possibility of hyperthyroidism is scarce, as the patient who has already got high blood cholesterol could not have hyperthyroidism at the same time ('It is possible, but it is not very likely', line 18). To be sure, the doctor recommends the test to be on the safe side. Moreover, on line 21 the doctor listens to the patient's heartbeat and announces nothing problematic; on line 22 the doctor looks at the patient's appearance and announces there is little chance she could have hyperthyroidism – both projects inconsistency to exclude the condition explicitly.

In extract 3.4, the doctor accounts for the decision to include tests as the next stage ('Though if you don't test, I can't actually be certain.'). In general, we can see in all three cases (i.e. extracts 1.1 – 1.4; extracts 2.1 – 2.4; extracts 3.1 – 3.4) the pattern in the physicians' actions of excluding a diagnostic hypothesis:

- The doctor first implicitly excludes the diagnostic hypothesis;

- The doctor then explicitly excludes the diagnostic hypothesis one by one, and arrive at the most likely condition (i.e. a provisional diagnosis);
- The doctor at last fully excludes the provisional diagnosis by conducting extensive tests.

Extracts 4.1 – 4.4 below is another case to illustrate the pattern of excluding diagnosing actions. After problem presentation, the doctor embarks on the exclusionary approach to make a diagnosis). History-taking questions tend to follow the principle of optimization and are predominantly positively-polarized questions (Heritage & Clayman, 2010). Similarly, in my data, history-taking questions seek the patients' disconfirming response to the typical symptoms of a condition; in this way, the physician can exclude the particular possible condition with certainty.

#4.1: X 34_dry lips

01 D: wanshang ni qi bu qi lai shang cesuo,
night you get up N get up go toilet
Do you get up at night and go to toilet at all,

02 P: bu qi lai. (0.2) [en:
N get up PRT
No I don't get up.(0.2)[En:

03 D: [>jiu shi shuo< da xiao bian
shi zhengchang de. a,=
just be say urine stool
be normal ASSC Q
[>That's to say< your urine and stool are normal. Right,=

04 P: =e:.
PRT
=Ye:h.

#4.2: X 34

05 D: yanjing gan bu gan,
eyes dry N dry
Do you feel your eyes are dry or not,

06 P: ↑yanjing(.)en: nage zuo sha, (.) hai bu zenmeyang le.
Eyes PRT that do what actually N matter PRT
↑My eyes (.) en: about that, (.) they are actually fine.

07 D: en. yanjing bu gan,
PRT eyes N dry
En. Your eyes aren't dry,

06 P: yanjing [zhe hai bu gan.]
eyes now actually N dry
My eyes [actually are not dry for now.]

07 D: [yanjing ↑mei juede] <mei you>(.)liu bu chu yanlei a,
eyes N feel N have run N out tears PRT
[You ↑don't feel your eyes] <can't>(.)can't shed tears,

08 D: <gan de lihai,> ↑you mei you,
Dry CP severely have N have
<Severely dry,> ↑Have you got that feeling at all,

(0.4)

09 P: na ni kan >yuefa de< na zhe a er nian,
that you look more ASSC that these two years
Look >It's more like< in these two years,

10 P: ↑yanjing(.) eh yixiazi xing le,
eyes PRT once wake CRS
↑My eyes(.)eh when I get up,

11 P: he liban you shazi shide,
and inside have sand like
It's like there's sand inside,

12 P: zhe yi me hai bu za.
this one time actually N matter
Though now they're actually fine.

#4.3: X 34 (C: patient companion)

13 D: yinwei ta gan de yuanyin, yigeshi:(.)youde ren ↑xue tang gao gan.=
because it dry ASSC reasons one be some people blood sugar high dry
The cause for dry lips, First:(.) some people feel dry due to ↑high blood sugar.=

14 D: =danshi bu tai xiang.
but N very like
=Though it's not very likely for your case.

15 P: ah.(.) en.=
PRT PRT
Ah.(.) Yeah. =

16 D: =>zai yige_<(.) hai you ge bing <jiao ganzao zonghezheng>.
ta dei cha xue a,=
another one also have C disease call dryness syndrome
it needs to test blood PRT
=>Another point_<(.) it maybe the disease <called the Dryness Syndrome>. For that, we need to draw blood,=

17 C: =en:.=
PRT
=En:.=

18 D: =bu shi cha zhege xue, dei cha [nage mianyi de wenti. a,]
N be test this blood need test that C immunity ASSC question Q
=Not to test your blood, But to test [your immunity. Alright,]

19 C: [uh:. uh:. uh:.]

PRT PRT PRT
[Yea:h. Alright. Alright.]

20 D: ↑zai yige(.) ↑wenti,(.)eh zai jiushi(.) ni xiang ni zhege dao dongtian doukuai guowan le,=
another one question PRT another actually you like you this till winter almost end CRS
↑Another(.) ↑point,(.) eh actually(.) it could be now the winter almost ends,=

21 D: =ni yao jia li xin sheng le luzi ya,[haiyou shi nuanqi tai gan na, zhege huanjing gan,
you if home inside recently use CRS stove PRT or be heater too dry PRT this environment dry
=If you recently used stove at home, [or your heater is too dry, That's to say dry environment,

22 C: [xianzai bu sheng luzi le.=
now N use stove CRS
[We don't use stove now.=

23 D: =zhege zhege huanjing,(.) kanlai shi(.) bu tai xiang.
this this environment looks be N quite likely
=Well,(.) It doesn't seem quite likely your dry lips are caused by the environment.

#4.4: X 34

24 D: cha cha mianyi zhibiao kan kan ba.
test test immunity index see see PRT
Have a test on the immunity index and see.

25 C: en.
PRT
Yeah.

26 D: yinwei zhege ni bu cha, ye bu neng paichu.
because this you N test actually N can exclude
Without the test, actually the Dryness Syndrome can't be excluded.

In extract 4.1, the doctor asks the patient whether she has the symptom of over-urination ('Do you get up at night and go to toilet at all?'). The question indicated a potential cause of diabetes. The patient offers disconfirmation, overlapped with the physician's follow-up interpretive question ('That's just to say your urine and stool are normal. Right?'). In extract 4.2, the doctor moves onto investigate another sign of diabetes (dry eyes) with a series of contingent questions, as the patient sounds reluctant in offering an answer. In reply to the physician's pursuit, the patient confirms that she has this issue two years ago, but not experiencing dry eyes any more.

Based on the diagnostic evidence collected from the initial history-taking (i.e. the absence of the symptoms of over-urination and dry eyes), the doctor in extract 4.3 explicitly excludes the possibility of diabetes with a general diagnostic assertion ('…some people feel dry because of high blood sugar. Though it's not very likely for your case', lines 13 & 14) The physician then informs the patient and her companion of the most likely condition ('the Dryness Syndrome'), and explains the corresponding test arrangement (lines 16 & 18).

Moreover, the doctor suggests there could be another potential cause for the patient's dry lips – the factor of the environment (due to the use of a stove or heater, lines 20, 21). However, the companion anticipates the no-problem diagnostic decision by the physician, making clear that their family do not actually use stove (line 22); the physician therefore changed her position by saying 'Well, it doesn't seem quite likely your dry lips are caused by the environment' (line 23), in this way, the factor of the environment is excluded. In extract 4.4, the doctor recommended tests ('Have a test on the immunity index and see', line 24; 'Without the test, actually the Dryness Syndrome can't be excluded', line 62), making explicit to the patient that the purpose of testing is to exclude diabetes (rather than to confirm it).

We have seen that doctors asks diagnostically driven questions and gathers the diagnostic evidence which may appear to be inconsistent (or consistent) with a certain diagnostic hypothesis. The beginning part of history-taking interactions serves to rule out (or to pursue) a possible condition in an implicit manner, which at the same time builds the grounds to exclude the possible condition explicitly subsequently. From the further cases of the sequence of diagnosing by exclusion (extracts 2.1 – 2.4; extracts 3.1 – 3.4; extracts 4.1 – 4.4), the key elements for implicitly ruling out a diagnostic possibility include:

- the physician's polar questions, particularly contingent questions (Heritage & Maynard, 2006), which sets up the agenda of a diagnostic hypothesis;
- the patient's history-taking answers;
- the physician's observation (e.g. briefly examining the patient's physical condition, extract 1.1 looking at the patient's legs; extracts 2.2 & 3.3 listening to the patients' heartbeat).

Note, the sequence of diagnosing by (implicit) exclusion is initiated by the physician's polar question. The implicit exclusion is done through the doctor's action of ruling out a possible condition, with the diagnostic evidence that appears to be inconsistent or incompatible with the typical symptoms of that condition. The diagnostic evidence is retrieved from what has been mentioned by the patient; and from what the physician observed (for instances of how the patient looks, of how her heartbeat sound, etc.).

4. The mechanisms of explicit exclusion

We have seen in previous cases that after problem presentation, the doctor embarks on a deductive eliminating approach of the history-taking. In initial history-taking, the inconsistency between the patient's symptoms and a potential condition is implicitly established through a combination of verbal and physical examination. What will be reported next is that the inference based on the initial history-taking exchanges may then be used to explicitly rule out a diagnostic hypothesis in core diagnosing utterances.

The analysis in the remainder part of this chapter focuses on the latter history-taking sequence, or equally, the core excluding utterances. In these core diagnosing utterances, irrelevant conditions are excluded one by one, until doctors arrive at a position of a provisional diagnosis; for which further testing becomes relevant.

Inconsistency based on doctors' observations

The mechanism that doctors most frequently in establishing inconsistency is by direct observation. I use the term direct observation to refer any sort of simple and brief physical examination; for instances, looking at or feeling the location of the ailment of patients, listening to their heartbeats, or to feeling patients' necks for any abnormality with their thyroid.

The following extracts are the typical cases, in which the doctors use direct observational means to construct inconsistency in history-taking. The highlighted lines show the core turns where inconsistency is made explicitly.

#5: Diabetes 64_swollen eyelids

```
01  D:   kan       ni de lian se,   bu   xiang  shi      na     zhong:(.)
         gan  bing ↑a (.) shen  bing  ↑a (.)name yanzhong yin  qilai
         de[zhong.
         look your facial color    N   seem   be       those    kinds
```

liver illness PRT kidney illness PRT so serious
caused CP ASSC swelling
Looking at your face, the swelling symptom doesn't seem to be caused by any serious kind of:(.) conditions in the ↑liver, or ↑kid[ney.

02 P: [he. he.
PRT PRT
[He. He.

#6: Diabetes 64 (same consultation of extract 5)

01 P: .hh danshi sss wo(.) tpk yuanxian hang,(0.2) hen neng shujiao.
PRT but PRT I PRT before PRT very able sleep
.hh But sss I (.) tpk before used to sleep for very long time.

02 P: wo yuanxian hen neng shui.
I before very able sleep
I used to sleep a lot.

03 D: en.
CRS
Alright.

04 D: danshi kan lian se, bu xiang you da wenti.=
but look facial colour N seem have big problem
But looking at your face you don't seem to have any serious problem.=

05 D: =keyi cha, paichu yixia jiajian.
can test exclude once hypothyroidism
=You can have a test, to exclude hypothyroidism.

#7: X48a_big thyroid

01 P: jiu shi: chuan bu dong qier a shide ganjue.
just be breathe N CP air PRT like feeling
It's just: like the feeling of hard to breathe.

02 D: shi ma?(.) ni ma zenme xiang qi ni(.)shuo de jiazhuangxian bu hao lai,
be Q your mother how thinks CP you say CP thyroid N fine PRT
Is it?(.) Why does your mother think your(.)Why does your mother say your thyroid isn't fine,

((Doctor turns to Patient's mother.))

03 D: huayi ta jiakang.=
doubt she hyperthyroidism
Do you think she has hyperthyroidism,=

04 D: =kan lian se, shi bu da xiang.
look facial colour be N quite like
=Looking at her face, she doesn't look like having hyperthyroidism.

(21 lines omitted) ((Patient's mother shows resistance.))

26 D: danshi ni bu fangxin, jiu cha.

but you N assured just test
Though if you don't feel assured, just take the test.

#8: Thyroid 14a_thyroid problem

01 D: ni- ni zhege bu shi tai dianxing a, shuo shihua.
your your this N be quite obvious PRT speak honestly
Your- your symptoms aren't quite obvious, to tell you the truth.

02 P: °o. bu shi tai dianxing.°
PRT N be quite obvious
°Oh. They're not quite obvious.°

03 D: cong lian se cong pifu de biaoxian, dou bu shi tai dianxing.
from facial colour from skin ASSC presentation both N be quite typical
Both the look on your face and your skin, aren't quite obvious.

04 P: o. yan- yanpi zhong le.
PRT eye eyelids swollen CRS
o. My eye- eyelids are swollen.

#9: Kidney 3a_waist pain

01 P: jiu [zhege defang,(.) hen teng a. zhege defang.
just this place very painful PRT this place
It's [here,(.) Very painful. Here.

[((Patient lifts her jacket up. Doctor looks at the patient's waist.))

02 D: zhege difang ↑bu yiding shi shen de shi,
this place N necessarily be kidney ASSC matter
The pain there ↑may not necessarily be caused by a matter with the kidney,

03 D: ni keyi ↑cha ↑cha paichu a.
you can test test exclude PRT
Though you can have a ↑test to exclude that.

04 P: zen zhidao zhege defang,(0.2) jiantian teng, ahh.
how know this place everyday hurts PRT
Then why does this place,(0.2) hurt everyday, ahh.

05 D: ni keyi cha cha, wo shuo.(0.3) danshi bu yiding shi.
you can test test I said but N necessarily be
I said, you can have the test.(0.3) But it may not necessarily be caused by a matter with the kidney.

06 D: ↑weizhi: ye bu xiang shen de weizhi.
location after all N seem kidney ASSC location
↑After all, the location: of your pain doesn't seem to be the kidney.

It is a recurrent pattern in these extracts that the doctors include diagnostic evidence based on observation in sharing with patients why a certain condition should be excluded. In extract 5, in response to the presented symptom of swollen eyelids, the physician informs the patient that after hearing what the patient replies in the prior history-taking, she decides the swelling should not be caused by two common doubts of liver / kidney illnesses, 'Looking at your face, the swelling symptom doesn't seem to be caused by any serious kind of conditions in the liver or kidney'. Note this core diagnostic utterance is constructed with the inconsistent evidence based on the physician's observation, as marked in the turn-initial position, 'looking at your face…'. The exclusion is done in a mitigated way, constructed with the hedging device, 'the swelling doesn't seem to be caused by…'.

The patient anticipated the physician's diagnostic assessment moving onto a no-problem diagnosis or an insignificant diagnosis, therefore, in extract 6, she volunteers the information that she oversleeps. In reply, the doctor recycles the similar line of diagnostic analysis – highlighting the inconsistent observational evidence ('but looking at your face'), and excluding any potential problem mitigatedly ('…you don't seem to have any serious problem'). Last, the test is recommended as being the optional next step, with the aim made explicit, which is only to exclude hyperthyroidism with full certainty.

In the next case of extract 7, for the concern that the patient's mother considers that the patient has hyperthyroidism, the doctor used the similar course of action, to discount the condition with observational evidence, 'looking from her face, she doesn't look like having hyperthyroidism' (line 4). Though the doctor follows that up with a testing recommendation ('But if you don't feel assured, just take the test', line 26), contingent upon the patient's or the patient mother's consent.

Prior to extract 8 (another case of possible thyroid problem), the patient presented that her recent test showed an enlarged thyroid. In reply, the physician's turns (lines 1 & 3) highlights two sources of inconsistent observational evidence – 'the look on your face and your skin'. The physician points out that although the patient's thyroid symptom appears problematic, the presentations of her symptom are not obvious, in another word, not so doctorable as to guarantee professional medical help (Heritage & Maynard, 2016). With anticipation of the insignificant findings, the patient pushes that back by volunteering an additional symptom, 'my eyelids are swelling.'

In extract 9, the patient complains of having persistent waist pain (line 1). After briefly examining the location of the ailment, the doctor rules out the possible problem with her kidney, followed up with the test arrangement if the patient sees it necessary (lines 2 & 3). The patient resists the physician's insignificant finding, pushing for a professional explanation on her pain (line 4). In reply, the doctor repeats the explicit exclusion of a kidney condition; moreover, makes more explicit the inconsistent observational evidence – 'After all, the location of your pain doesn't seem to be the kidney' (line 6.)

We have seen the mostly frequently employed mechanism to establish inconsistency for explicitly excluding a diagnosis, which is the physicians' observation. The core turns of exclusion have two features: 1) they are designed with *verbal constructions*, indexing what the physician has found out during simple visual examination of patients' circumstances; 2) they are framed *negatively*, exhibiting the absence of a certain symptomatic sign.

By simple observational means, doctors explicate the sources of inconsistent evidence, and share with patients the reasoning behind the exclusion of a potential condition. Moreover, it becomes obvious that the extensive testing may be included, where it is necessary (in cases of an over-concerned patient, or to double-check and fully exclude a particular condition).

Inconsistency based on the initial history-taking

From the previous cases, the overall sequence of the doctor's diagnosing action in the history-taking can be considered as two parts, and those are the initial history-taking (which contains implicit exclusion), and the latter history-taking (which includes explicit exclusion). The relationship between those two parts is the initial part can establish the grounds of inconsistency for the latter part; in general, the whole sequence features a stepwise inferential logic of a diagnosing approach.

The second mechanism for explicitly discounting action is based on what has been mentioned in the initial history-taking. The following two extracts are cases in point.

(from #2.3: Diabetes 96_hungry feeling)

18	D:	zai		jiu	shi,	you	mei you	jiakang.
		next		just	be	have	N have	hyperthyroidism
		The next point is, whether it's actually hyperthyroidism or not.						

(4 lines omitted) ((Patient acknowledges minimally.))

23 D: danshi ta dou shi::(.)yibande na liang ge bing, dou shi shou.
but it both be usually those two C diseases both be thin
But: both are::(.) Usually for those two diseases, patients become thinner.

24 P: SHOU.
thin
THINNER.

25 D: en. danshi ni [mei you shou.
PRT but you N have thin
Yeah. But you [haven't become thinner.

26 P: [wo pang-(.) wo ↑pang le ne.=
I fat I fat CRS PRT
[I've becom-(.)I've ↑become heavier.=

(from #3.3: Thyroid 59_excessive stool)

12 D: xiang ni zhe zhong qingkuang, xue zhi gao de, yibande henshao you jiakang a.
like you this kind situation blood cholesterol high NOM usually rarely have hyperthyroidism PRT
For your situation usually, one whose blood cholesterol is high, rarely has hyperthyroidism.

(5 lines omitted) ((Patient acknowledges minimally.))

18 D: ° yinwei ni zhege kenengxing,° danshi bu shi tai da.
because you this possibility but N be very big
° It is possible,° but not very likely.

In the above examples, the doctor recurrently alludes to the diagnostic information collected from prior history-taking, for constructing inconsistency between the patient's case and the typical symptoms of a particular diagnostic hypothesis. In the first example (taken from extract 2.3), the doctor points to the symptom of weight loss, that are typical of diabetes and hyperthyroidism patients ('Usually for both two diseases, patients become thinner', line 23); and compares that with the patient's physical appearance ('But you haven't become thinner', line 25). The inconsistency between these possible diagnoses and the patient's case has been established. The explicit excluding utterance is overlapped with the patient's aligning response ('I've become heavier', line 26), which does not only confirm the professional excluding judgement, but also adds more weight to the doctor's exclusion.

Similarly, in the second example (taken from extract 3.3), the doctor compares the patient's physical condition against the typical symptoms of hyperthyroidism patients. The doctor points out the inconsistency that people who have a history of cholesterol condition could not have

hyperthyroidism (‘…one whose blood cholesterol is high, rarely has hyperthyroidism’, line 12). Note this key information is also retrieved from the earlier history-taking (i.e. the interactions shown in extract 3.2).

One further case of this mechanism follows. The physician in the extract below does not only rule out the potential cause for the patient’s symptoms of dry lips (i.e. high blood sugar, line 13); meanwhile, follows up with an explicit remark on the patient’s general circumstances (‘though it’s not very likely for your case’, line 14).

(from #4.3: X 34_dry lips)

13 D: yinwei ta gan de yuanyin, yigeshi:(.)youde ren↑xue tang gao gan.=
because it dry ASSC reasons one be some people blood sugar high dry
The cause for dry lips, First:(.) some people feel dry due to↑high blood sugar.=

14 D: =danshi bu tai xiang.
but N very like
=Though it’s not very likely for your case.

15 P: ah.(.) en.
PRT PRT
Ah.(.) Yeah.

Note his general remark of inconsistency (‘it’s not very likely for your case’) is also what has been retrieved from the initial history taking sequences (extracts 4.1, 4.2), that the patient does not experience over-urination and severe dry feeling in her eyes.

Inconsistency based on the patients’ misaligning responses

In most cases, patients align with the doctor’s diagnostic analysis; however, sometimes patients may misalign with the doctor’s position, particularly when patients anticipate the consultation will end up with no medical test, or a no-problem diagnosis. The doctor treats such misaligning responses as providing inconsistent evidence, which has the effect of ruling out a certain diagnostic possibility. In extracts 4.1 – 4.4 above, to the presenting symptom of dry lips, the doctor proposed three possible conditions (‘diabetes’, ‘Dryness Syndrome’, and ‘dry environment’). Now we focus on extract 4.3 to see how the third possibility of the dry environment is discussed in the consultation.

(from #4.3: X 34_dry lips)

20 D: ↑zai yige(.)↑wenti,(.)eh zai jiushi(.) ni xiang ni zhege dao dongtian doukuai guowan le,=
another one question PRT another actually you like you this till winter almost end CRS
↑Another(.)↑point,(.) eh actually(.) it could be now the winter almost ends,=

21 D: =ni yao jia li xin sheng le luzi ya,[haiyou shi nuanqi tai gan na, zhege huanjing gan,
you if home inside recently use CRS stove PRT or be heater too dry PRT this environment dry
=If you recently used stove at home, [or your heater is too dry, That's to say dry environment,

22 C: [xianzai bu sheng luzi le.=
now N use stove CRS
[We don't use stove now.=

23 D: =zhege zhege huanjing,(.) kanlai shi(.) bu tai xiang.
this this environment looks be N quite likely
=Well,(.) It doesn't seem quite likely your dry lips are caused by the environment.

At first, the doctor outlines that the dry lips could be attributed to the environment of the patient's home being too dry. When other circumstances (rather than bio-medical factors) are referred to as the cause to the patient's symptom, the professional likely orients to a no-problem diagnosis (also see section 3 of chapter 7 on doctors normalizing symptoms). The patient's companion anticipated the no-problem decision and responds negatively, 'We don't use stove now' (line 22, extract 4.3). Note the misalignment triggers a change of the doctor's diagnosing position (from asserting dry environment as the symptom cause to excluding dry environment as the cause). This shift of diagnosing position is clear in the *negative framed* construction ('Well, it doesn't seem quite likely your dry lips are caused by the environment'). As a result, the initial of a no-problem diagnosis is excluded; the physician shifts to include some further tests in the consultation.

The next extract is also a typical case, in which the initial turns of the physician suggested no tests. Due to the patient's misaligning response, the doctor shifts to prescribe tests subsequently.

#10: Diabetes 64_swelling eyelids (the same consultation as extract 5)

01 D: kan ni de lian se, bu xiang shi na zhong:(.)
gan bing ↑a (.) shen bing ↑a (.)name yanzhong yin qilai

de[zhong.
look your facial color N seem be those kinds
liver illness PRT kidney illness PRT so serious
caused CP ASSC swelling
Looking at your face, the swelling symptom doesn't seem to be caused by any serious kind of:(.) conditions in the ↑liver, or ↑kid[ney.

02 P: [he. he.
PRT PRT
[He. He.

03 D: >wo shi zheme ge ganjue.<
I be this C feeling
>That's what I think.<

04 P: e. wo you dian xu. you dian nage pi xu.
PRT I have kind of deficiency have bit that spleen deficiency
Eh. I feel kind of weak. I feel kind of spleen deficiency.

(3 lines omitted) ((Patient repeats the symptomatic talk.))

08 D: na jiu shi shuo,(.) ↓bu fang xin, jiu ↑cha yi cha ya,
that just be say N put heart just test one test PRT
In that case,(.)if you↓ don't feel assured, just↑have a test,

The above interaction is what happens after extract 5, the consultation of the patient who complains that she has swollen eyelids. Recall in extract 5, with brief look at the patient's face, the physician rules out the potential conditions in the patient's liver and kidney, projecting a no-problem diagnosis and no tests are necessary.

In extract 10 above, we see the patient anticipated the doctor's move, and overlaps with the doctor's turn with a laughter on line 2; then volunteers another symptom – 'I feel kind of weak. I feel kind of spleen deficiency' (line 4). The sequential consequence is exhibited in the doctor's next turn of testing recommendation, 'In that case, if you don't feel assured, just have a test' (line 8). Note the recommendation is designed with an *if-conditional* clause, which suggests that the doctor's recommendation is only made as a response to the patient's indirect request.

All in all, the above two examples illustrate the third mechanism that doctors use in pinning down inconsistency in history-taking interaction. In both cases, the initial no-problem diagnosis or no testing decision were pushed back by the patients' misalignment, which is done by volunteering more symptomatic information. We see consequently the doctor alters their diagnostic decisions, from an initial 'nothing abnormal' diagnosis to a problematic diagnosis. Alongside the excluding of a no-problem diagnosis, in some cases, further tests are arranged to meet up with patients' indirect request for testing (as embedded in their misaligning responses).

5. Conclusion

In this chapter, I provided an overview of the sequence of doctors excluding a certain potential illness during acute visits consultations. The primary finding suggested a discernible shape of the sequence. The talk of the excluding diagnosing approach showed four sequential components: 1) checking on a certain symptom (i.e. implicit exclusion of a potential cause); 2) checking on a certain trigger (i.e. implicit exclusion of the potential cause); 3) highlighting the inconsistent evidence (i.e. explicit exclusion of the potential cause); 4) recommending tests (i.e. excluding the potential cause with certainty).

The data extracts showed a causality relationship among these components – what the doctor is investigating or suggesting at the moment can lay ground for what will be addressed next (i.e. to rule out irrelevant hypotheses). My study provided empirical evidence for the view that diagnosing is a type of activity (Robinson, 2003). The diagnosing activity starts quite early after problem presentation, and may last throughout the whole consultation. My data have also shown an acute visit consultation as an interactional process jointly constructed by both parties. In particular, diagnosing in these consultations are largely shared with patients.

Among these four components, it's a tendency that physicians recycle the first and second steps. In my corpus, it is common that the doctor repeats the implicit / explicit excluding action. This is because there maybe more than one potential illness corresponding to the patient's symptoms. The pattern of excluding diagnosing sequence tends to be recurrent across the whole corpus; in the meantime, the pattern appears to be recurrent within itself.

The second finding is the specific mechanisms that Chinese physicians routinely employ to eliminate the possible illnesses for their patients, whether in an implicit or explicit manner. The talk of implicit exclusionary diagnosing happens in the initial history-taking stage. The most frequently mechanism used to implicitly establish inconsistency is the diagnostic information retrieved from history-taking exchanges. My data showed three features of physicians' history-taking questions. First, most history-taking enquiries are diagnostically driven questions. During the questioning process, physicians constantly observing and weighing diagnostic evidence, so to test out the possibility of potential causes. Second, some history-taking enquiries are negatively framed polar questions (e.g. 'You just feel hands and'; 'No heart palpitation? Your body weight hasn't changed either', in extract 3.1; 'You didn't have any

illnesses in the past', in extract 3.2), which aligns with the principal of optimization for medical questioning (Heritage & Clayman, 2010). Yet, more history-taking are framed with an interrogative polarized questioning format (e.g. 'Have you changed your facial lotion or not?' in extract 1.2; 'Has your body weight changed or not?' in extract 2.1; 'Are your eyes dry or not?' in extract 4.2). These questions of interrogative indicated physicians' attempt to pursue diagnostic information, based on patients' responses. Last, some of the questions are contingent questions (i.e. questions asked on the similar matter, Heritage & Maynard, 2006), also asked to pursue conclusive information (of the inconsistency between the diagnostic hypothesis and the patient's case).

We have also seen that not only was the patients' (confirming or disconfirming) replies are taken into consideration; but equally importantly, whilst questioning, doctors also use observational means (i.e. looking, listening, feeling) to gather diagnostic evidence. Considering the lack of the opportunities for extensive physical examination for Chinese primary care (also see section 6 of chapter 1), it seems natural that Chinese physicians frequently use brief observation in primary care for making diagnoses.

The sequential consequence of the initial history-taking exchanges, as shown in the extracted interactions, are three-fold: 1) the doctor's close-ended questions set up the agenda of a diagnostic hypothesis; 2) these questions collect the key diagnostic evidence of inconsistency, which builds the grounds for ruling out the possible conditions one by one, until the physician arrives at a provisional diagnosis.

My data showed that the talk of explicit exclusionary diagnosing happens after the initial history-taking. It is done through: 1) the physician first outlining to the patient what are the common diagnoses for the presented symptom(s); meanwhile, pointing out those diagnoses may not be applicable to the patient's case 2) the physician then justifying the exclusion with inconsistent evidence (based on preceding history-taking exchanges). This pattern is recurrent for some cases, that the physician rules out the hypotheses one by one, until a provisional diagnosis can be concluded.

The three key mechanisms that doctors use to identify inconsistency are as follows.

- *Doctors' observations.* The doctor shares with the patient what she has found out till that moment, by various observational means, such looking, touching, listening and feeling. This is parallel to the phenomenon of 'online commentary' that has been found in the study on American primary care (Heritage et al., 2010; Heritage & Stivers, 1999); except in my corpus, the talk of doctors' observation is produced after the brief observation.
- *Diagnostic information collected from the prior history-taking.* The analysis showed physicians do take what patients mentioned into consideration. Such diagnostic information may be reframed or translated into the important incompatible evidence to implement the exclusion of a possible condition.

- *Patients' misalignment in history-taking.* In some cases of my corpus, in reply to a none-significant finding (or no testing / treatment), patients may challenge the professional judgement by mentioning a new symptom, indirectly requesting for a different medical explanation (or test arrangements). As a result, physicians may withdraw from the previous decision, to shift to entertain the patient's view, by suggesting clinical examination to test out the provisional diagnosis.

In general, the findings of this chapter suggested that diagnosing is a medical activity interwoven with almost every stage of a primary-care consultation; particularly, my data showed that history-taking and diagnosing are frequently intermeshed in primary care (this occurs approximately 60 percent of my sample). What I have shown here is a nuanced way of thinking of the concept of diagnosis, different from the staged concept of general practice consultations proposed by Byrne and Long (1976). Rather than a separate stage occurring later in a consultation, diagnosis should be considered as a type of medical activity that is on-going throughout a consultation. My study showed particularly diagnosis is interconnected with history-taking and physical examination. Thus, diagnosis is a kind of interwoven activity in primary care consultations.

Moreover, I have shown in the collected consultations that doctors successively exclude possible diagnoses, by looking at the patient, or by talking to the patient, in order to consider whether the symptoms might be consistent or inconsistent with the patient's case. The doctor's diagnostic utterance of excluding possible conditions suggested the significance of the patient's role in acute-visit consultations. First of all, the talk of exclusionary diagnosis is, as a matter of

fact, a process for sharing the diagnostic analysis with patients. It is like the ‘thinking aloud’ analytic process of the doctor, making the analysis as transparent as possible to patients. Besides, after excluding several hypotheses, physicians tend to deliver the provisional diagnosis in a mitigated and reassuring way, particularly, with the purpose of testing recommendation made clear as to further exclude some condition. This suggested the doctor’s interactional effort to deliver the diagnosis decision, and meanwhile, not to add any stress on the patient.

The pattern of doctors’ exclusionary diagnosing practice is commonly regarded as a routine practice of Chinese doctors to arrive at a provisional diagnosis, though the findings of this chapter may be equally applicable to primary care consultations of different contexts or countries.

Chapter 5 – Doctors recommending medical testing
Chinese primary care interactions

1. Introduction

In the previous chapter, I have described a frequently used approach for reaching diagnosis in Chinese acute-visit consultations. Through the exclusionary approach, physicians provide a provisional diagnosis, which is hearably reassuring to a potentially worrying patient; in the meantime, further testing becomes relevant for the consultation.

In this chapter, I focus on the phenomenon of doctors recommending that patients to undergo further tests in order to confirm (or otherwise) their tentative or provisional diagnosis. Having recommended the patient to undergo further tests, these tests were subsequently conducted by nurses in the hospital. When doctors initiate the proposal to take a further test, doctors support their recommendations by giving reasons for suggesting that, although they may have reached a conclusion about what is or is not wrong with the patient. Further tests are advisable in order to confirm their emerging hypotheses.

2. The socio-cultural contextual features

Bearing in mind the account provided in Chapter 1 of the ethnographic context in which consultations are held, and the lack of privacy accorded to patients in that context, it is evident that the diagnostic evidence can be gained through the doctor's direct observation alone or by simple and brief examination is quite limited. The semi-public environment in which consultations are generally conducted does not allow for the removal of clothing, or more intimate examination; clinical tests are regarded as a further source of information to ensure the accuracy or correctness of diagnosis. In terms of biomedical factors, clinical testing provides an effective diagnostic tool through which doctors retrieve diagnostic evidence. The diagnostic evidence can then be used to test out (i.e. to confirm or to rule out) the provisional diagnosis that arrived before.

In Chinese primary care medicine, there are two types of physical examination, the *simple* type and *extensive* type. Simple examination is done by the doctor in the consultation room, such as, checking blood pressure or heartbeat, using simple equipment to check the patient's throat or

nose. During the process, the doctor describes what she sees, feels or palpates, referred to as 'online commentary' (Heritage, et al., 2010; Heritage & Stivers, 1999). When simple examination cannot provide sufficient evidence to make a diagnosis, extensive examination is included.

As noted in Chapter 1 (the ethnographic context), clinical testing brings 'vested interests' to hospitals and doctors. The more tests the doctor dispenses, the more profit the hospital will earn, which in turn will increase the reward for the doctor. Over-testing was reported as an issue to be resolved by the media[19]. My data will reveal how biomedical and financial factors map onto the interactions, in which primary-care physicians' recommendations for clinical testing occur. These are three noticeable differences of the concept of further testing between Chinese medicine and British medicine.

- In British medicine, further tests mostly happen in patients' follow-up visits on *a different day*, and it takes time to get the results ready for collection. Whereas, in Chinese medicine, clinical testing is an important part of the whole diagnostic process. Extensive examination (via clinical tests) is *proximate* to the current consultation. Although it is conducted outside of the consultation in the examining room, the test results may become available on the same day, and the patient will have to bring the results back to the same doctor for getting the final diagnosis and treatment.

- In British medicine, testing cost is covered by the NHS. There is no financial interest in conducting further tests – indeed there is financial disincentive to administer further tests in the British system – GPs may be reluctant to suggest further testing to patients in consultation, as it imposes costs on the NHS. Patients will be referred for further tests, when they are considered necessary (British Medical Association, 2016; Foot, et al., 2010; Robertson, et al., 2017). Whereas, in Chinese medicine, testing is associated vested interests and financial inducement. The testing cost is charged against patients' medical allowance, insurance or savings, which will contribute to the income stream of hospitals.

- In British medicine, it is the doctor who initiates the testing activity, and the decision about

[19] Source: https://abcnews.go.com/Health/doctors-react-testing-recommendations/story?id=16073905; http://www.chinadaily.com.cn/regional/2010-02/08/content_9441251.htm.

further tests is made by the doctor, rather than the patient. Conversely, in Chinese primary care consultations, both doctor and patient can initiate testing. Sometimes patients can resist the professional decision and request for testing.

My analysis shall look at first, how test recommendations are included and managed in primary care consultations; second, the ways how test recommendations are justified; and third, the ways how testing decisions are jointly made.

3. The salience of further testing in primary care visits

In this section, I will show the salience of the diagnostic practice of including testing in primary care visits. Out of the whole corpus (484 acute consultations), I primarily identified 100 video-recorded sessions (50 sessions of the diabetes clinics; 50 sessions of the ENT clinic; see figure 6.1 below).

Clinic	Total sessions	Sessions during which testing is prescribed	Frequency of medical testing
Diabetes	50	33	**66%**
ENT	50	22	**44%**

Figure 5.1 The frequency of medical testing in acute-care consultations

For the 50 diabetes acute visit sessions, 66% of those sessions (33 cases) resulted in agreements for clinical testing. For the 50 ENT acute visit sessions, 44% (22 cases) resulted in clinical testing. The figure shows that clinical testing is frequently recommended in both clinics. Furthermore, doctors in diabetes the clinics are more inclined to dispense testing than the doctors in the ENT clinics.

The discrepancy in the rate of prescribing tests of these two clinics can be attributed to the contextual differences of these two clinics. First, the common testing procedures for the Diabetes Clinic are to take blood and urine samples, to run tests on blood sugar, blood cholesterol, on liver or kidney function, with the costs ranging from RMB 5 to RMB 50. By contrast, it generally costs patients more expense to take clinical tests in the ENT Clinic. The common testing procedures for ENT are electro-laryngoscope checks (for checking a patient's throat and vocal cords), costing as much as RMB 300; the check on listening ability (with advanced medical equipment), costing RMB 50 or so. The comparatively lower frequency of

testing in the ENT (shown in Figure 5.1 above) suggests that partly due to the higher medical costs, ENT doctors are more hesitant in recommending tests.

Second, the difference in the setting of the two clinics is demonstrated in figure 5.2 below (extracted from my data corpus). The consulting room of the Diabetes Clinic is similar to that of British GP practice, with desk, table, a patient bed and a few examination tools. The consulting room of the ENT Clinic features a doctor's examination desk equipped with various checkup tools. Having more examination tools at hand means that it would be comparatively easier for ENT doctors to collect evidence and to reach diagnosis with simple examination. Whereas, in diabetes consultation, lots of physical examination have to be done outside of the consultation by clinical tests.

Figure 5.2 The setting of the Diabetes Clinic (left), and of the ENT Clinic (right) (these anonymized screenshots are taken from my corpus)

Third, Diabetes clinicians are more inclined to include clinical testing, to assist diagnosis. This is because of the interplay among three factors, symptom nature, diagnostic evidence, and inferential distance (shown in figure 5.3).

Clinic	*Specialty*	*Evidence (based on simple examination)*	*Inferential distance*
Diabetes	Internal symptoms	Opaque	Longer
ENT	External symptoms	Direct	Shorter

Figure 5.3 Diabetes clinicians are more inclined to include testing in the consultation

In the Diabetes Clinic, a doctor's diagnosis depends a lot on the accuracy of clinical tests. Since the Diabetes Clinic deals with *internal* symptoms (e.g. liver, kidney problems), it would be hard for doctors to make a diagnostic judgment by mere observation. The diagnostic evidence retrieved from simple examination may turn out to be *opaque*, and likely to produce inconclusive diagnostic information. Owing to these two aspects, testing is included to retrieve

more certain diagnostic information. Whereas, the ENT doctor's diagnosis is mostly based on simple examination or direct observation, which can be done in the consulting room; thereby there is less necessity for further testing. The ENT Clinic specializes in treating *external* symptoms (e.g. ear, throat problems), and the physician can check the symptoms, by observation or palpation. There is more direct evidence available to ENT doctors through simple examination, given more examination tools at hand (shown in the right picture of figure 5.2). There is a shorter inferential distance between diagnostic evidence and conclusions for ENT clinicians.

Therefore, extensive examinations (or further testing) is frequently included in acute visits to both clinics, with the Diabetes clinicians showing slightly more tendency to prescribe tests.

4. The sequential organization of recommending tests

There is a fairly distinct sequence in which doctors recommend patients to be tested, to confirm / exclude a diagnosis hypothesis that the professionals hold at that time. This sequence is illustrated in the extract below – after which I will examine in more detail the practice of recommending further tests.

#1: X44_swollen hands & face

01 D: zai yi ge,(.) tkkh jiushi shuo zhong (.) women cha gan shen.
another one C PRT actually say swelling we check liver kidney
Another point,(.) tkkh Actually for swelling(.) we check liver and kidney.

(1.8)

02 D: zhege dongxi zhi neng kao jiancha le,=
this thing only can depend tests CR
This can only be explained by tests,=

03 D: =danshi kan zhe shi bu xiang.
but look CP be N like
=But you don't look like you have liver or kidney problem.

04 P: en.=
PRT
Yeah.=

05 D: =danshi ni bu- bu cha,
but you N N check
=But if you don't- don't check,

06 D: wo ye bu hao shuo jiu shi baifenbai paichu.

I also N good say just be one hundred percent excluded
I can't say for sure they're one hundred percent excluded.

07 D: ni yao tongyi cha,
you if agree tests
If you agree to take tests,

08 D: wo gei ni cha ge xue, cha ge niao, kan kan.=
I give you check CP blood check CP urine see see
I'll offer you a blood test, a urine test, We'll see.=

09 P: =A: wo jin zaoshang mei chi fan. cha ge xue xing.
PRT I this morning N eat meal test CP blood fine
=Ah: I haven't eaten meal this morning. Blood test is fine.

(37 lines omitted) ((Nurse converses with Doctor.))

47 D: ni yaoshi tiao- jingji tiaojian yunxu de hua.
you if condi- economic condition allows ASSC say
Say if your condi- your economic condition allows.

48 D: cha ti shi meiyou cuo.
test body be N wrong
Physical tests are not wrong.

49 P: en.
PRT
Yeah.

(3 lines omitted) ((Each acknowledges minimally.))

53 D: xue tang cha yi ge ba. ◦cai wu kuai qian.◦ (2.0) wo shi gei ni tiao zhe cha.
blood sugar test one C PRT five bucks money I be GEI you select CP test
Have a test for blood sugar. ◦Just five Yuan.◦ (2.0) I selected only the necessary items for you.

(20 lines omitted) ((Doctor repeats previous information – the patient's medical record as well as the cost for the test.))

74 P: wo zhe shang na- shang na qu zuo,
I now go where go where to do
where- where should I go for testing,

75 D: Eh::(0.9) jiu shang menzhen. toushang yi lou.
PRT just go outpatient end one floor
Eh::(0.9) The Outpatient. To the end of ground floor.

Prior to this extract, the patient complained of having swelling in her hands and face. The extract shows that the overall sequence of the doctor recommending clinical tests to the patient consists of: first, informing the patient of the provisional diagnoses (lines 1 – 4); second, recommending the patient to tests (lines 5 – 9); third, informing the patient of test expense (lines 45 – 53).

- *Justifying with provisional diagnoses.* The talk on testing arraignment is initiated by the physician. She begins by suggesting to the patient a provisional diagnosis ('Actually, for swelling, we check liver and kidney.' line 1). Based on her experience of practicing medicine (how liver / kidney conditions are usually investigated), she implies to the patient the need of including tests as the next step ('This can only be explained by tests', line 2). She then downplays the possibility of potential conditions, commenting on the patient's physical situation, 'But you don't look like you have liver or kidney problem' (line 3).

- *Recommending tests.* After introducing the potential causes and the usual treatment, the physician stresses the purpose of clinical testing as means to rule out potential conditions ('…if you don't have the tests, I can't say for sure it's one hundred percent excluded', lines 5, 6). The doctor provides the information of the two tests, 'If you agree to testing, I'll give you a blood test, a urine test.' (lines 7 – 8). Lines 5 – 8 are all constructed with *if-clauses*; and the recommending turns are framed as subject to the patient's agreement. The talk on testing is designed into provide the patient with two options – 1) without tests; or 2) with blood and urine tests. The latter option is preferred to the first option. Sacks shows that recipients of a turn design offering options will typically select the second mentioned option (on this principle of contiguity, see Sacks, 1987, e.g. pp. 63-65).

- *Mentioning test expense.* The patient offered a minimal response (line 4), and showed only a partial agreement to the testing recommendation, that she will take the blood test but not the urine test (line 9). In lines 47 -53, the physician pursued the patient's agreement, giving further justification of economic considerations, 'Saying if your economic condition allows, physical tests are not wrong…I selected only the necessary tests for you.' We see in lines 74 and 75 that the further tests happened straight after the consultation, yet in a difference clinic (i.e. the Outpatient). Later that day, the patient revisited the same doctor for reviewing test results and getting a diagnosis (interaction took place after extract 1).

Note, testing is included mainly to reassure the patient, as the doctor may have already got a relatively certain diagnosis (as shown in lines 1 and 6 below). The physician in extract 2 below did a simple check-up and described what he has just observed for the patient's throat. Similar to the way how tests are recommended in the previous extract, testing is initiated by the

physician through three steps:

- First, informing the patient of the provisional diagnosis (lines 1 – 7);
- Second, recommending further tests (lines 8 – 16);
- Third, mentioning the engendered cost (lines 27, 28, with line 32 showing that the testing happens on the same day).

#2: ENT 263a_blocked feeling in throat

01 D: shouxian zhe yi dian a(.) <jiu shi shuo shi> nage: you yanhou-yanyan, zhe yi dian keyi queli.=
first this one point PRT just be say be that have pharyngitis pharyngitisthis one point could sure
First of all(.) I'd say it may be pharynx- pharyngitis, of which I could be sure.=

02 D: =sangzi limian [you dian chongxue.
throat inside have a little hyperemia
=In your throat [there's a little hyperemia.

03 P: [O.
PRT
[Oh.

04 D: yanyan yihou a(.) rongyi zaocheng yiwugan.
pharyngitis after PRT easily causes foreign body feeling
Pharyngitis(.)can <u>easily</u> <u>causes</u> the feeling of a foreign object.

05 D: zai yige <jiu shuo shi> ta zhege: zai wang xia (.) jiu shi kan bu dao le.
another one just say be it this more towards low just be see N CP CRS
Next <I'd say> well: I can't see with eyes(.)the lower part of your throat.

06 D: danshi cong nage,(.) shangmian nage,(.) qingkuang lai kan,(0.2)guji ah(.) zan nage zhenduan shi zheng-(.)zhen- zhenduan shi bijiao zhunque de.
however from that upper that situation CP see estimate PRT we that diagnosis be correct diagnosis diagnosis be relatively precise ASSC
However well,(.) based on the condition of (.) the upper part,(0.2)I <u>estimate</u> ah(.) our diagnosis is correct-(.) diag- diagnosis is <u>relatively</u> <u>precise</u>.

07 P: En.
PRT
Yeah.

08 D: yige shi a(.) e: xian nage keyi zuo ge houjing a. cha yi cha xiamian zhege difang.
one be PRT PRT first that can do C electrolaryngoscope PRT examine one examine lower this place
What I'll do(.) eh: is to give you an eletrolaryngoscope test. To examine the lower part of your throat.

09 D: cha cha bu shi shuo shi zan huaiyi you shenme wenti.

test test N be say be we doubt have some problem
The purpose of testing.Rather than we doubt if there's any problem.

10 D: zhuyao shi kan kan(.) huanjie xia zhege, sixiang de wenti.
mainly be see see relieve CP this mental ASSC matter
It's mainly to see(.) to relieve well, your stress.

11 P: he. he.[HE. HE.
PRT PRT PRT PRT
He. He. [HE. HE.

12 D: [yinwei ↑zhege zhe zhong dang a, >zhe zhong zhe zhong<
because this this kind blocked PRT this kind this kind
[Because ↑this kind of blocked feeling ah,>this kind this kind<

13 D: rongyi shuo shi(.) nazhong, chansheng yi zhong,(0.2) laoshi huaiyi you shenme wen- da de wenti shide.
easily say be that cause one kind always doubt have some problem big ASSC problem like
Can easily cause(.) well, the feeling of,(0.2) always worrying if there's some probl- as if there's some big problem.

14 P: wo hai shi mei- mei. he. he. he.
I still be N N PRT PRT PRT
I actually don't- don't have any worry. He. He. He.

15 D: cha ge ↑houjing ↓kan yixia.
check CP electrolaryngoscope see once
Have an ↑electrolaryngoscope test and ↓see.

16 P: >xing a. xing a.< en.
okay PRT alright PRT PRT
>Okay. Alright.< Yeah.

(10 lines omitted) ((Nurse talks to Doctor about testing arrangements.))

27 D: houjing dei xuyao san bai kuai qian a. dai de qian gou le ma?
electrolaryngoscope has to needs three hundred yuan money PRT bring ASSC money enough CRS PRT
The electrolaryngoscope test will cost three hundred Yuan. Have you got enough money with you?

28 P: dai zhe gou le.
brought CP enough CRS
Yes, I have got enough money with me.

(3 lines omitted) ((Doctor asks Patient if she came with a companion. Patient replied that her husband came with her.))

32 D: ni jiao ta qu chong zhi. wo xian gei ni pen shang dian yao, zhunbei zhe ba.
you ask him go top up credit I first give you spray CP a bit medicine prepare CP PRT
You can ask your husband to top up. I'll spray a bit of medicine in your throat, and get your ready.

Similarly, the physician in extract 2 first provided an account of the provisional diagnosis of pharyngitis as well as the presentation of this diagnosis (lines 1 & 2). She then points out that the lower part of the patient's throat could not be examined by mere observation (lines 5 & 6), in other words, the uncertainty of the professional diagnostic position lays the ground for the medical test which may occur next ('I'll do …an eletrolaryngoscope test, to examine the lower part of your throat', line 8).

The core turns of the physician's recommendation ('The purpose of testing, rather than we doubt if there's any problem, is mainly to see, to relieve your stress.', on lines 9 – 10, highlighted that testing is included mainly for offering reassurance. Note the doctor alters from 'to see' to 'to relieve' (line 10). The repair projected an attempt to ensure the patient's understanding of the purpose of testing in the first place. In response, the patient shows resistance, saying 'I actually … don't have any worry', following that up with a laughter (line 14). The physician then recycles the testing decision, though constructed in a mitigated manner, 'Have an electrolaryngoscope test and see.' (line 15). Additionally, we can see clearly on lines 27 – 32 that in the end of history-taking, the engendered cost for running this test is made explicit to the patient and family member.

It emerges in both extracts (extracts 1 & 2) a typical sequential pattern of doctors establishing the testing agenda. The pattern involves three actions, [introduce a provisional diagnosis] + [recommend further tests] + [talk about test expenses]. The purpose of testing is made explicit in extract 1 for excluding a diagnostic hypothesis; similarly, in extract 2 for eliminating the patient's stress.

5. Testing for excluding a diagnostic hypothesis

In example 2 above, the doctor's utterances are constructed to indicate relative certainty through leaving room to be confirmed by clinical testing ('I estimate our diagnosis is corre-'. Diagnosis is relatively precise.', line 7). It looks as though the doctor was going to say that 'our diagnosis is correct'; he cuts off 'corre-(ct)' and replaces it with a *hedged* expression indicating that his 'diagnosis is relatively precise.' The idea of hedging is preliminarily defined as words and phrases 'whose job it is to make things fuzzier' (Lakoff, 1972, p.195). Hedging later expanded to refer to any linguistic behaviour, which conveys the speaker's approximation of or lack of commitment to what they are saying (Pappas, 1989; Prince, et al., 1982; Prokofieva

& Hirschberg, 2014).

Prince, et al. (1982) identified two ways that doctors mitigate their assertions, from lexical and phrasal angles: 1) *approximators*, affecting the propositional content, consisting of 'rounders' (e.g. the problem mainly lies in…; around one hundred), and 'adapters' (e.g. mainly, a bit); 2) *shields*, affecting the speaker commitment, consisting of 'plausibility shields' (e.g. I think, I feel), and 'attribution shields' (attributing the belief to a particular other; e.g. the usual practice is…; someone told me…). According to Prince, et al. (1982), in representing knowledge to others, speakers' marking of speech activities by hedges indicates a distancing attempt from their own stance to the proposition, so as to demonstrate rational thinking and professional orderliness.

In most cases of my collection of doctors' candidate diagnoses, Chinese physicians have shown systematic use of hedging devices at various levels – at lexical level, at clause level and at sequential level. I have adopted the framework of Prince, et al. (1982), in analyzing the use of hedging in doctors' talk of provisional diagnoses.

The hedged properties of doctors' provisional diagnoses are derived from my observation on individual cases of the phenomenon in question. During acute visits, doctors (of both Diabetes and ENT clinics) recommend tests for excluding a potential condition, or for reassuring the patient the normality of his or her physical condition. Consider extract 3 below, particularly the sequence featuring the consistent use of hedging in the doctor's design of a provisional diagnosis.

#3: ENT 395a_phlegm

01 D: wo juezhe ni zhege wenti zhege:(.)zhuyao zhuyao zai nage fangmian ne,
I feel you this problem this mainly mainly at which aspect Q
I feel well:(.) what your problem mainly mainly is,

02 D: zhuyao hai shi kaolv a, you dian (.) yanhouyan.
mainly still be consider PRT have a bit pharyngolaryngitis
Mainly actually I think ah, there's a bit(.) pharyngolaryngitis.

03 D: kenengxing shi zui da de.
possibility be biggest ASSC
That's most possible.

(1.8)

04 P: yanhouyan?
pharyngolaryngitis
Pharyngolaryngitis?

05 D: dui.
right
Right.

(3 lines omitted) ((Doctor checks Patient's understanding.))

09 D: e: >ruguo yaoshi shuo shi< nazhong(.) xiang jinyibu kan kan de hua.
PRT if if say be< that want further see see ASSC say
Eh:>If if say< well(.) you want to see further.

10 D: >jiu shi shuo< kan dixia daodi yi ge shenme qingkuang.
just be say see down actually one C what condition
>That means< to see what actually the condition is down your throat.

11 D: keyi(.)zuo ge houjing a, cha yixia kan kan.
can do C electro-laryngoscope PRT test once see see
You can(.) do electro-laryngoscope ah, test and see.

(6 lines omitted) ((Doctor seeks Patient's agreement. Patient says yes.))

12 D: ruguo xian bu yuan zuo, xian- xian yong yong yao ye keyi.=
If first N want do first first use use medicine. also okay
If at the moment you don't want to take the test, first- use some medicine first. It's okay.

13 D: =an yanhouyan zhiliao.=
according to pharyngolaryngitis treat
=Get treated according to pharyngolaryngitis.=

14 P: =zuo zuo ba na.
do do PRT PRT
=I'll have the test.

(1.0)

15 D: keyi zuo yixia.
can do once
You may have the test.

To the patient's complaint of phlegm, with a briefly check on the patient's throat, the doctor outlines the provisional diagnosis of pharyngolaryngitis. The utterance of an emerging hypothesis is framed by plausibility shields ('I feel, well, what your problem mainly is. I think there is a bit pharyngolaryngitis', lines 1, 2). The doctor's utterance is loaded with approximators: the word 'mainly', and the phrase 'a bit'. The diagnostic judgment is also mitigated by the add-on comment ('That's most possible.', line 3). In doing so, the doctor marks the diagnostic judgment as only provisional, which leaves room for running more tests in the

next stage.

To further illustrate the role of the doctor's candidate diagnosis in building the ground for the testing sequence, we look again at extract 1, where the doctor has recommended testing, though now focusing on the way that the provisional diagnosis is constructed.

(from #1: X44_swollen hands & face)

```
01  D:   zai  yi ge,(.)tkkh jiushi shuo  zhong (.)women cha  gan shen.
         another one C PRT  actually say swelling  we test  liver kidney
         Next,(.)   tkkh For swelling(.) actually we test liver or kidney.

         (1.8)

02  D:   zhege dongxi zhi neng kao jiancha le,=
         this thing  only  can  depend tests CR
         This can only be explained by testing,=

03  D:   =danshi kan zhe shi bu xiang.
           though   look CP be  N  like
         =Though you don't look like you have liver or kidney condition.

04  P:    en.=
         PRT
         Yeah.=
```

In the above extract, the doctor's provisional diagnosis is designed as a qualified account, employing mainly *hedges* and some *intensifiers*. In extract 1, the doctor emphasizes the purpose of running test is to exclude a provisional diagnosis ('Just to say for swelling, we usually check liver and kidney. This can only be explained by testing'). The utterance is qualified with some intensifiers, such as 'usually' and 'only'. Moreover, the doctor adds a 'hedged' comment, 'But you don't look like you do.' (line 3). In so doing, the testing recommendation is hearably a more balanced account than a blunt assertion of liver and kidney conditions.

To highlight the feature that physicians use hedging formats for mitigating the certainty of provisional diagnoses, here is a further case in which a patient seeks a doctor's advice on a hearing problem.

#4: ENT 309_hearing problem

```
01  D:   wo juezhe zheyang de hua(.) ni keyi dei- xueyao cha yige shenme a,
         I  feel   this  ASSC say   you can need- need check one what PRT
         I  feel in this case say(.) what you can you need- need to check

02  D:   zuo ge zuo ge tingli jiancha kan yixia
         do  CP  do CP listening test see once
```

Have a have a listening test and see.

03 D: ◦you bansui tou yun de zhe zhong.◦
has accompany head dizziness ASSC this kind
◦**For the kind of illness which also has head dizziness.**◦

04 D: yinwei ta dei paichu yi ge shenme ne,
because it has to exclude one what Q
Because what it has to exclude is,

(0.2)

05 D: e: paichu yixia <zhe zhong> neiting dongmai shuansai zhege: qingkuang.
PRT exclude once this kind internal ear arterial embolism this condition
Eh: To exclude <the kind of > internal ear arterial embolism well: condition.

(3 lines omitted) ((Patient and Companion acknowledge minimally.))

09 D: danshi:(0.2) cong zan nage(.) changgui zhege jiancha lai kan.
but from our that routine this check CP see
But:(0.2) from our well(.) see from the basic check.

10 D: hai shi dao- dao shi xiang shi fayan shi ge zhuyao de yuanyin.
still be actually actually be like be inflammation be C main ASSC reason
It actually actual- actually It seems like inflammation is the main cause.

Following a brief examination on the patient's ears, the doctor recommends clinical tests, to exclude the provisional diagnosis (internal ear arterial embolism, lines 1 – 5). The diagnosis is marked as tentative with hedging formats ('I feel', 'have a listening test and see'). The assertiveness of this testing recommendation is further mitigated by the balancing effort in next turn ('But from our, well, from the basic check. It actually, It seems like inflammation is the main cause', lines 9 & 10). The doctor repairs from 'It actually…' to 'It seems like…', employing a hedging device to highlight the tentativeness of the current diagnosis.

Extracts 1 – 4 all suggested physicians saliently employ hedging devices to construct the talk on provisional diagnoses; in this way, highlighting the uncertainty of current diagnoses, and building a case for prescribing tests in the next. These cases offered illustration of my collection of including clinical testing in acute-visit consultations to exclude a diagnosis, as well as to offer patients reassurance.

6. Testing for confirming a diagnostic hypothesis

The hedged properties of doctors' provisional diagnoses are further manifest in cases of testing recommended for confirming a diagnostic hypothesis. In comparison with the cases for exclusion or reassurance, doctors tend to be more certain of the provisional diagnosis in these following instances. Despite more certainty in the provisional diagnoses, hedging is also heavily used to construct the turns of testing recommendations.

#5: X50_bitter & dry mouth

01 D: yuanxian you dannangyan ma? you mei you weiyan,
before have cholecystitis Q have N have gastritis
Have you had cholecystitis before? Have you had gastritis or not,

(4 lines omitted) ((Patient acknowledges minimally.))

02 P: zuo le yihui caichao, ta shuo dan bu da hao. [dan bu hao-
done CRS once colour ultrasonography he said gallbladder N very fine gall N fine
I have done colour ultrasonography, He said my gallbladder isn't really fine.[My gallbladder isn't fine-

03 D: [dui a. ni zhe yi zhong kou ku youkeneng gen dan you guanxi
right PRT your this one kind mouth bitterness possibly with gall has connection
[Right ah. This kind of mouth bitterness possibly has connection with gallbladder.

(9 lines omitted) ((Doctor acknowledges minimally.))

13 D: cha cha xue, zuo ge cai chao. tongyi ba,
check check blood do C colour ultrasonography agree Q
Have a test on blood, a colour ultrasonography test. Agree,

14 P: e: <zuo cai chao>, <zuo(.) dan na,>
PRT do colour ultrasonography do gallbladder Q
Eh: <A colour ultrasonography>, <to test (.) gallbladder,>

15 D: a. keyi zuo zuo dan na.
PRT can do do gallbladder PRT
Yeah. You can have a test on gallbladder.

16 P: A. ni shuo kou ku-
PRT you say mouth bitterness
Ah. You mean mouth bitterness-

17 P: kou ku jiu shi [dan de qiao,
mouth bitterness just be gallbladder ASSC problem
Mouth bitterness is actually [the problem of gallbladder,

18 D: [kou ku youkeneng youde ren shi dannangyan.

mouth bitterness possibly some people be cholecystitis
[Mouth bitterness possibly for some people is cholecystitis.

#6: X50_bitter & dry mouth

01 D: ni(.) zhege. wo juede ni yinggai cha cha xue tang xue zhi.=
you this I think you should check check blood sugar blood cholesterol
You(.) Well. I think you should have a test on blood sugar and cholesterol.=

02 D: =yinwei ta en na: xue chou a ye keyi gan.
because it PRT that blood thickness PRT also can mouth dryness
=Because it em well: blood thickness ah can also cause dryness.

03 P: shi o,=
is Q
Is it,=

04 D: =zai, shuo(.)nage: dannangyan ye keyi kou gan. hang.
another say that cholecystitis also can mouth dryness Q
=Another point, say(.) Well: cholecystitis can also cause mouth dryness. Alright.

05 P: o.
PRT
Oh.

06 D: ni yao xiang cha zixi dian, jiu yikuai cha.
you if want test carefully bit just altogether test
If you wanna test more carefully, you can just have both tests.

07 D: xiang sheng dian qian, jiu xian cha xue. xue bixu yao cha de.=
want save bit money just first testblood blood must needs to tested ASSC
If you wanna save a bit of money, just test blood first. Blood must and needs to be tested.=

08 D: =yinwei bu cha wo bu, zhidao.
because N test I N know
=Because if you don't have the test, then I don't know.

#7: X50_frequent urination

01 P: cha xue. cha niao.
test blood test urine
Test blood. Test urine.

02 D: en.
PRT
Yeah.

03 D: zhege niao(.)youshihou you niao pin, yiding yao kan kan you mei you yanzheng. hang.
this urine sometimes have urine frequent must need

to look look have N have inflammation Q
The urine(.) Sometimes with frequent urination, you must and need to see whether or not there's inflammation. Alright.

04 D: ye keneng shi pangguang shousuo bu hao.
also possible be urinary bladder contraction N fine
It's also possible the contraction of your urinary bladder isn't fine.

#8: Thyroid 14a_thyroid problem

01 D: ni jiajian de yuanyin shi bu shi zhege qiaobenshi jiazhuangxian fayan yin qilai de,
you hypothyroidism ASSC reason be N be this Hashimoto thyroid inflammation caused CP ASSC
Is it or not your hypothyroidism caused by this Hashimoto thyroid inflammation,

02 D: ni cha guo qiazhuangxian kangti le ma?
you tested ASP thyroid antibody CRS Q
Have you ever tested thyroid antibody?

03 P: mei cha guo kangti.
N tested ASP antibody
I haven't tested antibody.

(9 lines omitted)

13 D: ni keyi cha cha kangti. daodi shi ta yin qilai de.
you can test test antibody on earth be it caused CP ASSC
You can have a test on antibody. Whether or not it is the cause.

(3 lines omitted) ((Patient and Companion speak unclearly.))

17 D: =ta youkeneng zhege kenengxing da. ni cha cha shi bu shi zhege.=
it may this possibility big you test test be N be this
=This is very possible. You have a test to see whether or not it's because of this.=

18 D: =ruguo shi zhege yin qilai de (.) na ta keneng youshihou (.) um yihui kang yihui jian,
If be this caused CP ASSC that it can sometimes PRT a while overactive a while underactive
=If it's because of this(.) then the thyroid can sometimes(.) um be overactive or underactive,

19 D: dou you keneng fanfu fazuo de.
both can repeatedly occur ASSC
Both can occur repeatedly.

#9: ENT 401_dizziness

01 D: yi huier (.) zan xuyao zuo ge jiancha a.
one while we need do C test PRT
Later(.) we need to run a test a.

(0.2)

02 D: cha ge erduo.=
test C ears
Run a test on your ears.=

03 D: =shouxian: wo dei kan kan ni ting li xianzai zenmeyang.=
first I need see see your listening ability now how
=Fir:st I need to see how's your current listening ability.=

04 D: =weisha yao kan ne?
why need see Q
=Why I need to see that?

05 D: you yi ge bing a, jiao meiniaishi bing a. ↑huh.
have one C disease PRT called (disease name) disease PRT Q
There's a disease ah, called Meniere's Disease ah. ↑Huh.

06 P: sheme [bing,
what disease
What [disease,

07 D: [mei- meiniaishi bing.
mei (disease name) disease
[Me- Meniere's Disease.

08 P: o:.
PRT
Oh:.

09 D: ta jiu shi(.) erduo(.) hui you wenti. (0.2) tongshi bansui
zhe yun(.) ↑huh. meanwhile accompany CP dizzy Q
it just be ears could have problems
It's just(.) ears (.) could have problems. (0.2) Meanwhile also could have dizziness(.) ↑huh.

10 D: shouxian kan kan you mei you wenti.
first see see have N have problem
First to see whether or not there's any problem.

In extract 5, concerning the patient's symptom of mouth bitterness, the doctor proposes the diagnostic possibility of cholecystitis (i.e. the inflammation of gallbladder). The tentativeness of this diagnosis is manifested through the hedged construction, *possibly has connection with ...* ('This kind of mouth bitterness possibly has connection with gallbladder', line 3). In reply, the patient shows scepticism to the professional judgement, repeating what the physician just explained with rising intonation ('You mean mouth bitterness- Mouth bitterness is actually the problem of gallbladder', lines 16, 17). What is interesting is that the doctor corrects and overlaps with the patient ('Mouth bitterness possibly for some people is cholecystitis.' line 18), using the hedging expressions *possibly, for some people*. The hedging devices suggest that cholecystitis is only a hypothesis which needs to be tested in further investigation.

In extract 6, for the patient's presenting symptom of mouth dryness, the doctor outlines two

possible diagnoses (blood thickness, cholecystitis), and both are hedged by the modal word *can* (‘Because it em well, blood thickness ah can cause dryness.’ line 2; ‘Another point, say, well, cholecystitis can also cause mouth dryness.’ line 4).

In extract 7, for the additional symptom of frequent urination, the doctor proposes the possible conditions of inflammation and problematic urinary bladder (‘The urine sometimes with frequent urination, you must and need to see whether or not there’s inflammation. It’s also possible the contraction of your urinary bladder isn’t fine.’ lines 3, 4). The hedging expressions, *sometimes, whether or not ..., It’s also possible ...,* indicates that the assessments are only tentative which need to be confirmed by tests.

Immediately before extract 8 (data not shown), the patient’s recent physical check showed she may have hypothyroidism. The doctor recommends thyroid antibody testing, (‘You can have a test on antibody. Whether or not it is the cause.’ line 13; ‘This is very possible. You have a check whether or not it’s because of this.’ line 17). Again, the diagnostic sequence is hedged with the add-on comment *This is very possible*, the structure *whether or not* (used twice). The doctor provides background information about the candidate diagnosis: ‘If it’s because of this, then the thyroid can sometimes, um be overactive or underactive. Both can repeatedly occur.’ (lines 18, 19), is mitigated through the sentence structure *If ...then...*, the word *can* (which is used twice), and the approximated frequency *sometimes.*

In extract 9, for the presenting concerns of dizziness and ear problem, the doctor recommends a listening ability test, which is justified by an account on the tentative diagnosis (‘Why I need to see it? There’s a disease ah, called Meniere’s Disease ah.’ lines 4, 5; ‘It’s just ears could have problems. Meanwhile also could have dizziness.’ lines 9,10). Similar to the previous instances, the doctor recurrently employs hedging word *could* in talking about candidate diagnoses.

Extracts 5 – 9 have demonstrated the interactional features of doctors’ testing recommendations for confirming a diagnostic hypothesis. Although doctors may seem fairly certain of a diagnosis early on in the consultation, they consistently employ hedging expressions or structures in provisional diagnostic sequences. In doing so, they convey to the patient the provisional property of their initial diagnosis; and that tests are necessary for the subsequent stage of the consultations.

7. The core turns constructed as proffering the patient options

It is clear in physicians' testing recommendations (illustrated in previous sections by the cases for excluding a hypothesis; the cases for confirming a hypothesis), the turns of recommendation are both significantly hedged.

In this section, I shall show that the recommendations are presented to patients as 'options', for both the cases of testing for excluding a diagnosis, and for the cases of testing for confirming a diagnosis. According to the principle of continuity (Sacks,1987), the recipient of a turn design proffering options tends to choose the second mentioned option. Such design of the core turns of recommendation indicates doctors' efforts to seek patients' alignment on the professional decisions of testing arrangements; and doctors' orientation to patients' agency in deciding what kinds of tests they see most suitable to themselves.

Here we look again at the extracted interactions discussed above, though this time focusing on the core turns of recommendations.

(from #1: X44_swollen hands & face, an excluding case)

1 → D: danshi ni bu- bu cha,
but you N N check
But if you don- don't check,

1 → D: wo ye bu hao shuo jiu shi baifenbai paichu.
I also N good say just be one hundred percent excluded
I can't say for sure it's just one hundred percent excluded.

((P nodding))

2 → D: ni yao tongyi cha,
you if agree test
If you agree to testing,

2 → D: wo gei ni cha ge xue, cha ge niao, kan kan.=
I give you check CP blood check CP urine see see
I'll prescribe you blood and urine tests, and see.=

(from #3: ENT 395a_phlegm, an excluding case)

1 → D: e: >ruguo yaoshi shuo shi< nazhong(.) xiang jinyibu kan kan de hua.
PRT f if say be< that want further see see ASSC say
Eh:>If if say< well(.) you want to further see.

1 → D: >jiu shi shuo< kan dixia daodi yi ge shenme qingkuang.

just be say see down actually one C what condition
>That's means< to see what actually the condition is down your throat.

1 → D: keyi(.)zuo ge houjing a, cha yixia kan kan.
can do C electro-laryngoscope PRT test once see see
You can(.) do electro-laryngoscope ah, test and see.

(6 lines omitted) ((Patient acknowledges minimally.))

2 → D: ruguo xian bu yuan zuo, xian- xian yong yong yao ye keyi.=
If first N want do first first use use medicine. also okay
If at the moment you don't want to check, first- first use some medicine. It's also okay.

(from #6: X50_bitter & dry mouth, a confirming case)

1 → D: ni yao xiang cha zixi dian, jiu yikuai cha.
you if want check carefully bit just altogether check
If you wanna check more carefully, just check them altogether.

2 → D: xiang sheng dian qian, jiu xian cha xue. xue bixu yao cha de.=
want save bit money just first check blood blood must needs to checked ASSC
If you wanna save a bit of money, just check blood first. Blood must and needs to be checked.=

2 → D: =yinwei bu cha wo bu zhidao.
because N check I N know
=Because if you don't check then I don't know.

In these extracts, doctors construct the testing recommendations with two options, which are framed with hedging expression *If*... In cases where testing is suggested to exclude a diagnosis, the core recommending turns are designed as two options, *test or no test*. In extract 1, 'But if you don- don't check, I can't say for sure it's just one hundred percent excluded.' (option 1); 'If you agree to testing, I'll prescribe you blood and urine tests, and see.' (option 2). In extract 3, 'If say, well, you want to further see. You can do electro-laryngoscope ah, test and see.' (option 1); 'If at the moment you don't want to check, first- first use some medicine. It's also okay.' (option 2). In extract 6, 'If you wanna check more carefully, just check them altogether.' (option 1); 'If you wanna save a bit of money, just check blood first. Blood must and needs to be checked.' (option 2). In the majority of cases (97 cases out of 100 cases), patients prefer to take the second option of testing plan, agreeing to the kind of medical testing that is physicians recommended more strongly during history taking stage.

8. Misalignment on testing matters

We have seen, in the extracted interactions of previous sections, the matter of further testing is raised in consultations for two purposes, i.e. for excluding and for confirming a diagnostic hypothesis; meanwhile, the core turns of recommendations are designed as proffering patients two pairs of options (i.e. tests or no tests; thorough tests or basic tests).

In the remainder of the chapter, I will describe two contrasting line of actions, which triggered testing in the consultation. First, the doctor stresses the necessity of testing, whereas, the patient minimizes the necessity, which led to testing prescription eventually. Second, the physician downplays the significance of testing, whereas, the patient emphasizes the significance, which led to testing subsequently.

Physicians pushing for medical testing

Extract 10 is included below to illustrate the interactions during history taking, where the physicians try to draw the patients' attention to the abnormality of their physical condition, however, the patients at first take their symptoms as normal, later on shifts to the professional diagnostic position agreeing to subsequent tests. Such a feature is equally observable in British primary care. Drew's study (2006) on out-of-hour calls found that doctors and patients may have differing judgement and interpretation of the significance of certain symptoms and signs.

#10: Diabetes 64_swollen eyelids

01 P: xue tang shao gao yi dian dian.
blood sugar little high a little little
Blood sugar is a little a little bit high.

02 D: ↑a(0.2) SHAO GAO YI DIAN sh(h)i [d(h)uosh(h)ao.]XIAN SHUO.
Q little high a little be how first say
↑What(0.2)A LITTLE A LITTLE BIT HIGH is[(h)how (h)high.] TELL ME THAT FIRST.

03 P: [°He. He. °]liu dianer:,
liu dianer:,=
PRT PRT six point
six point
[°He. He.°]Six point:,
Six point:,=

04 D: =liu dianer duo. ni jiu yinggai zhuyi le.
six point more you just should attention CRS
=Six point and more. You should really pay attention.

05 D: yinwei zhengchang ren shi wu dian liu yixia de.=
because normal people be five point six below NOM

Because normal people are below five point six.

(10 lines omitted) ((Doctor repeatedly emphasizes the severity.))

14 D: na, ni xue tang xue zhi hai cha ba,
so you blood sugar blood cholesterol still test PRT
So do you want to test blood sugar and cholesterol,

15 P: yikuai cha yixia ba yaoburan,
altogether test once PRT or
Should I have these two tests together or,

16 D: xing a.
alright PRT
Alright.

Close to the end of history taking, the doctor pursues the patient's answer on the results of her recent test. The patient replied in a hearably vague and brief manner that her blood sugar is 'a little high, a little bit high' (line 1). The patient's attempt to downplay the severity is evident in the qualified description, 'a little'.

By contrast, the doctor treats the blood sugar as problematic, and warns the patient of the severity repeatedly, 'You actually should pay attention' (line 4), 'Because normal people are below five point six' (line 5). The doctor's utterances are marked with the intensified construction, 'You should really' (line 4).

The doctor's upgrading effort of symptom severity led to the initiation of testing, 'So do you want to test blood sugar and cholesterol' (line 14). The patient aligns and replies with the question, 'Should I have these two tests together or?' (line 16), handing the final decision on testing matters to the physician.

Extracts 11 and 12 are included below to illustrate the pattern of doctor-patient misalignment which triggered testing arrangement; in particular, their misalignment is manifest in their divergent views of diagnosis. This observation also finds support from what has found for British medicine. Drew (2006) found that doctors and patients frequently misalign on the potential diagnosis for the patient's symptoms in British out-of-hour calls to GP services.

#11: X 34_dry lips (C: companion)

01 D: fanzheng, jiu shi shuo, fengshi mianyi. na ni jiu cha zhege quan yi dian de ba.
anyway just be say rheumatic immune disease then you just check this thorough bit NOM PRT

Anyway, that's just to say, rheumatic immune disease. Then you may have this thorough test.

02 C: huayi ta shi,
doubt she be
You doubt she has,

03 D: paichu ganzao zonghezheng,
exclude dryness syndrome
In order to exclude Dryness Syndrome,

04 C: o. ganzao zonghezheng.
PRT dryness syndrome
Yeah. Dryness Syndrome.

06 C: ta xianzai ta zai nongcun li. ta ganzao shi bu ganzao a.
she now she lives in countryside she dry be N dry PRT
Now she lives in the countryside. It isn't actually dry.

07 D: zhege shuyu fengshi mianyi bing. ta bu shuyu ganzao bu ganzao,
this belongs rheumatic immune disease it N belongs dry N dry
This may be rheumatic immune disease. It isn't about dry or not dry.

08 C: o.
PRT
Oh.

09 D: ta shi cha de yixie kangsheng kanti a.
it be test CP some anti-growth anti-body PRT
It is to test the anti-growth anti-body indexes.

10 C: xing. gei ta cha cha ba.
ok give her test test PRT
Ok. Please give her those tests.

#12: ENT 263a_blocked feeling in throat

01 P: wo hai ↑shi chu lihai le, wo mai dian ↑yanyan pian.
I still feel CP serious CRS I bought bit pharyngitis pill
When I ↑feel it's getting serious, I then bought a bit ↑pharyngitis pill.

02 P: chi le hang, jiu jiu jiu guanshi(.) hai shi.
ate CRS PRT just just just effective actually
After taking the pill, I feel better(.) actually.

03 D: dan ni zhege:(.) ye dei xuyao cha cha.
but you this still have to need to test test
But for this:(.) you still have to need to test.

04 P: °en. xing.°
PRT alright
°Yeah. Alright.°

05 D: ni [dabufen shi yanyan yinqi de,=
you majority be pharyngitis caused ASSC
Your symptom is [mainly caused by pharyngitis,=

```
06  P:                  [En.
                        PRT
                        [Yeah.

07  D:   =ye you        ji      gebie de bie de bing.
         also have      extremely rare ASSC other ASSC illnesses
        =There're also extremely rare other illnesses.
```

In extract 11, in reply to the doctor recommendation (line 1) that the patient should be tested for rheumatic immune disease, the companion asks the question, seeking the doctor's clarification ('You doubt she has?', line 2). The doctor clarifies the purpose of the test ('In order to exclude Dryness Syndrome', line 3). Again, the companion raises skepticism ('Now she lives in the countryside. It isn't actually dry.', line 6). This prompts the doctor to further clarify the account of candidate diagnosis ('This may be rheumatic immune disease. It isn't about dry or not dry.' line 7). At last, the patient shows affiliation with the plan of thorough testing ('Please give those tests.', line 10).

The patient in extract 12 first partially misaligns with the doctor's diagnosis, that she agrees with the professional judgement of pharyngitis, though disagrees with the doctor on the possibility of having rare conditions ('When I feel it's getting serious, I then bought a bit pharyngitis pill. After taking the pill, I feel better actually.', lines 1, 2). This prompts the doctor to stress the necessity of having tests, and to follow that up with the purpose of tests, which is to exclude the extreme cases ('Your symptom is mainly caused by pharyngitis. There're also extremely rare other illnesses.', lines 5, 7). After the extracted interaction, the patient agreed with the physician of having electrolaryngoscope test (not shown in the excerpt), to rule out the possible condition of extreme rare illnesses.

Extract 13 below is an exemplification of the cases in my corpus, in which physicians and patients hold different positions on what kinds of tests should the patient take, and the consultation ends up with running clinical testing in the subsequent stage. Note there is scarce instances, reported in the previous literature of Western primary care medicine, of patients showing resistance to professionals' judgement of medical testing. In British primary care medicine, doctors and physicians tend to hold different opinions in terms of symptom severity, and candidate diagnosis (Drew, 2006). The majority of British primary care patients may follow the professional suggestions on further testing (Foot, et al., 2010; Robertson et al., 2017).

#13: Thyroid 14a_thyroid problem

01 D: zuihao zuo ge xindiantu.
best do CP electrocardiogram
You'd better have an electrocardiogram test.

02 C: xindiantu. ye gang zuo le.
electrocardiogram too just done CRS
Electrocardiogram. She has just done it actually.

03 P: xindiantu. ye hai shi gang zuo le. hai shi zhengchang.
electrocardiogram too also still be done CRS still be normal
Electrocardiogram.I have done it actually. It was actually normal.

04 C: hai shi zhengchang.
still be normal
It was actually normal.

05 D: xindiantu zuo de mudi shi kan kan ni zhege yao daodi cong nage jiliang kaishi.
electrocardiogram do ASSC aim be see see your this medicine on earth from which amount begin
The aim of the electrocardiogram test is to find out for sure how much dose to begin with.

For the patient's symptom of a thyroid problem, the doctor recommends the patient to have an electrocardiogram test. This is resisted by the companion ('Electrocardiogram. She has done it actually.', line 2), and by the patient ('Electrocardiogram. I have done it actually. It was actually normal', lines 3,4). In response, the doctor has to highlight the purpose of the electrocardiogram, which is to find out for sure whether some adjustment to the dose of the patient's current medication are necessary (line 5). Later on, in the consultation, the patient and companion aligned with the doctor's advice on taking the recommended test (not shown in the excerpt).

Extracts 10 – 13 represented the cases in my corpus, that doctor-patient misalignment triggered testing arrangements. Such misalignment is manifest in their different positions of symptomatic severity, candidate diagnoses and testing choices. When doctors stress the seriousness of the symptoms, the conditions, or the need to run tests, patients may minimize the significance of their symptoms or conditions, or the need of further testing. In most cases (ninety out of one hundred instances of my collection), patients and companions shifted to follow the professional advice of taking the recommended tests.

Patients pushing for medical testing

The other pattern of misalignment leading to testing arrangement is that doctors are inclined to a no-problem diagnosis, minimizing the need of clinical tests. Whereas, patients

push for tests, resisting the no-problem diagnosis. This feature is primarily demonstrated in their different judgements on the patient's symptom severity. The next three extracts are cases in point.

#14: Diabetes 64a_swollen eyelids

01 D: kan ni de lian se, bu xiang shi na zhong:(.)
gan bing ↑a (.) shen bing ↑a (.)name yanzhong yin qilai de[zhong.
look your facial color N seem be those kinds liver illness PRT kidney illness PRT so serious caused CP ASSC swelling
Looking at your face, the swelling symptom doesn't seem to be caused by any serious kind of:(.) conditions in the ↑liver, or ↑kid[ney.

02 P: [he. he.
PRT PRT
[He. He.

03 D: >wo shi zheme ge ganjue.<
I be this C feeling
>That's what I think.<

04 P: e. wo you dian xu. you dian nage pi xu.
PRT I have kind of deficiency have bit that spleen deficiency
Eh. I feel kind of weak. I feel kind of spleen deficiency.

05 D: >en. en. en.<
PRT PRT PRT
>Yeah. Yeah. Yeah.<

06 P: .hh dan[shi (.) tpk en: danshi wo zhege-
PRT but PRT PRT but I this
.hh Bu[t (.) tpk en: But I well-

07 D: na jiu shi shuo,(.) ↓bu fang xin, jiu↑cha yi cha ya,
that just be say N put heart just test one test PRT
In that case,(.)if you↓ don't feel assured, just↑have a test,

08 P: wo (xian ba) xunsi cha cha xue.
I first PRT think test test blood
I think I'll have the blood test first.

#15: ENT 315a_bitter mouth

01 D: shijishang, bu shi shuo tai lihai de wenti. keyi xian yong dian yao a.
In fact N be say very serious ASSC problem can first use a bit medicine
In fact, I don't think there's any very serious problem. You can use some medicine for the moment being.

02 D: gei ni kai dian yao. yong dian yao kan kan, a.
give you prescribe a bit medicine use a bit medicine see see PRT

I'll prescribe some medicine. Use some medicine and see, alright.

03 P: qu nain wo chi le hen duo xi yao zhong yao. dou bu shi hen duo dou bu guanyong.
last year I took CRS very many western medicine Chinese medicine all N be very many all N effective
Last year I took a lot of Western medicine and Chinese medicine. All of them are not effective at all.

(4 lines omitted) ((Patient says she has got no difficulty in swallowing. Companion volunteers the information that Patient has got some fluid insider her nose)).

08 P: fanzheng zaochen qilai, tu de yi kuai yi kuai hei de.
anyway morning get up spit CP one mouthful one mouthful black NOM
Anyway, when I get up in the morning, I spit lots of black phlegm.

09 D: en.
PRT
Yeah.

10 P: neng bu neng ba bizi zhao yixia libian you N you any, He. He. He.
can N can ASSC nose test once inside has N has anything PRT PRT PRT
Can you give me a test to find out if there's anything inside my nose, He. He. He.

11 D: wo juede zhege shiji cha yixia de hua, keyi jiu cha yige en biyanjing kan yixia.
I feel this actually test once ASSC say can just test one PRT TEST NAME see one
I think you can have an electrolaryngoscope and see.

12 D: shen jinqu jingzi a zhao zhao libian daodi shi ge shenme qingkuang.
put CP mirror PRT check test inside actually be C what situation
which is to put the electrolaryngoscope in order to see what is actually the situation inside your nose.

13 P: en. jiu shi a.
PRT just be PRT
Yes. Sure.

#16: X48a_big thyroid

01 D: ni zhege nianling, keyi da yidian.
your this age can bigger a little
At your age, thyroid can grow to be a little bigger.

02 D: zhiyao mei jiakang, jiu xing.
as long as N hyperthyroidism then alright
As long as it isn't hyperthyroidism, then it's alright.

03 C: wenti shi ta hen neng fan a
problem be she very commit PRT
The problem is she quite often feels something wrong.

04 D: en. cha cha paichu yixia.
PRT test test exclude once
Ok. She can have the test to exclude hyperthyroidism.

The physicians, in each of the above cases, primarily give a no-problem diagnosis and no-testing decision. In extract 14, 'Looking at your face, the swelling doesn't seem to be caused by any serious kind of conditions...' (line 1); in extract 15, 'In fact, I don't think there's any very serious problem. You can use some medicine for the moment being' (lines 1); in extract 16, 'At your age thyroid can be a little bigger. As long as it's not hyperthyroidism, it's just alright." (lines 2, 3).

The doctor's no-problem diagnosis is met with misalignment from patients. In extract 14, the patient raises the issue of additional symptom ('Eh. I feel kind of weak. I feel kind of spleen deficiency', lines 4). In extract 15, the patient undermines the suggested treatment of only using medicine for the moment being, saying 'Last year I took a lot of Western medicine and Chinese medicine. All of them are not effective at all.' (line 3). The patient then explicitly requests for further testing on line 10, 'Can you give me a test to find out if there's anything inside my nose?'. In extract 16, the companion misaligns with the doctor's no-problem diagnosis, by emphasizing the severity of the symptom that her daughter suffers from, 'The problem is that she quite often feels something wrong.' (line 5). In all three cases, the patient's or the companion's misaligning action has pushed the doctor to prescribe tests.

This pattern in which doctors normalizes symptoms as not indicating anything particularly alarming, in response to which patients emphasize that the symptoms are untoward and might instead suggest something more significant, is also evident in their different judgements of candidate diagnoses, illustrated in extract 17 below.

#17: X 50a_bitter & dry mouth

01 D: cha cha xue, zuo ge cai chao. tongyi ba,
test test blood do C colour ultrasonography agree Q
Have a blood test, and colour ultrasonography. Agree,

02 P: e: <zuo cai chao>, <zuo(.) dan na,>
PRT do colour ultrasonography do gallbladder Q
Eh: <colour ultrasonography>, <Is it to check (.) gallbladder,>

03 D: a. keyi zuo zuo dan na.
PRT can do do gallbladder PRT
Yeah. You may also have a test on gallbladder.

04 P: A. ni shuo kou ku-
PRT you say mouth bitterness
Ah. Do you mean mouth bitterness-

05 P: kou ku, jiu shi [dan de qiao,
mouth bitterness just be gallbladder ASSC problem

Mouth bitterness,Is it actually caused by[the problem with the gallbladder,

06 D: [kou ku youkeneng youde ren shi dannangyan.
mouth bitterness possibly some people be cholecystitis
[Mouth bitterness possibly for some people is cholecystitis.

07 P: shi o,(0.1) na, hai shi bu teng.
be Q that still be N hurt
Is it,(0.1) Well, actually it (my gall) doesn't hurt.

08 D: en. ni bu yuanyi zuo, keyi bu zuo.
PRT you N willing do can N do
Yeah. If you aren't up for testing, it's okay not to have the test.

09 D: xian cha- xian cha cha xue, ye xing.
first test- first test test blood also fine
First test- First have a blood test, it's also fine.

10 P: bu xing a. NI KAN KAN xuyao xuyao zuo.
N alright PRT you look look need need do
No. YOU DECIDE what kind of tests I should take.

In reply to the physician's recommendation of a blood test and colour ultrasonography, the patient in the above extract asks about the purpose of the tests, in other words, she asks if the purpose is to investigate cholecystitis ('Mouth bitterness. Is it actually caused by the problem with the gallbladder?', line 5). The doctor overlaps with the patient's question and offers the diagnostic account ('Mouth bitterness possibly for some people is cholecystitis.', line 6), with the hedging, 'possibly', marking the tentativeness of the diagnosis. What is interesting is the patient's response ('Is it? Well, actually my gall doesn't hurt.', line 7). The misaligning response led to the doctor amending recommendation to only have a blood test (line 9), to which the patient finally agrees ('No. You decide what kind of tests I should take.', line 10; in effect saying that she is in the doctor's hands).

The pattern in which the doctor minimizes the significance of the patient's case, and the patient emphasizing the significance of his or her case is moreover manifest in their different opinions on testing decisions. This feature is illustrated in extract 18 below, in which the misalignment is on whether or not to include the electrocardiogram test.

#18: X48a_big thyroid
01 P: yong bu yong cha ge xindiantu?
use N use test CP electrocardiogram

Is it necessary to have an electrocardiogram test or not?

02 D: ye keyi cha. dan bu hui you hen da de wenti
too can test but N will very big problem
You can have that test. But it won't be any big problem.

(6 lines omitted) ((Doctor talks about the cost the test may engender. Patient acknowledges minimally.))

09 P: °youshihou chuan bu dong.°
sometimes breathe N move
°Sometimes I can't breathe.°

10 D: ni yao zhende bu fang xin, en he he ni keyi zuo ge xindiantu
you if really N put heart PRT PRT PRT you can do CP electrocardiogram
If you don't really feel assured, you can have the electrocardiogram test.

(42 lines omitted) ((Patient continued to resisting Doctor's advice.))

53 D: cha le ni kan yi kan. jieguo hen hao, ni jiu fangxin le. mai ge xinli anwei ba.
test CRS you look one look results very good you just put heart buy CP psychological reassurance PRT
Have a look after the test. With good testing results, you should feel assured. It's like buying psychological reassurance.

In response to the doctor's prior indication that there's nothing abnormal (mentioned before; not shown in the extract), the patient, in the above extract, anticipates that tests will be not arranged and pushes back by requesting a test ('Is it necessary to have an electrocardiogram test or not', line 1). The doctor partially aligns with the patient's request, and points out that the test may not find anything problematic ('You can have that test. But it won't be any big problem', line 2). The patient continues to push for more tests by adding a new symptom ('Sometimes I can't breathe', line 9). In response, the doctor arranges for the electrocardiogram test, indicating that the tests are only prescribed to reassure the patient ('If you don't really feel assured, you can have the electrocardiogram test.', line 10; and 'With good testing results, you should feel assured. It's like buying psychological reassurance', line 53).

Extracts 14 – 18 exemplified the pattern of doctor minimizing and patient stressing the significance of the symptom, of the candidate diagnosis, or of the testing, which led to testing arranged for the next stage. The analysis showed that patients may make requests for more tests; medical tests prescribed under these circumstances are mainly done to offer patients reassurance, rather than to confirm a provisional problematic diagnosis that physicians formed through history taking exchanges.

7. Conclusion

The analysis of this chapter showed that before physical examination, doctors frequently talk about 'what tests would best suit the patient's case'; instead of showing full alignment, patients in some cases may challenge or reject doctors' recommendations. Doctors generally (i.e. in 80% of cases) provided an account supporting their test recommendations, that account often consisting of a qualified or hedged version of their tentative or provisional 'candidate' diagnoses.

Primarily, my analysis has shown the overall sequence of physician's testing recommendation, which consists of [telling about the provisional diagnosis] + [recommending medical testing] + [mentioning test costs]. The extracted interactions showed that the core recommending turns are supported both by an account considered from the bio-medical angle (making explicit to the patient the provisional diagnoses), as well as an account considered from the financial aspect (i.e. making explicit to the patient the engendered expenses).

Second, my analysis has shown that further testing in Chinese acute-visit consultations are recommended and prescribed, out of two considerations. That is, to exclude a provisional diagnosis that the physician formed during prior exchanges (or to offer assurance); or to confirm a potential diagnosis. It is noted that there are much more excluding cases than confirming cases (75 cases vs. 25 cases) in my collection of further testing. The finding suggested that clinical testing serves the purpose of ruling out a potential illness, so to offer patients reassurance, in Chinese primary care medicine.

Moreover, hedging (on levels of words, phrases and sentences) are heavily used in physicians' talk of provisional diagnosis. The data extracts showed that the hedged account marks the tentativeness (in other words, uncertainty) of the professional judgement, more importantly, serves the function of building a case to justify the testing recommendation which occurs next.

Last but not least, my analysis showed that in responses to the doctors' diagnostic talk, patients may misalign with the professional way of treating their cases. What is interesting is that such misalignment may result in medical testing being arranged in the subsequent step of the consultations. When doctors emphasize the need to run tests, patients may minimize such a need; when doctors minimize the need for testing, patients may emphasize such a need. The

misalignment of further testing can be manifest in terms of their different takes on symptom severity, candidate diagnosis, and even testing decisions. Either way, the interactions end up with referring the patient to take further clinical tests.

Therefore, based on the findings of this chapter, medical testing should be viewed as another the routine practice of how to reach a diagnosis (that is conclusive and reassuring to patients) in Chinese primary care medicine.

Chapter 6 – Symptom assessment and patient resistance in Chinese primary care interactions[20]

1. Introduction

We have seen in acute-visit interactions Chinese physicians tend to share with patients the emerging diagnosis, and the grounds leading to that diagnostic assessment (i.e. how the presenting symptoms are assessed). We have also seen that the way in which physicians assess symptoms is through talking to patients, observing patients, or conducting some simple examinations. The sharing of the diagnosing process has sequential and interactional consequences, and in this chapter I focus on one of its obvious consequences – patient resistance. For this phenomenon, it would not be necessary to identify a sub-sample. This is because patient resistance is rather prevalent, I can only identify less than 20% (132 out of the whole corpus of 484 sessions), where there is no resistance to doctors' diagnoses. In all other cases, there appeared clear evidence of resistance to professional judgements.

Physicians' explications of the evidence for reaching certain medical assessments can provide patients with opportunities to talk further about the professional assessments (Drew, 2013; Peräkylä, 2002). On many occasions, Chinese patients tend to show resistance rather than directly accepting the doctor's diagnosis. In comparison with patient resistance in British / American primary care (reported to occur in the treatment stage; see Stivers, 2007; Koenig, 2011), Chinese primary care interactions show what seem to be a higher level of patient resistance: besides showing resistance to treatment, patient resistance is already evident as early as in the stage of diagnosing.

There is little research into medical interactions that has investigated patient resistance. The research that can be located has been done mainly in the area of resistance to treatment (e.g. Stivers, 2005a, 2005b, 2007; Koenig, 2011), and in the area of psychotherapy (e.g. Peräkylä, et al., 2008; Vehviläinen, 2008; Voutilainen, et al., 2011). There is significantly less research focusing on patient resistance to diagnosis in primary care interactions (e.g. Ijäs-Kallio, 2011; Ijäs-Kallio, et al., 2010). In this chapter, I aim to address this gap by answering the questions: 1) What are the common dimensions of the doctors' symptom depictions, and the common

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dimensions of the patient's symptomatic accounts? 2) How do patients resist doctors' diagnoses? The overall sequence that is the focus of this chapter can be represented as [patient's problem presentation] + [doctor's symptom assessment] + [doctor's diagnosis] + [patient's symptom description].

Within this sequence, two recurrent patterns have been identified. At various points in a consultation, the clinician may indicate that the patient's symptoms are 'normal' and that nothing is medically concerning or problematic. The patient may resist that by representing her condition as being in some fashion abnormal. By contrast, when the clinician considers the patient's symptoms as abnormal, i.e. indicating a medical abnormality and worthy of medical care (i.e. doctorable), the patient may resist that by normalizing her symptoms. Symptom abnormality, in terms of medical relevance and medical significance, is the central form of expression at moments in which doctors and patients are misaligned in their diagnostic reasoning.

In this chapter, I first identify the practices through which clinicians construct symptoms as being either abnormal or normal; second, I identify the recurrent features of patient resistance to the clinician's diagnosis; third, I discuss the implications of the talk on symptom normality / abnormality for primary care diagnosis and patient participation.

2. Overview of the sequential pattern for 'making a diagnosis'

The moment when the doctor delivers a diagnosis to the patient has been considered in the research literature to be a discrete stage in the medical consultation (Byrne & Long, 1976; Heath, 1992, 1997). The diagnosis that the doctor gives is based on the information that the patient has given about their malady, through history taking, physical examination, or a combination of both (Robinson, 2006). The pivotal role of diagnosis in general practice consultations is manifest not only in this being the goal of information-gathering activities (through history taking and the physical examination), but also lies in determining and providing the basis for treatment advice (Heath, 1992).

Diagnosis in the primary care consultation is manifest in both the delivery of a diagnostic label (e.g. *a problem diagnosis* such as 'You've got rhinitis', or *a no-problem diagnosis* as in 'There's nothing wrong with you'), but also as some indication of the reasoning which supports that

diagnosis (Heath, 1992). Rather than a single moment in the consultation, the diagnosis stage is seen as a cluster of activities consisting of three components [description of condition] + [explanation of symptom cause] + [diagnostic label], and these activities do not always occur in that particular order. Example 1 offers an overview of the sequential organization of the interactional moments of 'making a diagnosis' in primary care encounters.

#1: ENT 186_traces of nasal blood

01 D: bu shi biede you shenme dongxi yin qi chu xue.
N be particular have what thing cause CP have blood
There isn't anything in particular causing your nose to bleed.

02 D: zaiyige a, ta ye bu xiang shi xueye fangmian yin qi wenti.=
another PRT it also N seem be blood aspect cause CP problem
Next, it doesn't seem to be caused by any problem in the blood.=

03 D: = yinwei kan ni lian se shenme de, mei you na zhong, he he biede shenme wenti.
because look your face colour what NOM N have that kind PRT PRT particular what problem
=Because, looking at your face and so on, there isn't anything, He. He. particularly problematic.

04 P: en.(0.8) na chi dianer yao ne?
PRT then eat a bit medicine Q
En. (0.8) Then should I take a bit of oral medicine?

After examining the patient's nose and throat, the doctor describes what she sees inside the patient's nose as indicating no particular problem supporting a 'no problem' diagnosis (line 1); that is followed with an 'exclusionary' assessment that there is nothing problematic in the patient's blood either. The doctor's exclusion of anything untoward in the condition of the patient's blood is evidenced in the doctor's next turn (line 3) by her description of the patient's complexion. When she enquires about the possibility of taking some medicine, the patient implies that her symptoms are more significant than the doctor has conveyed and that some treatment might be necessary. She is indirectly resisting the doctor's descriptions of her symptoms and the (no-problem) diagnosis indicated by the doctor.

In this example, the doctor arrives at a no-problem diagnosis on the grounds that the patient's symptoms are not significant, not a cause for concern; in response to which the patient resists by suggesting nevertheless she ought to take some medicine. In this next example, by contrast, their positions are reversed; the doctor characterizes the patient's symptoms as being abnormal and very much a matter of concern.

#2: Diabetes 64_sollen eyelids

01 P: xue tang shao gao yi dian dian.
blood sugar little high a little little
Blood sugar is a little a little bit high.

02 D: ↑a(0.2) SHAO GAO YI DIAN sh(h)I [d(h)uosh(h)ao.]XIAN SHUO.
Q little high a little be how first say
↑What(0.2)A LITTLE A LITTLE BIT HIGH is[(h)how (h)high.] TELL ME THAT FIRST.

03 P: [°He. He. °]liu dianer:,
[liu dianer:,
PRT PRT six point
six point
[°He. He.°]Six point:,
[Six point:,

04 D: [liu dianer duo. ni jiu yinggai zhuyi le.
six point more you just should attention CRS
[Six point and more. You should really pay attention.

05 D: yinwei zhengchang ren shi wu dian liu yixia de.=
because normal people be five point six below NOM
Because normal people are below five point six.=

06 D: =ni bie kan liu dianer yi=
You N look six point one
=We're looking at just six point one=

07 D: =liu dianer yi jiu yinggai shi you wenti de.
six point one actually should be have problem ASSC
=Just six point one is actually problematic.

The example begins with the patient, who has had a blood test just before this consultation, admits that her blood sugar 'a little bit high' (line 1). On line 3, the patient's laughter, and the vagueness and reluctance in sharing the results of her previous physical check with the doctor, projected some resistance to the doctor's question. The doctor then confirms and strengthens the patient's assessment, and clearly indicates that in her view the patient's symptoms are abnormal (lines 5 – 7).

In each of these examples, the doctor did not deliver a diagnosis. However, in example 2 she is indicating that the patient has a problem, diagnostically, whereas in example 1 the doctor indicates that the patient does not have a problem. In the first example, the patient's symptoms are depicted by the doctor as being normal, whilst in the second example the doctor depicts the patient's symptoms as abnormal. This diagnostic work is managed through descriptions of

symptoms, designed to support a diagnostic conclusion.

3. Normalizing symptoms and constructing symptom abnormality by doctors

When it is the patient's turn to see the doctor, in response to the doctor asking what seems to be the matter, the patient presents her problem, by describing the symptoms she has been experiencing and what are causing her concern. In extract 3 below, the patient complains of blood trace in her nose, and funny feeling in her throat.

#3: ENT 186_traces of nasal blood

01 D: zenme le. [zhe shi.
what CRS this be
What's the [matter.

02 P: [wo zhege bizi li you ↑xue ↑si.
my this nose inside have blood traces
[Inside my nose there're ↑blood ↑traces.

03 D: en: ta shi, shuo shi, na zhong(.) pingchang(.) cong qianbian(.) na zhong xing chulai de.(.) haishi,
PRT it be say be that kind common from front that kind blown out NOM or
En: Well, then, Is it the common (.)kind(.) coming from the front(.)the kind produced from blowing your nose.(.)or,

(0.3)

04 P: youdeshihou zhege- yuanxian zhege bikong bijiao gan.
Sometimes this before this nostril comparatively dry
Sometimes this- Before this nostril's comparatively dry.

((Patient points to the right nostril.))

05 P: wanle yi kou a, libian you xue si.=
then once pick PRT inside have blood traces
And once I pick my nose, there'd be blood traces inside.=

06 D: =en.=
PRT
=En.=

07 P: =zhe jintian shi(.) zhege bikong you biti ba. xing lai jiu you xue si.
this today be this nostril have mucus PRT woke up just have blood traces
=Today it's like(.) I have mucus in this nostril. I just woke up with blood traces ((in this nostril)).

((Patient points to the left nostril.))

08 D: en.
PRT
En.

09 P: yiqian yizhi jiushi yi ganmao(.) bizi

jiu bu xing.
before always actually once cold nose
just N fine
Actually it's <u>always</u> like this when I've caught cold(.) my nose then becomes not fine.

10 P: dazhe yi ge yue zhiqian ba.(.) ganmao le.
since one C month ago PRT caught cold CRS
It's one month ago.(.) since I caught cold.

11 P: en::, chi le dianer- chi le dianer ganmao yao. biyan yao.=
PRT ate CRS a bit ate CRS a bit cold medicine rhinitis medicine
En::, I took a bit-took a bit of flu medicine. rhinitis medicine.=

12 D: =en.=
PRT
=En.=

13 P: =da da zhen.(0.2) bizi ↑mei da hao ↑lisuo ne.
hit hit needle nose N very fine completely
PRT
=Had some injection. (0.2) My nose ↑hasn't become ↑completely recovered.

14 P: zhe liang tian ↑yi kan ↑you xue si ne.
these two days one look have blood traces PRT
Two days ago I ↑had a look myself ↑there're blood traces inside.

15 D: o. wo kan yi xia a.
PRT I look one C PRT
O. Let me have a look.

The patient, in the above extract, is concerned about finding traces of blood from her nose (lines 5, 7, 14), which seems to come from one nostril in particular, and moreover which have appeared after she has taken certain treatment for a cold (line 11). It is this appearance of traces of nasal blood after the problem should have been resolved by her treatment for a cold that is evidently a matter of concern to her, and which she presents as the reason for her visit. In short, this symptom seems to the patient to be diagnostically relevant.

After conducting a brief physical examination of the patient's throat and nose and general appearance, the doctor assessed the patient's symptoms, 'informing' (Heath, 1992) the patient of the result of his findings. The doctor's assessment serves the communicative function of forecasting a certain diagnosis (Maynard, 1996; Stivers, 1998).

#4: ENT 186_traces of nasal blood

01 D: hai shi <u>kaolv</u> bizi you <u>yanzheng</u> yihou,
still be consider nose have inflammation after
I actually <u>see</u> slight <u>inflammation</u> around your nose,

02 P: En.
CRS
En.

03 D: fa yan yihou, yixie xiao de xie xue guan a(.)
kuozhang.
have inflammation after some small ASSC some blood vessels PRT
expand
**With slight inflammation, some small some blood vessels (.)
expand.**

(3 lines omitted)((Doctor recycles previous utterances.Patient
acknowledges minimally.))

07 D: dao bu da- litou chazhe
mei shenme biede- shenme dongxi.
actually N very inside checked
N any particularly any thing
**Actually it isn't very- There isn't anything particularly-
problematic found inside your nose.**

08 D: bu shi biede you shenme dongxi yin qi chu xue.
N be particular have what thing cause CP have blood
There isn't anything in particular causing your nose to bleed.

09 D: zaiyige a, ta ye bu xiang shi xueye fangmian yin qi
wenti.=
another PRT it also N seem be blood aspect cause CP
problem
**Another thing, it doesn't seem to be caused by a problem in the
blood either.=**

10 D: =yinwei kan ni lian se shenme de, mei
you na zhong he he biede shenme wenti.
because look your face colour what NOM N have that kind PRT PRT
particular what problem
**=Because looking at your face and everything else, there isn't
anything, he. particularly problematic.**

The doctor, in the above extract, has assessed the patient's symptoms as indicating that she does not have a significant medical problem. This is clear in expressions like 'nothing particularly problematic' in lines 7 and 10. In support of his no-problem diagnosis, the doctor plays down significance of the very symptoms which are for the patient such a matter of concern. He describes some slight inflammation around the patient's nose caused by the expansion of some small blood vessels (line 3), thereby representing the patient's symptoms as being minor or not so atypical as to indicate any significant condition. Note the doctor's prefacing assessment with the fact marker, *actually* (Clift, 2001) ('I actually see slight inflammation around your nose', line 1), and the *self-correction* in line 7 ('Actually it isn't very-' to 'There isn't anything particularly problematic…'), through which he includes an evidential verb ('see') and the source of evidence ('inside your nose'). Through these linguistic practices, the doctor attempts to make explicit to the patient that he can find no physical

evidence indicating anything particularly troubling or untoward about the patient's health. In brief, whilst the patient has described her symptoms in terms that indicate their atypicality, by contrast, the doctor normalizes those same symptoms.

Whereas in the previous example the doctor normalizes the patient's symptoms in support of a no-problem diagnosis, in this next example the doctor does something rather different. He first delivers an assessment to reassure the patient (lines 1, 2) that she does not have throat cancer, which she has earlier indicated she fears might be the problem.

#5: ENT 184_tight feeling in throat

01 D: ting ni shuohuag zhege shengyin (0.2) mei shenme wenti.
listen you speaking this voice N what problem
It sounds as though there isn't any problem (0.2) with your voice during speaking.

02 D: chi fan bijiao liu- shunchang qima zhege-
eat meal comparactively flow smooth at least this
Foods flow down smooth- smoothly at least-

03 P: En.
CRS
En.

04 D: =dui. qima bu hui shi shuo shi na zhong shidao a, huozhe shi na zhong qiguan li de wenti.
correct at least N can be say be that kind esophagus PRT or be that kind air tube in ASSC problem
=Correct. At least it can't be those kinds of problem in the esophagus, or in the air tube.

05 D: zhang zhe xianzai zhang zhe zui neng kan dao de zhege fanwei nei a sangzi e bijiao ganzao
open CP now open CP mouth can see CP ASSC this rang within PRT throat PRT comparatively dry
The part of your throat which can be seen when you op- opened your mouth just now, (0.2) eh: is quite dry.

06 D: houtou dou (.) dou gan de shuo dou zhou zhou le, zhege pier pier gan de.
rear all all dry CSC all wrinkle wrinkle CRS this skin skin dry CSC
The rear of your throat(.) is very dry and wrinkled, The surface is dry.

(5 lines omitted) ((Patient acknowledges minimally.))

12 D: yinggai shuyu yige(.) jiao ganzaoxing yanyan.
should belong one call dryness pharyngitis
It is probably the illness(.) called dryness pharyngitis.

He then goes onto indicate that nevertheless her symptoms are indeed abnormal, by describing

her throat as ‘quite dry’, ‘very dry’, and ‘wrinkled’ (lines 5, 6), concluding that her symptoms are abnormal and therefore that she has pharyngitis. Hence, in contrast to the previous case where the doctor normalizes the patient’s symptoms, here the doctor assesses the patient’s symptoms as being abnormal. However, whilst in a certain respect the doctor and patient are aligned on the matter of the abnormality of her symptoms, the diagnostic relevance or outcome of this symptom abnormality is different for each: the patient was concerned that she has a serious condition, cancer, whilst the doctor’s diagnosis is that the abnormality of the symptoms indicates a rather less serious condition, pharyngitis.

In summary, in example 4 the doctor has constructed an account of the patient’s symptoms in such a way as to normalize them, whilst in example 5 the doctor constructs the patient’s symptoms as being abnormal.

We shall see later that there is the potential in such cases for doctor-patient misalignment about whether or not the patient’s symptoms are abnormal, and that the diagnostic relevance of their symptoms has the potential to result in some resistance by patients, concerning either the normality or abnormality of their symptoms or the diagnostic conclusions that may be reached. But for the present, we should first examine precisely how the construction of symptom normality and abnormality is achieved. That is, we shall now see that doctors construct normality and abnormality of symptoms through a common set of dimensions, namely physical signs or evidence, the patient’s age, test results, or particular circumstances (such as the patient’s living conditions).

Physical signs

We have noted above that in example 4 the doctor used an evidential verb, what he saw (line 7), in assessing the patient’s symptom (‘nothing particular problematic’). He similarly uses *evidential verb* constructions, ‘it doesn’t seem’, and ‘looking at’ in referring to the visible physical evidence, and the physical evidence of ‘the inside of your nose’ and ‘your complexion’. In this way the doctor draws on the sensory verbs and signs through which he describes and assesses the patient’s symptoms, in this case, normalizing the symptoms. In example 5 the doctor uses a qualified negative formulation in line 1, ‘It sounds as though there isn’t any problem with your voice during speaking.’ Rather than using a plain assertion ‘your voice doesn’t have any problem’, the doctor incorporates the *evidential verb* (‘sound’), in doing so,

accomplishing the double functions (Peräkylä, 1998) of indexing the sensory evidence gathered from hearing the patient's voice, and marking his assessment as being tentative. Furthermore, he refers back to the patient's negative answer to prior history-taking questions as to 'whether the patient experiences difficulty in swallowing' as further evidence for the forthcoming no-problem diagnosis – 'swallowing' being of course another physical sign which bears on whether or not the patient has a significant medical condition.

The following four extracts are some further illustrations of this dimension of descriptions of physical evidence through which doctors may account for the normality (example 6) and abnormality (example 7, example 8) of the patient's symptoms in concern, during the course of diagnostic reasoning and concluding. In example 6, having considered the diagnostic hypothesis of liver and kidney illness, the doctor's sensory verb construction 'though you don't look like you have liver or kidney condition' serves to normalize her symptoms, thereby negating the possibility that the patient is suffering such an illness.

In example 7 the doctor draws on the evidence of physical signs ('Both the appearance on your face and your skin aren't very typical', line 1), that the patient's condition is abnormal. Similarly, the doctor in example 8 describes the physical evidence retrieved by checking her throat ('see from the upper part (of your throat)', line 2) as supporting a diagnosis of pharyngitis.

#6: X44_swollen hands & face

01 D: zai yi ge,(.)tkkh jiushi shuo zhong (.)women cha gan shen.
another one C PRT actually say swelling we test liver kidney
Next,(.) tkkh For swelling(.) actually we test liver or kidney.

(1.8)

02 D: zhege dongxi zhi neng kao jiancha le,=
this thing only can depend tests CR
This can only be explained by testing,=

03 D: =danshi kan zhe shi bu xiang.
though look CP be N like
=Though you don't look like you have liver or kidney condition.

#7: Thyroid 14a_thyroid problem

01 D: cong lian se cong pifu de biaoxian, dou bu shi tai dianxing.
from facial colour from skin ASSC presentation both N be very typical
Both the appearance on your face and your skin, aren't very typical.

02 P: en.
CRS
En.

03 D: dui.
right
That's right.

04 D: cunzai jiu shuoming you ge wenti, shi bu shi zhege jiajian.
exist just shows have C problem be N be this hypothyroidism
There exists- It just shows a problem, whether or not it's hypothyroidism.

#8: ENT 263a_blocked feeling in throat

01 D: zai yige <jiu shuo shi>(.) ta zhege: zai wang xia (.) jiu shi kan bu dao le.
another one just say be it this more towards low just be see N CP CRS
Another point <Just to say>(.) well: for the lower part(.) it just can't be seen.

02 D: danshi cong nage,(.) shangmian nage,(.) qingkuang lai kan,(0.2)guji ah(.) zan nage zhenduan shi zhengde-(.) zhen- zhenduan shi bijiao zhunque de.
but from that upper that situation CP see estimate PRT we that diagnosis be correct diagnosis diagnosis be relatively precise ASSC
But see from well,(.) the situation of well,(.) the upper part,(0.2)I estimate ah(.) our diagnosis((pharyngitis)) is correct-(.)diag- diagnosis is relatively precise.

Age or time / stage of life

One of the physical 'signs' that is quite visible to the doctor is the patient's approximate age or her stage of life, and the data indicate that doctors will interpret symptoms as normal or abnormal relative to or in the context of the patient's age. That is to say, a symptom may not be intrinsically normal or abnormal, but rather may be interpreted as one or the other in the context of the patient's age, so that what might for instance be abnormal in a patient of a certain age may be considered normal in a patient of a different age. An example is the following in which the doctor interprets a symptom that might otherwise be a cause for concern as normal for someone of the patient's age.

#9: X48a_big thyroid

01 D: shenglixing- keyi shenglixing zhong a.
physiological may physiological swelling PRT
Physiological- This may be physiological swelling.

02 D: ni zhege nianling, keyi da yidian.
your this age can bigger a little
At your age, ((the thyroid)) can grow to be a little bigger.

03 D: zhiyao mei jiakang, jiu xing.
as long as N hyperthyroidism then alright
As long as the test doesn't show hyperthyroidism, then it's alright.

The patient is a teenage female who is concerned about what she regards as her enlarged thyroid glands; she is worried that she might have hyperthyroidism. Whilst the patient regards her symptom (swelling) as abnormal, the doctor normalizes the same symptom, so that, whilst agreeing with the patient that her glands are swelling, the doctor downgrades the severity of the symptom (line 2, 'a little bigger') in terms of the patient's age (line 2, 'at your age'), the implication being that the slight swelling could be attributed to an adolescent growth spurt, and not to the possibility that the patient suffers from hyperthyroidism. At last, the physician provides a no-problem diagnosis, which is delivered with a hedged construction ('As long as the test doesn't show hyperthyroidism, then it's alright.', line 3). In this next example, the patient has presented with migraine symptoms, symptoms to which again the doctor attributes less diagnostic significance than does the patient's mother.

#10: ENT266_migraine

01 D: ruguo yao shi, shuo, ni you zhe fangmian de gulv de hua, keyi zuo ge lu nao de yige CT kan yixia.
if if be say you have this aspect ASSC worry ASSC say can do C head brain ASSC one TEST NAME see once
If, Say, you have this kind of worry, you can have a head and brain CT and see.

02 D: danshi ta- ta zhege zheme da nianling chuxian you wenti de kenengxing dou feichang xiao.
but his his this this big age appear have problem ASSC possibility actually very little
But at his- his age the possibility of him having that problem is actually very small.

Before this extract, the patient's mother has explained that she believes her son's migraine may be an indication of a brain condition. In reply, the doctor discounts that possibility on the basis of the patient's relatively young age (early 30s), and instead interprets the symptoms as a sign of sinusitis later in the consultation.

In both these previous cases, doctors have in effect normalized what appear to the patient (or patient's companion) to be abnormal symptoms by explaining that they are not diagnostically abnormal in terms of the patient's age. In this next example, by contrast, the doctor treats the

patient's various symptoms – in someone of his age (mid 30s) – as indicating a significant medical problem.

#11: Diabetes 110_chest tightness

01 D: ni xue tang- you you tangniaobing. you you gao xue zhi. you you gao xue tang. you you niao danbai.
your blood sugar plus have diabetes plus have high blood lipid plus have blood sugar plus have have urinary protein
Your blood sugar- Plus you've got diabetes. Plus you've got high blood lipids. Plus you've got high blood sugar. Plus you've got urinary protein.

(0.3)

02 D: ni zhege nianling he zhe bing bu fu a.
you this age HE this illness N match
Your age doesn't match these illnesses.

03 P: en.
CRS
En.

04 D: zhe dou shi lao nian bing rang ni de shang le.
these all be old age illnesses let you got CP CRS
All these you've got are illnesses of old age.

The patient has complained of tightness in his chest, and has reported that the cardiology tests that he had reveal indications of a problem. The doctor here explains that the patient's symptoms do indeed suggest a significant problem, given that they are abnormal for someone of his age; they are the kinds of symptoms that might be more familiar and less concerning for someone in an older age bracket. The symptoms are incongruent with the patient's relative youth, and for this reason are characterized by the doctor as being abnormal and severe – indeed leading the doctor to propose, later in the consultation, that the patient should undergo intensive treatment in hospital.

These examples (9 – 11) illustrate the ways in which doctors reason about the normality or abnormality of certain symptoms in terms of their congruency with the patient's age. In cases where the doctor proposed that the symptoms are congruent with the patient's age, they downgrade the apparent abnormality of the symptoms, whilst in cases where a patient would not be expected to be experiencing those symptoms at their relatively young age, doctors in effect upgrade the abnormality, and therefore the severity of the symptoms. Thus 'symptom severity' is described in terms relative to 'stage of life'.

Evidence of test results

A final device through which doctors may either normalize patients' symptoms or account for their symptoms as abnormal is the use of the interpretation of medical test results. As we have seen in previous examples, doctors commonly refer patients for further tests either to confirm their expectation that there is nothing much wrong with the patient, and thereby to reassure the patient that there is nothing seriously the matter; or to explore whether the patient's symptoms are indeed a sign of some more serious underlying condition. The results of such tests are therefore discussed in subsequent consultations, and again we find that the doctors may either normalize these results, or they may interpret the results as indicating some abnormality in the patient's condition. In this next example, the nurse has handed the doctor a photograph of the patient's throat.

#12: ENT 395_phlegm

01 D: she gen zhege difang a, jiu shi guanyu yige lvpao zengsheng a.
tongue root this place PRT just be about a follicular hyperplasia PRT
The bottom of your tongue this place, just has a bit of follicular hyperplasia.

02 D: zhege bu yaojin a,(.) ta zhuyao shi fayan yinqi de.
this N matter PRT it mainly be inflammation caused CP
This doesn't matter,(.) It's mainly caused by inflammation.

Looking at the photograph, the doctor suggests that the photograph shows nothing untoward, nothing particularly abnormal. The doctor gives a mitigated description of what the photograph reveals (line 1, 'just has a bit of'), going onto explain that this is merely a mild inflammation that 'doesn't matter', which is to say that it is not diagnostically relevant, hence the symptom (follicular hyperplasia) is normalized diagnostically. Similarly, in example 13, the doctor explains that the CT scan of the patient's brain shows no physical or organic cause for the patient's dizziness, thereby normalizing his symptom ('often related to ears') and which the doctor does not regard as diagnostically relevant.

#13: ENT 401_dizziness

01 D: ni jiran zuo le lu nao ct le, xianzai bu kaolv lu nao de bing bian.(.) huh,
you since done CRS head brain (examination name) CRS now N consider head brain ASSC illness change PRT
Since you've had a head brain CT, now I don't consider illness or a change in your head and brain.(.) Huh,

02 D: zhege yun na, zhiyao ni pai- paichu lu nao
de bing bian yihou a,
this dizziness PRT as long as you rule rule out head brain
ASSC illnesses change after PRT
This dizziness, as long as we've rul- ruled out the illness and a change in the head and brain,

03 D: <yi- ban-> dou yu erduo you guanxi.
Often all to ears have relation
<It's- often-> related to the ears.

Prior to the consultation in this next example, the doctor has indicated that the patient's presenting symptom of a dry mouth could be associated with diabetes, and she referred the patient for further tests; the patient interprets the results of these tests, a blood sugar level of 'five point something', as being 'not high', and so normal and not a matter of concern.

#14: Diabetes 101c_dry mouth

01 P: can hou(.) en wo kan wu dian duo. ↑bu gao a.
meal after PRT I see five point more N high PRT
After-meal(.) En. I see five point something. ↑Not high.

(0.4)

02 D: dui. shuoming ni shi ge er xing tangniaobing. jianglai hai keneng you yi tian(.) chuxian ↑di xue tang le.
right shows you be C two type diabetes future actually possible have one day appear low blood sugar PRT
Right. It shows you have type two diabetes. In the future actually it's possible one day(.) you may develop ↑low blood sugar.

In contrast to the previous two examples, here in example 14 the doctor treats the test results as abnormal, and as indicating a diagnosis that the patient is Type II diabetic, 'Right. It shows you have type two diabetes. In the future, actually it's possible one day you may develop low blood sugar' (line 2). The minimal acknowledgement 'right' does not indicate the physician aligns with the patient's judgement of the normal blood sugar. Instead, based on the further testing results, the doctor delivers the assessment that this is 'Type II Diabetes'; further makes explicit to the patient the risk ('In the future, …you may develop low blood sugar'). The patient and the doctor are misaligned insofar as the patient interprets the test results as normal whilst the doctor treats them as abnormal, as happens also in the following example.

#15: Diabetes 101a_dry mouth

01 D: na shi yiding gao le.
that be certainly high ASP
That's certainly very high.

(10 lines omitted) ((Doctor talks quietly about the indexes of testing results.))

12 D: yinwei ni kong fu (0.2) liu dian duo (.)
yijing chao biao le.
because you empty stomach six point more
already exceeded criteria CRS
Because you were checked with an empty stomach (0.2) at more than six point.(.)Which has already exceeded the criteria.

13 D: ni nianling bu da. sanshi ba sui.
you age N old thirty eight age
You are not old. Thirty eight.

14 D: zhengchang ren shi liu dian yi.(.) hang,=
normal people be six point one Q
Normal people are six point one. Alright,=

The doctor in example 15 draws the patient's attention to the problem with his blood sugar, evidenced with abnormal test results. The doctor delivers an upgraded description (line 1, 'That's certainly high'), then accounts for that assessment by comparing the level of the patient's blood sugar with the normal criteria (lines 12, 14); additionally, the doctor comments on the inconsistency of the patient's blood sugar with his relatively young age (thirty-eight years old). In doing so, the doctor conveys the diagnostic significance of the patient's condition.

Other circumstances

We have seen that doctors may construct an account of symptoms as being abnormal, for instance, abnormal in terms of patients' age, as a warrant for a diagnosis that the patient is indeed suffering from a significant medical condition. On the other hand, doctors may likewise reason that symptoms that might have appeared to be a concern are in fact quite usual or normal, for instance, for patients of that age – and that by normalizing symptoms in this way, the doctors convey there is nothing to worry about (e.g. a no-problem diagnosis). One way in which doctors commonly downgrade or downplay the significance of certain symptoms is to account for those symptoms in terms of some particular circumstances, such as, the time of year, or the living conditions of the patient. The first of these, accounting for the symptoms in terms of the time of the year, is evident in the next example.

#16: ENT 186_traces of nasal blood

01 D: fa yan yihou, yixie xiao de xie xue guan a(.)kuozhang.
have inflammation after some small ASSC some blood vessels PRT expand
With inflammation, some small some blood vessels (.) expand.

02 P: en:,
CRS
En:,

03 D: tebie shi na zhong ganzao de jijie a jiu shi zhege
wen wendu bianhua bijiao da de jijie,
especially be that kind dry ASSC season PRT just be this
temperature temperature change comparatively big ASSC season
Especially for those seasons when it's dry and
temp- temperature change is just comparatively big,

(0.2)

04 D: ta zhege shihou a, youshihou yixie xiao de xue guan
rongyi polie.
it this time PRT sometimes some small ASSC blood vessels
easily break
During this time, sometimes some small blood vessels can
easily break.

The doctor explained that various symptoms that the patient is experiencing, including the inflammation and breaking of some blood vessels, a runny nose and so on, could be attributed to dry periods during winter when there are comparatively large changes in temperature (line 3). The symptoms are therefore normal and not a cause of diagnostic concern. Similarly, in example 17, the doctor also explains that the patient's symptoms of a runny nose and nasal inflammation (i.e. rhinitis) are quite normal for the time of the year.

#17: ENT 186_traces of nasal blood

01 D: ta youxie youxie ren yidao yidao tian leng de shihou a jiu
liu biti shenme. ↑na ↑ye shuyu biyan a,
it some some people once once weather cold ASSC time PRT just
run mucus what that also belong rhinitis PRT
Well, some some people have runny nose once
the weather is cold. ↑That's ↑also rhinitis,

02 D: dan biyan ye shi you you fen zhengzhuang qing zhong a, zhengzhuang
qing de hua, keyi jiu bu yong guan la.
but rhinitis also be have have divide symptom light heavy PRT
symptom light ASSC say can just N use mind PRT
But rhinitis can be presented as minor or major symptoms, If the
symptoms are minor, you can just leave it like that.

In example 17, which is taken from the same consultation as the previous example (example) 16, the doctor quite explicitly downgrades or normalizes the patient's symptoms (line 2, 'if the symptoms are minor') as the kind of symptoms that some people experience when the weather is cold, and therefore they are not a cause for concern (line 2, 'you can just leave it like that'). A final illustrative example is the following.

#18: ENT 246_breathing difficulty

01 D: yinwei ni zhe danchun guominxing biyan,
because you this simple allergic rhinitis
Because your condition is simple allergic rhinitis,

02 D: ta shi ge,(.)shijishang yige shi(0.2) e:(.) ta you yiding de jijiexing.
it be C actually one be PRT it have limited ASSC seasonal
Well,(.) actually it's(0.2) eh:(.) it's kind of seasonal.

03 D: bu shi shuo chang nian zheyang.
N be say all year this
That's to say it is not like this all year around.

Just before this, the patient has requested more effective and quicker acting treatment for her allergic rhinitis; the doctor resists this request by accounting for the patient's symptoms as being a relatively normal allergic condition for this time of year (line 2, 'it's kind of seasonal'). In other words, the doctor is not denying that the patient has a condition, nor is he suggesting the symptoms are not diagnostically relevant – however, he is proposing that they are only 'normally abnormal' and do not indicate the condition of the severity proposed by the patient.

It is well-known that among the other conditions that can affect patients' health are their living conditions, for instance, dampness in the home, inadequate heating, all of which can create a harmful atmosphere. In example 19 the doctor points to precisely those kinds of circumstances by way of normalizing the patient's symptoms.

#19: X34_dry lips

01 D: ↑zai yige(.) ↑wenti(.)eh zai jiu shi(.) ni xiang ni zhege dao dongtian doukuai guowan le,=
another one problem again just be you like you this till winter almost end CRS
↑Another(.) ↑problem(.) It's just(.)it could be now the winter almost ends,=

02 D: =ni yao jia li xin sheng le luzi ya, hai you shi nuanqi tai gan na, zhege huanjing gan.
you if family inside newly used CRS stove PRT or have be heater too dry PRT this environment dry.
=If your family has recently used a stove, or heater making it too dry, the environment is dry.

The patient in this example has presented with dry lips, to which the doctor has responded by considering two possible diagnoses, diabetes and dryness syndrome (mentioned before; not

shown in the extract). However, bearing in mind that it is almost the end of winter (line 1) and that the patient's family most likely has been using a stove and similar heater that have dried the atmosphere through recent months, the doctor normalizes the patient's symptoms by accounting for them as having been most likely caused by the dry atmosphere in her house. By normalizing the patient's symptoms in this way, the doctor discounts the possibility that the patient is suffering from a significant condition, that is, she discounts the possibility that the patient is suffering from diabetes or dryness syndrome. It is notable that here, as in earlier examples, the doctor designs her explanation with *hedging* and *conditional clause formats*, thereby directing the diagnostic reasoning away from the patients' physical symptoms to some external circumstances or contexts. By normalizing the patient's symptoms in this way, the doctor minimizes their diagnostic relevance.

4. Patient resistance to symptom normality / abnormality

We have seen two patterns that may be associated with a patient's presentation of the medical symptoms which are causing them concern. First, on some occasions the doctor may *play down* or *'reduce'* the medical significance of the symptoms the patient has described. Whilst the patient attributes to the symptoms he or she is experiencing some quite problematic medical condition, the doctor attributes much less significance to those same symptoms. In the other pattern, in response to the patient's description of some symptoms, the doctor *upgrades* the account and significance of those symptoms, thereby indicating a more problematic medical condition, and hence a more 'serious' diagnosis than it appears the patient had expected. So, in the first pattern, the doctor's emerging diagnosis is perhaps a little less serious than seems to be proposed by the patient; in the second pattern, the diagnosis appears to be perhaps more serious than would seem to be indicated by the patient's account of their symptoms. The doctor either downgrades or normalizes the symptoms, or constructs the symptoms as being abnormal by upgrading the patient's account of those symptoms.

Associated with these patterns, we find in these interactions that patients may resist the doctor's account of their symptoms. Where the doctors normalize a diagnosis by 'reducing' or downgrading symptom descriptions, patients may push back by inflating or strengthening their descriptions of the symptoms, thereby bringing those symptoms more in line with the concerns they initially mentioned to the doctor. Alternatively, if the doctor has depicted the patient's symptoms in terms that treat them as being somewhat abnormal, and thereby indicating a more

serious medical condition, a patient may downgrade or 'reduce' the account of their symptoms, in pursuit of a less serious diagnosis. In this section, we will review how patients resist the diagnostic direction and significance which the doctor has attributed to the patients' symptoms.

The patient's representation of symptom abnormality

In cases where the doctor has normalized a patient's symptoms, the patient may resist by upgrading their symptoms, as in following case.

#20: Diabetes 64_swollen eyelids

```
01  D:   kan       ni de lian se,   bu   xiang  shi      na     zhong:(.)
         gan  bing ↑a (.)  shen  bing  ↑a (.)name yanzhong  yin  qilai
         de  [zhong.
         look your facial color    N   seem  be       those    kinds
         liver illness PRT  kidney illness PRT  so serious
         caused CP  ASSC swelling
         Looking at your face, the swelling symptom doesn't seem to be
         caused by any serious kind of:(.) conditions in the ↑liver, or
         ↑kid[ney.

02   P:       [he. he.
              PRT PRT
              [He. He.

03  D:   >wo shi zheme ge ganjue.<
          I  be  this  C feeling
         >That's  what I  think.<

04  P:   e.     wo you dian xu.          you  dian nage pi     xu.
         PRT    I have kind of deficiency have bit that spleen deficiency
         Eh. I feel kind of weak. I feel kind of spleen deficiency.
```

In line 1, the doctor has described the patient's symptoms – 'looking at yourface' – in terms that plainly normalizes them, thereby supporting a non-serious diagnosis ('the swelling symptom doesn't seem to be caused by any serious kind of conditions in the liver or kidney'). In her next turn (line 4), the patient resists the doctor's no-problem diagnosis by attributing to her symptoms a diagnosis that is more familiar in Chinese traditional medicine (spleen weakness). In this next example, the doctor similarly arrived at a no-problem diagnosis (that no-problem diagnosis being indicated through there being no need for medical treatment, lines 1 & 2). The patient resists that diagnosis by volunteering a new symptom (bumps on each side of the throat), which adds to and strengthens her previous symptomatic descriptions of having a sore throat.

#21: ENT6_throat pain

01 D: En:(.) mei you biyao dazhen.
PRT N have need injection
En:(.) there's no need for an injection.

02 D: dazhen de hua jiu shuo shi na zhong ruguo you jixing yanzheng.
injection ASSC say just say be that kind if have acute inflammation
Have an injection only works when there is acute inflammation.

02 P: en.
CRS
En.

03 D: dui.
right
That's right.

05 P: jiu shi wo zhe liang bian yi teng de shihou, shi yi bian yige bao.
just be I these two sides once sore ASSC time be one side one bump
It's just that once both sides of my throat get sore, there'll be bumps on each side.

This pattern of resistance to the doctor's normalizing can be seen in each of these following brief excerpts in which the patient variously upgrades the doctor's descriptions; for instance, in example 22, that the patient describes herself as 'always at night I feel a little heart palpitation', in contrast to the doctor's preceding symptomatic account 'actually your heart is not palpitating'; and in example 23, that the patient proposes that her 'nose is very severe', in contrast to the doctor's downgraded 'you just have a bit of …'.

#22: Diabetes 96_hungry feeling & heart palpitation

01 D: hai shi bu xin huang ah.
Still be N heart upset PRT
Actually your heart is not palpitating.

02 P: bu xin huang ah?
N heart upset PRT
My heart is not palpitating?

03 D: ting zhe xianzai bu xin huang, xin lv bu kuai.
listens CP now N heart upset heart rate N fast
It doesn't sound like you have a palpitating heart for now, your heart rate is not fast.

04 P: shi a, lao shi wanshang he he you dianer xin huang.
be PRT always be night like like have a little heart
Really, It's like I always at night feel a little heart palpitation.

#23: ENT 186_traces of nasal blood

01 D: hai benshen jiu you dian manxing biyan.=
actually self just have a bit chronic rhinitis
Actually you just have a bit of chronic rhinitis.=

02 P: =jiu shi a. bizi hen lihai. zhiyao yi sangzi teng, bizi jiu hen lihai.
just be PRT nose very severe once if throat pain nose just very severe
=It is. My nose is very severe. When my throat is sore, my nose then gets very severe.

The patient's representation of symptom normality

In the pattern described in the previous section, the patient resists the doctors' attempts to downgrade their symptoms and thereby to normalize their condition, resulting in a no-problem diagnosis; in the patient's view their symptoms are of greater concern than the doctor allows. In approximately 30 percent of the cases, the reverse happens; the doctor appears to indicate that the patient's symptoms are indeed a matter of concern, in response to which the patient resists by normalizing their symptoms, thereby reducing the seriousness of their condition. It seems reasonable that this pattern of patient resistance is less common than cases in which patients resist doctors normalizing their symptoms and condition; the former is present on occasions when patients have presented with a medical condition that is causing them concern; however, the latter seems more evident when the patients' recent tests shows some sort of problem, or in cases where the patients have been referred to the clinic. The tendency to more resistance to a no-problem diagnosis than to a problem diagnosis are consistent with the findings of previous research. In ENT oncology consultations, patient tends to initiate new concerns, immediately following the projection of a no-problem assessment by the physician (Drew, 2013). Similarly, in pediatric primary care, parents tend to show resistance to non-antibiotic treatment suggestion (Heritage & Stivers, 1999; Mangione-Smith et al., 2003).

Nevertheless, there are just a few instances in which a patient seems to play down the seriousness and significance of symptoms to which the doctor has previously given some diagnostic weight. The following two examples illustrate this much less common phenomenon.

#24: Diabetes 64_swollen eyelids

01 D: danshi ni de zhuyi le.
but you need to attention CRS
But you need to pay attention to it.

02 P: xuanxian shi ↑xue zhi gao le, ↑ganyousanzhi gao le,

before be blood cholesterol high PRT INDEX NAME high PRT
Before my ↑blood cholesterol was high, my ↑triglyceride was high,

03 P: zhe ↓hai jiang di bu shao le
this actually reduce N little PRT
Now they have ↓actually both reduced a lot.

#25: Diabetes 89_high blood sugar

01 D: tangniaobing duoshao nian le.
diabetes how many years CRS
How many years have you had diabetes.

02 P: hao- haoxiang you liang nian le.(0.2) jiushi xue tang ye shi you yidian gao ma, jiushi shuo.
seem seem have two years CRS actually blood sugar also be have a bit high PRT just say
Seem- seems like two years.(0.2) Actually my blood sugar is a bit high, just to say.

In each case, the doctor has highlighted the likelihood that there is something medically amiss to which the patient 'needs to pay attention' (example 24, line 1,), or by asking a question that highlights the fact that the patient has suffered from diabetes for some time (example 25 line 1). However, the patient responds by downplaying the medical concern through descriptions which reduce the severity of his or her symptoms; in the first example, the patient describes her symptoms in the *past tense* (line 2), and concludes that her symptoms 'have actually both reduced a lot'; in the second example, the patient resists the implication of the doctor's enquiry about how many years she has had diabetes, by avoiding attribution of the diagnostic label 'diabetes' and substituting that with an account of her blood sugar being 'a bit high' (it may be noted that her *prefatory* 'actually' is contrastive with the doctor' prior turn; Clift, 2001). In each of these examples, the patient is pushing back against the doctor's incipient diagnosis by explicitly downgrading or normalizing her symptoms. In other cases, this resistance is much less explicit; indeed, it is only implicit in the patient's skepticism or reservation with the doctor's account is conveyed through what are, in effect, *repair initiations* (Drew, 2003). This feature of implicit resistance done through skepticism is clear in the next example – in response to the doctor's diagnostic assertion 'cholecystitis', the patient utters a form of elliptical inquiry ('Is it?'), adding inconsistent evidence which tends to normalize the abnormality in her gall.

#26: X50_bitter & dry mouth

01 P: Ah. ↑ni shuo kou ku- kou ku jiu shi
[dan de qiao,
PRT you say mouth bitterness mouth bitterness just be gall ASSC problem
Ah. ↑You mean mouth bitterness- Mouth bitterness is actually

[the problem with the gall bladder,

02 D: [kou ku youkeneng youde ren shi dannangyan
mouth bitterness possibly some people be cholecystitis
[Mouth bitterness possibly for some people is cholecystitis

03 P: shi o,(0.1) na, hai shi bu teng.
be Q that still be N hurt
Is it, (0.1) Well, actually it ((my gall bladder)) doesn't hurt.

Dimensions of comparison (upgrading and downgrading)

Across these different patterns of resistance, we find a relatively restrictive class of comparators or dimensions in terms of which one diagnostic account is compared or contrasted with a prior account. The first set of comparators consists, quite naturally, of '*quantity' terms*, for instance of hedges like 'a bit of' and 'reduced', which function to undermine the significance of the speaker's evaluation, or intensifiers like 'very', 'a lot', 'high', 'completely', which serve to boost the strength of what has been described (Labov & Waletzky, 1997; Taglimonte & Roberts, 2005). Sometimes 'quantity' can be conveyed through *descriptive terms*, such as 'serious / severe', 'weakness', 'both sides', 'high blood sugar'. A second set of comparators is *temporal comparisons*, such as 'always', 'in the afternoon', 'often', 'once', 'two years.' A final set of comparators to which patients sometimes resort is that of *treatment descriptions*, as when in this next excerpt the doctor proposed a no-problem diagnosis ('isn't anything particularly problematic'), the patient responds by suggesting a possible treatment, implying thereby that she considers that there is something wrong with her.

#27: ENT 186_traces of nasal blood

01 D: mei you na zhong he he biede shenme wenti.
N have that kind PRT PRT particular what problem
There isn't anything, He. He. particularly problematic.

02 P: en.(0.8) na chi dianer yao ne?
PRT then eat a bit medicine Q
En.(0.8)Then I should take a bit of oral medicine?

In this next example, the patient resists the doctor's downgraded view of the treatment (i.e. medicine) that is necessary.

#28: ENT 266_migraine (C: patient's mother)

01 C: ta zhege xuyao zenme zhiliao a
he this needs how treat Q
What treatment does he need.

02 D: en: yi ge shi yong dianer yao pen pen bizi. zai chi dianer yao kan kan. a.
PRT one C be use bit medicine spray spray nose and eat bit medicine see see Q
En: first use a bit of medicine to spray the nose. Then take a bit of medicine orally and see. Alright.

(6.2)

03 C: fanzheng shi >gen chu< shi gen chu bu liao shi ba, he. he.
anyway be completely cure be completely cure N CRS be Q PRT PRT
Anyway >to cure it completely< it can't be cured completely. can it, He. He.

04 C: de(.) yong(.) zhege xuyao yong shenme shoushu zhilei de, jiu shi shuo shaowei-
need use this need use what surgery category NOM just be say slightly
Need(.) Use(.) Does this need surgery or something like that, Just to say to slightly-

The doctor's treatment recommendation in line 2 to 'take a bit of medicine' to spray the nose and 'a bit of medicine orally' is a downgraded form of recommendation in terms both of quantity ('a bit of') and of the rather unspecific nature of medicine to be taken. The patient appears to resist such minor or negligible medical treatment when the patient's mother first questions whether medicine alone would cure her son's condition completely and asks whether surgery might be necessary.

5. Conclusion

We have been considering the phase during Chinese primary care consultations in which doctors assess a patient's symptoms and indicate the diagnosis that follows from (is consistent with) that assessment. Thus, the doctor is making a judgment about the patient's condition – about whether the patient might be suffering from some malady, or is in comparatively good health – based on an assessment of the presenting symptoms and any other physical signs that the doctor detects. This stage of assessing the patient's symptoms and drawing conclusions about a possible diagnosis can extend over multiple turns of talk. This is consistent with previous research findings, including Heath's account of a diagnosis evolving from a tentative summary into a qualified version of diagnosis (Heath, 1992). Patients present with concerns about their health by mentioning what they regard as abnormal symptoms, that is to say, physical signs and feelings that indicate to them that something might be wrong. The doctors assess their symptoms through talking to and observing the patients, and sometimes

with some limited physical examination, in order to arrive at a judgment about whether or not there is anything wrong. If they conclude there is something wrong, then they share with the patient the diagnostic judgment they are forming.

We have seen that in some cases the doctor makes an assessment of the patient's symptoms that is at variance with the patient's own assessment. That is to say, in some cases, a doctor may regard the patient's symptoms as less serious than does the patient herself, indeed as quite normal; in these cases, the doctor describes the symptoms through downgraded forms that lessen the seriousness or significance of the symptoms, in comparison with the descriptive terms used by the patient. In these cases, doctors indicate a no-problem diagnosis.

In other cases, by contrast, the doctor's assessment is that the symptoms are abnormal and thereby do indicate a matter of concern, which are considered to be more serious than the patient might have anticipated; in these cases, the doctor depicts the symptom presentation through upgraded formats, serving to reinforce the severity or urgency of these symptoms, in contrast with the symptomatic accounts of the patient. In these cases, the doctor conveys a problem diagnosis, supporting a diagnosis that the patient may be suffering from some malady or illness, for which further testing might be advisable.

Hence, my analysis has first shown the interactional moments of 'misalignment' between doctor and patient concerning the normality / abnormality of the patient's presenting symptoms. Though doctors may align with a patient's judgment, they may downgrade (i.e. to normalize the patient's case) or upgrade (i.e. to depict the patient's case to be more abnormal) the medical significance or relevance of the concerning symptoms. Meanwhile, such differences between doctors' and patients' assessments have sequential consequences, in patients' subsequent resisting responses. Specifically, the emerging patterns of patient resistance to the professional medical assessments have shown a restricted class of comparators, that of quantity and quality terms, and of temporal comparisons to contrast with the doctor's prior account of 'normal or abnormal case'; that of treatment descriptions to resist the doctor's prior account of 'normal case'. Particularly for those cases in which patients portray their symptoms as abnormal or severe (a typical case would be example 22), their accounts not only undermine doctors' no-problem assessments, but also, by projecting the 'doctorability' of their condition, reinforce their reasons for claiming to be sick and seeking professional help (Heritage & Robinson, 2006b; Halkowski, 2006). Accounts in and through which patients attempt to counter (aspects

of) a diagnosis rarely lead the doctor changing their initial diagnosis; that is to say doctors rarely accede to patients' diagnosis suggestions (though the patient's pursuit of a different diagnostic assessment can sometimes cause physicians to resort or retreat to such activities as re-conducting a physical examination, reiterating the rationale for diagnosis, or restating the diagnosis [cf. Stivers, 2005a]).

The principal finding of this study is that doctors diagnose and patients resist doctors' diagnoses each in a somewhat indirect manner, primarily through their talk about symptom assessment, and specifically the design of their respective symptom descriptions. The analysis here provides empirical evidence that doctors and patients systematically orient to the varied implications of symptom descriptions: when symptoms are described in such a way as to imply that nothing (medically) is the matter, such descriptions convey no-problem diagnoses and that no treatment is needed; when, by contrast, symptoms are described in more serious terms, indicating that they are medically significant or urgent, such descriptions are associated with and implicate (anticipate) the upcoming delivery of doctors' diagnoses that there is something wrong that needs to be treated medically. This sequential approach to (symptom) description design, uptake, and outcome contributes to our understanding of the pragmatics of descriptions.

The analysis suggests that Chinese patients and doctors are often misaligned (more than 80%) on the matter of making medical assessments during primary care encounters. The lack of a strict referral system, and the consumerism trend in Chinese medicine, entail a wide scope of choices of medical facilities for Chinese patients. Patients may have already formed an idea of 'the problem' (i.e. a candidate diagnosis) from a previous visit to another physician, and seem ready to challenge or disagree with the present doctor's medical assessment. In doing so, patients push for a desired consultation outcome, i.e., a medical explanation to their satisfaction. The dimensions through which physicians construct their symptomatic accounts, and the dimensions through which patients misalign with doctors' symptomatic accounts, uncovered in this analysis, show particular implications for patient participation and pre-empting resistance in primary care medicine.

Chapter 7 – Conclusion

1. Introduction

In the research reported here, I have used the nuanced approach of the latest CA (i.e. the research trend after the 1990s) to investigate the corpus of video-recorded acute-visit consultations, which is collected from an upper-intermediate Chinese public hospital.

In the three empirical chapters, focusing on the sequential management of primary care doctors diagnosing, I have documented the sequential organization and consequence of the whole diagnosing sequence, from the history taking to the final diagnosis. My analysis did not just consider the physicians' diagnostic turns, but also take into account the role of patients – both agency in shaping the outcomes (especially, diagnosis).

In this final chapter, I shall discuss four concluding points: 1) the contribution my research has made 2) the implications of my findings 3) some possible limitations of my research and 4) reflections and future directions.

2. Contributions

I have investigated the interactional patterns and practices of Chinese doctor-patient communication, through close analysis of video recorded actual consultations. All forms of human interactions are organized according to particular social orders and structures, rather than being organized according to individual whim and habits (Goffman, 1955; Schegloff, 1996; Drew & Heritage, 2006). My analysis adopted the classic CA framework in analyzing medical interactions: 1) to identify a theme, type or pattern of interactional conduct; 2) to look for similar cases; 3) to form a collection of cases as empirical evidence, for showing that it is a recurrent pattern (Sacks, 1984; Scheglff, 1996; Drew, 2005). In doing so, the findings presented the patterns, practices, and other interactional features that constitute the essential organization of Chinese primary care consultations.

What the thesis contributed is a systematic and balanced study of what actually happens in primary care encounters of ordinary Chinese hospitals. There are two similar developing projects on Chinese medical interactions; but my project is rather different from them in terms of what kind of medicine that is the concern of the research. Wang (2017) is using mixed

methods of CA and quantitative analysis to study the kind of interactions that happened in Chinese pediatric clinics. Wei (2018) is using CA to explore the kind of interactions that happened in Chinese traditional medicine.

However, my project has taken the nuanced view of CA approach (mentioned in CA studies after the 1990s; to take 'medical actions / activities' as the primary concern), in analyzing the kind of medical interactions that occurred between doctors and adult patients, during acute-visit consultations.

This thesis qualifies as the first study of the interactional behavioural conducts of Chinese hospital-based medicine. Furthermore, this thesis stands at the forefront of the trend to use CA naturalistic observational approach to study medical interactions of Western style medicine. The key contributions of this research are the findings on the sequential and interactional features of how a diagnosis emerges, involves and concludes in primary care doctor-patient interactions.

The interactional patterns and features of the sequence of doctors making diagnosis during acute-visit consultations, and the emergency of diagnosis in history-taking (from a provisional diagnosis to a definitive diagnosis) are two key contributions of my research. Next, I shall explicate three major aspects of my contribution.

Seeing diagnosing as a process

Diagnosis lies at the heart of primary care consultations, and the goals for consultations is diagnose what is wrong with the patient and to offer appropriate treatment (Pilnick, et al., 2009). In comparison with other consultation stages, there appear to be rather little research on diagnosis (except for instance, Jones & Beach, 2005; Maynard, 1992; Maynard & Frankel, 2006). The observations and findings based on the video-recorded corpus of Chinese primary care interactions should address this research gap.

What I have shown in the three empirical chapters point to a nuanced view, which is to see 'diagnosis' more as an infused process, rather than a single stage. This view is in rather contrast to the CA literature of medical consultations that I laid out in my literature review (explicated in chapter 2). Byrne and Long (1976) proposed the concept of a staged consultation, which sees

a consultation as consisting of different stages, notably stages that are discrete from one another and happen in a particular order. Heath's study (1992) proposed the delivery of diagnosis as a particular 'moment', in response to which patients are relatively passive.

Moreover, Peräkylä (1998, 2002) focused on the format of diagnostic delivery and proposed the various formats of diagnosis utterances as conveying the authority of the doctor. Maynard (1992) also focused on the aspect of sequential consequence and proposed the physician's talk on what has been found during the physical examination can forecast the final diagnosis.

Therefore, in early CA research literature, diagnosis is generally and regularly considered as a stage (a typical stage that is similar to other stages like history taking). Even in the more recent study by Robinson (2003), diagnosis has been treated as an activity, that tends to occur after physical examination and before treatment.

What I have shown through my corpus is there is not so much a moment in which the diagnosis is delivered, for primary care consultations (at least for Chinese primary care visits). It is a gradually emerging matter and cannot be susceptible to be confined to a single moment / stage. In other words, diagnosing is a kind of process, in which patients are fully involved, sometimes may contest the given diagnosis.

Seeing diagnosing as an infusing medical activity

Based on the observations made on my corpus, this thesis proposed that 'diagnosing' should be treated as a type of medical activity, notably infused with almost every consultation activity in primary care interactions.

Despite of the different categorization of history taking and diagnosis, in actual consultations, these two activities are intermingled (see particularly the findings of chapters 5 & 6). For instance, the doctor asks the question 'have you changed facial lotion recently?' in checking whether the patient's swelling could be an allergic reaction. Although the question is a part of history taking, it is asked clearly in relation to a possible diagnosis. As a matter of fact, in the data I collected, most of the physician's history taking questions are diagnostically loaded (Cassell, 1985; Heritage & Clayman, 2010). In other words, diagnosis is done in and through history taking. As a matter of fact, the intermeshing property of diagnosis have also been

mentioned in previous literature, for instance of Stivers' study (2007), diagnosis merges with treatment, and what is mentioned for diagnosing can provide the justification for the treatment recommendations.

Seeing diagnosing as lasting throughout the consultation

Figure 7.1 (based on the interactions of my corpus) is the illustration of the progression of an acute-visit consultation.

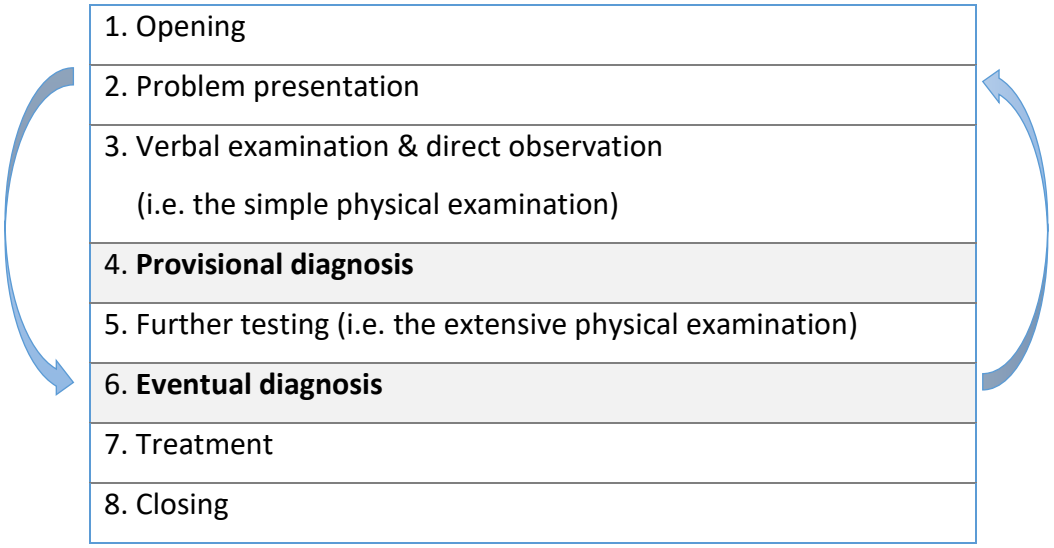

Figure 7.1 The structure of a Chinese primary care consultation (based on my corpus)

The left arrow shows diagnosing is infused and lasting throughout a consultation; the right arrow shows the diagnosing process can rewind to previous stages due to possible patient resistance. Robinson (2003) observed in American primary care medicine that departures from the staged structure can be common when patients and physicians have different agendas.

First, it is clear in the above figure that the entire interaction is infused with diagnosis – that suggests diagnosis does not inhabit a discrete phase; it is done throughout primary care consultations. The stages of a consultation may not be as clear-cut as suggested in the previous research literature (e.g. Byrne & Long,1979; Heath, 1992).

Second, the emergent and evolving property of the physician's diagnosis can be easily seen. Based on the evidence retrieved from the verbal examination and direct observation, physicians should form a provisional diagnosis (i.e. the fourth point in figure 7.1). Then based on the evidence of prior history taking and further testing results, this diagnosis should develop into

an eventual diagnosis (i.e. the sixth point in figure 7.1), of which the physician are more certain. Last, the majority of these activities are found to be interconnected or bound up with one another – all are done in service of reaching the final diagnosis. As proposed in Robinson (2003), among the stages of a consultation, each prior activity is done in service of the next with joint construction of physicians and patients. My findings showed the sequential consequence between history taking and diagnosing – the verbal examination, the physicians' observations and further testing, all contributes to the final conclusion of what is the actual diagnosis.

The importance of the patient's role

In my corpus, both the doctor and the patient take active roles in deciding what could be the most possible diagnosis for the presented symptoms. Patients are observed to be fully interactional partners of doctors, and they are aware of what is happening during every stage of a consultation. Patients do not act as 'judgmental dopes' (Garfinkel, 1967), passively and unreflectingly conforming to the doctor's authority or aligning with the doctor's agenda.

Urgency and effectiveness seem to be the important factors that Chinese patients consider in pushing for a particular cure (e.g. in a migraine case of extract 10, the patient's mother asks for surgery which she thinks is a more effective one-off way of treating her son's symptom; in a rhinitis case of my corpus, the patient requested for IV drops (i.e. a kind of antibiotic treatment) which she thinks would be more effective than the recommended medication).

Not only do patients challenge the treatment advice, patients are found to resist the professional assessment of their symptoms, in other words, resisting the diagnosis. Moreover, doctors are found to orientation to patients' role in diagnosing, sharing the rationale of the emerging diagnoses to a considerable degree, and why certain tests are necessary.

These findings suggest a far more active role of Chinese patients, than what is reported in the research literature of British or American medicine (e.g. Stivers, 2005a, 2005b; Koenig, 2011). Patient resistance in Chinese medicine may start from the diagnosing stage; whereas, patient resistance for American medicine are observed mainly in the treatment stage (Stivers, 2007).

Peräkylä (2006) reported that whether patients utter challenges is to somewhat extent associated with the design of those formats of doctors' diagnoses (e.g. the format constructed

with sensory evidence will project more authority and will be less likely to trigger patient resistance). My findings suggested that Chinese patients tend to challenge physicians, in terms of what is the most appropriate correct diagnosis, rather than simply resisting a certain design of diagnostic format.

This is on some level related to the decentralized consumerist approach of the Chinese medical care, that some patients may already have a candidate diagnose from previous visit, the purpose of the visit is to get a better diagnostic explanation for their persistent symptoms (also see section 4 of chapter 1, the ethnographic features).

3. Implications

Empirical evidence for the ethnographic features of Chinese medicine

For this thesis I collected a valuable video-recorded 660 sessions of Chinese outpatient consultations, and formed a data corpus of 484 acute consultations. A large corpus like this can contribute to the larger representativeness of this research; the corpus also can be compared with the datasets reported by published medical CA research. What is more important, my video-recorded corpus constitutes important empirical evidence, which precisely captured the ethnographic properties of the current Chinese primary care medicine.

All of the observations below have been evidenced in my data, and they represent important ethnographic aspects of what actually happens in routine primary care visits to ordinary Chinese hospitals:

- *Overcrowding in hospital clinics.* Chinese patients tend to visit higher-level hospitals rather than lower-level primary care facilities, for any kind of concern, regardless of the symptom severity. As evidenced in my video corpus, in some consultations it can get crowded with other patients and patient companions queuing behind the present patient, waiting to see the physician. This could cause pressure on doctors in trying to give sufficient time for each consultation.

- *The necessity of medical tests in primary care consultations.* The overcrowding poses a challenge to patient privacy; Chinese doctors find it hard to conduct an examination alone

with the patient. We see in many of the consultations that doctors recommend medical testing to patients, to refer them to the examining room to take physical checks. Meanwhile, medical tests generate an income stream for hospital and hospital specialists; patients need to pay to get tested – this is another reason why tests are integrated in Chinese primary care consultations. Financial considerations are evident in the actual interactions of consultation, that a doctor would often make explicit to patients the cost when recommending those tests.

- *Doctors' subtle management of talk in giving candidate diagnosis and recommending tests.* In many of the collected consultations, doctors tend to offer a justification for why certain tests are necessary, making explicit the possible diagnoses and the purpose of the tests (to discount or to confirm a hypothesis). In addition, doctors seek patients' alignment in deciding on the matter of what tests are necessary. It reflects the pressure to earn a profit; on the other hand, it could be a strategy to avoid being perceived as prescribing unnecessary and expensive tests.

- *Patient expectations and resistance.* Chinese patients have much freedom to seek any level of medical care and may have high expectations, as there is no strict referral system. This feature is clearly displayed in my finding that patient resistance in Chinese acute-care consultation can start from the diagnosing stage. Patient resistance may happen much earlier the cases for British or American consultations, in which patients tend to show more resistance and direct challenge to treatment than to diagnosis (e.g. Stivers, 2005a; Drew, 2013).

More positive than negative implications

Instead of being critical of medical practice, this research aims to present a dispassionate and balanced study to describe the actual conduct and genuine characteristics of Chinese primary care medicine. My findings showed more positive implications than negative. For instance, it might be worth other medical systems, in other countries, considering and perhaps adopting the pattern of 'discounting diagnosing', a routine approach of Chinese medicine. Discounting candidate diagnoses relates to previous research on 'online commentary' (Heritage & Stivers, 1999) and 'pre-diagnostic commentary' (Stivers, 1998). It *forecasts* what

kind of tests might be suitable for the patient, facilitating patient acceptance. It is also a type of 'thinking out loud' for the benefit of patients (Stivers, 1998, p.246). Doctors are able to *share* with patients the thought process of diagnostic reasoning that went behind the final diagnosis. Doctors are able to offer *reassurance* to patients that nothing is the matter for medical concern, through various means of diagnostic evidence, based on the doctors' observation, prior history taking exchanges, or medical testing.

Although discounting diagnosing is a phenomenon that has been reported in the field of medicine (e.g. Fred, 2013; Yung, et al., 2013), there is no research done by CA into medical interactions to look into this practice. It was only briefly mentioned in two previous studies (Peräkylä, 2002, 2006; Spranz-Fogasy, 2014). However, Peräkylä's argument was not supported with interactional evidence; Spranz-Fogasy's argument was shown on a single turn of talk. Discounting diagnosing is rather an understudied subject in medical interactions of western medicine. The data I have shown in this thesis provide important empirical evidence that doctors discount diagnostic possibilities implicitly, explicitly and through medical testing, until the process arrives at what doctors are satisfied as being the correct diagnoses. On the other hand, what can be seen in my data is that patients are involved in almost every stage of a consultation; they can align or misalign with the doctors' emerging diagnosis.

Discounting diagnosing is thus an important approach for involving patients in the consultation, offering them reassurance for the doctors' disposal of their case (cf. 'option-listing' pattern for involving patients in treatment decisions, see Toerien, et al., 2013; Reuber, et al., 2015; Toerien, 2017).

Sequential analysis of the management of diagnosing

The last implication of this thesis is based on my observation that diagnosing is an *evolving* activity which is interwoven with almost every stage of a primary care consultation. Subordinate to this observation, my findings suggested that it is important to look for *sequential management* of how diagnosing is accomplished in the interactions.

We see figure 7.1 (in section 2) again, though now attending more to the point: diagnosis evolves from 'candidate diagnosis' (the doctor's initial hypothesis of what are the possible conditions) to 'eventual diagnosis' (the doctor's final conclusion of the actual medical problem).

By parallel, Heath (1992) also observed the professional assessment often develops from a tentative diagnosis into a more qualified version in British GP practice. Stivers (1998) identified two sorts of diagnostic utterances in veterinary consultation, i.e. pre-diagnostic commentary and official diagnosis, which also indicated the view of 'evolving diagnosis' in consultation.

Focusing on diagnosis in the early stages of a consultation (prior to the physical examination), I include figure 7.2 below to illustrate how diagnosis is managed sequentially. The figure is developed from the main finding of this thesis, which explored doctor-patient interactions centred on discounting diagnosing practice.

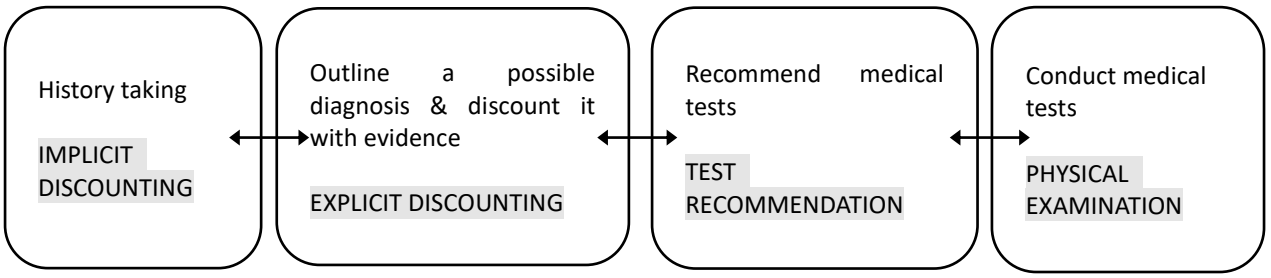

Figure 7.2 The pattern of discounting diagnosing (the two-directional arrow highlights the interconnection among these activities)

It is clear in figure 7.2 the *interconnection* between history taking and diagnosis; the *interconnection* between diagnosis and test recommendations:

- *Based on* history taking information, the doctor gathers evidence of the patient's experiencing symptoms. The evidence seems inconsistent with a diagnostic possibility.
- *Based on* the evidence collected from history taking, the doctor discounts diagnostic possibilities that are found to be inconsistent with the patient's situation. The physician repeats the discounting approach until it gets to what is considered as the actual candidate diagnosis.
- *Based on* candidate diagnosis, the doctor recommends medical tests, selected to provide some further diagnostic evidence.

My findings show that these activities are empirically bound up with one another, with the former activity *foregrounding* the latter. My analysis goes beyond 'format analysis', the approach used in much research on diagnosis or treatment. Sequential analysis of the management of diagnosing has been a particular strength of my research.

(1) FATTY TUMOUR (San Gabriel)

```
7    DOC:    Tell me what brought=you in.
8    PAT:    .hh I have
9    DOC:    uh lump on your shoulder °[for about :] three weeks:.°
10   PAT:    [Right he:re,]
11           (2.0)
12   DOC:    You do something or you just noticed it.
13   PAT:    No:, I just noticed it,
            ((8 lines omitted; DOC examines PAT ailment location))
22   DOC:    [This is uh fatty tumor.
```

The above extract shows diagnostic delivery through a single turn, 'This is uh fatty tumor', line 22. Format analysis of diagnostic delivery / receipt has been the focus of much previous research (e.g. Heath, 1992; Maynard & Frankel, 2006; Peräkylä, 1998, 2006). For instance, Peräkylä (1998) identified three kinds of diagnostic formats: 1) plain assertions (e.g. 'That's already proper bronchitis'), 2) evidential verb constructions (e.g. 'Now there appears to be infection at the contact point of the joint'), and 3) evidential turns for supporting that particular diagnosis (e.g. 'The pulse can be felt in your foot. So there's not in any case, no real circulation problem'). Peräkylä considered variance in diagnosis formats as a reflection of physician authority. Similarly, recent studies identified different formats relating to actions of recommending medication, in British and American primary care medicine (Stivers & Barnes, 2018; Stivers, et al., 2018). The difference in treatment recommendation formats (e.g. 'I'm going to start you on X.' vs. 'Would you like me to give you X?') is considered to reflect or expression different levels of doctors' authority.

(2) NECK MOLE (Robinson, 2003)

```
94   DOC:   You know what those things are .mhh those are due: to
95          plu:gging up the po::res. .hh with:=uh: I guess:
96          lo:tion [an' [o:ils [and
97   PAT:   [Hih [heh heh [heh
98   DOC:   [that kinda s[tuff.]
99   PAT:   [( )[Me. ] .h Mi(h)ne c(h)omes fr(h)om
100         ins(h)id o(h)ut .h[hh hheh ( )]
101  DOC:   [Excessive o::il.]
102  PAT:   .hhh[h
103  DOC:   [Right so the wa:y to: (.) prevent those
104         thing[s is to-]
```

Extract 2 shows diagnosis done over a long sequence: it is announced on lines 95 – 98 ('those are due to plugging up the pores with, I guess, lotion and oils, and that kinda stuff'), extended over line 101 ('excessive oil'), projecting the treatment advice prefixed with *so* particle ('Right so the way to prevent those things is to …', lines 103 &104). My data show similarities with

such case of an extended sequence of diagnosing. In fact, many consultations in my corpus (e.g. the case of [X 44a_swollen hands & face]) contain a diagnosing sequence that appears to be even longer and more complex than extract 2. As Robinson (2003) argued, phases of acute visit consultation are 'activities' that could be constructed with a series of sequences. My research also found what Robinson observed about the connection between diagnosis and treatment (diagnosis builds the ground for treatment). My research found furthermore that diagnosing is infused with almost every stage of primary care consultation (including the treatment phase); most medical activities are interconnected with each another for arriving at the final diagnosis.

In general, what I have done for this thesis is to analyze the sequential management of diagnosing in consultation. Through this sequential approach, I have been able to show significant findings particularly in the logic and evolution of the doctor's diagnosis. My analysis makes connection among three elements – *activities*, *sequence patterns* and *medical significance*; in this way, the findings may have potential implications for medical practices.

4. Limitations

Dialect variations and the representativeness of the data

Caution needs to be taken about the representativeness of the findings, as the corpus is based on consultations collected from one hospital. The enormous population and vast area of China covers a considerable range of dialect variation; it is likely (i.e. certain) that some features of utterances on my transcripts are dialect specific. Although I collected a comparatively large corpus for my research (660 consultations), this is only one hospital in one area of China; moreover, it is in an urban area; it is difficult to know how representative my findings are, for Chinese primary care medicine across so many provinces, including so many ethnicities, and so many different area types (e.g. rural, sparsely populated and so forth).

Time constraints

Owing to the time constraints (a four-year project), the current research focused on a restricted area of medical practice – the diagnosing activity and practice. More work should be done in the future on activities associated with treatment, where patients also played an important role. Moreover, my findings are restricted to qualitative analysis; I was unable to explore them statistically; methods of coding and quantification, which have become more

frequently used in CA studies of medicine, emerged only in the latter stages of my project – they could undoubtedly be integrated into any future analysis of my data.

A future comparing study

My research did not compare systematically what has been found with Chinese primary care with real interactions in British / American primary care medicine. My observations on features of British / American medicine relied on what has been reported in previous literature. However, although my research is on medical communication of Chinese primary care, the findings might have important implications for medical practice in other systems in other countries. But these possible implications can only be tentative given that I have not made any systematic comparisons between primary care provision/ delivery in our respective countries and systems.

5. Reflections and future directions

The news media in China frequently refer to the necessity of reforming the Chinese medical system, and they stress especially that 1) primary care is the level of medical care that most needs to change, 2) large urban hospitals are the leading medical facilities for the reform, therefore reform should begin in these hospitals, and 3) doctor-patient communication is one of the key areas for improving Chinese medicine. These three topics of medical reform lay at the back of my research, motivating me to choose doctor-patient interactions in Chinese hospital-based primary care medicine as the overarching theme of this thesis.

I set out on this research thesis because of the prominence of the issues concerning Chinese primary care medicine. Nonetheless, I have not been able to delve further into matters, such as reform and improvement regarding Chinese medicine. I adopted more of the descriptive CA than of the applying CA to investigate the corpus; my analysis remained focused on using the naturalistic observational approach to analyze the interactions. Additionally, because of time constraints, this thesis remained using CA to investigate diagnosis in Chinese primary care.

What I have done has remained focused on the sole objective of offering a depiction of what actually happens in routine consultation. My depiction has revealed how Chinese consultations are organized structurally, how Chinese doctors diagnose, how patients respond to diagnoses, and other related aspects.

Meanwhile, the video recordings collected for this thesis have provided evidence capturing ethnographic aspects for the current situation of Chinese medicine. There is much evidence in my video corpus, which suggests that primary care is under pressure, in terms of time and money. The evidence presented in these video-recorded consultations points to the fact that Chinese medicine is still an evolving system, going through reforms, and showing controversies and dysfunctions sometimes. The major challenges to the system are manifest in the overwhelming number of patients (evidenced in the anonymized screen shots of my corpus), and the high expectations of patients (evidenced in the extracts of patient resistance in chapter 6). My research points out that these matters are important areas for the system to improve.

Although my thesis did not recommend ways to improve Chinese primary care, there are small pointers among certain themes and results in my research, which might have implications for reforming Chinese medicine. In my analysis of the doctor's diagnosing by exclusionary method, and the related theme, the doctor's testing recommendations, some aspects of my findings may show some relevance to the cause of reforming the system. In certain aspects, my analysis uncovered the practices and the mechanisms that may generate unnecessary medical tests. I have linked the integration of medical testing in primary care encounters as possibly financially motivated, even though the medical purpose may be to reassure patients.

This research has taken the initial step to document the interactional conduct in Chinese primary care encounters, and the ethnographic features of contemporary Chinese medical practice. The findings capture precisely what takes place in routine visits to Chinese hospital-based primary care. Although the findings do not have direct relevance to improve the medical system, we can see studies of direct observational analysis (using primarily CA methods) begin to have an impact (in revealing medical practices). Further work, which combines CA with other methods, would be able to play a part in the reform of Chinese medicine. I would hope to carry out this work soon for my next project.

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Appendix

Appendix 1 Ethical clearance checklist

Ethics Approvals (Human Participants) Sub-Committee

Loughborough University

Ethical Clearance Checklist

Has the Investigator read the 'Guidance for completion of Ethical Clearance Checklist' before starting this form?	Choose an item

Does the study require NHS approval? *Please complete a copy of the checklist providing a brief project description in the additional information section. Please send this to the Secretary of the Ethics Approvals (HP) Sub-Committee before starting your NHS application.*	Choose an item

Project Details

1. Project Title: Click here to enter text

Investigator(s) Details

2. Name of Investigator 1: Click here to enter text	10. Name of Investigator 2: Click here to enter text
3. Status: Choose an item	11. Status: Choose an item
4. School/Department: Click here to enter text.	12. School/Department: Click here to enter text.
5. Programme (if applicable): Click here to enter text.	13. Programme (if applicable): Click here to enter text.
6. Email address: Click here to enter text.	14. Email address: Click here to enter text.
7a. Contact address: Click here to enter text.	15a. Contact address: Click here to enter text.
7b. Telephone number: Click here to enter text.	15b. Telephone number: Click here to enter text.
8. Supervisor: Choose an item	16. Supervisor: Choose an item
9. Responsible Investigator: Choose an item	17. Responsible Investigator: Choose an item
List all other investigators (name/email address): Click here to enter text.	

Participants

18. Does the project involve NHS patients from the National Centre for Sport and Exercise Medicine. *NHS approval may be required. Please complete a copy of the checklist providing a brief project description in the additional information section. Please send this to the Secretary of the Ethics Approvals (HP) Sub-Committee.*	Choose an item

Positions of Authority

19. Are investigators in a position of direct authority with regard to participants (e.g. academic staff using student participants, sports coaches using his/her athletes in training)?	Choose an item

Vulnerable groups

20. Will participants be knowingly recruited from one or more of the following vulnerable groups?	
Children under 18 years of age	Choose an item
Persons incapable of making an informed decision for themselves	Choose an item
Pregnant women	Choose an item
Prisoners/Detained persons	Choose an item
Other vulnerable group Please specify: Click here to enter text	Choose an item
If Yes to any of question 20, please answer the following questions:	
21. Will participants be chaperoned by more than one investigator at all times?	Choose an item
22. Will at least one investigator of the same sex as the participant(s) be present throughout the investigation?	Choose an item
23. Will participants be visited at home?	Choose an item

Investigator Safety

24. Will the investigator be alone with participants at any time?	Choose an item
If Yes, please answer the following questions:	
24a. Will the investigator inform anyone else of when they will be alone with participants?	Choose an item
24b. Has the investigator read the Guidance Notes on 'Conducting Interviews Off-Campus and Working Alone' and will abide by the recommendations within?	Choose an item

Methodology and Procedures

25. Please indicate whether the proposed study:	
Involves taking bodily samples (please refer to published guidelines)	Choose an item
Involves using bodily samples previously collected with consent for further research	Choose an item
Involves procedures which are likely to cause physical, psychological, social or emotional distress to participants	Choose an item
Is designed to be challenging physically or psychologically in any way (includes any study involving physical exercise)	Choose an item
Exposes participants to risks or distress greater than those encountered in their normal lifestyle	Choose an item
Involves collection of body secretions by invasive methods	Choose an item
Prescribes intake of compounds additional to daily diet or other dietary manipulation/supplementation	Choose an item
Involves pharmaceutical drugs	Choose an item
Involves use of radiation	Choose an item
Involves use of hazardous materials	Choose an item
Assists/alters the process of conception in any way	Choose an item
Involves methods of contraception	Choose an item
Involves genetic engineering	Choose an item

Involves testing new equipment	Choose an item

Observation/Recording

26. Does the study involve observation and/or recording of participants?	Choose an item
If Yes, please answer the following question:	
27. Will those being observed and/or recorded be informed that the observation and/or recording will take place?	Choose an item

Consent and Deception

28. Will participants give informed consent freely?	Choose an item

Informed consent

29. Will participants be fully informed of the objectives of the study and all details disclosed (preferably at the start of the study but, where this would interfere with the study, at the end)?	Choose an item
30. Will participants be fully informed of the use of the data collected	

(including, where applicable, any intellectual property arising from the research)?	Choose an item

31. For children under the age of 18 or participants who are incapable of making an informed decision for themselves:	
a. Will consent be obtained (either in writing or by some other means)?	Choose an item
b. Will consent be obtained from parents or other suitable person?	Choose an item
c. Will they be informed that they have the right to withdraw regardless of parental/guardian consent?	Choose an item
d. For studies conducted in schools, will approval be gained in advance from the Head-teacher and/or the Director of Education of the appropriate Local Education Authority?	Choose an item
e. For detained persons, members of the armed forces, employees, students and other persons judged to be under duress, will care be taken over gaining freely informed consent?	Choose an item

Deception

32. Does the study involve deception of participants (i.e. withholding of information or the misleading of participants) which could potentially harm or exploit participants?	Choose an item
If Yes, please answer the following questions:	
33. Is deception an unavoidable part of the study?	Choose an item
34. Will participants be de-briefed and the true object of the research revealed at the earliest stage upon completion of the study?	Choose an item
35. Has consideration been given on the way that participants will react to the withholding of information or deliberate deception?	Choose an item

Withdrawal

36. Will participants be informed of their right to withdraw from the investigation at any time and to require their own data to be destroyed?	Choose an item

Storage of Data and Confidentiality

37. Will all information on participants be treated as confidential and not identifiable unless agreed otherwise in advance, and subject to the requirements of law?	Choose an item
38. Will storage of data comply with the Data Protection Act 1998?	Choose an item
39. Will any video/audio recording of participants be kept in a secure place and not released for any use by third parties?	Choose an item

40. Will video/audio recordings be destroyed within ten years of the completion of the investigation?	Choose an item
41. Will full details regarding the storage and disposal of any human tissue samples be communicated to the participants?	Choose an item
42. Will research involve the sharing of data or confidential information beyond the initial consent given?	Choose an item
43. Will the research involve administrative or secure data that requires permission from the appropriate authorities before use?	Choose an item

Incentives

44. Will incentives be offered to the investigator to conduct the study?	Choose an item
45. Will incentives by offered to potential participants as an inducement to participate in the study?	Choose an item

Work Outside of the United Kingdom

46. Is your research being conducted outside of the United Kingdom?	Choose an item
If Yes, please answer the following questions:	
47. Country or countries researcher will travel to for the conduct of the research:	Click here to enter text
48. Is this the investigator's home country?	Choose an item
49. Has a risk assessment been carried out to ensure the safety of the investigator whilst working outside of the United Kingdom?	Choose an item
50. Have you considered the appropriateness of your research in the country you are travelling to and checked the FCO guidance: https://www.gov.uk/foreign-travel-advice?	Choose an item
51. Is there an increased risk to yourself or the participants in your research study?	Choose an item
52. Have you obtained any necessary ethical permission needed in the country you are travelling to?	Choose an item

Risk Assessment

53. Has a risk assessment been carried out to ensure the safety of the investigator and participants involved in the study?	Choose an item

Information and Declarations

Checklist Application Only:
If you have completed the checklist to the best of your knowledge, and not selected any answers marked with an *, # or †, your investigation is deemed to conform with the ethical checkpoints. Please sign the declaration and lodge the completed checklist with your Head of Department/School or his/her nominee.

† Checklist with Additional Information to the Secretary:
If you have completed the checklist and have only selected answers which require additional information to be submitted with the checklist (indicated by a †), please ensure that all the information is provided in detail below and send this signed checklist to the Secretary of the Sub-Committee.

Checklist with Generic Protocols Included:
If you have completed the checklist and selected one or more of the answers marked with this symbol # a full Research Proposal needs to be submitted to the Ethical Approvals (Human Participants) Sub-Committee unless you, or one of the investigators on this project, are a named investigator on an existing Generic Protocol which covers the procedure. Please download the Research Proposal form from the Sub-Committee's web page. **A signed copy of this Checklist should accompany the full proposal to the Sub-Committee.**

If you, or one of the investigators on this project, are using a procedure covered by a generic protocol, please ensure the relevant individuals are on the list of approved investigators for that Generic Protocol. Include the Generic Protocol reference number and a short description of how the proposal will be used at the end of the checklist in the space provided for additional information.

The completed checklist should be lodged with your Head of Department/School or his/her nominee.

* Full Application needed:
If on completion of the checklist you have selected one or more answers which require the submission of a full proposal (indicated by a *), please download the Research Proposal form from the Sub-Committee's web page. **A signed copy of this Checklist should accompany the full Research Proposal to the Sub-Committee.**

Space for Additional Information and/or Information on Generic Proposals as requested:

Click here to enter text.

For completion by Supervisor

Please tick the appropriate boxes. The study should not begin until all boxes are ticked.

☐ The student has read the University's Code of Practice on investigations involving human participants

☐ The topic merits further research

☐ The student has the skills to carry out the research or is being trained in the required skills by the Supervisor

☐ The participant information sheet or leaflet is appropriate

☐ The procedures for recruitment and obtaining informed consent are appropriate

Comments from supervisor:

Click here to enter text.

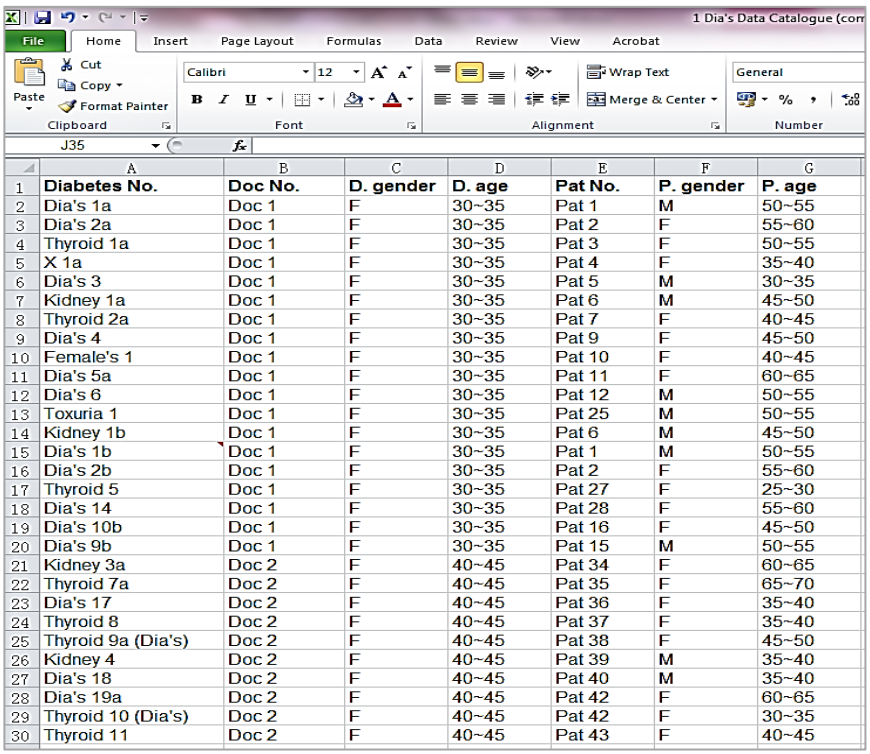
Signature of Applicant: Click here to enter text.

Signature of Supervisor (if applicable): Click here to enter text.

Signature of Dean of School/Head of Department or his/her nominee: Click here to enter text.

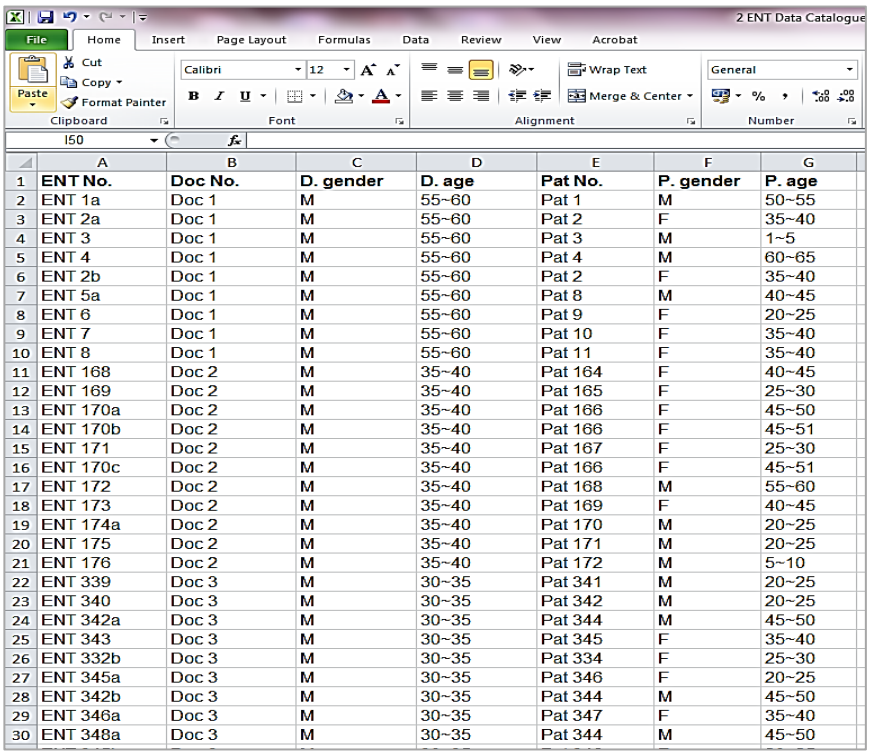
Date: Click here to enter text.

Appendix 2 Participants of ENT and Diabetes clinical visits (extracted from the whole data sampling)



	A	B	C	D	E	F	G
1	**Diabetes No.**	**Doc No.**	**D. gender**	**D. age**	**Pat No.**	**P. gender**	**P. age**
2	Dia's 1a	Doc 1	F	30~35	Pat 1	M	50~55
3	Dia's 2a	Doc 1	F	30~35	Pat 2	F	55~60
4	Thyroid 1a	Doc 1	F	30~35	Pat 3	F	50~55
5	X 1a	Doc 1	F	30~35	Pat 4	F	35~40
6	Dia's 3	Doc 1	F	30~35	Pat 5	M	30~35
7	Kidney 1a	Doc 1	F	30~35	Pat 6	M	45~50
8	Thyroid 2a	Doc 1	F	30~35	Pat 7	F	40~45
9	Dia's 4	Doc 1	F	30~35	Pat 9	F	45~50
10	Female's 1	Doc 1	F	30~35	Pat 10	F	40~45
11	Dia's 5a	Doc 1	F	30~35	Pat 11	F	60~65
12	Dia's 6	Doc 1	F	30~35	Pat 12	M	50~55
13	Toxuria 1	Doc 1	F	30~35	Pat 25	M	50~55
14	Kidney 1b	Doc 1	F	30~35	Pat 6	M	45~50
15	Dia's 1b	Doc 1	F	30~35	Pat 1	M	50~55
16	Dia's 2b	Doc 1	F	30~35	Pat 2	F	55~60
17	Thyroid 5	Doc 1	F	30~35	Pat 27	F	25~30
18	Dia's 14	Doc 1	F	30~35	Pat 28	F	55~60
19	Dia's 10b	Doc 1	F	30~35	Pat 16	F	45~50
20	Dia's 9b	Doc 1	F	30~35	Pat 15	M	50~55
21	Kidney 3a	Doc 2	F	40~45	Pat 34	F	60~65
22	Thyroid 7a	Doc 2	F	40~45	Pat 35	F	65~70
23	Dia's 17	Doc 2	F	40~45	Pat 36	F	35~40
24	Thyroid 8	Doc 2	F	40~45	Pat 37	F	35~40
25	Thyroid 9a (Dia's)	Doc 2	F	40~45	Pat 38	F	45~50
26	Kidney 4	Doc 2	F	40~45	Pat 39	M	35~40
27	Dia's 18	Doc 2	F	40~45	Pat 40	M	35~40
28	Dia's 19a	Doc 2	F	40~45	Pat 42	F	60~65
29	Thyroid 10 (Dia's)	Doc 2	F	40~45	Pat 42	F	30~35
30	Thyroid 11	Doc 2	F	40~45	Pat 43	F	40~45

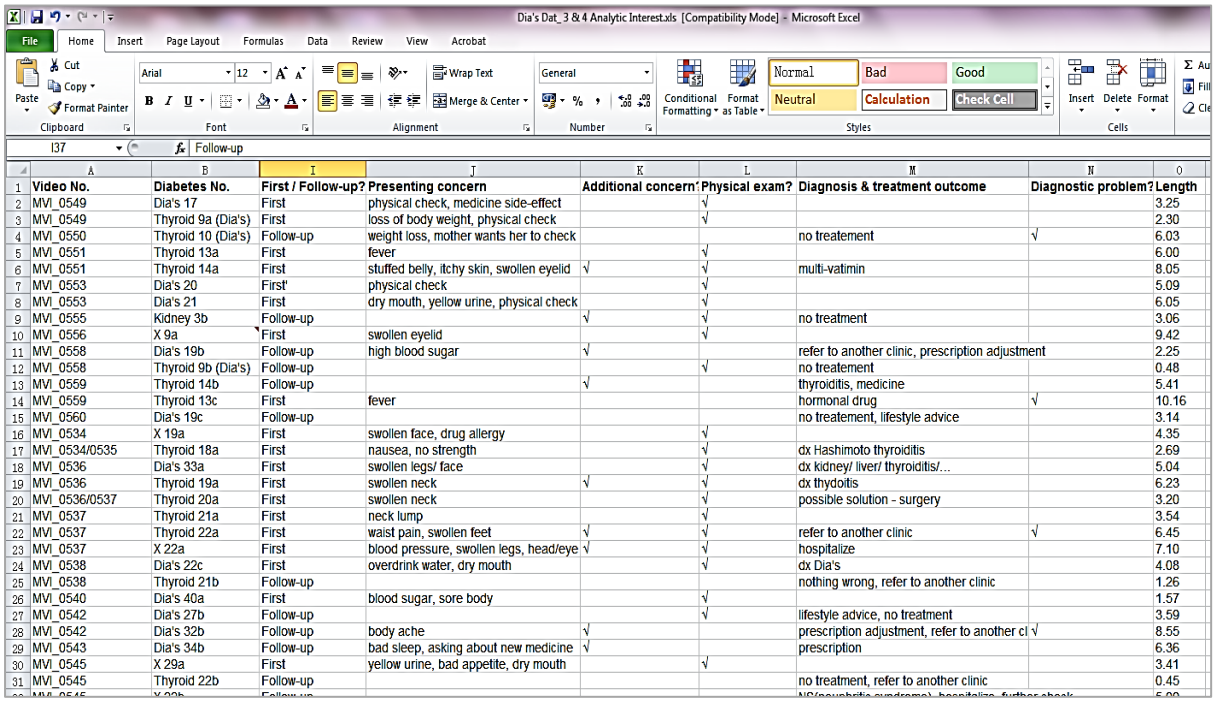
(1) Participants (Diabetes clinical consultations)



	A	B	C	D	E	F	G
1	**ENT No.**	**Doc No.**	**D. gender**	**D. age**	**Pat No.**	**P. gender**	**P. age**
2	ENT 1a	Doc 1	M	55~60	Pat 1	M	50~55
3	ENT 2a	Doc 1	M	55~60	Pat 2	F	35~40
4	ENT 3	Doc 1	M	55~60	Pat 3	M	1~5
5	ENT 4	Doc 1	M	55~60	Pat 4	M	60~65
6	ENT 2b	Doc 1	M	55~60	Pat 2	F	35~40
7	ENT 5a	Doc 1	M	55~60	Pat 8	M	40~45
8	ENT 6	Doc 1	M	55~60	Pat 9	F	20~25
9	ENT 7	Doc 1	M	55~60	Pat 10	F	35~40
10	ENT 8	Doc 1	M	55~60	Pat 11	F	35~40
11	ENT 168	Doc 2	M	35~40	Pat 164	F	40~45
12	ENT 169	Doc 2	M	35~40	Pat 165	F	25~30
13	ENT 170a	Doc 2	M	35~40	Pat 166	F	45~50
14	ENT 170b	Doc 2	M	35~40	Pat 166	F	45~51
15	ENT 171	Doc 2	M	35~40	Pat 167	F	25~30
16	ENT 170c	Doc 2	M	35~40	Pat 166	F	45~51
17	ENT 172	Doc 2	M	35~40	Pat 168	M	55~60
18	ENT 173	Doc 2	M	35~40	Pat 169	F	40~45
19	ENT 174a	Doc 2	M	35~40	Pat 170	M	20~25
20	ENT 175	Doc 2	M	35~40	Pat 171	M	20~25
21	ENT 176	Doc 2	M	35~40	Pat 172	M	5~10
22	ENT 339	Doc 3	M	30~35	Pat 341	M	20~25
23	ENT 340	Doc 3	M	30~35	Pat 342	M	20~25
24	ENT 342a	Doc 3	M	30~35	Pat 344	M	45~50
25	ENT 343	Doc 3	M	30~35	Pat 345	F	35~40
26	ENT 332b	Doc 3	M	30~35	Pat 334	F	25~30
27	ENT 345a	Doc 3	M	30~35	Pat 346	F	20~25
28	ENT 342b	Doc 3	M	30~35	Pat 344	M	45~50
29	ENT 346a	Doc 3	M	30~35	Pat 347	F	35~40
30	ENT 348a	Doc 3	M	30~35	Pat 344	M	45~50

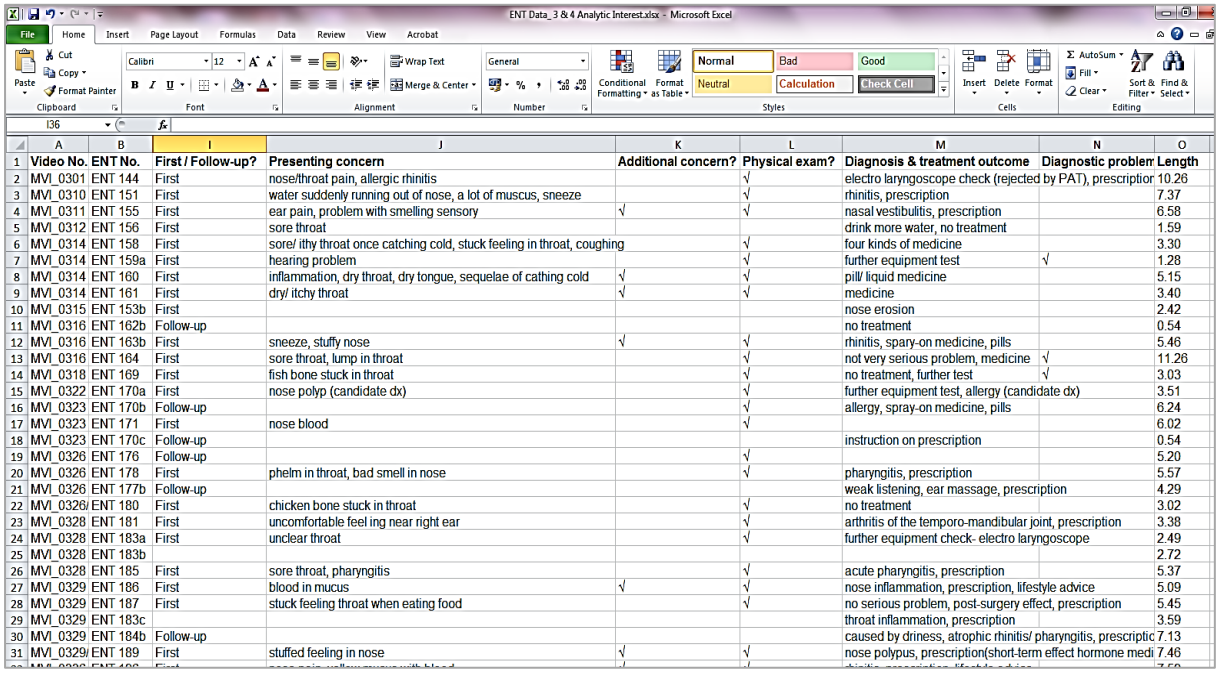
(2) Participants (ENT clinical consultations)

Appendix 3 Extracts of the data samples (of the Diabetes Clinic & ENT Clinic)



Video No.	Diabetes No.	First / Follow-up?	Presenting concern	Additional concern?	Physical exam?	Diagnosis & treatment outcome	Diagnostic problem?	Length
MVI_0549	Dia's 17	First	physical check, medicine side-effect		√			3.25
MVI_0549	Thyroid 9a (Dia's)	First	loss of body weight, physical check		√			2.30
MVI_0550	Thyroid 10 (Dia's)	Follow-up	weight loss, mother wants her to check			no treatement	√	6.03
MVI_0551	Thyroid 13a	First	fever		√			6.00
MVI_0551	Thyroid 14a	First	stuffed belly, itchy skin, swollen eyelid	√	√	multi-vatimin		8.05
MVI_0553	Dia's 20	First'	physical check		√			5.09
MVI_0553	Dia's 21	First	dry mouth, yellow urine, physical check		√			6.05
MVI_0555	Kidney 3b	Follow-up		√	√	no treatment		3.06
MVI_0556	X 9a	First	swollen eyelid		√			9.42
MVI_0558	Dia's 19b	Follow-up	high blood sugar	√		refer to another clinic, prescription adjustment		2.25
MVI_0558	Thyroid 9b (Dia's)	Follow-up			√	no treatement		0.48
MVI_0559	Thyroid 14b	Follow-up		√		thyroiditis, medicine		5.41
MVI_0559	Thyroid 13c	First	fever			hormonal drug	√	10.16
MVI_0560	Dia's 19c	Follow-up				no treatement, lifestyle advice		3.14
MVI_0534	X 19a	First	swollen face, drug allergy		√			4.35
MVI_0534/0535	Thyroid 18a	First	nausea, no strength		√	dx Hashimoto thyroiditis		2.69
MVI_0536	Dia's 33a	First	swollen legs/ face		√	dx kidney/ liver/ thyroiditis/...		5.04
MVI_0536	Thyroid 19a	First	swollen neck	√	√	dx thydoitis		6.23
MVI_0536/0537	Thyroid 20a	First	swollen neck		√	possible solution - surgery		3.20
MVI_0537	Thyroid 21a	First	neck lump		√			3.54
MVI_0537	Thyroid 22a	First	waist pain, swollen feet	√	√	refer to another clinic	√	6.45
MVI_0537	X 22a	First	blood pressure, swollen legs, head/eye	√	√	hospitalize		7.10
MVI_0538	Dia's 22c	First	overdrink water, dry mouth		√	dx Dia's		4.08
MVI_0538	Thyroid 21b	Follow-up				nothing wrong, refer to another clinic		1.26
MVI_0540	Dia's 40a	First	blood sugar, sore body		√			1.57
MVI_0542	Dia's 27b	Follow-up			√	lifestyle advice, no treatment		3.59
MVI_0542	Dia's 32b	Follow-up	body ache	√		prescription adjustment, refer to another cl	√	8.55
MVI_0543	Dia's 34b	Follow-up	bad sleep, asking about new medicine	√		prescription		6.36
MVI_0545	X 29a	First	yellow urine, bad appetite, dry mouth		√			3.41
MVI_0545	Thyroid 22b	Follow-up				no treatment, refer to another clinic		0.45

(1) Diabetes data sample



Video No.	ENT No.	First / Follow-up?	Presenting concern	Additional concern?	Physical exam?	Diagnosis & treatment outcome	Diagnostic problem	Length
MVI_0301	ENT 144	First	nose/throat pain, allergic rhinitis		√	electro laryngoscope check (rejected by PAT), prescription		10.26
MVI_0310	ENT 151	First	water suddenly running out of nose, a lot of muscus, sneeze		√	rhinitis, prescription		7.37
MVI_0311	ENT 155	First	ear pain, problem with smelling sensory	√	√	nasal vestibulitis, prescription		6.58
MVI_0312	ENT 156	First	sore throat			drink more water, no treatment		1.59
MVI_0314	ENT 158	First	sore/ ithy throat once catching cold, stuck feeling in throat, coughing		√	four kinds of medicine		3.30
MVI_0314	ENT 159a	First	hearing problem		√	further equipment test	√	1.28
MVI_0314	ENT 160	First	inflammation, dry throat, dry tongue, sequelae of cathing cold	√	√	pill/ liquid medicine		5.15
MVI_0314	ENT 161	First	dry/ itchy throat	√	√	medicine		3.40
MVI_0315	ENT 153b	First				nose erosion		2.42
MVI_0316	ENT 162b	Follow-up				no treatment		0.54
MVI_0316	ENT 163b	First	sneeze, stuffy nose	√	√	rhinitis, spary-on medicine, pills		5.46
MVI_0316	ENT 164	First	sore throat, lump in throat		√	not very serious problem, medicine	√	11.26
MVI_0318	ENT 169	First	fish bone stuck in throat		√	no treatment, further test	√	3.03
MVI_0322	ENT 170a	First	nose polyp (candidate dx)		√	further equipment test, allergy (candidate dx)		3.51
MVI_0323	ENT 170b	Follow-up			√	allergy, spray-on medicine, pills		6.24
MVI_0323	ENT 171	First	nose blood		√			6.02
MVI_0323	ENT 170c	Follow-up				instruction on prescription		0.54
MVI_0326	ENT 176	Follow-up			√			5.20
MVI_0326	ENT 178	First	phelm in throat, bad smell in nose		√	pharyngitis, prescription		5.57
MVI_0326	ENT 177b	Follow-up				weak listening, ear massage, prescription		4.29
MVI_0326	ENT 180	First	chicken bone stuck in throat		√	no treatment		3.02
MVI_0328	ENT 181	First	uncomfortable feel ing near right ear		√	arthritis of the temporo-mandibular joint, prescription		3.38
MVI_0328	ENT 183a	First	unclear throat		√	further equipment check- electro laryngoscope		2.49
MVI_0328	ENT 183b							2.72
MVI_0328	ENT 185	First	sore throat, pharyngitis		√	acute pharyngitis, prescription		5.37
MVI_0329	ENT 186	First	blood in mucus	√	√	nose inflammation, prescription, lifestyle advice		5.09
MVI_0329	ENT 187	First	stuck feeling throat when eating food		√	no serious problem, post-surgery effect, prescription		5.45
MVI_0329	ENT 183c					throat inflammation, prescription		3.59
MVI_0329	ENT 184b	Follow-up				caused by driness, atrophic rhinitis/ pharyngitis, prescriptic		7.13
MVI_0329	ENT 189	First	stuffed feeling in nose	√	√	nose polypus, prescription(short-term effect hormone medi		7.46

(2) ENT data sample

Appendix 4 Application of ethics approval (for hospital committee)

November 2013

A letter of application for ethics approval, to XXXXXXX Hospital

A study of general visits to medical clinics in Chinese hospitals

WU Lin
PhD student Loughborough University, UK
l.wu2@lboro.ac.uk

I am a research postgraduate student studying at Loughborough University in the UK for a PhD. I am studying the way in which ordinary general practice medicine is conducted in clinics in Chinese hospitals. I will be using a methodology developed in the US and UK, which has been very successful in telling us more about how doctors and patients interact in medical clinics, about the difficulties that can arise (for instance when patients try to give an accurate account of their problem and symptoms) and how those difficulties might be avoided. Understanding the doctor-patient relationship in their interactions with one another is an essential step in understanding how they can better collaborate with one another in achieving successful medical outcomes (e.g. patient concordance).

My research is purely scholarly; it is not sponsored by any medical agency or pharmaceutical company; nor is it designed to be critical in any way of the medical professionals, nor to assess individual doctors. My aim is solely to discover the patterns of interaction and communication to be found in clinical visits.

I will be using a form of sociolinguistic methodology – I am focusing on both the verbal language used by participants, and their non-verbal behaviour during the medical consultation. In order to conduct this research and apply this methodology, I will need to video record actual clinic interactions between doctors and their patients. I will then transcribe these recordings in detail, for the purposes of my analysis.

Confidentiality and anonymity: These recordings and transcripts will be entirely confidential. No names of patients, doctors or the hospitals in which recordings are made will be shown or retained. Anonymity will be ensured at all times. The data will be kept in a secure and locked place, and will be encrypted. No names will ever be revealed to anyone.

Doctor and Patient consent: The consent of all participants – doctors and patients – will be requested before any recording takes place (sample consent information is attached with this application). Doctors and patients will have complete freedom to decline to take part in the study. Those who agree to take part by being recorded will have the further protection that if at any stage on the clinical visit they become uncomfortable about being recorded, they may ask

for the recording to be terminated; if that happens, the recording up to that point will be erased.

Data in publications and presentations: Extracts from the transcripts may be shown either in research publications (scholarly journals) or at scholarly meetings. Only brief extracts will be shown; and they will be completely anonymised. The video recordings will never be shown in any public or scholarly setting.

Ethics approval, Loughborough University UK: My research proposal has been examined and approved according to the rigorous ethics procedures of Loughborough University, UK

Name: WU Lin

Signature:

Date:

Appendix 5 Information sheets (for doctors)

Loughborough University

A study of general visits to medical clinics in Chinese hospitals

INFORMATION SHEET FOR DOCTORS

Introduction

Thank you for considering taking part in this study. This study is a collaborative project of two research teams of Loughborough University and Shandong University. The study focuses on the communicative features of general visits to medical clinics in Chinese hospitals. The study will provide a better understanding of how language is used by doctor and patient to build up their talk during medical consultations. The result of the study will contribute to the training of medical professionals of Chinese medical care.

What will happen to me if you take part

If you take part in this study, my colleague and I (the researchers) will come to your workplace and make video or audio recordings of some medical visits. I will explain the study to the patient and ask for their agreement to participate in the study. Ideally, I will make a video-recording, but audio-recording may be used if you or the patient prefer. Participation is entirely voluntary.

Why we are asking to record consultations

We need to record appointments in order to capture the details of what is said and how it is said. It is impossible to do this just by observing and making notes or by asking doctors about their work. We want to know what really happens so that the guidelines we write are based on real-life rather than theory. We would like to video-record in particular, because it will help us to learn more about non-vocal conduct, including gestures and how the patient is examined. A video record will also show, for example, what is happening during silences in the talk (e.g. did someone nod or smile or shake their head?).

What will I be asked to do?

If you decide to take part you'll be asked to sign a consent form. You will meet with the patient just as you would have done if you were not taking part in the study. The only difference will be that the appointment will be recorded. There is nothing more you will have to do.

How long will it take?

The time is same as your usual medical consultation time, depending on you yourself.

Will my taking part in the study be kept confidential?

Yes. We will follow ethical and legal practice and all information about you will be handled in complete confidence; there is no risk in participating in this study. Please refer the following for more specific declaration:

1. We are required to comply with the Data Protection Act 1998 in terms of handling, processing, storage and destruction of the information that we collect from you.

2. Code numbers or names will be used in place of names of people who have given us information on all questionnaires and transcripts so that all information collected for the study can be kept strictly confidential.

3. Consent forms and a database containing participants' real names and contact details will be stored securely. Questionnaires and recordings will be labelled with a unique code (no real names will be used) and stored on secure servers (all of which will be password-protected) at the above locations and at Shandong University and Loughborough University. Transfer of data will be managed using encryption software to ensure that your recordings cannot be accessed by unauthorised people.

4. Access to the recordings and questionnaires will be restricted to named team members. Nothing that could reveal your identity will be disclosed beyond these teams.

5. Questionnaires and recordings will be kept for 20 years for the purposes of writing up the study's findings for publication/training and for possible use in follow-up studies (subject to your consent). After 20 years, the questionnaires and recordings will be destroyed.

What are the possible benefits of taking part?

The information will be used to help improve future health services by understanding the ways in which doctors and patients communicate during medical consultations in China. The study may not have any immediate direct benefits for you but it will help doctors provide better support for patients in the future.

We would like to make it absolutely clear that we are not assessing doctors, or judging how well you do your work. We want only to know more about the communication between you and your patients, and how that communication is managed. We are NOT assessing your individual performance (or that of any other doctor who agrees to take part).

Who should I contact with questions?

This study is part of a PhD student research project supported by Loughborough University (UK). If you have any questions about the research, please contact Ms Lin Wu.

Applicant: Lin Wu
Dept. of Social Sciences, Brockington,
Loughborough University, Loughborough, UK
LE11 3TU
L.Wu2@lboro.ac.uk

Many thanks for your time in reading this leaflet and considering taking part.

Appendix 6 Information sheet (for patients)

Loughborough University

A study of general visits to medical clinics in Chinese hospitals

INFORMATION SHEET FOR PATIENTS

Introduction

Thank you for considering taking part in this study. This study is a collaborative project of two research teams of Loughborough University in the UK and Shandong University. The study focuses on the communicative features of general visits to medical clinics in Chinese hospitals.

Before you decide, it is important for you to understand why the research is being done and what it will involve.

This information sheet tells you about the study. Please read it carefully and ask us if there is anything that is not clear if you would like more information. Please take time to decide whether or not you wish to take part. Many thanks for reading this.

Aim of the study

The study will provide a better understanding of (i) the practice of medical consultations in general Chinese hospitals (ii) how doctor and patient use language to communicate during medical visits.

Why have I been invited

You have been invited to take part because you will be meeting with a doctor who is taking part in this study. We hope that at least 50 patients from various clinics in Jinan and Linzi will participate in this study.

Do I have to take part

No, it is entirely up to you. This information sheet should help you to decide whether you want to take part and we are happy to answer any questions you may have. We will also discuss the study with you before your appointment with the neurologist. If you decide to take part, you will be asked to sign a consent form. Even after signing, you can still leave the study at any time without giving a reason. A decision to leave the study or a decision

not to take part will not affect your standard of care.

Once I take part, can I change my mind
Yes! After you have read this information and asked any questions you may have we will ask you to complete an Informed Consent Form, however if at any time, before, during or after the sessions you wish to withdraw from the study please just contact the main investigator. You can withdraw at any time, for any reason and you will not be asked to explain your reasons for withdrawing.

What will happen to me if I take part
If you take part in this study, your appointment with the doctor will be video recorded. The recording equipment will be set up before the appointment so that the researcher will not be present while you talk with the doctor. Apart from the recording, your appointment will be no different to what would have happened with the neurologist if you were not taking part in the study.

Just before your appointment you will be asked to complete one brief questionnaire about general information about you (e.g. age, gender, and occupation), about your reasons for visiting the doctor, and about your quality of life in relation to your health

After your appointment you will be asked to complete another brief questionnaire about your experience of the appointment with the doctor.

Why are appointments being recorded
We need to record appointments in order to capture the details of what is said and how it is said. It is impossible to do this just by observing and making notes or by asking doctors about their work. We want to know what really happens so that the guidelines we write are based on real-life rather than theory. We would like to video-record in particular, because it will help us to know more about what part non-verbal conduct plays in the medical visit, for instance as the doctor examines your problem; there is a lot going on during the visit that will not be spoken, including what is happening during silences (e.g. did someone nod or smile or shake their head?). However, we know that some people who would like to take part would prefer not to be video-recorded. You can therefore choose whether to be audio or video-recorded.

What will I be asked to do
If you decide to take part you'll be asked to sign a consent form. You will then be asked to complete one questionnaire (described above) before your appointment. Next, you will meet with your doctor as you would have done if you were not taking part in the study. The only difference will be that the appointment will be recorded. After your appointment you will be asked to complete the final questionnaire (described above). There is nothing

more you will have to do.

How long will it take

The consultation time is same as your usual medical visits, depending on the doctor. I might need ask you a few questions for background information before or after the consultation.

Are there any risks in participating

No.

Will my taking part in the study be kept confidential

Yes. We will follow ethical and legal practice and all information about you will be handled in complete confidence. Please refer the following for more specific declaration:

1. We are required to comply with the Data Protection Act 1998 in terms of handling, processing, storage and destruction of the information that we collect from you.

2. Code numbers or names will be used in place of names of people who have given us information on all questionnaires and transcripts so that all information collected for the study can be kept strictly confidential.

3. Consent forms and a database containing participants' real names and contact details will be stored securely. Questionnaires and recordings will be labelled with a unique code (no real names will be used) and stored on secure servers (all of which will be password-protected) at the above locations and at Shandong University and Loughborough University. Transfer of data will be managed using encryption software to ensure that your recordings cannot be accessed by unauthorised people.

4. Access to the recordings and questionnaires will be restricted to named team members. Nothing that could reveal your identity will be disclosed beyond these teams.

5. Questionnaires and recordings will be kept for 20 years for the purposes of writing up the study's findings for publication/training and for possible use in follow-up studies (subject to your consent). After 20 years, the questionnaires and recordings will be destroyed.

What are the possible benefits of taking part

The information will be used to help improve future health services by understanding the ways in which doctors and patients communicate during medical consultations in China. The study may not have any immediate direct benefits for you but it will help doctors provide better support for patients in the future.

Who should I contact with questions

This study is part of a PhD student research project supported by Loughborough University (UK). If you have any questions about the research, please contact Ms Lin Wu.

Applicant: Lin Wu
Dept. of Social Sciences, Brockington,
Loughborough University, Loughborough, UK
LE11 3TU
L.Wu2@lboro.ac.uk

You will also have a chance to discuss the study with a researcher on the day of your appointment.

Many thanks for your time in reading this leaflet and considering taking part.

Appendix 7 Consent forms (for doctors)

Loughborough University

A study of general visits to medical clinics in Chinese hospitals

CONSENT FORM for DOCTORS

The purpose and details of this study have been explained to me. I understand that this study is designed to further scientific knowledge and that all procedures have been approved by the Loughborough University Ethical Approvals (Human Participants) Sub-Committee.

I agree to the video/audio recording of my consultations, subject to patient's consent. I agree to discuss with the researchers about my work as a doctor. I have had an opportunity to ask questions about my participation.

I understand that the researchers offer me the following guarantees:

- All the information will be treated in strict confidence and will be kept anonymous and confidential to the researchers.
- Recordings will be accessible only to the research team and those directly involved in the study's management.
- The image of my face will be blanked out in the recordings for confidentiality by the researchers using modern computer technology.
- I (or the patient) can ask for the recording to be stopped at any time and for the recording to be deleted.

I agree to participate in this study.

Signed: _____ **Date:** _____

For the researcher:
I confirm that I have explained the study to the person named above.

Name: _____

Signed: _____ **Date:** _____

Appendix 8 Consent forms (for patients)

Loughborough University

A study of general visits to medical clinics in Chinese hospitals

CONSENT FORM for PATIENTS

The purpose and details of this study have been explained to me. I understand that this study is designed to further scientific knowledge and that all procedures have been approved by the Loughborough University Ethical Approvals (Human Participants) Sub-Committee.

I agree to the video/audio recording of my visit to a doctor. I have had an opportunity to ask questions about my participation.

I understand that the researchers offer me the following guarantees:

- All the information will be treated in strict confidence and will be kept anonymous and confidential to the researchers.
- Recordings will be accessible only to the research team and those directly involved in the study's management.
- I can ask for the recording to be stopped at any time and for that recording up to that point to be deleted.
- The study will not affect my benefits in any way.

I agree to participate in this study.

Signed: _____ **Date:** _____

The researchers may wish to play short bits of the recordings for training purposes and at presentations. They may also wish to include stills (i.e. photographs) from the recordings in publications. If so, faces will be blanked out and your confidentiality will be guaranteed as outlined above.

Please sign here if you agree to short bits of your recording being played for training and presentation purposes, and to stills being included in publications:

Signed: _____ **Date:** _____

For the researcher:
I confirm that I have explained the study to the person named above.

Name: _____

Signed: _____ **Date:** _____

Appendix 9 Three-line transcription

Diabetes or hyperthyroidism, MVI_0472
D: doctor
P: Patient
C: patient companion

1 D: lai zuo xia ba.
come sit down PRT
Come Sit down please.

2 zenme le?
what CRS
what's up?

((PAT sit down))

3 P: wo jiu shi:: baitian hai shi shi bu chu lai(.)
I just be day still be feel N out CP
I just:: can't feel it in the day(.)

4 zenme wanshang↑ guang you dian e de huang ne↓ jiu shi zhe.
how night always have bit hungry CP upset Q just feel CP
How come at night↑ (I feel) always sort of hungry and upset↓ I just feel.

(0.2)

5 D: e de huang?
hugry CP upset
hungry and upset?

6 P: En [wanshang jiu shi
PRT night just be
Yeah [at night it's just

7 D: [you bing li(.) mei you bing li ben ah
have illness record N have illness record note PRT
[Have (you) got medical record(.)You haven't got the medical record note

8 P: eh(.) bingli ben na zhe.
PRT illness record note got CP
Yeah(.) I've got the medical record note.

9 D: uh.
PRT
Yeah.

10 P: nage:: (0.1) wo nage(.) baitian a(.) chi shenme dou xing.
that I that day PRT eat what all ok
That:: (0.1) I that(.) in the day(.) it's ok to eat whatever (food).

11 jiu shi wanshang a(.)
just be night PRT
it's just at night(.)

12 chi yi dian dongxi a(.) chi yi dian=
eat one little thing PRT chi yi dian
(If I) eat a little bit(.) eat a little bit=

13 =youshi(.)dai na wei li shi zhe du du zhe.
sometimes stay that stomach inside feel CP stuffed stuffed CRS
=sometimes(.) inside (my) stomach (I) feel stuffed stuffed.

14 D: en:
PRT

En:

(4.8) ((DOC touches PAT's thoat))

15 D: e de xin huang ma?
hungry CP heart upset Q
So hungry that (your) heart palpitates?

16 P: xin huang.=
heart upset
(My) heart palpitates.=

17 =wanshang zhe liang tian hai shui bu zhao jiao ne.
night this two days still sleep N COM sleep PRT
=At night these days (I) can't even fall asleep.

18 = shui bu zhao jiao, xin huang jiu.
sleep N COM sleep heart upset just
=Once (I) can't fall asleep, (my) heart palpitates.

(1.8)

19 D: en.
PRT
Yes.

(1.7)

20 P: yao teng.
waist painful
(My) waist is painful.

21 D: yuanxian mei kan guo bing. mei you shenme man xing bing.
before N seen ASP disease N have what chronic disease
Before (you) haven't seen any doctor. (You) haven't got any chronic disease.

22 P: ↑yiqian jiu shi:: ↑jin qu nian jiu shi:
before just be:: this last year just be:
↑Before it was just:: ↑Last year it was just:

23 guang you dianer(.) xin huang=
always have a little heart upset
Always have a little heart palpitating=

24 =you dianer zao bo a.
have a little early beat PRT
=have a little premature beat.

Appendix 10 Four-line transcription

Diabetes or hyperthyroidism, MVI_0472
D: doctor
P: Patient
C: patient companion

来 坐下吧
1 D: lai zuo xia ba.
come sit down PRT
Come Sit down please.

怎么了
2 zenme le?
what CRS
what's up?

我就是白天还是试不出来
3 P: wo jiu shi:: baitian hai shi shi bu chu lai(.)
I just be day still be feel N out CP
I just:: can't feel it in the day(.)

怎么晚上光有点饿得慌呢 就试着
4 zenme wanshang↑ guang you dian e de huang ne↓ jiu shi zhe.
how night always have bit hungry CP upset Q just feel CP
How come at night↑ (I feel) always sort of hungry and upset↓ I just feel.

饿得慌
5 D: e de huang?
hugry CP upset
hungry and upset?

嗯 晚上就是
6 P: En [wanshang jiu shi
PRT night just be
Yeah [at night it's just

有病历 没有病历本啊
7 D: [you bing li(.) mei you bing li ben ah
have illness record N have illness record note PRT
[Have (you) got medical record(.)You haven't got the medical record note

哎 病历本拿着
8 P: eh(.) bingli ben na zhe.
PRT illness record note got CP
Yeah(.) I've got the medical record note.

9 D: uh.
PRT
Yeah.

那个 我那个白天啊 吃什么都行
8 P: nage:: (0.1) wo nage(.) baitian a(.) chi shenme dou xing.
that I that day PRT eat what all ok
That:: (0.1) I that(.) in the day(.) it's ok to eat whatever (food).

就是晚上啊
10 jiu shi wanshang a(.)
just be night PRT
it's just at night(.)

吃一点东西啊 吃一点
11 chi yi dian dongxi a(.) chi yi dian=
eat one little thing PRT chi yi dian

(If I) eat a little bit(.) eat a little bit=

有时呆那胃里试着堵堵着
12 =youshi(.)dai na wei li shi zhe du du zhe.
sometimes stay that stomach inside feel CP stuffed stuffed CRS
=sometimes(.) inside (my) stomach (I) feel stuffed stuffed.

嗯
13 D: en:
PRT
En:

饿得心慌吗
15 D: e de xin huang ma?
hungry CP heart upset Q
So hungry that (your) heart palpitates?

心慌
16 P: xin huang.=
heart upset
(My) heart palpitates.

晚上这两天还睡不着觉呢
17 =wanshang zhe liang tian hai shui bu zhao jiao ne.
night this two days still sleep N COM sleep PRT
=At night these days (I) can't even fall alseep.

睡不着觉心慌就
18 = shui bu zhao jiao, xin huang jiu.
sleep N COM sleep heart upset just
=Once (I) can't fall alseep, (my) heart palpitates.

(0.5)

嗯
19 D: en.
PRT
Yes.

腰疼
20 P: yao teng.
waist painful
(My) waist is painful.

原先没看过病 没有什么慢性病
21 D: yuanxian mei kan guo bing. mei you shenme man xing bing.
before N seen ASP disease N have what chronic disease
Before (you) haven't seen any doctor. (You) haven't got any chronic disease.

以前就是 今去年就是
22 P: ↑yiqian jiu shi:: ↑jin qu nian jiu shi:
before just be:: this last year just be:
↑Before it was just:: ↑Last year it was just:

光有点儿心慌
23 guang you dianer(.) xin huang=
always have a little heart upset
Always have a little heart palpitating=

有点儿早搏啊
24 =you dianer zao bo a.
have a little early beat PRT
=have a little premature beat.