Interprofessional Care:
A Sociology of Expertise Perspective



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ABSTRACT

This thesis examines how professionals from different occupations collaborate in complex institutional settings, focusing on expanding our understanding of the relationship between experts, expertise, and society. I address this gap in the sociology of occupations and professions literature by unpacking the three central issues of the conundrum of expertise: the problem of trust, the problem of extension, and the problem of complexity. The problem of trust refers to the tension between the reliance on and distrust of experts; the problem of extension refers to the inclusion of laypersons and marginalised professionals in complex decision-making; and the problem of complexity refers to the difficulties in navigating complex institutional settings and challenges brought on by the risk society and the hybridisation of organising logics.

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CHAPTER 1: INTRODUCTION

So, the surgeon got it wrong. A computerised tomography (CT) scan revealed several lesions in the pancreas of a family member. We were referred to see a famous surgeon. He was a senior consultant in hepato-pancreato-biliary and transplant surgery. A hospital website profile described him as an expert in treating several types of cancer of the gastrointestinal system, including the bile duct, liver, and pancreas. He graduated from medical school in the 1980s and held a number of fellowships at prestigious institutions and even a PhD. His profile listed multiple appointments at several prestigious professional organisations, locally and internationally, and national scientific grant committees. I accompanied my family member for the visit as she did not speak conversational English, although she could understand many basic English words. At the clinic, I asked the surgeon about the diagnosis and treatment options. He said that the CT scan found three lesions roughly located at the head, body, and tail of the pancreas. Pancreatic cancers are very deadly (Hidalgo et al., 2015; Oberstein & Olive, 2013). The five-year survival rate of all types of pancreatic cancer patients from all stages (i.e., I to IV) is about 5% to 10% (Hidalgo et al., 2015; Ilic & Ilic, 2016; Vincent et al., 2011). Patients with stage IV pancreatic cancer have a five-year survival rate of about 1% (Cancer Research UK, 2020; Freelove & Walling, 2006). The survival rates of pancreatic cancers are so low because they are asymptomatic until the later stages of cancer (Ferrone et al., 2008).

The surgeon recommended a total pancreatectomy. Distal and central pancreatectomies were not feasible options as the lesions were distributed across the pancreas. I am a *layperson*. But, given the radical surgical procedure, I was very concerned about the risks of the procedure and quality-of-life issues after the surgery. After all, a total

pancreatectomy is a radical life-changing procedure. The surgery usually involves the removal of the entire pancreas, part of the stomach, the duodenum, part of the bile duct, the gallbladder, and the spleen. This meant that she would immediately have type-1 diabetes and would require daily insulin injections. Given her relatively advanced age, chronic co-morbidities, including a prior non-ST-elevation myocardial infarction (NSTEMI; i.e., a type of heart attack), and a nephrectomy (i.e., removal of kidney) for renal cell carcinoma (RCC), a total pancreatectomy would further stress her body. Every surgery has risks; there was a real possibility that she might not survive the operation. There would also be a risk of post-operative infections and other complications. When I asked the surgeon about the risks and post-operation quality-of-life issues, he brushed me off and responded in a callous and dismissive tone in front of the patient, "What quality-of-life? Without the surgery there is no life!" as if I had asked a ridiculous question. I was both surprised and angry with his lack of empathy and unwillingness to address my concerns.

At the time, I had already worked as an ethnographer in an acute hospital environment for many years and had conducted detailed observation studies in all major departments in acute hospitals, including intensive care, general medicine, general surgery and emergency. Although I had never worked in this particular hospital where the consultation was conducted, I was accustomed to the norms of such doctor-patient discourses (Kee et al., 2018). Careful and empathetic deliberations with patients were the norm, even for relatively small uncomplicated procedures. His curt response was a jarring difference from what I had observed in all my years of observing doctor-patient interactions and what medical educators emphasised to their medical students about the importance of patient rapport and delicate care needed in breaking bad news. The surgeon's response was a red flag for me. Although he was a highly regarded surgeon in his field, I did not trust that

he would care for my family member in the manner she needed as a patient. Perhaps to him, the person in front of him was just another patient, but this patient was someone's parent, spouse, sibling, and child. I contacted a senior medical colleague for help in identifying another clinician for a second opinion.

We consulted with a second surgeon, and he suggested that we conduct a biopsy of the lesions to determine the type of pancreatic cancer so that we could make a better-informed decision. Most pancreatic cancers are developed from exocrine cells, and they make up more than 95% of cancers of the pancreas; these are called nonendocrine pancreatic cancers. Then, there are pancreatic cancers that are developed from cells in the endocrine, and they make up less than 5% of all pancreatic cancers; these are called neuroendocrine cancers (Bocchini et al., 2020). And, of course, there are benign lesions. The type of pancreatic cancer matters because their survival rates are vastly different; patients with stage IV neuroendocrine lesions have a five-year survival rate of 24%, compared to 3% for nonendocrine lesions discovered at the same stage. Surely this was highly material information for making a decision regarding a major surgery. If the cancer was very aggressive, palliative care might be a better option than going through the trauma of a highly risky surgery that would undoubtedly alter one's quality-of-life, and yet only delay the eventual (Frigerio et al., 2017).

The biopsy results surprised us. It turned out that the lesions were neither nonendocrine nor neuroendocrine lesions. The lesions were of her RCC, i.e., they originated from her previous kidney cancer! She was considered surgically cured of RCC when they performed a nephrectomy on her more than a decade ago. This information completely changed the treatment and management plan. Instead of a risky life-changing radical surgical procedure, she could take an oral medication called Pazopanib that blocks tumour

growth and inhibits angiogenesis. The drug was very costly, about £4000 a month, but the side effects were much more manageable compared to a total pancreatectomy. As the surgery was not necessary, the second surgeon promptly transferred her care to a medical oncologist, who manages her condition to this day.

The Precariousness and Durability of Healthcare

Throughout this whole episode of sorting out the appropriate care and treatment plan, I was at once a caregiver and a researcher and made many observations. What was most striking for me in this experience as a caregiver and researcher was the fragility of healthcare. While it is highly intuitive to think that patient outcomes depend on the level of expertise of the doctor treating the patient, it is also patently incomplete when we consider the complexity involved in caring for a patient. My experience shows that a doctor's expert knowledge has limited impact unless his knowledge is successfully assembled with other accomplishments, such as the building of trust with patients and their caregivers and obtaining an accurate account of patients' presenting complaints and medical histories. The trajectory of care delivery is always susceptible to the variabilities of the enactment of human actors as well as the affordances and constraints of contextual entities. When healthcare professionals fail to build rapport and trust with their patients, patients may be less willing to share vulnerable details about their conditions and concerns. Incompleteness and inaccuracies in the recounting of patient complaints and relevant medical history would undoubtedly affect the accuracy of diagnoses and the effectiveness of care.

Additionally, contextual entities such as the availability of treatment options and the affordability of those treatment options mattered too. For instance, because the drug Pazopanib was so expensive, we would not have been able to finance it except with a mix of

assistance schemes, out-of-pocket payments, and insurance reimbursements. But the need to utilise multiple modes of payment for one drug meant complicated calculations and well-timed collection of prescribed medications to avoid inadvertently exceeding monthly claim limits. We received assistance from the cashier of the dispensary, who routinely went above and beyond her job as a cashier to ensure that we optimised our assistance and insurance entitlements to minimise out-of-pocket payments. Not forgetting, without the help of a medical social worker who worked with us to prepare the various documents needed to apply for assistance schemes, we would have struggled immensely to pay for the treatment. Any breakdown along this long chain of accomplishments would have set us off on a different trajectory and most possibly ended up with a poor outcome. As such, healthcare is precarious. Patient outcomes depend on expertise beyond what is embodied in a doctor. Healthcare is constantly in flux and held together through constant accomplishments by a 'motley crew' of healthcare professionals, organisational arrangements, policies, digital records, physical equipment, and other materials.

Yet, our experiences at healthcare institutions, for the most part, do not feel nearly as precarious as my account above suggests. Albeit occasional variabilities, my experiences at healthcare institutions mostly felt pedestrian and non-chaotic. A fundamental question one may ask of this experience is, how are healthcare institutions held together despite their precariousness? How are the different entities assembled to achieve durability in the long chain of accomplishments? How do actors act when the chains of accomplishments fall apart? Does the manner in which healthcare institutions are organised matter? If yes, how so; if not, why? This precarious yet durable experience provides an important premise for the research problem of this thesis.

Overview of Research Problem and Theoretical Sensibility

It may be puzzling why the first surgeon, given his vast experience, did not order a biopsy to rule out other possibilities or differential diagnoses. Perhaps, one may also wonder why he did not even bother to explain more about the risks of the procedure and post-operative issues. He eventually made the wrong diagnosis and recommended an unnecessarily high-risk and life-changing procedure, which we would have undergone if not for the second opinion that we sought. Sociologists, however, would not find the behaviours such as that of the first surgeon so puzzling (Law, 1994; Law & Mol, 2008; Mol, 2002, 2008). One possible explanation is the phenomenon of multiplicity. This phenomenon occurs when there is a "simultaneous enactment of objects in different practices, when those objects that are said to be the same, [and] the claim that there are many realities rather than one" (Law, 2004, p. 162). One physical entity can be multiple objects and thus multiple realities at once. To a surgeon, it is a surgical problem; to an interventional radiologist, it is a biopsy sampling problem; and to a medical oncologist, it is a diagnosing and treatment problem. When related multiples are artificially divorced from each other in decision-making, other possibilities other than the one an individual prefers or is most familiar with will prevail in interpretations more often than not. The effect of these behaviours on patients, when taken to an extreme, is that a patient is objectified and becomes a one-dimensional problem. The degree of multiplicity becomes even greater for the care of complex conditions as the number of occupations and specialities involved in the care will increase (see Chapter 3 for the Research Context). This thesis is concerned with problems associated with the phenomenon of multiplicity. It seeks to understand how professionals from different occupational groups can collaborate successfully in complex institutional settings despite the multiplicity that exists. In addition, the challenges that

professionals are currently facing go beyond the multiplicity occasioned by the need to collaborate across occupational groups routinely. Their relationships with society and service users have also changed profoundly.

As my review of the sociology of occupations and professions literature in Chapter 2 will reveal, profound changes have been occurring with regard to the manner in which occupational and professional work is organised today. These changes create a contradictory relationship between experts, expertise, and society. In my review, I highlight three related but separate issues – the problems of trust, extension, and complexity. Collectively, these problems can be conceptualised as the conundrum of expertise, in which the nature of the relationship between expertise and society is fundamentally contradictory; expertise is at once distrusted, demanded, and yet depended on. As Limoges (1993, p. 417) asserted, "[t]here was a time when the mobilisation of experts was a taken-for-granted, unproblematic aspect of decision-making processes. That confidence has vanished." In other words, experts have a trust problem. Scholars have described professionals to be "persecuted" (Farrell & Morris, 2003, p. 135), "under attack" (Ackroyd, 1996, p. 615), and going through "professional deconstruction" (Saks, 2021, p. 81). A number of reasons have been offered for this decline in trust in experts, including high-profile expert errors (Cole, 2006; Kennedy, 2001; Lynch et al., 2009; Wynne, 1996), widespread social media disinformation (Collins et al., 2022; Lazer et al., 2018; Nichols, 2017; O'Connor & Weatherall, 2018; Pennycook & Rand, 2021), and growing anti-intellectualism (Hofstadter, 1963; Merkley & Loewen, 2021). Importantly, experts have to build, and not assume, trust with the public; trust can no longer be assumed (Eyal, 2019; Goldenberg, 2021). Part of the process of building trust requires experts to incorporate the

concerns, values, priorities, and knowledge of those receiving their expertise into the process of assessment and decision-making.

However, this inclusion of non-credentialed persons in decision-making creates the problem of extension (Collins & Evans, 2002). The problem of extension pertains to the concomitant concern that non-credentialed persons with practical experience are left out of decision-making and the infinite regress that anyone who wants to participate will be able to contribute meaningfully to decision-making. Collins and Evans (2002) proposed a normative theory of expertise that sought to distinguish the different types of expertise to address the problem of extension, but their proposal created other challenges. First, the normative theory of expertise is silent on who should be the arbiter of what is considered relevant expertise. Second, expertise is conceptualised to be an attribute of individuals, i.e., embodied in experts. This conceptualisation removes the consideration of relevant contexts and ignores the precariousness of the delivery of activities such as healthcare. Third, their idea of an extension was very narrow and only pertained to technical decisions. This approach then ignores the multiplicity that pervades social life as it artificially divorces the technical with other relevant realities such as the social, cultural, and historical. As such, in Chapter 2, I will argue for a more nuanced conceptualisation of the problem of extension to include non-technical decisions as well as concerns about inclusivity in the participation of members who are more junior and from less prestigious occupational groups and not just dominant occupational groups.

By expanding the scope of participation, the problem of complexity becomes salient. The problem of complexity stems from two important developments that have unfolded gradually but relentlessly over the last few decades, namely, the rise of a risk society and the hybridisation of organising logics. The rise of a risk society (Beck, 1992b)

increases experts' involvement in "trans-scientific" (Weinberg, 1972, p. 209) questions, i.e., questions that can be asked of experts but yet cannot be answered by experts. The hybridisation of organising logics is the result of the bureaucratisation and marketisation movements (Abbott, 1991; Adler et al., 2008; Farrell & Morris, 2003; Starr, 1982). The result of the rise of a risk society and hybridisation of organising logics is the creation of contradictions that experts have to constantly navigate as they accomplish their work.

To address the problems of trust, extension, and complexity, I turned to the sociology of occupations and professions literature. However, as the review in Chapter 2 will show, this literature does not have adequate theoretical resources to help scholars grasp the impact of these trends, even though it should rightfully be in its jurisdiction. As noted by several scholars, the sociology of occupations and professions is currently at an "intellectual standstill" or "intellectual impasse" (E. H. Gorman & Sandefur, 2011, p. 279). Due to "a dearth of studies that explicitly take occupational or professional categories into account" meant that the literature "largely failed to keep pace with the rising salience of occupational and professional dynamics in work life" (Anteby et al., 2016, pp. 183–184). The sociology of occupations and professions has had different priorities. It has focused on understanding the socialisation of individuals as they become part of occupational groups and the jurisdiction battles between occupational groups. As such, although this thesis draws from and seeks to contribute to the sociology of occupations and professions, a different conceptualisation of expertise is needed to help shed light on the problems of trust, extension, and complexity. For this thesis, a conceptualisation that allows the incorporation and analysis of the contributions of non-credentialed experts as well as the contextual factors that make it possible for superior performance is needed.

Rather than to conceptualise expertise as an attribute of experts, I follow Eyal (2013) to conceptualise expertise as an attribute of networks – networks that link heterogeneous entities made up of "social, material, spatial, organisational, and conceptual arrangements that serve as it conditions of possibility" (2013, p. 871). Eyal (2013, 2019) drew from the work of Foucault (1972, 1973) and scholars of social studies of science informed by the actor-network theory (ANT) tradition (Cambrosio et al., 2013; Lakoff, 2005; Latour, 1987, 1988). By untangling the concept of an expert from that of expertise, I conceptualise expertise as a "capacity to carry out certain specialised tasks that are either impossible to carry out in its absence, or that are performed better, faster and with greater certainty of desired outcomes in its presence" (Eyal, 2013, p. 36).

To address the research question of this thesis on how professionals from different occupational groups collaborate in complex institutional settings, I draw from the conceptual resources of ANT. ANT is not a theory per se but rather a sensibility to engage with the empirical world. It is also known as a sociology of translation and "a disparate family of material-semiotic tools, sensibilities, and methods of analysis that treat everything in the social and natural world as a continuously generated effect of the webs of relations within which they are located" (Law, 2009, p. 141). This conceptualisation of the empirical world provides a cogent alignment with Eyal's (2013) conceptualisation of expertise as a capacity that comes from a network of heterogeneous entities. Importantly, studies that use an ANT framing focus not on explaining why society is the way it is but rather focuses on how things come together to become durable. This focus on understanding how durability was achieved despite precariousness provides a strong fit with the premises of this study.

While this thesis is informed and sensitised by the central ideas of ANT, it departs from how scholars usually deploy ANT in the conceptualisations of their studies. ANT scholars frequently invoke ANT's arguments by emphasising the notion of flat ontology or generalised symmetry between humans *and* non-humans. They analyse society by unpacking the hybridity of social and material in producing durability. My analyses acknowledge but do not focus on drawing the distinctions between humans/non-humans or social/material and how they contribute to durability. Rather, I focus on the consequences of hybridisation. Specifically, I seek to understand professionals' responses to the complexities and contradictions of hybridising heterogeneous entities of organising logics. Instead of drawing the distinctions along the lines of humans/non-humans or social/material, I analyse how the hybridisation of organising logics produced institutional complexity and influenced professionals' practices. As noted by Friedland (2014), "logics exist where a substance has a practical specificity, and conversely, a practice has a substantial specificity, [and] it is this coupling of substance and material practice that constitutes a logic."

As a result of the focus of the thesis, its text is heavy on the socio, and light on the material. Although I do not explicitly employ the concept of materiality directly in my analysis, its impact on the phenomenon of interprofessional care was ubiquitous and all-encompassing. For instance, as the chapters to follow will reveal, the A4-sized patient list, the manner in which hospital beds were arranged and labelled, the presence (or absence) of professionals in interprofessional meetings, and most critically, the limited number of hospital beds, and the physicality (or the absence) of patients' conditions (i.e., stroke/spinal cord injury compared to psychosis), were paramount in their influence of how interprofessional care was assembled. While materiality holds significant importance,

incorporating it explicitly into this thesis could potentially add complexity to the already intricate examination of collaboration among professionals from diverse occupational groups in the context of entity hybridization.

Overview of Methods

To understand how professionals from different occupational groups come together to provide care for patients with different chronic conditions, I followed the actors as well as the 'tokens' as Latour (1987, 1996, 2005) and Gaskell and Hepburn (1998) advised. The actors (i.e., the healthcare professionals) and the tokens (i.e., the patients) were observed in the context of three interprofessional teams working in two hospitals in Singapore. I conducted the observations of the three interprofessional teams over a period of 14 to 16 weeks each at their weekly interprofessional meetings. The teams focused on treating different conditions, namely, spinal cord injury, stroke, and psychosis. I had chosen two physical health ailments and one mental health ailment to sharpen the analytical affordances of the data. Although I mentioned that I observed three interprofessional teams, as the details about team composition in Chapter 4 will show, the teams were always in flux, and I essentially followed 46 teams as each team was composed differently for each week. The composition of patients was also different for each week as existing patients were discharged and new patients were admitted. This constant flux of healthcare professionals and patients demonstrates the relevance of the notion of precariousness in healthcare work. Yet, as noted, this precariousness and potential of one's healthcare experience to be chaotic rarely occurred during the duration of my data collection efforts. This flux adds to the problem of complexity brought about by the risk society and hybridisation of organising logics.

During data collection, I paid special attention to details about the patients discussed, and the utterances made by healthcare workers were tracked longitudinally. My intention was to be able to analyse how the conversations changed or were maintained over time. I traced several dimensions of the interactions, namely, 1) who spoke, 2) occupation and rank of speakers, 3) length of utterance, 4) type of utterance (by speech act), 5) focal patient, 6) who was in the room, 7) when they entered and left the meeting room, 8) the issues they discussed, and in particular contradictions, or breakdowns encountered. By doing so, the data allowed me to trace the 'tokens' or patients, as Gaskell and Hepburn (1998) advised while following the actors. When healthcare professionals turned over a conversation by ceding the floor to other healthcare professionals or a healthcare professional claimed the floor to discuss a particular patient, it was interpreted as the "token is either ignored or taken up by people who see their interests translated within it in the process of shaping it to their interest [to] modify the token" (Gaskell & Hepburn, 1998, p. 65). By tracing both actors and tokens, I was able to describe how professionals from different occupational groups assembled to collaborate.

As noted in the preceding paragraph, to specifically address the problem of complexity, I paid special attention to contradictions or breakdowns. These situations were potentially chaotic, given the precariousness of healthcare work. As highlighted by Friedland and Alford (1991) and Czarniawska and Sevón (2011), contradictions and breakdowns are fertile grounds to tease out the workings of taken-for-granted organisational and institutional arrangements. In addition to observations of weekly interprofessional meetings of three teams, I also conducted in-depth semi-structured interviews with 32 healthcare professionals. These interviews focused on getting a good solid grasp of the context in which they worked, as well as their personal experiences and

views with regard to the contradictions I observed. I paid close attention to the justifications and explanations of healthcare professionals as they work with the contradictions they encountered.

Overview of Findings and Contributions to the Literature

This thesis is concerned with how professionals from different occupational groups collaborate in complex institutional settings. The study aims to fill the gaps in the sociology of occupations and professions literature by expanding our understanding of the changing relationship between experts, expertise, and society. The study scrutinises how professionals from different occupational groups work on tasks and problems. Specifically, the findings of my thesis provide insights into how healthcare professionals from different occupational groups 1) collaboratively build trust with the recipients of their care; 2) afford greater inclusivity in decision-making; and 3) navigate the contradictions occasioned by the hybridisation of organising principles in complex institutional settings. The thesis concludes by discussing the limitations of the study as well as identifying some possible areas for future research.

CHAPTER 2: LITERATURE REVIEW

Overview

This thesis is concerned with how professionals from different occupational groups collaborate in complex institutional settings. This concern with interprofessional team performance in complex institutional settings stems from a number of important societal developments that have impacted the manner in which occupational and professional work is organised today. Specifically, this thesis seeks to contribute to existing knowledge by unpacking the dynamics of the problems of trust, extension, and complexity (to be elaborated in later sections), issues that are exacerbated by the conundrum of expertise (Broadbent et al., 1997; Clarke & Newman, 2017; Eyal, 2019; Goldenberg, 2021; Grundmann, 2017; Huising, 2014; Jasanoff, 1997; Kurtz, 2022; Larson, 2018; Nichols, 2017; Noordegraaf, 2020; Schudson, 2006; Young & Muller, 2014). The conundrum of expertise is characterised by the concomitant reliance on experts and the growing distrust of experts (Beck, 1992a; Bijker et al., 2009; Eyal, 2019; Jasanoff, 1998; Limoges, 1993; Nowotny et al., 2001). "We believe less and less in experts, and yet we use them more and more" (Limoges, 1993, p. 424) in the risk society (Beck, 1992a, 1996); "[e]xpertise is at once contested, problematic, central and indispensable" (Nowotny et al., 2001, p. 215).

The sociology of occupations and professions is currently at an "intellectual standstill" or "intellectual impasse" (E. H. Gorman & Sandefur, 2011, p. 279) and struggling to stay relevant and contribute to the ongoing conversation about the conundrum of expertise. As observed by scholars, "a dearth of studies that explicitly take occupational or professional categories into account" meant that the literature "largely failed to keep pace with the rising salience of occupational and professional dynamics in work life" (Anteby et

al., 2016, pp. 183–184). This thesis focuses on teams undertaking tasks that require contributions from actors with diverse occupational profiles to understand the conditions that afford superior team performance. Diversity in teams presents challenges to performance because these differences often result in the need to attend to the faultlines occasioned by divergent and contradictory interests (Bell et al., 2011; Boone & Hendriks, 2009; Harrison et al., 2002; Horwitz & Horwitz, 2007; Lau & Murnighan, 1998). Despite these differences, how do interprofessional teams accomplish their work in light of the problems of trust, extension, and complexity?

While this thesis draws from and seeks to contribute to the sociology of occupations and professions literature, it departs from the literature in its conceptualisation of expertise. The sociology of occupations and professions is primarily a sociology of experts (Collins & Evans, 2007; Eyal, 2013). It conceptualises expertise as an attribute of experts, i.e., a quality that is acquired through some form of credentialing and licensing and only embodied in expert individuals (Abbott, 1988). However, the sociology of experts does not focus on the substantive aspects of expertise but focuses rather on the process of gaining expert status and legitimacy over an area of work. As such, scholars of occupations and professions have tended to focus on conflicts among different occupational groups that make contesting claims to expertise in jurisdictional battles (Abbott, 1988; Anteby, 2010; Anteby et al., 2016; Bechky, 2003; Heusinkveld et al., 2018; Saks, 2021; Wright et al., 2019). One of the shortfalls of this approach is its difficulty in incorporating and analysing the contributions of non-credentialed experts as well as the contextual factors that make it possible for superior performance (Eyal, 2013). Implicit in the assumption that expertise is embodied in expert individuals is that expertise is static and transcends context, i.e., experts will be able to perform consistently regardless of organisational and institutional

differences in their contexts of practice (Hodges & Lingard, 2012; Rip, 2003). Of course, experts do not operate in a vacuum (Goldenberg, 2021; Jasanoff, 2003; Latour, 1988; Limoges, 1993). Context is especially crucial in the accomplishment of tasks that involve the inputs of those without credentials, such as clients, service users, and even the general public (Collins & Evans, 2002; Drew et al., 2011; S. Epstein, 1995; Jasanoff, 1997; Rabeharisoa & Callon, 2004; Wynne, 1996). It was repeatedly found that laypersons, lay experts (S. Epstein, 1995), or experience-based experts (Collins & Evans, 2002, 2007) contributed meaningfully to the capacity to accomplish tasks better and faster and, in some instances, were better than credentialed experts (S. Epstein, 1995; Jasanoff, 1997; Rabeharisoa & Callon, 2004; Wilson et al., 2007; Wynne, 1996).

This inadequacy in incorporating non-credentialed experts and contexts in scholarly analyses of occupations and professions becomes particularly pronounced in studies of team performance in complex settings (Anteby et al., 2016; Eyal, 2013). If expertise is conceptualised as a "capacity to carry out certain specialized tasks that are either impossible to carry out in its absence, or that are performed better, faster and with greater certainty of desired outcomes in its presence" (Eyal, 2013, p. 36), then conceptualising expertise solely as an individual attribute seemed vastly inadequate. The proposed response to this inadequacy was to untangle expertise from experts and conduct two modes of analyses – sociology of experts and sociology of expertise (Eyal, 2013). As asserted by Eyal (2013, p. 868), the two modes of analyses are complementary and "only by combining the analysis of how networks of expertise are assembled with jurisdictional analysis can we conduct a history of tasks and problems" as Abbott (1988, p. 314) advocated to understand occupations and professions sociologically, and the implications of the problems of trust, extension, and complexity. Instead of conceptualising expertise as

an attribute that experts acquire as a result of training and socialisation into a certain occupational group, the sociology of expertise approach conceptualises expertise as a network linking entities, including agents, concepts, organisational procedures, and institutional arrangements (cf. Collins & Evans, 2007). Put differently, it views expertise as embodied in networks rather than embodied in individuals or organisations (cf. Abbott, 1991). By distinguishing experts from expertise, it allows two modes of analysis to be carried out in conjunction, thereby allowing an analysis of the conditions of possibilities that afford the assembly of superior expertise (Eyal, 2013).

In the rest of the chapter, I will provide an overview of the sociology of occupations and professions literature. I first begin by describing the growing salience of occupations and professions in society. I will then discuss the implications of the vexatious definitional issues that have beset the literature since its inception, the different strategies scholars deployed to define (or avoid defining) and to conceptualise occupations and professions, and how these conceptualisations have led to a limited scope for scholarly work. The limited scope of scholarship insulated the literature from larger societal developments and led it "to an intellectual standstill" (E. H. Gorman & Sandefur, 2011, p. 279). Second, I will describe the most pressing societal developments that affect occupational and professional work. These developments have profound implications for our understanding of the role of occupations and professions in organisations and societies. The literature has characterized these developments as the problem of trust and the problem of extension (Collins & Evans, 2007; Eyal, 2019). I will highlight an additional problem that is insufficiently conceptualised and studied – the problem of complexity. As noted earlier, the sociology of occupations and professions literature has paid scarce attention to these developments and has struggled to stay relevant. One of the main reasons why the literature has lagged behind these issues is

because of its conceptualisation of expertise as an attribute of credentialed experts. Third, following Eyal (2013), I will propose to use an alternative conceptualisation – expertise as a network – to address the shortfalls in the literature. I will review the relevant literature that has conceptualised expertise as a network (or network-like) to develop the theoretical framework for the thesis to unpack the problem of trust, the problem of extension, and the problem of complexity. I will propose a focus on studying how different occupational groups collaborate in complex institutional settings to understand their implications for occupations and professions. Specifically, the review will lay the theoretical grounds for the study to unpack the conditions that afford expertise to be assembled effectively for complex institutional environments.

Trends in the Occupations and Professions Literature: A Sociology of Experts

Occupational and professional work has become increasingly important in modern societies. Statistics by official bodies such as the *U.S. Bureau of Labor Statistics* (BLS) and the *U.K. Office for National Statistics* (ONS) revealed that occupationally organised work has grown to be increasingly important over time. The ratio between work organised around occupations, and work organised around hierarchies within organisations, has increased dramatically (Barley & Kunda, 2004; Tolbert, 1996). Employment opportunities as engineers, technicians, and other skilled craftspersons have increasingly made up a larger proportion of the overall labour market compared to employment opportunities in areas such as sales, administration, and secretarial positions (U.K. Office for National Statistics, 2021; U.S. Bureau of Labor Statistics, 2021). This increase in occupationally organised work meant that occupations have become more important than organisations in influencing an individual's career pathways and task boundaries. As a result of the

stronger occupation identification, individuals were more ready to change employers, which in turn created a more fluid labour market (Tolbert, 1996). In other words, *The Organization Man* (Whyte, 1956) has become more of the occupational man (or woman).

The BLS and ONS provide highly granular codes for different occupations. For instance, the ONS provides four-level codes to categorize occupations (U.K. Office for National Statistics, 2021). The first-level code of *Professional Occupations* has second-level codes such as science, research, engineering and technology; health professionals; and teaching and educational professionals. Health professionals are further classified into health professionals (that includes medical practitioners, psychologists, and pharmacists); therapy professionals; and nursing and midwifery professionals. These categories provide clear boundaries over each occupation's respective scope of practice. However, does categorising an occupation as a professional occupation make it a profession? Scholars have argued that official categories provided by official bodies such as the BLS and ONS are better conceived as socially constructed categories imposed by the official bodies.

Anteby and colleagues (2016, p. 187) defined occupations as "socially constructed entities that include: (1) a category of work; (2) the actors understood – either by themselves or others – as members and practitioners of this work; (3) the actions enacting the role of occupational members; and (iv) the structural and cultural systems upholding the occupation." Muzio and colleagues (2020, p. 3) characterized occupations as "a community of practitioners with similar skill requirements engaging in common work tasks that are relatively enduring, either within a sector or spanning several sectors." Scholars often vary in their conceptualisations of occupations. However, their definitions largely coalesce around the idea that occupations are socially meaningful categories of work (Abbott, 2010; Kalleberg & Mouw, 2018).

The challenges of defining occupations and professions are well documented in the literature (Abbott, 1988; Becker, 1970; Brown, 1993; Cogan, 1955; Flexner, 1915; Habenstein, 1963; Leicht & Fennell, 1997; Wilensky, 1964). No single definition of occupations or professions has received widespread adoption in the literature, and several authors have argued that the distinctions between occupations and professions have become increasingly irrelevant; professions should be conceptualised as a subset of occupations, and their differences were a matter of degree rather than in kind (Evetts, 2006; E. C. Hughes, 1958; Larson, 2018). Questions about what constitutes a profession go at least as far back as 1915 when Alex Flexner, author of the influential Flexner (1910) report, deliberated at length about whether social work should be considered as a profession or not (Flexner, 1915). Abbott (1991, p. 19) described professions as a "definition bog from which one might never emerge."

In the literature, professions are often defined in comparison to occupations and in a trait-based manner (Abbott, 1988; Elliott, 1972; Freidson, 1970; Larson, 2018). For instance, Hodson and Sullivan (2008, p. 258) defined a profession as "a high-status, knowledge-based occupation characterised by (1) abstract, specialized knowledge, (2) autonomy, (3) authority over clients and subordinate occupational groups, and (4) a certain degree of altruism." The trait-based manner of defining professions is problematic in a number of ways as it is highly susceptible to political concerns and manoeuvring. Scholars could subjectively find some trait that did not fully meet a threshold of a certain trait to exclude an occupation from being categorised as a profession (Abbott, 1988; Evetts, 2006; Millerson, 1964). As noted earlier, professions are often said to possess an abstract body of knowledge and autonomy over the methods they use to accomplish their tasks. However, scholars rarely articulated how to determine if a particular profession's knowledge base was

abstract enough or if the degree of autonomy was sufficient to meet the requirements to qualify as a profession. As Evetts (2006, p. 519) asserted, the trait-based manner of defining professions "is now largely assessed as being a time-wasting diversion in that it did nothing to assist our understanding of the power of particular occupations (such as law and medicine, historically) or of the appeal of 'being a professional' in all occupational groups."

Another approach to defining professions was by tracking whether an occupation had progressed through the necessary stages of professionalisation (Larson, 1977; Wilensky, 1964). Wilensky (1964) described professionalisation as a multi-stage process in which an occupation gains the status of a profession. These stages include the establishing of training facilities in increasing levels of sophistication, forming of professional associations, controlling the jurisdiction of practice areas through the institution of licensure, and espousing a formal code of ethics (Wilensky, 1964). This manner of defining professions was found to be equally problematic because of the large variations in the process of professionalisation across contexts, even within the same occupation, and these variations were even more pronounced when compared across occupations (Brès et al., 2019; Evetts, 1999; Millerson, 1964; Nicklich et al., 2021; Pohler & Willness, 2014; Saks, 2021).

In his seminal work *The Systems of Professions*, Andrew Abbott (1988), arguably the most influential sociologist of occupations and professions, criticized the literature for focusing solely on definitional questions and obfuscating substantive issues that made professions important areas of sociological inquiry in the first place. He argued that the confusion over definitions mainly arose among writing that did not have a theoretical agenda. Instead, he adopted a Wittgensteinian way of defining professions – the meaning of a word depends on its use – and emphasised that definitions "must follow from

theoretical questions" and provided a "very loose definition that professions are exclusive occupational groups applying somewhat abstract knowledge to abstract cases" (Abbott, 1988, p. 8). Additionally, he noted the problems faced by theories of professionalisation had originated from scholars' neglect of the substance of work, i.e., how professionals actually tackle tasks and problems.

Scholars have tended to focus on the social status of occupations and ignored the content and context of how work was carried out (Barley & Tolbert, 1991). This neglect of the close study of work remains pervasive in the literature and has important implications for theories of organisations, as extant theories are based on antiquated images of work (Barley & Kunda, 2001). Abbott further noted that the "central phenomenon of professional life was the link between a profession and its work, a link [he] called jurisdiction" (1988, p. 20). Specifically, he called for a focus on understanding how professionals approached "tasks and problems" (Abbott, 1988, p. 314) instead of focusing on the "life histories" of professions to avoid assuming a profession's functional identity. Rather than focusing on the "life histories" of professional groups, as earlier scholars of professions did, he focused on "interprofessional competition" (1988, p. 2), i.e., how occupational groups battle for control of knowledge and application of that knowledge in jurisdictional fights.

Anteby and colleagues' (2016, p. 184) integrative review of the occupations and professions literature suggested that studies of occupational groups' life histories and socialisation, and jurisdiction could be framed through the lenses of "becoming" and "doing." These studies adopted a sociology of experts approach, focusing on how individuals receive the credentials and socialisation from attaining the status of experts; and how occupational groups make contesting claims to certain tasks and problems over other groups. These studies focused on understanding how occupational members were

socialised into their professions and the worldviews of the occupational communities (Becker et al., 1961; Bucher, 1965; McCann et al., 2013; Millerson, 1964; Price, 2009; Van Maanen, 1978, 1991; Van Maanen & Barley, 1984). The exemplar work adopting the becoming lens is Howard Becker and colleagues' (Becker et al., 1961) study of medical students. The strength of socialisation studies was their ability to uncover the intricacies of the worldviews of occupational members. These studies often provide deep insights into the cultural norms of occupational groups and provide highly relatable explanations of occupational behaviour.

The central problem of studies that took on the doing lens was to understand the activities of occupational members as they competed for exclusive rights over tasks and problems (Anteby, 2010; Bechky, 2003; Bergeron et al., 2021; Heusinkveld et al., 2018; Saks, 2021; Wright et al., 2019; Xyrichis et al., 2017). The exemplar work adopting the doing lens is Abbott's (1988) seminar essay on the division of expert labour. The main rationale for the ecological approach was that occupations did not exist in isolation, and studying an occupation without considering the developments in adjacent occupations would lead to an incomplete understanding and "deeply mistake its history" (Abbott, 1988, p. 314). By examining how work is accomplished in an ecology of occupations, scholars can analyse the power structures as occupations engage in jurisdictional battles to shape the boundaries of their practice.

Studies of socialisation and jurisdictional battles, however, were limited in a number of ways. The insights of socialisation studies were often limited to members of the group that were studied as the contexts beyond the immediate environment were not incorporated into the analyses. Additionally, these studies also tended to focus on the most junior members of occupational groups as scholars were most interested to understand the

process in which individuals were socialised. In response to the narrow focus of socialisation studies, scholars expanded the scope of inquiry to focus on understanding an occupation from an ecological perspective (Abbott, 2005; Blok et al., 2019; Liu, 2014; Liu & Emirbayer, 2016). Despite its usefulness in uncovering the structure of interprofessional relations, jurisdiction studies suffer from a number of limitations. First, the jurisdictional claims framework is solely focused on interprofessional competition. As such, its theoretical framework is unable to incorporate and analyse the contributions of noncredentialled experts, even if their contributions are relevant. Second, the underlying premise of this framework is that occupational groups are inherently competitive and conflictual (Anteby et al., 2016; Berman, 2006). As Berman (2006, p. 157) noted, "theories of professions do not sufficiently explain how individuals with different and often ill-defined interests can organize themselves into a group coherent enough to undertake a "professional project." This assumption hinders the development of understanding of non-competitive, non-adversarial, collaborative relationships among occupational groups. Third, the conflictual framework seemed to have limited relevance after the jurisdictional battles were settled. Jurisdictional fights are relatively rare episodes and usually only occur in the initial stages when a new occupation or a new task emerges. Although the framing is immensely useful in unpacking the nature of interprofessional relations, it is decidedly lopsided in its view.

As noted earlier, the sociology of occupations and professions is currently at an intellectual standstill" or "intellectual impasse" (E. H. Gorman & Sandefur, 2011, p. 279). One of the main reasons for its shortfall is due to the manner in which expertise is conceptualised. In socialisation and jurisdiction studies, expertise is an attribute of experts. Socialisation studies focus on the process of how individuals receive training to be competent members of an occupational group. These studies attempt to unpack the

experiences of trainees undergoing credentialing and the meanings trainees attach to their experiences. Scholars have conceptualised different types of expertise individuals can embody, such as relational expertise (Edwards, 2011; Sandefur, 2015), contributory expertise (Collins et al., 2016; Collins & Evans, 2002), and interactional expertise (Collins & Evans, 2015; M. E. Gorman, 2010). Although the socialisation, learning, and enactment of the different types of expertise can take on different paths, the expertise is embodied in experts. Jurisdiction studies, on the other hand, are focused on the process of how occupational groups establish their claims to expertise and compete with other occupational groups that threaten their legitimacy. Because expertise is conceptualised to be an attribute of experts, and only experts have the license to work on certain tasks, scholars of jurisdiction studies often studied how different groups attempt to define the task; make arguments on what expertise is required for the task; and how assessments of whether an individual is up to the task are constructed. Because of the research agendas of socialisation and jurisdiction studies, scholars have conceptualised expertise in a rather limited way. As a result, the sociology of occupations and professions literature was not able to satisfactorily incorporate and address a number of important societal developments that have implications on the effectiveness of occupational members into their analyses. For instance, how do professionals establish trust with the recipients of their work? What happens when individuals without credentials also make claims to expertise? What do professionals do when they are expected to go beyond their claimed area of expertise? What happens if there are no experts in the area, such as in an emerging unknown area?

In the next section, I review important societal developments that affect occupational and professional dynamics but are inadequately addressed by the occupations

and professions literature. Specifically, I will discuss the problems of trust, extension, and complexity.

The Problem of Trust

> **Faisal Islam:** *The leaders of the US, India, China, Australia, everyone single one of our allies, The Bank of England, the IFS, the IMF, the CBI, five former NATO Secretary Generals, the Chief Exec of the NHS, and most of the leaders of the trade unions in Britain, all say, that you, Boris, and Nigel are wrong. Why should the public trust you over them?*
>
> **Gove:** *I am not asking the public to trust me, I am asking the public to trust themselves. I am asking the British public to take back control of our destiny, from those organisations which are distant, unaccountable, elitist and don't have their…*
>
> **Faisal Islam:** *Elitist? Elitist? The Lord High Chancellor, conspiracy of elites…*
>
> **Gove:** *Well… the one thing that I would say, is the people who are backing the remain campaign are people who have done very well, thank you, out of the European Union. And the people, increasingly… the people who are arguing that we should get out are concerned to ensure the working people of this country at last get a fair deal.* ***I think the people of this country have had enough of experts with organisations from acronyms saying they know what is best and getting it distantly wrong.*** *[Faisal Islam: Have enough of experts?* ***People from this country have had enough of experts****. What do you mean by that?] These people are the same ones who got consistently wrong.*
>
> (Sky News, 2016)

In the run-up to the Brexit referendum in 2016, Sky News political and economics journalist Faisal Islam asked the then Lord Chancellor Michael Gove why the public should trust him and not the economics experts. As the exchange above shows, Gove

characterised experts as "distant, unaccountable, [and] elitist," i.e., essentially untrustworthy, and asked "the public to trust themselves." He added that "the people of this country have had enough of experts with organisations from acronyms saying they know what is best and getting it distantly wrong." Fifty-two percent of the UK voted to leave the EU in 2016. Should the people have trusted the experts? A study was conducted by the independent British think tank Resolution Foundation to assess the impact of Brexit on the UK's economy. The study, which is the most detailed assessment to date of the impact of the Brexit deal with the EU, found that leaving the EU damaged the UK's competitiveness and will make the UK poorer in the decade to follow (Dhingra et al., 2022).

Just recently, Kwasi Kwarteng's first act after his appointment as the Chancellor of the Exchequer was to replace Sir Tom Scholar, finance expert and the most senior civil servant of the Treasury (HM Treasury, 2022). This move was highly criticized by former senior servants not only because it compromised the principle of a permanent and impartial civil service and risked politicising the civil service, but also because the removal of a highly experienced career civil servant came at a highly uncertain time (Elgot, 2022). As Lord Butler remarked on BBC Radio 4, "If there was ever a time, we needed experience and continuity, which is what the civil service provides, it is now. We have a new sovereign, we have a new prime minister and we really need the cement that can hold this system together" (Elgot, 2022). Along with the sacking of Scholar was the announcement of £45bn of unfunded corporate tax cuts. These tax cuts came without an assessment by the UK Office for Budget Responsibility (Parker & Giles, 2022). The world financial markets responded to it calamitously (Parker, 2022), and the value of the pound fell to a 37-year low against the US dollar (John, 2022). The then UK Prime Minister Liz Truss had since U-turned on the tax cuts, admitted that it "went further than markets were expecting," replaced her

38-day-old Chancellor (UK Gov, 2022a), and resigned as Prime Minister after just 44 days in office (UK Gov, 2022b).

This phenomenon of disdain for experts is pervasive and global but not new (Eyal, 2019; Gore, 2007; R. Hughes, 1993; Nichols, 2017). A survey conducted in the US revealed that only 17 percent of Donald Trump supporters wanted him to appoint people with experience in government service, and 53 percent of those polled agreed that everyday US citizens understand what the government should do better than the experts (Edwards-Levy, 2016). Manifestly, the consequences of mistrust in experts go beyond just the economic domain but in every domain of social life and can have deadly consequences in some instances. For instance, the US public health system has experienced an increase in vaccine preventable diseases as vaccine hesitancy among parents increased (American Academy of Arts and Sciences, 2014). This hesitancy can be seen in either delays or selective administration of immunisations, while some parents choose not to immunise at all. The American Academy of Arts and Sciences (2014, p. 1) further emphasised that these behaviours "reflect diminished public trust in the system that protects all of us against the timeless threat of communicable diseases—and the result is dangerous and costly outbreaks that are poised to grow worse in the future."

The state of the relationship between experts and nonexperts was not always as such. As Limoges (1993, p. 417) asserted, "[t]here was a time when the mobilization of experts was a taken-for-granted, unproblematic aspect of decision-making processes. That confidence has vanished." An increasing number of scholars have highlighted the tenuous position of experts in society. A variety of ominous labels have been used by scholars to describe the state of affairs. To wit, the "crisis of expertise" (Eyal, 2019), the "war on expertise" (Saks, 2021, p. 81), and the "death of expertise" (Nichols, 2017). Some scholars

viewed this phenomenon more as a problem for professionals and professionalism. They described that professionals are being "persecuted" (Farrell & Morris, 2003, p. 135) as "professionalism is under attack" (Ackroyd, 1996, p. 615), under "assault" (Freidson, 2001, p. 180) and going through "professional deconstruction" (Saks, 2021, p. 81). All these attacks augur the "end of professions" as a sociological category (Broadbent et al., 1997, p. 1; Kurtz, 2022, p. 265). Others have understood this more as a general societal circumstance of "troubled times" (Gleeson & Knights, 2006, p. 277), a "crisis of trust" (Goldenberg, 2021, p. 15), and a "war on science" (Goldenberg, 2021, p. 11).

Scholars have offered a number of reasons for this decline in trust in experts. These reasons include, high profile expert errors (Cole, 2006; Kennedy, 2001; Lynch et al., 2009; Wynne, 1996), widespread social media disinformation (Collins et al., 2022; Lazer et al., 2018; Nichols, 2017; O'Connor & Weatherall, 2018; Pennycook & Rand, 2021), and growing anti-intellectualism (Hofstadter, 1963; Merkley & Loewen, 2021). Goldenberg (2021) argued the heart of the problem of trust lay in the fraught relationship between scientific institutions and the public. She noted that to address this mistrust, experts must build a relationship with the public, appeal to "shared values and priorities" (Goldenberg, 2021, p. 169) and not assume an ignorant public is waging a war on science. She argued that the framing of vaccine hesitancy as a war against science has led to miscued interventions that were premised on erroneous assumptions, such as vaccine hesitancy would reduce if information campaigns were more effective. Although a fair amount of misinformation does exist, educational campaigns are vastly inadequate to solve the vaccine hesitancy problem (O'Connor & Weatherall, 2018). This point was also articulated by Limoges (1993, p. 418), who remarked that the "traditional communication model in which knowledge is emitted by experts and received by the public, admittedly with much noise, mainly

attributed to distortion by the media, has not proven very helpful" in changing opinions and behaviours. Importantly, as Limoges added (1993, p. 418), the traditional communication model is ineffective because "expertise is not only a message, but also, and mainly, a process [that] cannot be reduced to the set of statements uttered by experts, [and] is first and foremost the result of collective learning and assessment."

Given the knowledge and experience of experts, why are they mistrusted? The real question, however, as Eyal (2019) noted, is not why they are mistrusted but why would anyone ever trust experts? The bigger question is not mistrust, but why does trust exist? (Eyal, 2019; Giddens, 1990; Luhmann, 1979). A presumption that trust does not exist as a default meant that experts have to constantly re-establish trust rather than assume its existence. Essentially, to address the problem of trust is to answer the question of how trust can be established. This process of building trust is sensitive to "cultural characteristics of caution, empiricism and restraint" (Jasanoff, 1997, p. 228). For instance, Jasanoff (1997, p. 228) observed that the "US policy culture is open, adversarial, formal and legalistic where the UK's is closed, cooperative, informal and consensual." Compared to the UK, the US places its trust more in the process than character and experience. In the UK, trust is embodied in people who are deemed to be trustworthy, who have "[o]ver and above any demonstrations of technical competence, such individuals have proved their right to represent the public interest through years of devoted service…[earning] knighthoods or other honours in recognition of their contributions to public life" (Jasanoff, 1997, p. 227). In the US, "trust is reposed in formal processes, such as rule-making and litigation, and in styles of reasoning that ensure the transparency and objectivity, if not the wisdom, of government decisions" (Jasanoff, 1997, p. 228). The upshot of these differences, Jasanoff (1997, p. 231) noted: "If the UK has relied too much on character and experience, thereby

consolidating power in relatively few individuals, Americans have perhaps erred in the opposite direction, putting too little faith in people and too much in the objectivity of formal analysis." These differences underscore the importance of attending to contextual nuances in the process of building trust.

For experts to be effective, trust is needed not only between experts and the public, but trust is also needed between experts for complex undertakings (Jasanoff, 2004; Limoges, 1993), such as interprofessional care, full-stack program development, and construction of a skyscraper. Complex work often requires professionals from different occupational groups to work together to tackle problems that are ambiguous, shape occupational boundaries emergently, and take risks in the face of incomplete information (Adler et al., 2008; Beyerlein et al., 2004; Davila et al., 2012; Huising, 2015). The process of building trust across occupational boundaries is highly contextual and sensitive to the assemblage of people, rules, ideas, values, and occupational practices that need to come together (Cambrosio et al., 2013; Eyal, 2013). As such, trust cannot be assumed but must be treated as an accomplishment that needs to be constantly re-established (Cambrosio et al., 2013; Limoges, 1993; Limoges et al., 1995). The complexity of issues that confront occupations and professions meant that the number and diversity of stakeholders involved also concomitantly increased. This increase begets a more complex set of actions. A more inclusive trust-building process provides a higher chance of developing a socially robust relationship (Goldenberg, 2021; Jasanoff, 1998; Nowotny, 2000, 2003).

However, this increase in the number of stakeholders presents another problem – the problem of extension (Collins & Evans, 2002; Eyal, 2019; Rip, 2003). Whose inputs should be considered, and to what extent should those inputs be solicited and incorporated? What should be done with contradictory views? The current

conceptualisation of expertise in the sociology of occupations and professions is ill-equipped to address these questions because it views the relationships among occupational groups as fundamentally conflictual (Abbott, 1988; Anteby et al., 2016). Complex undertakings require trust not only with the recipients of the work but also trust among the occupational groups involved in the work. It is unimaginable that the relationships among experts accomplishing complex work are unidimensionally defined by conflicts as extant theories of occupations and professions have suggested.

The Problem of Extension

> *I go to a party and people come up and say, "You know what they ought to do? They ought to put a monorail down the middle of the freeway." And I said, "Well, what do you do?" And they said, "Well, I'm a cardiologist." I said, "You know what you ought to do? You ought to do more angioplasties and less coronary-artery bypasses." "Well, why do you say that?" I said, "Well, I have as much expertise in cardiology as you do in transportation. I have a heart."*
>
> Brian D. Taylor
> Professor of Urban Planning and Public Policy
> Director of the Institute of Transportation Studies at U.C.L.A.
> (Kelley & Dubner, 2022)

The problem of extension refers to "a tendency to dissolve the boundary between experts and the public so that there are no longer any grounds for limiting the indefinite extension of technical decision-making rights" (Collins & Evans, 2002, p. 235). Collins and Evans (2002) noted that while early studies of science demonstrated that technical decision-making would benefit from incorporating the participation of noncredentialled experts, it was unclear how far their participation should extend for technical decision-making. One of the main precipitating factors for highlighting the problem of extension

was their concerns about issues such as the antivaccine sentiment. A far-reaching antivaccine sentiment arose after gastroenterologist Andrew Wakefield and colleagues (1998) alleged a link between the measles, mumps, and rubella (MMR) vaccine and childhood autism in their publication in the prestigious medical journal *The Lancet*. In the paper, Wakefield and his colleagues noted that "[i]n eight children, the onset of behavioural problems had been linked, either by the parents or by the child's physician, with measles, mumps, and rubella vaccination" (p. 638). The paper was retracted on 6 February 2010, 12 years after its publication, as the editors of the journal noted that "it has become clear that several elements of the 1998 paper by Wakefield et al. are incorrect… [and in] particular, the claims in the original paper that children were "consecutively referred" and that investigations were "approved" by the local ethics committee have been proven to be false" (The Editors of The Lancet, 2010, p. 445). It was also reported that the data was fabricated to benefit the researchers financially (Deer, 2011a, 2011b). Never mind that the retracted study, even if done with integrity, was too weak to be used to make any causal inference between the MMR vaccine and autism (Chen & DeStefano, 1998), this paper became the centrepiece of the vaccine controversy (Goldenberg, 2021). The controversy created widespread antivaccine sentiments and garnered the support of numerous celebrities, and continued to influence the public long after the paper was retracted (Goldenberg, 2021). In many instances, parents who refused the vaccination schedule as advised by medical bodies and as required by regulatory bodies saw themselves as experts on their children's health (Reich, 2014, 2016).

By the problem of extension, Collin and Evans (2002) were concerned that noncredentialled experience-based experts or individuals with practical experience were excluded from the process of contributing to technical decisions. At the same time, they

were also concerned about the infinite regress that beset public discussions of technical matters, such as vaccine hesitancy (Goldenberg, 2021; Reich, 2020), global warming (Anderegg et al., 2010; Gore, 2007), and urban planning (Bonnes et al., 2007; Riechers et al., 2017). To tackle the problem of extension, Collin and Evans (2002) proposed a normative theory of expertise consisting of three levels of expertise, namely, no expertise, interactional expertise, and contributory expertise. Of particular importance to this discussion is interactional expertise, which refers to "the ability to converse expertly about a practical skill or expertise, but without being able to practice it, learned through linguistic socialisation among the practitioners" (Collins, 2004, p. 125). Interactional expertise enables communication to take place across occupational boundaries and allows interactional experts to facilitate knowledge exchange between groups that would not otherwise have been possible (Collins, 2004, 2013).

For instance, it was shown that laypersons were able to contribute to the knowledge production of highly technical areas such as AIDS research (S. Epstein, 1995), neuromuscular diseases (Rabeharisoa & Callon, 2004), and determining the source of the nuclear leak (Wynne, 1996). Epstein (1995) found that AIDS research consisted of a very diverse assemblage of lay and professional actors, such as immunologists, virologists, epidemiologists, government officials, pharmaceutical and biotechnology companies. His study found that AIDS activists were successful in achieving influence because they were able to present themselves as credible in the scientific community, despite their lack of credentials. Epstein (1995) mentioned that successful activists were able to "master the technical arcana in ways that even credential experts found impressive" (p. 426) and noted that the activists constructed their credibility by "the acquisition of cultural competence, the establishment of political representation, the yoking together of epistemological and

ethical claims-making, and the taking of sides in pre-existing methodological disputes" (p. 410). Specifically, AIDS activists were able to push for reforms in how clinical trials were conducted by persisting in arguing that clinical trial sites were simultaneously sites of care and scientific research, and thereby pushed the frontiers of scientific knowledge by requiring attention to details that credentialled experts missed.

In Rabeharisoa and Callon's (2004), they studied the French Muscular Dystrophy Association (AFM), an organisation founded by patients' parents or adult patients for the sole purpose of eradicating neuromuscular diseases (MD). Despite never having any scientific or medical professionals on its board of administrators since its inception in 1958, the AFM was able to successfully participate and lead in the production of knowledge regarding MD as well as mobilize research and patient communities to dialogue, negotiate, and set programme agendas to promote mutual learning. The AFM was highly influential and successful, and had an annual budget of 90 million euros at the time of the study. Rabeharisoa and Callon (2004) noted the criticality of an (p. 153) "intermediary discourse" that enabled laypersons to describe technical details about genes and bodies in action with medical and scientific practitioners. As emphasised by Rabeharisoa and Callon (2004), the AFM never intended to replace the division of labour established by scientific and medical communities. Patients and their families were at once subjects and objects of research by establishing a constant interaction with specialists based on what they knew about the illness by the sheer fact of being patients and carers.

Wynne's study of sheep farmers in Cumbria provides an example of how laypersons would have contributed to technical decisions if not for incompatible modes of describing and defining the problem. These incompatibilities led to different priorities. The scientists in Wynne's (1992) study of the Cumbrian sheep farmers and the Chernobyl fallout ignored

the technical expertise of the sheep farmers. Collins and Evans (2002) argued that this case of the Cumbrian sheep farmers was, in fact, a study of "the interaction of two communities of experts, one without certificates" (Collins & Evans, 2002, p. 270). Collins and Evans (2002) claimed that the farmers could have had a great impact on the outcomes if they were to interact with the scientists more compatibly. The scientists had overlooked local knowledge (such as the heterogeneous types of soil in the area) as well as specialized farming knowledge. Because the scientists ignored the knowledge of the farmers, they not only made a mistake in identifying the source of the radiation as Chernobyl instead of Sellafield, but they also lost credibility and mismanaged the social aspects of the crisis as a result of having a naïve understanding of how sheep farming works. The sheep farmers, as reported by Wynne (1996), were scornful of the scientists because of their ignorance:

> "[The experts] don't understand our way of life. They think you stand at the fell bottom and wave a handkerchief and all the sheep come running… I've never heard of a sheep that would even look at straw as a fodder. When you hear things like that it makes your hair stand on end. You just wonder, what the hell are these blokes talking about?" (p. 66).

As the abovementioned studies showed, laypersons were able to demonstrate the value and impact of their participation even for highly technical work. Across the studies, laypersons were able or would have been able in Wynne's (1992) study, to make a difference to technical decisions by communicating in a way that bridged domains. These cases underscored Collins and Evans (2002) case for the importance of interactional expertise.

To recap, Collins and Evans (2002) were concerned about inclusion in technical decisions. At the same time, they were also concerned about the substance of the

participation, i.e., the people who participate in the process of decision-making need to have at least interactional expertise. In essence, the problem of extension brings our attention to the process where technical decisions can be accomplished with greater inclusivity. However, Collins and Evans's (2002) proposed a normative theory of expertise has a number of important limitations. First, as admitted by Collins and Evans (2002) and reiterated by Rip (2003) and Eyal (2019), more participation does not guarantee better decisions. Even among experts, not all are created equal (Anderegg et al., 2010). The proposed normative theory of expertise is silent on who should be the arbiter of what is considered relevant expertise. This issue is especially pertinent for highly complex undertakings (such as a pandemic) where the problem is emergent and dynamic and where no experts exist. In these circumstances, it will be difficult to specify in advance what types of knowledge are relevant and who has the expertise for problems that are new to society (Jasanoff, 1998, 2003).

Second, Collins and Evans's notion of expertise is embodied only in individuals. Their conceptualisation of expertise is reductive as it removes the relevant contexts that make it possible for the accomplishment of work (Jasanoff, 2003; Rip, 2003; Wynne, 2003). A conceptualisation of expertise as embodied only in individuals also makes the implicit assumption that expertise is acontextual, i.e., an individual will be able to accomplish consistently regardless of organisational and institutional differences in their contexts of practice (Hodges & Lingard, 2012; Rip, 2003). As Jasanoff (2003, p. 393) noted, "expertise is not merely something that is in the heads and hands of skilled persons, constituted through their deep familiarity with the problem in question, but rather that it is something acquired, and deployed, within particular historical, political, and cultural contexts."

Third, their conceptualisation of the purpose of laypersons' participation is very narrow. Collins and Evans (2002) were concerned about "how we set boundaries around the legitimate contribution of the general public to the technical part of technical debates" (Collins & Evans, 2007, p. 113). But this narrow conceptualisation limits its usefulness as the issues that confront society are rarely just purely technical (Jasanoff, 2003; Weinberg, 1972). Even if we can untangle the technical aspects of problems from the social, cultural, or whatever relevant aspects, the outcome of the collective participation will not be socially robust because those debates will be contextually sterile. Moreover, there is strong evidence that suggests that diversity in groups contributes to better quality decisions (Haan et al., 2021; Woolley et al., 2008, 2010, 2015). By divorcing the technical domain from other domains, the quality of decisions will be decidedly compromised as the considered perspectives will be more homogenous. As Nowotny and colleagues noted (2001, p. 166), "the great conceptual, and organizational, categories of the modern world – state, market, culture, science – have become highly permeable, even transgressive… [as] they are ceasing to be recognizably distinct domains." They added that "[t]he more strongly contextualized a scientific field or research domain is, the more socially robust is the knowledge it is likely to produce" (2001, p. 167). Importantly, participation, as Wynne (2003) noted, is not just about technical decision-making, which Collin and Evans (2002, p. 236) defined as "those points where science and technology intersect with the political domain because the issues are of visible relevance to the public." Participation, is also about "democratic cultivation and negotiation of public meanings through the continuities and interwoven textures of public experiences, relationships, knowledges and interactions… [and] not just a kaleidoscope accumulation of atomistic, ahistorical public decisions based on expert knowledge, however inclusively we might define expert" (Wynne, 2003, p. 410).

The problem of extension is a difficult problem in which the solutions are not obvious (Eyal, 2019). Although inclusivity in participation has been shown to be linked with superior performance among interprofessional teams, it was also shown that participation from team members who were more junior or from a less prestigious occupation could not be taken for granted (Haan et al., 2021; Nembhard & Edmondson, 2006; Nishii & Mayer, 2009). As such, the puzzle for scholars of occupations and professions is to unpack how this process of inclusivity takes place for teams when teams are consisted of professionals from different occupational groups of varying levels of seniority. As reiterated throughout this review, the sociology of occupations and professions literature has focused its attention on conflictual relations instead of collaborative relations (Anteby et al., 2016). As Anteby and colleagues noted, the sociology of occupations and professions literature has very little on "understanding when and how occupational groups collaborate with other groups to perform interdependent work or collectively expand their social influence… [as it is] fairly new and research is comparatively scant" (2016, p. 212). Additionally, as noted earlier, for the problem of extension to be useful in addressing societal issues, it not only has to attend to inclusivity in terms of members, it also has to attend to inclusivity in terms of domains. To afford an environment that allows a socially robust exchange, the purpose of participation has to expand beyond technical domains. This expansion will, however, increase the complexity of exchanges. In the next section, I consider the issues related to an expansion of remit beyond the technical with reference to the problem of extension. This expansion will increase the complexity of interprofessional collaborations.

The Problem of Complexity

Expertise in society is contradictory (Bijker et al., 2009; Eyal, 2019; Larson, 2018). It is demanded, depended on, and distrusted all at once (Eyal, 2019; Nowotny, 2000).

Expertise in society is tenuous. Scholars have described expertise in society as being under attack (Ackroyd, 1996), assaulted (Freidson, 2001), deconstructed (Saks, 2021), and persecuted (Farrell & Morris, 2003). As noted earlier, the conundrum of expertise is persistent and pervasive. As Bijker and colleagues (2009, p. 1) remarked:

> "We live in paradoxical times. Scientific advice is asked for all serious problems, whether they concern new health threats such as severed acute respiratory syndrome (SARS) or new opportunities such as genetically modified food and crops. But as soon as advice is given, citizens, politicians, and non-governmental organizations comment on, criticize, or lend additional support to the scientists' report. The cases in which scientific advice is asked most urgently are those in which the authority of science is questioned most thoroughly."

At the heart of the conundrum of expertise is the problem of complexity. This complexity comes from two important developments that have unfolded gradually over the last few decades, namely, 1) the rise of a risk society, and 2) the hybridisation of organising logics.

In many ways, the problems of trust and extension exist because of the rise of a risk society (Beck, 1992b). The concept of a risk society refers to the second phase in industrialisation when society begins to suffer from the "latent side effects" (Beck, 1992b, p. 34) of its achievements accomplished in the first phase of industrialisation. Advancements in domains such as aeronautical, agricultural, material, medical, and nuclear sciences have allowed the global population to enjoy a quality of life higher than at any time in its history (Autor, 2020; Brynjolfsson & McAfee, 2016). As part of the industrial society's maturation, it has gained momentum that increasingly eludes control and prediction, i.e., it has become highly complex (Beck, 1996). Industrial society has been displaced by risk society; instead of structuring around the distribution of goods, it is now

structured around the distribution of "bads" – or risks (Beck, 1992b). By risks, Beck (1992b, p. 22) referred to "above all radioactivity, which completely evades human perceptive abilities, but also toxins and pollutants in the air, the water and foodstuffs, together with the accompanying short- and long-term effects on plants, animals and people." He added that these risks are by and large invisible and relatively little knowledge exists about them. As such, these risks are highly susceptible to manipulation and politicisation by the media, politicians, scientists, and the general citizenry.

Accompany the rise of a risk society is reflexive modernisation, which contains elements of a "reflex-like threat to industrial society's own foundations through a successful further modernisation which is blind to dangers, *and* the growth of awareness, the reflection of the situation" (Beck, 1996, p. 34). Risk society's tendency to self-critique create situations where "[e]xperts are relativised or dethroned by counterexperts… [and politicians] counter the resistance of citizens' initiatives, [and] industrial management that of consumer organisations" (Beck, 1996, pp. 32–33). In industrial society, politicians are increasingly pressured to justify their decisions in a scientific manner, resulting in experts being increasingly involved in the assessment of risks of all kinds. These dynamics create a ""scientization of politics" [that] inadvertently causes the "politicization of science," and the two processes reinforce and entangle one another in an unstable, crisis-prone mixture" (Eyal, 2019, p. 97).

The politicisation of science meant that scientists would be increasingly involved in what Weinberg (1972, p. 209) described as "trans-scientific" questions, i.e., "questions which can be asked of science and yet which cannot be answered by science." An example will be necessary to illustrate this point. In 1989, the US Department of Energy convened an expert panel and commissioned a study to judge if the markers used in the Waste Isolation

Pilot Plant (WIPP) were efficacious in deterring inadvertent human intrusion for the next 10,000 years (Trauth et al., 1993). The WIPP is a nuclear waste plant located in the state of New Mexico, built and licensed to store transuranic radioactive waste for 10,000 years.[1] The study was intended to help "[develop] design guidelines for markers and messages to communicate with future societies about the location and danger of the buried wastes… and estimate the efficacy of the markers in surviving the required time period and in communicating the intended messages" (Trauth et al., 1993, p. 12). As one can imagine, these assigned tasks cannot be practically answered by the current procedures and standards required of scientific studies. Physicist Gregory Benford was one of the physicists in the expert panel, and his task was to estimate the probabilities of a risk of an accidental intrusion. As Benford (1999) admitted, it was an impossible yet necessary task; experts need to produce answers nonetheless. There are, of course, relatively more mundane trans-scientific questions that experts are being tasked with regularly. Trans-science questions that we have taken for granted such as how much protection an N95 mask can confer against an unknown pathogen; the extent to which carbon emissions are responsible for global warming; and what is the risk of a certain patient with schizophrenia attempting suicide if he is discharged; are all asked of science and yet not answerable by science. To address these questions, a set of assumptions have to be made with a healthy dose of judgement. These challenges underscore Beck's (1992b) point about the malleability of risk interpretations and the corollary controversies and contradictions in a risk society.

The second development that has fuelled the problem of complexity is the increased hybridisation of organising principles or logics. Professions and occupations

[1] The half-life of plutonium–235 is 24,100 years, and a substance is considered completely expended after ten half-lives, which is 241,000 years for plutonium–235.

represent one of the most important organising logics in society, along with bureaucracy, community, family, market, religion, science, and the state (Fiske, 1991; Friedland & Alford, 1991; Nowotny et al., 2001; Streeck & Schmitter, 1985; Thornton et al., 2012). These ideal types, or archetypes, provide a way for members of society to interpret the social world and to determine the saliency of issues and what constitutes appropriate responses. In other words, these logics make up "the building blocks of sensemaking efforts" (Thornton et al., 2012, p. 96). As an organising logic, occupations and professions provide the interpretive lens that individuals use to evaluate task- and relationship-related interactions at work. Pertaining to occupations and professions, scholars have been most concerned about the impact of bureaucratisation and marketisation movements (Abbott, 1991; Anteby, 2010; Berman, 2006; Farrell & Morris, 1999, 2003; Freidson, 2001; Larson, 1977, 2018; Nicklich et al., 2021; Pohler & Willness, 2014; Spence et al., 2017; Starr, 1982).

The impact of bureaucratisation and marketisation movements has been gradual but unrelenting over the last few decades. As early as 1964, the author of the paper *The Professionalization of Everyone?* (Wilensky, 1964, p. 157) made a prediction:

> "The occupational group of the future will combine elements from both the professional and bureaucratic models; the average professional man will combine professional and non-professional orientations; the typical occupational association may be neither a trade union nor a professional association. Mixed forms of control, hybrid organizations – not a straight-line "professionalization of labor" – are the likely outcomes."

Different modes of hybridity have emerged. For instance, one of the modes is the professional partnership firm as a form of a professional organisation (Greenwood et al., 1990; R. L. Nelson, 1988; Smets et al., 2017). While retaining some form of professional

autonomy, the professional partnership firm sought to gain efficiencies by bureaucratising the day-to-day operational matters and improving commercial opportunities by creating specialisations in practice areas. The pressures to bureaucratise did not spare professionals in public service. Noordegraaf and Steijn (2013) noted that public service professionals faced pressures to undergo managerial reforms to improve their efficacy and effectiveness. However, with these reforms, "professional logics, with their emphasis on clients, quality and craftsmanship were seen as being weakened, whereas bureaucratic and managerial logics were seen as becoming hegemonic" (Noordegraaf & Steijn, 2013, p. 11).

Organisations have to grapple with the tensions of having different modes of organising embedded in a single organisation. These hybrid organisations are "based on combing different knowledge bases and perspectives but at the same time generating an organisational perspective… [that] is at best partial, and inherently contains tensions" (Broadbent et al., 1997, p. 9). The primary concern of professionals has been the dilution of the 'soul' of professionalism and losing "claim to exclusive technical competence and adherence to the service ideal" (Wilensky, 1964, p. 156) as a result of the hybridisation of organising logics (Brint, 1994; Broadbent et al., 1997; Freidson, 2001; Larson, 1977). For Freidson (2001), the soul of professionalism "is the right, even the obligation, of professionals to be independent of those who empower them legally and provide them with their living" (p. 220) and "[p]rofessionals claim the moral as well as the technical right to control the uses of their discipline, so they must resist economic and political restrictions that arbitrarily limit its benefits to others" (p. 222). Not all scholars were concerned with the dilution of the professional mode of organising logic. Adler and colleagues (2008), for instance, argued that while the pressures to bureaucratise and marketise have been strong, it is uncertain that the professional organising logic will weaken or abate. Instead, they

argued that the different organising logics would mutate towards a new collaborative form. Specifically, Adler and colleagues noted (2008, pp. 360–361):

> "One line of thought assumes that the three organizing principles we have identified are mutually exclusive ideal types, and that therefore the rise of market and hierarchy must mean the demise of community. We follow an alternative line of thought in arguing that the three principles are better understood more abstractly, and that in real institutions they typically coexist. The ascendancy of market and hierarchy has not meant the retreat of community: The community principle appears to be growing in salience alongside the other two principles… this changing constellation leads to a profound mutation in the form of community."

To recap, the milieu of occupations and professions has become more complex with the rise of a risk society and the hybridisation of organising logics. While the literature is clear that contradictions will certainly arise, what is unknown are the practices used by professionals to navigate these contradictions (Blomgren & Waks, 2015; McPherson & Sauder, 2013; Nicolini et al., 2016; Sandholtz & Burrows, 2016). In the next section, I will provide a recap of the salient arguments regarding the conundrum of expertise and the rationale for my concern about the process of collaboration between occupational groups in complex institutional settings. I will also delineate the main concepts of my proposed theoretical framework for this study.

Research Problem

The research question of this thesis is concerned with how professionals from different occupational groups collaborate in complex institutional settings. The growth in

the salience of occupational and professional life in society came with a conundrum (Anteby et al., 2016; Tolbert, 1996). Expertise is at once required, ridiculed, and received with apprehension (Beck, 1992b; Bijker et al., 2009; Jasanoff, 1998; Nichols, 2017; Nowotny et al., 2001). This phenomenon can be conceptualised as the problems of trust, extension, and complexity. Yet, as highlighted throughout this review, the sociology of occupations and professions literature is unable to provide adequate theoretical resources to help scholars grasp the impact of these trends even though it should rightfully be under its jurisdiction – *pun intended* (Anteby et al., 2016; E. H. Gorman & Sandefur, 2011). The sociology of occupations and professions has had different priorities. It has focused on understanding the socialisation of individuals as they become part of occupational groups and the jurisdiction battles between occupational groups. Scholars have repeatedly noted that the literature on occupations and professions has failed to produce enough scholarly work to improve our understanding of the growth in the salience of occupations and professions in social life (Anteby et al., 2016; Barley & Tolbert, 1991; Tolbert, 1996). The crux of its inadequacy lies in its conceptualisation of expertise (Eyal, 2013; Jasanoff, 2003; Wynne, 2003). Because scholars viewed expertise as an attribute of experts, the sociology of occupations and professions was essentially a sociology of experts (Eyal, 2013). Scholarly work derived from this conceptualisation rightfully focused on the process in which individuals achieved expert status and how experts competed with other experts to lay claim to certain areas of knowledge and the right to work (Anteby et al., 2016). However, this focus is insular, and the intersection between experts, expertise, and society is largely not viewed to be in its remit (Anteby et al., 2016).

To address the problems of trust, extension, and complexity, the literature needs a conceptualisation of expertise that allows it to incorporate and analyse the contributions of

non-credentialed experts as well as the contextual factors that make it possible for superior performance. Eyal (2013) proposed to untangle the concept of an expert from that of expertise and conceptualised expertise as a "capacity to carry out certain specialized tasks that are either impossible to carry out in its absence, or that are performed better, faster and with greater certainty of desired outcomes in its presence" (2013, p. 36). Rather than conceptualise expertise as an attribute of experts, Eyal (2013) conceptualised expertise as an attribute of networks – networks that link heterogeneous entities made up of "social, material, spatial, organizational, and conceptual arrangements that serve as conditions of possibility" (2013, p. 871), by drawing from the work of Foucault (1972, 1973) and scholars of social studies of science informed by the actor-network theory (ANT) tradition (Cambrosio et al., 2013; Lakoff, 2005; Latour, 1987, 1988). The most important implication of conceptualising expertise as embodied in networks is the location of expertise; expertise is located in the associations between entities rather than individuals. In network analysis jargon, this conceptualisation means that expertise is not in the nodes (i.e., individuals) but in the edges (i.e., relationships) between entities. As such, to address the problems of trust, extension, and complexity, I follow Eyal (2013) to develop the theoretical framework by drawing from the work of scholars in the ANT tradition to delineate the theoretical and methodological implications for this study.

Expertise as a Network: An Actor-Network Theoretical Sensibility

ANT, which is also known as the sociology of translation, is also understood to be "a disparate family of material-semiotic tools, sensibilities, and methods of analysis that treat everything in the social and natural worlds as a continuously generated effect of the webs of relations within which they are located" (Law, 2009, p. 141). ANT is focused on

describing rather than explaining. ANT focuses on providing an account of *how* things come together and become durable. It does not try to develop a theory to explain *why* society is the way it is. As such, despite its label as a theory, it is not a theory in the traditional sense. Rather ANT provides a sensibility, not a method, theory, or recipe that can be applied off-the-shelf (Fenwick & Edwards, 2010; Latour, 2005; Law, 2004, 2009; Michael, 2016; O'Doherty, 2019). Instead of using categories created by social scientists as a given (e.g., society, power, identity, division of labour, occupations), ANT attempts to redefine society by reconceptualising the social as an assemblage of heterogeneous entities or actants that requires constant accomplishment. Importantly, ANT is not anti-categorisation. As Fenwick and Edwards (2010, p. 148) reminded, "ANT is not saying that categorization should be eschewed, but that categories should not be taken for granted." As Callon (2006, p. 8) noted, "no method, whether quantitative or qualitative, starts with a *tabula* rasa." ANT provides a radical way of interacting with the empirical world by challenging taken-for-granted notions for even concepts as fundamental as a society. As Latour (1984, p. 276) asserted:

> "[S]ociety is not what holds us together, it is what is held together. Social scientists have mistaken the effect for the cause, the passive for the active, what is glued for the glue. Appealing to a reserve of energy, be it 'capital' or 'power', to explain the obedient behaviour of the multitudes, is thus meaningless. This reservoir is full only as long as you do not need it, that is as long as others dutifully fill it. It is empty when you need it, that is when the others are no longer filling it. There is no way out of this 'paradox. No matter how much power one appears to accumulate, it is always necessary to obtain it from the others who are doing the action this is what I called the shift from diffusion to translation."

A distinctive feature of ANT is its principle of generalized symmetry that assumes both human actants and non-human actants as equal. In this way, it can be said that ANT has a flat ontology (Latour, 1990). In ANT, both human and non-human actants have agency, i.e., the ability to become the source of actions in an actor-network. Non-human actants can be conceptual, social, or organisational arrangements such as a timetable, an idea, a logic, a digital record, or a key performance indicator. As noted by Latour (1993, p. 159):

> "No actant is so weak that it cannot enlist another. Then the two join together and become one for the third actant, which they can therefore move more easily. An eddy is formed, and it grows by becoming many other."

For ANT, intention and consciousness are not criteria for agency (Latour, 1990). The critical reason why nonhuman actors can have agency is because of the process of translation (Callon, 1984). During translation, actants sought to define the problem by which "the identity of actors, the possibility of interaction and the margins of manoeuvre are negotiated and delimited" (Callon, 1984, p. 203). Through problematization, one of four stages in the process of translation, actants define a system of associations that make them indispensable to each other before moving to the interessement stage, i.e. "[t]o be interested is to be between (inter-esse), to be interposed" (Callon, 1984, p. 208). During interessement, actants dynamically adjust their formulations of the issues that surfaced during problematization to "impose and stabilize the identity of the other actors" by building devices that can be placed between other actants so that their identities will be built in relation with each other with respect to the goal identified in during problematization. Agency, in the sense of translation, is more akin to a form of collective emergence as an actor-network (O'Doherty, 2019). The lifespan of an actor-network can be

extended and made more durable by enrolment, the third stage of the process of translation. Enrolment is the process of recruiting other actants or other durable materials into the actor-network. Enrolment is important because the power of an actor-network is tied to the size of the network. The fourth and last stage of the process of translation is mobilization. All actants in the actor-network function as a coherent interlocking whole, enacting their respective functions and gaining legitimacy from their associations with each other. Callon (1984, p. 224) emphasized that "[t]ranslation is a process before it is a result" and further noted:

> "is the mechanism by which the social and natural worlds progressively take form. The result is a situation in which certain entities control others. Understanding what sociologists generally call power relationships means describing the way in which actors are defined, associated and simultaneously obliged to remain faithful to their alliances. The repertoire of translation is not only designed to give a symmetrical and tolerant description of a complex process which constantly mixes a variety of social and natural entities. It also permits an explanation of how a few obtain the right to express and to represent the many silent actors of the social and natural worlds they have mobilized" (Callon, 1984, p. 224).

The concept of translation is particularly helpful in shedding light on the problem of trust and extension. For this study, the problem of extension pertains to the inclusion of contributions of non-credentialled experts in decision-making. Thus, by analysing how associations with different actants are formed, dissolved, or never associated. We cannot assume that an interprofessional team exist to provide interprofessional care just because professionals from different occupational groups convene. Interprofessional teams, in the ANT sense, are made up of associations that need constant accomplishment. Latour (1993)

emphasized the fragility and temporality of such associations. The processes of association and disassociation both require effort and have no meaning or coherence outside the actor-network. "An actant can gain strength only by associating with others" (Latour, 1993, p. 160). The weak actant could be weak because their voices were inaudible or silenced, such as that of a professional from a less prestigious occupational group or a junior member of an organisation. A weak association can be indicative of a problem of trust or a problem of extension, or both. By analysing the formation, dissolution of associations, or lack of formation of relations, an ANT analysis can thus reveal the subtleties of emerging and shifting power dynamics in actor-networks and also the subtleties and multiples within them (Fenwick & Edwards, 2010).

One of the consequences of an actor-network that is consisted of an assemblage of heterogeneous entities is multiplicity (Law, 2004, 2009). Multiplicity, Law (2004, p. 162) noted, is "the simultaneous enactment of objects in different practices, when those objects that are said to be the same, [thus] the claim that there are many realities rather than one." Multiplicity arises because different practices can be combined and have an infinite number of variations, thus resulting in multiple realities. Multiplicity is different from pluralism. Law (2004, p. 162) further noted pluralism is the "idea that views or, more generally, realities, may co-exist in different locations without interfering with one another so long as appropriate ground rules can be put in place to regulate their relations and secure their independence." In Mol (2002), she described the diagnostic and treatment practices for atherosclerosis and found that the condition was interpreted as many different objects in different places. Although the body is theoretically singular, Mol (2002) claimed that multiple objects and different practices are associated with different objects, and different objects can have different logics. Different logics in multiplicity can lead to contradictions.

(Mol, 2008). In Law's (1994) study of the Daresbury Laboratory, he found that managers worked with different logics, and these logics represented different organising principles. Depending on the technological and organisational assemblage, the managers could be entrepreneurs, bureaucrats, charismatic leaders, or puzzle-solvers. A similar approach was taken by Law and Mol (2008) as they found that the Cumbrian sheep that had foot and mouth disease was multiple sheep at once. It was a veterinary sheep, epidemiological sheep, economic sheep, and farming sheep. Each sheep was associated with a set of practices, and the variation in combinations of practices and the associated logics meant that complexity. In ANT, objects, whether they are ideas, humans, or animals, do not just exist but are rather crafted and assembled with other entities.

The concept of multiplicity is highly appropriate for the problem of complexity of this study. As noted, the milieu of occupations and professions has become more complex with the rise of a risk society and the hybridisation of organising logics. The concept of multiplicity provides a sensibility to the assemblage of entities in the actor-network that may have given rise to contradictions and the resultant consequences in the study.

Summary and Research Question

As Fenwick and Edwards (2010, p. 1) noted: "It is extraordinary difficult to write or talk about actor-network theory without either destroying or domesticating it." Although it is helpful to use the key principles from seminal ANT work to guide research, scholars have been careful to remind scholars using ANT that the "logical meaning and coherence of the concepts we use is less important: what is crucial is how they help us do empirical studies and analyses and the kinds of studies and analyses in which they result" (Sørensen, 2009, p. 12). To this point, Law (1999, p. 1) also quipped that "only dead theories and dead practices

celebrate their self-identity." ANT provides an entry point for this study to understand the collaborative work between occupational groups. My study will focus on describing the phenomenon of collaboration among professionals of different occupational groups. The research question of my study is:

How do professionals from different occupational groups

collaborate in complex institutional settings?

CHAPTER 3: RESEARCH CONTEXT

Grand Societal Challenges: Ageing Population, Decreased Fertility, and Longevity

One of the most difficult challenges confronting today's societies is the phenomenon of the ageing population (United Nations, 2013). The increase in longevity coupled with decreased fertility in both developing and developed economies have put much strain on our social, economic and political systems (Harper, 2004, 2006). Policymakers around the world have begun to develop policies and initiate changes that will allow them to respond adequately to the "Silver Tsunami." The UK and Singapore, for instance, will have one in four of their populations aged 65 and above by 2050, compared to just one-in-six in the UK and one in ten in Singapore currently (Cracknell, 2010; Yap & Gee, 2014). Some even predicted that the global population would age at an increasing rate (Lutz et al., 2008). What do these trends mean? A population that enjoys greater longevity also means that it will have a greater proportion of people with multiple chronic morbidities, such as diabetes, hypertension, and hyperlipidaemia (Global Burden of Disease Study 2013 Collaborators, 2015). The presence of multiple chronic morbidities will increase the number of medical disciplines (e.g., endocrinology, rheumatology, and gerontology) and the number of professional groups (e.g., physiotherapists, medical social worker, and dieticians) involved in providing an appropriate level of care for any single patient.

Lower fertility and population replacement rates (United Nations, 2013) will put further stress on healthcare systems that are already stretched. The system of intergenerational reciprocity in current societies in which adult children care for their elderly parents will be increasingly difficult to maintain as there will be fewer working persons to support the older person financially and fewer individuals providing informal

care socially (Kulik et al., 2014). Critically, the diminishing intergenerational support means that more care will occur in institutionalized settings, which in turn increases the demand for healthcare workers and related support services. These alternative arrangements will result in increased utilization of healthcare services and healthcare expenditure, thus translating to concomitant external environmental pressures of rising costs, stronger demands for healthcare professionals, and decreasing budgets.

Increase in Complexity of Patients, Diversity of Specialists, and Care Coordination

With the increase in the complexity of patients, new forms of health professions and specialists have emerged to meet the increased demands of specialized knowledge and skills to care for these patients. Consider the medical profession. The Accreditation Council for Graduate Medical Education (ACGME) accredits a total of 28 different specialist training programs, and the specialty internal medicine alone already has about 20 sub-specialties. The diversity of specialists did not appear overnight but rather emerged gradually over many years as clinicians adapted their practice alongside scientific and technological advancements and epidemiological patterns. In response to epidemiological patterns of a growing number of patients with complex and chronic conditions, interprofessional teams have emerged as a dominant form of organised care in healthcare organisations. Interprofessional teams that are providing care for individuals with complex chronic conditions often have to spend considerable effort working with uncertainties as a team to leverage each other's expertise. The configuration of teams often depends on the type and extensiveness of care needed by patients. When the care required is extensive, the number and type of professionals involved in the care increase to commensurate with increased

demands and complexity, which in turn make care coordination and integration a pressing and continuous challenge for healthcare systems.

To put simply, the more complex the needs are, the more complex the care provided needs to be. The more complex the care, the greater the diversity of healthcare professionals required for the team that is providing that care. The greater the diversity needed for the team, the larger the size of the team, which increases the difficulty in care coordination and the likelihood of care fragmentation. The solutions to manage uncertainties and resultant complexities are often unclear as many of the problems in healthcare have contradictory and evolving requirements. Greater diversity in team configurations will require greater resources dedicated to coordination to minimize the consequences of coordination neglect (Heath & Staudenmayer, 2000). One of the upshots of a growing number of healthcare professionals and specialists in an organisation is that the diversity of interpretations due to uncertainties of the situation will increase because specialists would have developed specialty-peculiar ways of perceiving and interpreting schemes for action. This diversity is a double-edged sword. It can result in fragmentations and confusion in organisations, as each specialization develops a set of peculiar rules and routines, thereby subjecting organisations to greater uncertainty. However, it can also create conditions for superior performance when the diversity of expertise is adequately harnessed (Kämmer et al., 2017; Woolley et al., 2010). As noted by Page (2007, 2010), team diversity in perspectives (ways of representing situations and problems), interpretations (ways of categorizing or partitioning perspectives), heuristics (ways of generating solutions to problems), and predictive models (ways of interfering cause and effect) can often lead to superior outcomes.

Inadequate Models of Care

With fundamental changes occurring at the demographical, epidemiological, and sociological levels, there have been doubts that healthcare systems around the world will be able to respond adequately to these challenges in their current configurations. These doubts centre on issues of healthcare expenditure, the ways in which healthcare practitioners are prepared for work, and models of care that are based on outmoded premises of population profiles. Historically, healthcare systems were engineered to treat one disease at a time instead of multiple chronic diseases at once. Current ways in which care is delivered are increasingly unsustainable because of shifts in population profiles. In a report about adult social care in England, the Comptroller and Auditor General of the British Government's National Audit Office, Sir Amyas Morse (2014, p. 11), concluded:

> "Pressures on the care system are increasing. Providing adequate adult social care poses a significant public service challenge, and there are no easy answers. People are living longer and some have long-term and complex health conditions that require managing through care. Need for care is rising while public spending is falling, and there is unmet need. Departments do not know if we are approaching the limits of the capacity of the system to continue to absorb these pressures."

The inadequacies in current models of care delivery are made obvious by comparing cross-sector labour productivity (defined as volume output per worker over unit cost). For instance, between the years 1990 to 2010, the United States' gross domestic product grew by an average of 2.5% annually, with growth in employment and labour productivity contributing 0.7% and 1.8%, respectively. The healthcare sector, however, grew by an average of 2.3% annually, with growth in employment at 2.9% and labour productivity at negative 0.6% (Kocher & Sahni, 2011). These numbers are staggering compared to other

service industries, such as retail and finance, in which productivity growth was above 2% annually. The dismal showing on productivity levels in healthcare lies in the fact that healthcare delivery models have been outpaced by changes in population profiles.

What does it take for our healthcare systems to handle the challenges of future populations? To cope with these challenges better, healthcare systems may need to move beyond an episodic model of care that is largely reactionary to a holistic model of care that focuses on illness prevention and health promotion. It may also require that healthcare institutions redesign their organisational processes and delivery models to take care of multiple chronic morbidities instead of single diseases that it is currently designed to manage. An overhaul of the health professions education system may be required for healthcare workers to work across disciplinary and professional boundaries in an integrated way. There is a growing consensus that the provision of integrated care possesses tremendous potential in achieving the dual goals of reducing costs and improving the quality of care at the same time (Berwick, 2007; Goodwin et al., 2012; Mitchell et al., 2012; Zwarenstein, 2000). Although many observers saw the corresponding increase in healthcare expenditure as populations age as inevitable, there is increasing recognition that the cost curve could be bent by changing our care delivery models to ones that are interprofessional in nature (Fisher et al., 2009).

Summary of Research Context

In summary, healthcare institutions are struggling to deliver adequate levels of care for patients with multiple chronic diseases. Current approaches to care are fragmented and are expected to intensify with expected changes in population profiles over the next few decades. These trends are a major source of concern for many countries because of this

need to provide an adequate but economically viable level of care. Healthcare institutions' ability to adapt to these changes is undermined without a thorough knowledge of how interprofessional care is currently being accomplished and could potentially improve and an understanding of how the needs of patients with multiple chronic diseases can be better met. Providing care that is disciplinarily and professionally integrated is difficult. Currently, the patient has to navigate a complicated and fragmented institutional environment across an entire spectrum of healthcare organisations to receive the care required. An adequate model of care will require healthcare professionals to work across professional, disciplinary, and hierarchical boundaries. Expectedly, interprofessional collaboration does not just occur as we desire; barriers to interprofessional collaboration are immense. These barriers include professional cultures and identities (e.g., P. Hall, 2005; Kvarnström, 2008), communication approaches (e.g., Conn et al., 2009; Lingard et al., 2004), legislative and logistical encumbrances (e.g., Reeves et al., 2010; World Health Organization, 2010), and lack of shared goals or common mental models (e.g., Mitchell et al., 2012; Tan et al., 2014). What it takes for successful interprofessional care is largely unstudied and often taken for granted (Reeves, 2010).

Given my research question of *How do professionals from different occupational groups collaborate in complex institutional settings*, the healthcare domain provides a rich and highly appropriate context for this study. The research study not only fills a theoretical gap in the literature but is also practically relevant.

CHAPTER 4: METHODS

Study Setting

A pre-study feasibility pilot was conducted between 7th December 2015 and 8th January 2016 at two potential research sites, Pauper and Timber Hospitals (both pseudonyms). The purpose of the pilot study was three-fold: 1) to be sensitized to the issues and concerns of these departments; 2) to evaluate and identify the openness and likelihood of the teams to participate fully in my study; and 3) to evaluate the feasibility of using obtrusive methods, such as shadowing and observations. During the pilot study, I shadowed members of rehabilitation and psychosis teams in Pauper and Timber Hospitals. Particularly, I made intentional efforts to be present during institutionalized settings where interprofessional teams gathered to discuss individualized illness management plans for patients. These settings included morning ward rounds and weekly interprofessional meetings. Particularly, I shadowed the main doctors and therapists attending to patients at both sites, held conversations with key leaders across professional groups within the units, and performed observations of the day-to-day operations. Although my intent was announced at the departmental level at both sites, I took time to introduce myself to the teams and provided information on my objectives before data collection began. Throughout fieldwork, I took notes and clarified with healthcare workers to understand the significance of actions and behaviours that I could not understand. Notes were expanded and annotated after each day of fieldwork. These pre-study feasibility observations helped shape my eventual study design.

After securing in principle agreements from the heads of the departments of my research sites, I returned to consult with the literature and doctoral supervisors and began

to draft the study proposal as well as ethics applications to the relevant ethics review boards. This whole process of developing the study proposal, applying for ethics approval, and negotiating and securing entry took 16 months. After the 16-month hiatus, I started observations at the rehabilitation department (REHAB) of Pauper Hospital for six months and the early psychosis intervention department (EPI) in Timber Hospital for five months. Pauper Hospital was founded more than a century ago to serve a large number of destitute immigrants. It was a major teaching hospital that provided clinical teaching for doctors, nurses, and allied health professionals, in addition to serving about two million people in its catchment area. Timber Hospital, like Pauper Hospital, was also an established hospital that provided the full range of psychiatric, rehabilitative, and counselling services for patients across all age profiles for close to a century. It also played a major national role in training mental health professionals, in addition to being the only tertiary psychiatric hospital in a catchment area of about five million people. My observations focused on three different interprofessional teams, namely the EPI Team (PSYC) in Timber Hospital, the Spinal Cord Injury (SCI) Team, and the Stroke Team (STK) based in REHAB of Pauper Hospital. Figure 4.1 provides an overall setup of the study sites.

I chose REHAB and EPI as my research sites for several reasons. First, I was employed in the same healthcare system as Pauper and Timber Hospitals. I was part of a research unit that conducted research to improve the quality of healthcare through better education and training of healthcare professionals. Because of my formal role in the parent organisation, I had numerous interactions with healthcare workers at both hospitals. My liminal position as an 'insider-outsider' in these two organisations provided unique strengths. As an 'insider' belonging to the same parent organisation, I had legitimacy and access to both organisations and the departments for my proposed study. Yet, as an

'outsider,' as I am not a member of both departments, I had the distance to see new perspectives in mundane daily activities that an insider of the two departments would have taken for granted.

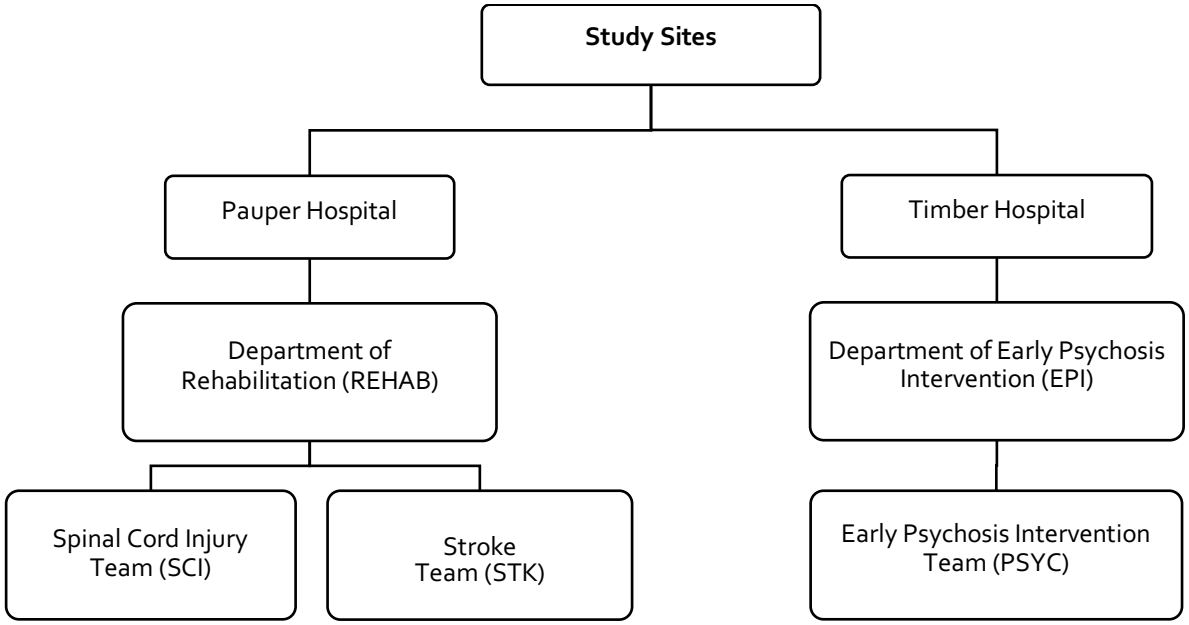


FIGURE 4.1 Study Sites

Second, because both departments treat a large number of patients who suffer from complex chronic conditions, it allowed me to study the impact of task complexity on the behaviours of interprofessional team members. REHAB treated patients with conditions such as stroke, spinal cord injuries, amputations, and traumatic brain injuries. EPI treated patients with first-episode psychosis, which typically happens to individuals before the age of 40. The difference in patients' ailment – physical manifestation versus mental manifestation – allowed meaningful variation in disease context to sharpen the analytical affordances of the data. Third, both departments had a long tradition of providing healthcare for patients in the form of interprofessional teams. This characteristic of both departments allowed me to pursue my research aims, which was to uncover what holds interprofessional teams together. Last, both departments valued and saw research as a critical part of improving clinical care for patients, as both REHAB and EPI were headed by

clinicians who were actively involved in research and thus valued the role of research knowledge in improving patient care. This attitude toward research activities in the departments improved the chances that my prolonged obtrusive presence would be tolerated.

Funding

I obtained a research grant, NHG-HOMER FY16/B05, of $6500 Singapore dollars (approximately £4000) to reimburse patient participants for inconvenience fees as well as to fund the payment for transcription expenses.

Ethics

Four separate ethics applications were made and approved for this study. The application approval numbers are Oxford Tropical Research Ethics Committee Reference 5117-16, Institute of Mental Health Clinical Research Committee Reference 584-2017, National Healthcare Group Domain Specific Review Board Reference 2017/00239 and 2017/00462.

As noted above, I was an 'insider-outsider' in the organisations in which I collected data. As a result of this liminal status, I intentionally invited participants via email so that they could decline participation conveniently without feeling undue pressure. To recruit healthcare professionals for the semi-structured interviews, I sent individualized emails to introduce myself, reminded them of the details of the study, and attached the participant information sheet and informed consent form (Appendix A) for their perusal. I requested healthcare professionals to suggest a location where they are most comfortable for the semi-structured in-depth interview to take place. All but one of the 32 interviews occurred

at the workplaces of healthcare professionals. One interview took place at a café. Before each interview, I went through the participant information sheet and emphasized the voluntary nature of their participation. I also emphasized that identifying details would be removed or modified to ensure anonymity if I used any quotes from my interview with them. In the event that it was not possible to remove or modify identifying detail without losing the substance of the meaning, explicit permissions were obtained. Participants were also reminded that they could exit the interview at any time, although all participants completed the interview.

Healthcare professionals also participated in the study as interviewees in observations and in-depth semi-structured interviews and as foci of my observations. Before observations started with each of the three teams, I made presentations at both rehabilitation and psychosis department meetings to provide the background of my study and the foci of my observations. Healthcare professionals at the meetings were given an opportunity to clarify anything about the study either during the presentation or after the study via email and telephone. Whereas field interviews happened spontaneously during or after each observation session, recruitment for in-depth semi-structured interviews for healthcare professionals did not take place until I had completed the scheduled field observations for each team so as to allow the healthcare professionals to be familiar with me and my intentions. I took observation fieldnotes overtly using a notepad and a mobile phone.

Data Collection Methods

As specified in the preceding chapter, my question required methods that were able to capture the mundane process of healthcare professionals delivering interprofessional

care *in media res*. Specifically, I follow recommendations by Latour (1987, 2005) and Fenwick and Edwards (2010) to follow the actors. Additionally, I used methods that allowed the participants to elaborate and provide their narratives for their practices. As such, the two main methods that were employed for this study are in-depth semi-structured interviews and field observations.

In-depth semi-structured interviews

I conducted in-depth semi-structured interviews with 32 healthcare professionals. The main inclusion criterion for healthcare professionals was that they had worked in either REHAB or EPI for at least six months. Because of my prolonged presence to the teams during field observations, I was known to most of the team members in both REHAB and EPI. As such, the recruitment of healthcare workers for interviews took place either face-to-face or via email. I intentionally sampled across all professional groups to get the maximum variation in terms of professional logics on interprofessional care, assuming that those differences in logics of care existed along professional lines. I interviewed 17 healthcare professionals from REHAB and 15 healthcare professionals from EPI. The focus of healthcare professional interviews was to construct accounts of healthcare professionals' behaviours in the context of interprofessional teams. Interview questions were posed to understand the context that each healthcare professional was embedded. I elicited contextual information such as their professional backgrounds, training and experiences in different clinical settings to understand how these experiences may shape their professional judgment and reasoning. I also posed questions to elicit their descriptions of positive interprofessional interactions, such as behaviours during interprofessional meetings that promoted greater levels of involvement from different professional groups,

as well as their approach to tackling contradictions in day-to-day care. Additionally, I also asked questions about their experiences with patients who had integrated better into the community after discharge. Although I prepared a list of questions to ask, these interviews were framed as open as possible to allow healthcare workers to speak about matters that were important to them, and questions were adapted accordingly. Healthcare worker interviews averaged 70 minutes and ranged between 34 minutes to 112 minutes. All interviews totalled up to over 37 hours and were transcribed verbatim into 732 pages of transcripts. Interviews with healthcare professionals were all conducted at their workplaces, with the exception of one interview that was conducted at a café.

TABLE 4.1
Semi-Structured Interview Participants

PSYC Team (N=15)		SCI & STK Teams (N=17)	
Art Therapist	1	Clinical Psychologist	4
Case Manager	3	Doctor	3
Clinical Psychologist	1	Medical Social Worker	1
Doctor	3	Nurse	3
Medical Social Worker	1	Occupational Therapist	2
Nurse	2	Physiotherapist	3
Occupational Therapist	1	Speech Therapist	1
Patient Support Specialist	2		
Pharmacist	1		

Observations

To grasp the mundaneness and complexities of providing interprofessional care, I focused on observing interactions between healthcare professionals during routinised platforms, such as weekly interprofessional meetings and ward rounds, when interprofessional communication takes place most intensely. To follow the actors (Latour,

1987, 2005) in a feasible manner, I recorded the attendance and tracked them across the weeks that I attended the interprofessional meetings. Tables 4.2, 4.3, and 4.4 provides a visualisation of the "flux" of essentially different teams for each of the weeks for PSYC, SCI, and STK. The intent of conducting these observations was to capture communication patterns among healthcare professionals to develop an understanding of the structures of interprofessional teams. One of ANT's progenitors, Callon (2006), similarly conducted a structural analysis of heterogenous networks of researchers and diseases by way of articles published that were funded by a selected funder. An understanding of the structures allowed access to fundamental aspects of the heterogenous networks of professionals of different occupational groups, organisational rank, logics of practice, as well as complexities of meeting diverse patient needs of different diseases.

For the purpose of sharpening comparisons, I emulated Barley's (1990) research design to structure my data collection and analytical procedures from three vantage points, namely the synchronic, the diachronic, and the parallel. This manner of structuring observations has the advantage of following the actors not only through time but also through a virtual space (Law, 2002). From the ANT perspective, this allowed me to follow through important actor-network associations that existed but were not apparent at the beginning of the study. This manner of structuring my observations provided me with practical handles as I worked with the "messyness" of an ANT study (Fenwick & Edwards, 2010; Law, 2004). Figure 4.2 provides a schematic diagram of how I have structured my data collection and analytical procedures for this thesis. The terms synchronic and diachronic originate from the work of linguist Ferdinand de Saussure (2011), and the term

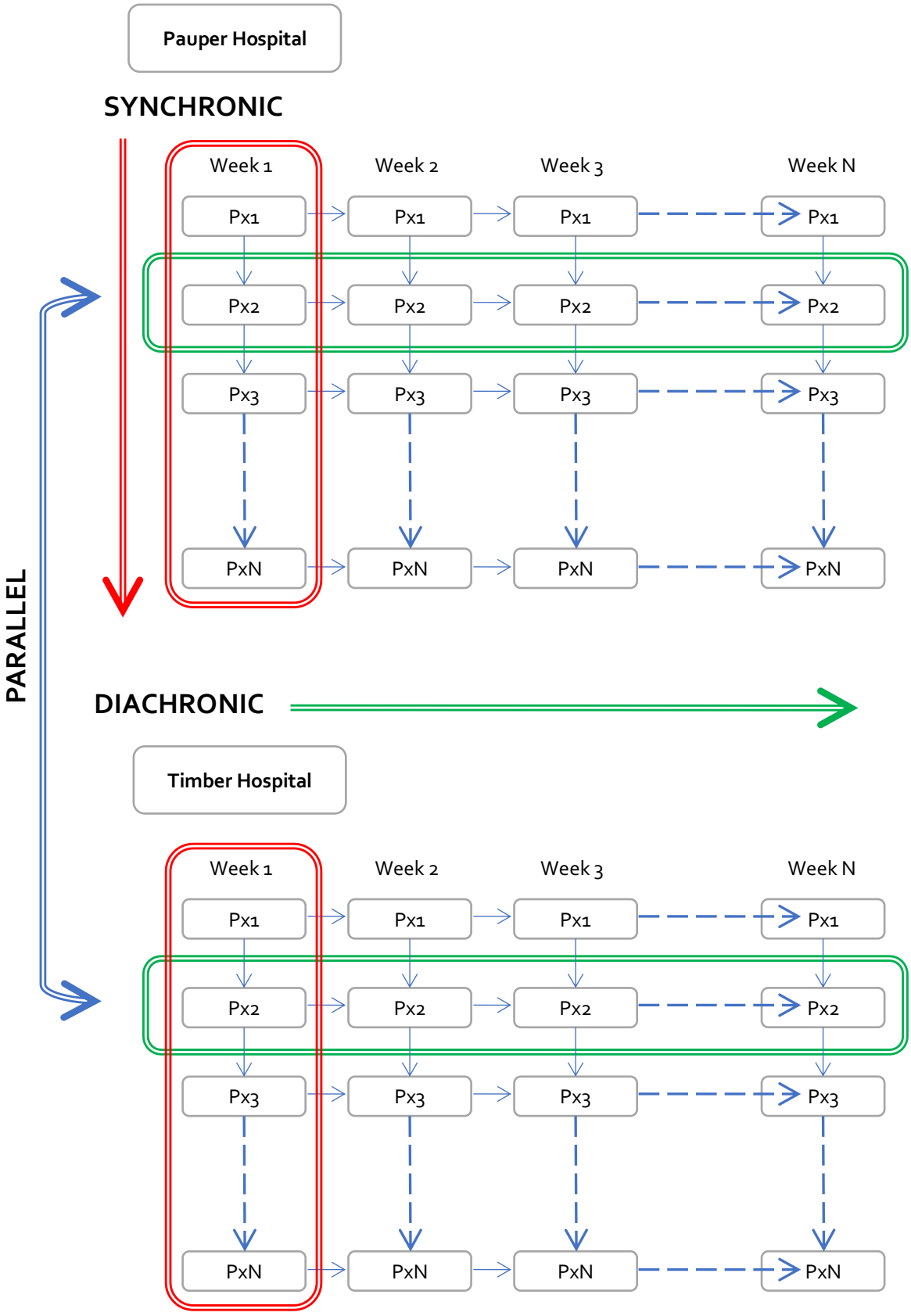


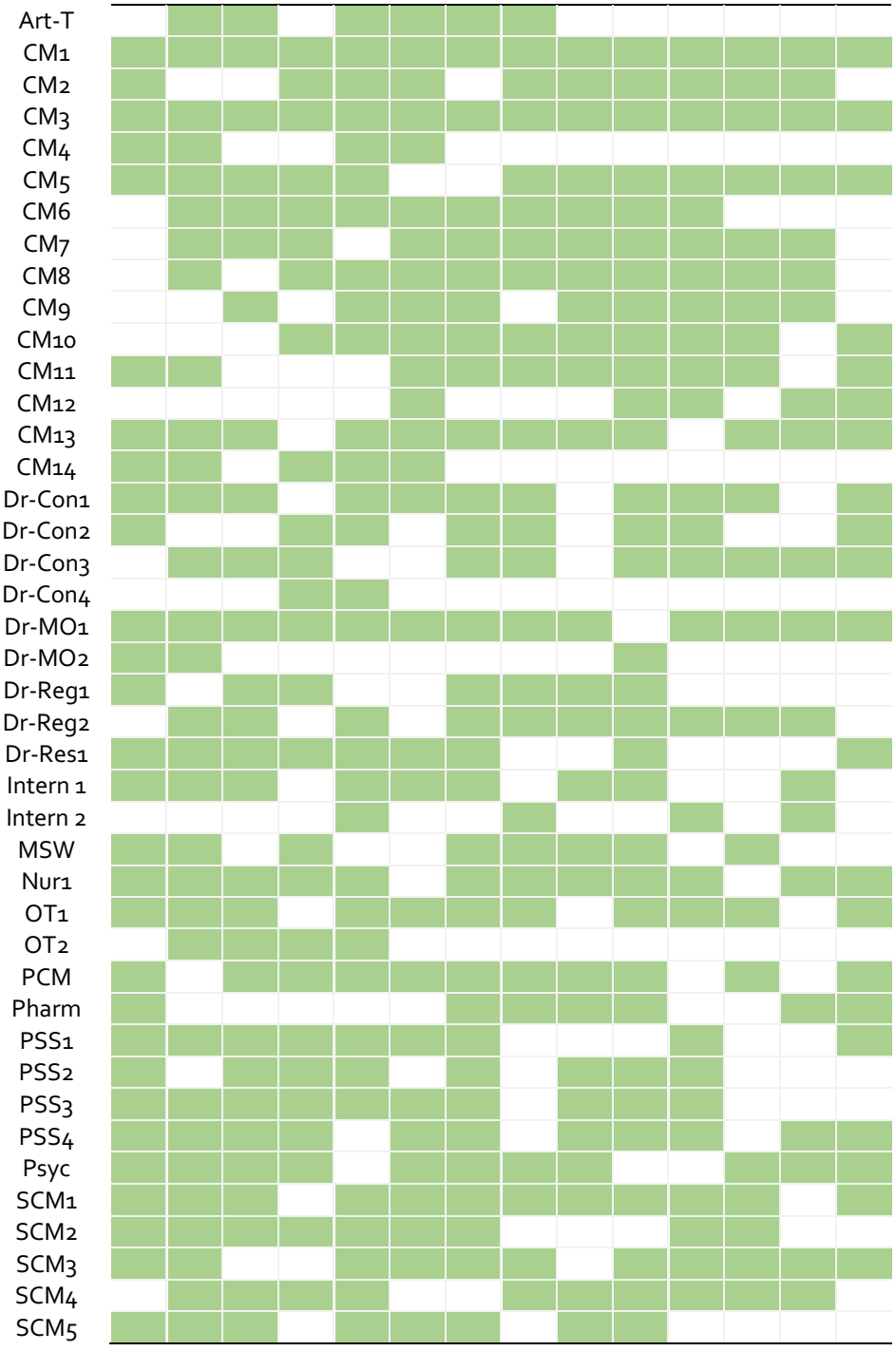
FIGURE 4.2 Synchronic, Diachronic, and Parallel Comparisons of Interprofessional Teams.

parallel from the work of Barley (1990). As highlighted by Barley (1990, p. 224), although these terms "may appear to be little more than pretentious synonyms such as "cross-sectional," "longitudinal," and "comparative," the terms of synchronic, diachronic, and parallel accentuates the nuances that traditional terms neglect. For instance, as noted by Barley (1990), both synchronic and parallel can be considered cross-sectional, but parallel analysis requires comparisons across different observation units.

Each interprofessional meeting is situated at the intersection of history and present, subjected to path dependency effects of a diachronic view, exigencies of a synchronic view, and idiosyncrasies of institutions. By setting up the data collection and analyses with the three different comparisons in mind, the design sets up sharper comparisons that allowed me to make stronger claims from the interpretation of the data. By the term synchronic, I refer to static and non-historical aspects of team interactions in each interprofessional meeting. I attended to the roles, case mix (i.e., the composition of patients with different levels of patient acuity), interactions, and other pertinent matters circumscribed within each meeting. I focused on how the team of the week discussed each patient and the manner in which the teams interacted. By the term diachronic, I refer to the evolutionary aspects of team interactions. Specifically, I attended to changes in the patterns of team interactions and sought to explain those changes in my analysis. I also focused on how patients were discussed over the length of their stay at the hospital. Lastly, by the term parallel, I refer to the differences across institutions in consideration of the insights from synchronic and diachronic views.

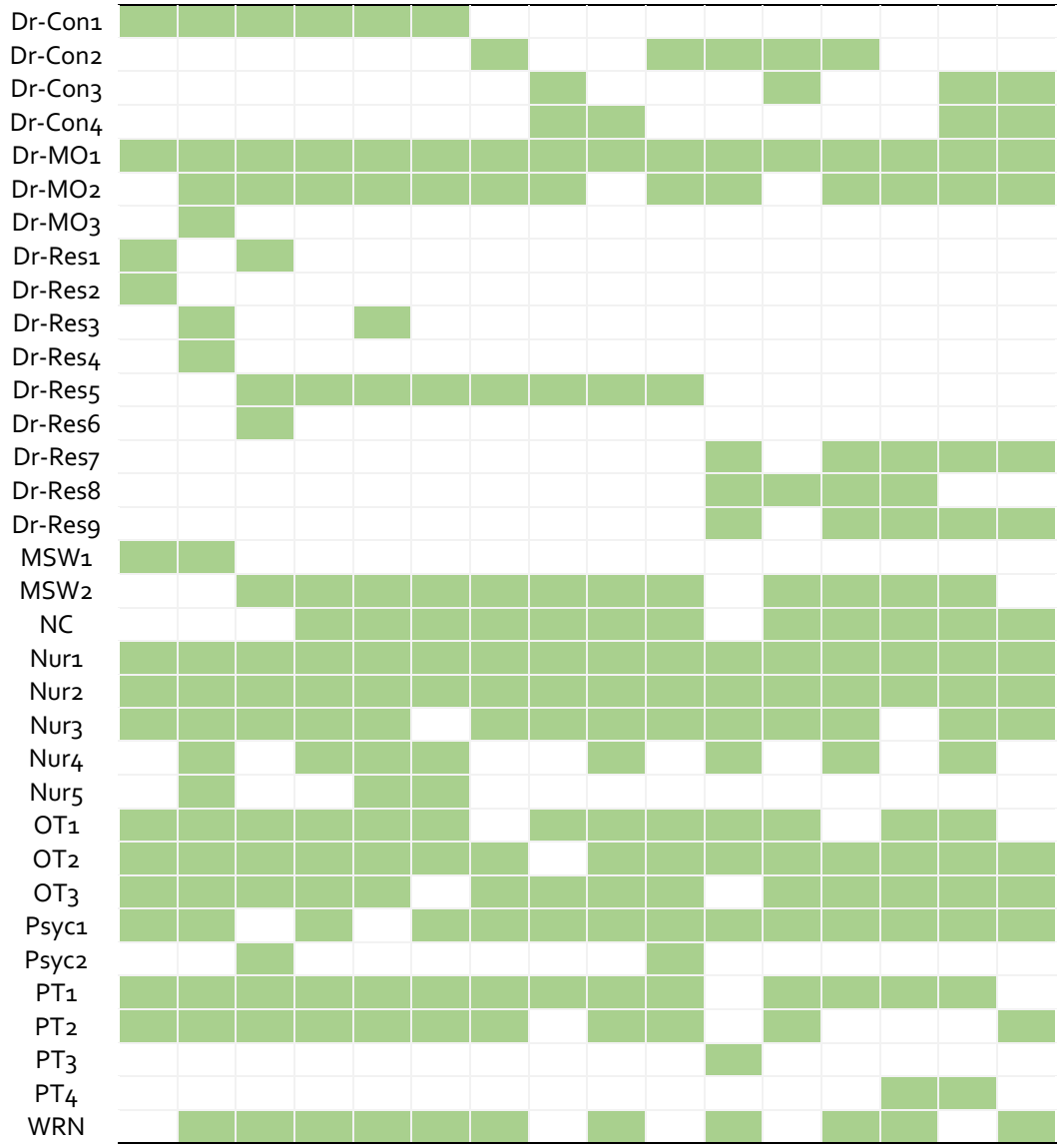
As the study was designed to collect data from three different teams from two institutions, I focused on identifying peculiarities in interactional structures that originated from institutional cultures (i.e., REHAB vs EPI) and particular types of patients (STK vs SCI

TABLE 4.2
Following the Actors in PSYC



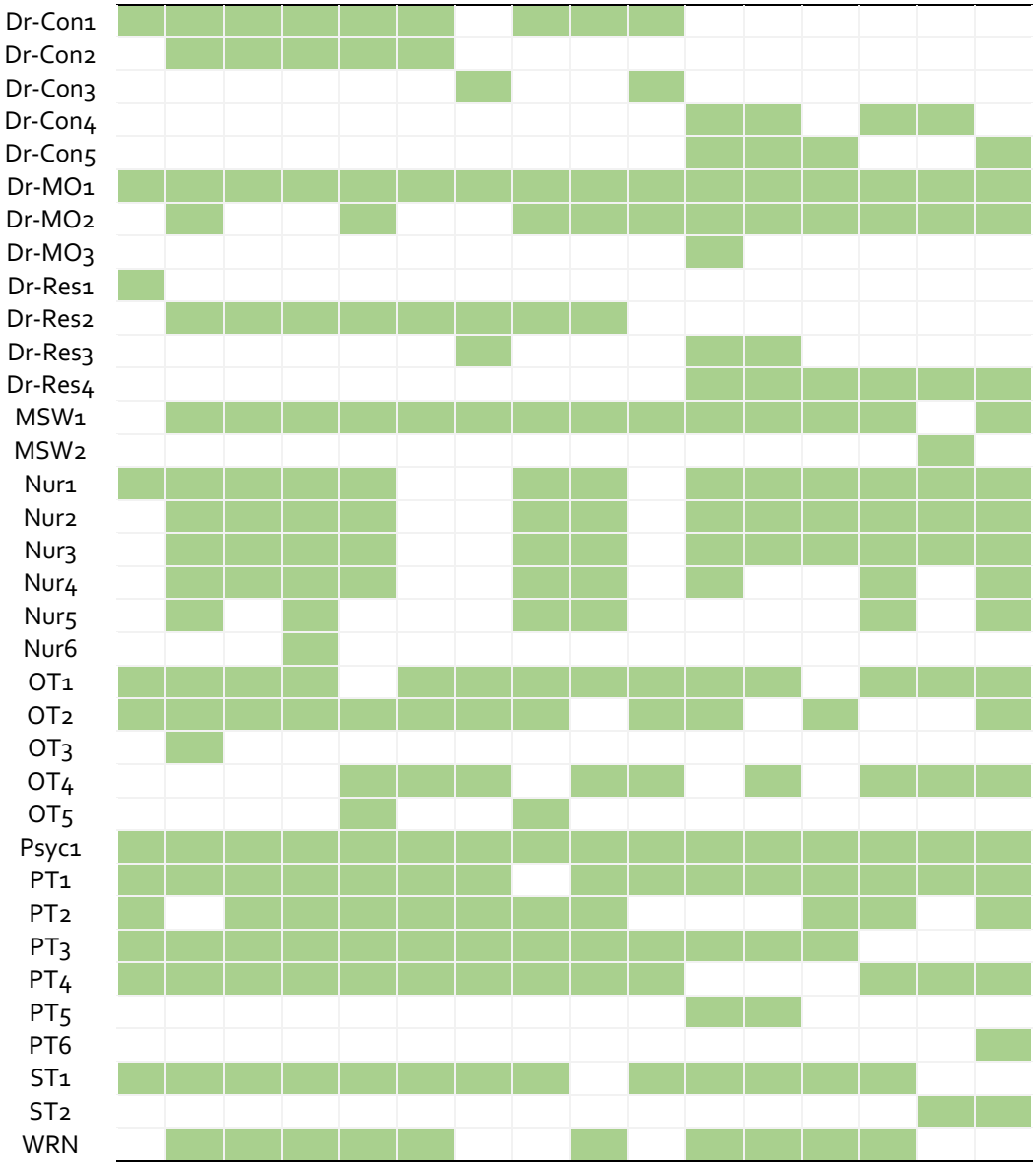
vs PSYC). Because I have two teams from REHAB and one team from EPI, if interactional team structures between STK and SCI are more similar when compared to PSYC, I can be more confident that differences found between teams across institutions can be explained

TABLE 4.3
Following the Actors in SCI



by institutional factors rather than other factors not observed. Observations at REHAB consisted of 42 weekly interprofessional meetings, with 21 sessions each for SCI and STK; 2 sessions of morning ward rounds, and 10 field interviews. Observations at EPI consisted of 19 weekly PSYC interprofessional meetings, 1 session of morning ward round, 8 field interviews, as well as observations at various interprofessional settings.

TABLE 4.4
Following the Actors in STK



A summary of observation activities conducted for each of the three teams can be found in Table 4.5. The first five sessions of each team's interprofessional meetings were spent recording basic facts about each of the teams. As such, the final number of sessions in which detailed interaction data was collected and analysed for SCI, STK, and PSYC were 16, 16, and 14. The number of healthcare professionals in SCI and STK was similar, averaging between 16 to 17 individuals. As such, one of the first and most important tasks

of observations was to be able to identify the name, occupation, and seniority of members of the team. The task of identification was accomplished through a variety of means, including listening to interactions at team meetings (although names were infrequently mentioned), looking at records projected on a screen, as well as asking healthcare workers with whom I had established rapport. During these observations, I also took notes about the nature of their discussions and began to identify if there was a structure to how each of the meetings was discussed and if there were differences across the different teams.

TABLE 4.5
Field Observation Activities

Activities	PSYC team	SCI Team	STK Team
	Number of sessions		
Morning ward rounds	1	1	1
Weekly interprofessional meetings	19	21	21
Weekly grand ward rounds	19		
Weekly case reviews	4		
Field interviews	8	5	5
Therapy groups	2		

In addition to identifying healthcare professionals, the other initial critical task of observation was to develop a way to take down information about the general content of interactions without being overwhelmed by the variety and volume of details discussed at interprofessional meetings. I needed to develop an efficient way of taking down information to analyse the structure of teams and their communication patterns and the evolution of interactions over time for different patients. As such, I needed information on who was speaking to who, for how long, about which patient, as well as the general content of what was said. After consulting with the literature regarding how utterances during meetings could be categorized, I found Searle's (1976) theory of Speech Acts to be most

suitable based on my assessment of the proceedings of interprofessional meetings I had observed to date. A discussion of the nuances of Speech Acts theory is vast and is beyond the scope of this thesis, and can be found in the works of other scholars (Bach, 2006; Cooren, 2002; Sadock, 2005; Vanderveken, 1990). For purposes of categorizing utterances in this thesis, I use Searle's (1976) typology of five types of speech acts, namely, directives, assertives, commissives, expressives, and declaratives.

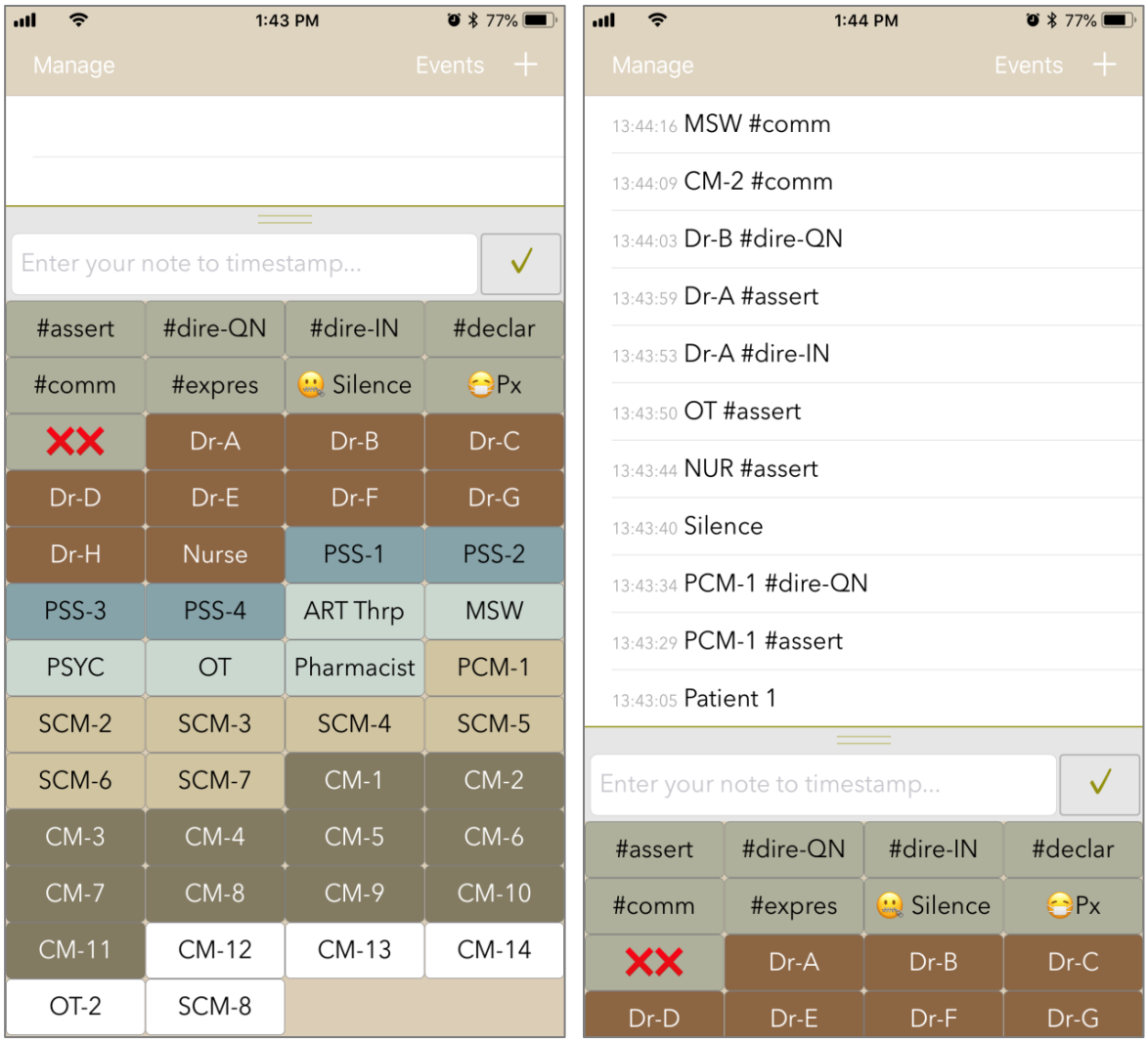


FIGURE 4.3 Time-stamped Communication Utterances

One other initial observation that I made was that airtime varied widely when different consultants were leading the meetings. As such, I began to look for note-taking

applications that would facilitate time-stamped note-taking. After I identified a few possible candidates, I tested the mobile applications in the field. Screenshots of the eventual mobile phone application are shown in Figure 4.3. During the testing, I also realized that the use of the speech act of directives in interprofessional meetings roughly fell into only two subcategories: asking questions or providing instructions. Given that these two types of utterances had the potential to reveal information about team structures, hierarchies, and other nuances of team dynamics, I decided to distinguish between directive questions and directive instructions in my notes.

The note-taking routine stabilized after three interprofessional meetings and was tested out for two further weeks before a final version was reached. As shown in Figure 4.3, information about a healthcare professional, type of speech act, and other shorthand notes such as "silence" when no one was speaking, "Px" to denote the start of a discussion about a new patient, as well as "XX" to denote that an error has been made in the prior entry. Each of the entries was time-stamped to the second. This data supplemented the observation field notes I took using a pen and a paper notebook. At the end of each observation day, I typed out the summary of my observations from my notebook and cleaned up the data collected using the mobile application. Data preparation was accomplished with statistical program R (R Core Team, 2017).

Summary of Methods

In summary, From an ANT perspective, an actor-network can be traced either by following the actors or following the 'tokens' (Gaskell & Hepburn, 1998; Latour, 1987, 1996). The tokens in my study were the patients. As such, in this study, I followed the actors *and* the tokens by observing how healthcare professionals enlist each other in weekly

interprofessional meetings. This approach affords robust actor-network data to be collected. Each speech utterance is an attempt to enlist another to be part of an actor-network. My approach allowed me to observe how healthcare professionals circulated the token across the actor-network. As Gaskell and Hepburn (1998, p. 65) noted:

> "[T]he token is usually not passed unchanged from hand to hand. There is no initial "inertia." The token is either ignored or taken up by people who see their interests translated within it in the process of shaping it to their interest, these people usually modify the token. The path of the token is a product of the number and strength of the links that are established between it and a diverse group of other actors. It is not a product of an initial quality but of the subsequent actions of a multitude of others. In the model of translation, not only the token is continuously transformed as links with other actors are established but so are the other actors. As they take up and use the token, their actions and patterns of practice are changed as they see new possibilities with the token. The network is defined by the token but the token is also simultaneously defined by the network. The network and token co-evolve. As the token/network system stabilises the token is seen to be an unproblematic artefact or to define a part of nature, the network is seen to define a part of society and each is dependent on the other."

CHAPTER 5: HOW DO INTERPROFESSIONAL TEAMS RESPOND TO CONTRADICTIONS?

Introduction

To recap, the research problem of my thesis is to understand how professionals from different occupational groups collaborate in complex institutional settings. As noted in the literature review, expertise in society is contradictory and tenuous. Expertise is demanded, depended on, and distrusted all at once. At the centre of this conundrum of expertise are the rise of a risk society and the hybridising of organising logics. Experts are increasingly being asked "trans-scientific" questions, i.e., "questions which can be asked of science and yet which cannot be answered by science" (Weinberg, 1972, p. 209). In this study, trans-science questions are often asked about discharge dates, prognosis, and therapy opportunities. In addition, as noted earlier, there was also a concern about the hybridisation of organising logics in professional life and if this hybridisation would dilute professional ethos. As noted by Latour (1993), the hybridisation of entities frequently leads to contradictions in social life. These contradictions arise when actors who hold conflicting viewpoints, interpretations, or interests are assembled in an actor-network. From an ANT perspective, contradictions provide opportunities to understand how power relations are negotiated, and practices are changed in response to the multiplicity of perspectives through the process of translation.

This chapter provides insights into the problem of trust and the problem of complexity. The findings show how healthcare professionals build trust with their patients by prioritising patient rapport, i.e., trust, over many other aspects of their work. The findings also reveal how healthcare professionals navigate contradictory organising logics.

To study how healthcare professionals build trust and navigate complex institutional settings by focusing my attention on contradictions healthcare professionals encounter in the course of delivering interprofessional care. As argued earlier, contradictions are efficacious conceptual devices to unpack the mechanics of the paradox of embedded agency. As Friedland and Alford (1991, p. 256) noted:

> "institutional contradictions are the bases of the most important political conflicts in our society; it is through these politics that the institutional structure of society is transformed. A key task of social analysis is to understand those contradictions and to specify the conditions under which they shape organizational and individual action."

Additionally, as Czarniawska & Sevón (2011, p. 1) asserted:

> "A smoothly run, well-routinized organization does not offer much insight to a researcher. Things go well because they go well; this might be due to successful routines or to a receptive market, and only a change can reveal the makings of success. It is like the optical illusion of a stable source of light where in fact a stroboscope is flashing at such a speed that the pause between one flash and the next cannot be detected… during periods of stability, people take their realities for granted, and are therefore unable to reveal their construction to themselves or to others. In times of change, old practices are destroyed and new ones are constructed, which invites the questioning and de-construction of the previous social order."

In this thesis, I gain access to contradictions confronted by healthcare professionals by delineating organising logics in the complex institutional environment of interprofessional care. As previously noted, organising logics are meaningful orders of practice (Friedland et

al., 2014). Given the concern of the organising logics of bureaucratisation and marketisation in diluting the professional logics, I used these three logics to guide my analysis of the interview data. Evidence from in-depth interviews and observations with healthcare professionals revealed that a *meta*-organising logic – patient-centred care – provided the bases of the organising logics of shared leadership, medical leadership, and resource optimisation. Each of these logics consists of a coupling of a specific metaphysical notion and set of physical practices. Collectively, they formed a troika of logics in which the meta-organising logic of patient-centred care is made actionable.

Patient-Centred Care: A Meta-Organising Logic

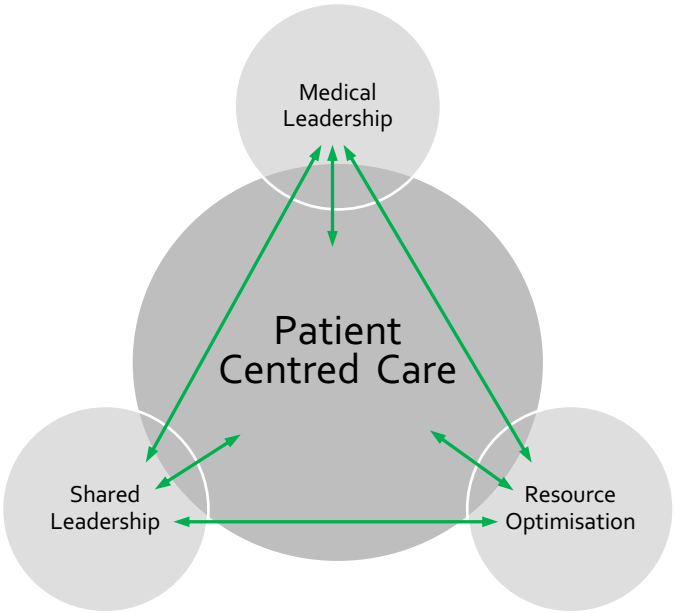


FIGURE 5.1 Organising Logics of Interprofessional Care

There are few terms, if any, more "sacred" than patient-centred care in healthcare institutions. The design of healthcare delivery, training of healthcare professionals, and health policy considerations are often peppered with emphases on putting the patient at the centre of all considerations. Terms such as patient-centred care are what rhetorician

Kenneth Burke labelled as god-terms, which "enables men to go far afield without sensing a loss of orientation" (Burke, 1969, p. 54). God-terms carry a rhetorical force that "all other expressions are ranked as subordinate and serving dominations and powers (Weaver, 1953, p. 212). I have used the prefix *meta* to emphasise the encapsulating nature of the organising logic of patient-centred care. Another example of a meta-organising logic in healthcare is the term competence, a "rhetorical trump card, regularly plated as the last word in debates about how health professions education should function (Lingard, 2012, p. 44)." Meta-organising logics are philosophical in nature and establish the foundations on which other organising logics anchor to evaluate the propriety of practices.

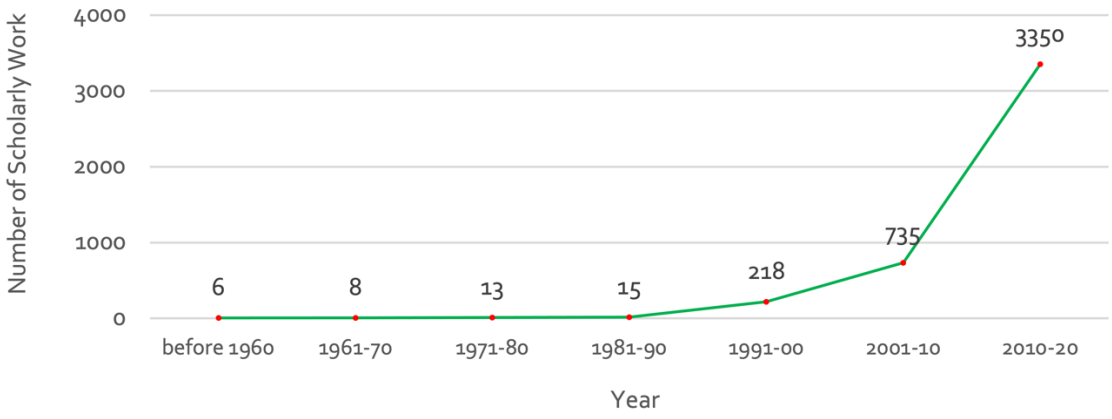


FIGURE 5.2. Scholarly Literature on Patient-Centred Care from the 1950s to 2020

Patient-centred care is intuitive: The raison d'être of healthcare is patients. It is now unthinkable that any assessment of quality in healthcare institutions does not incorporate patients and their perspectives in some measure, but the notion of a patient-centred approach did not come into the public consciousness until recently. The term was coined by the Picker Commonwealth Program for Patient-Centered Care in 1988 (Barry & Edgman-Levitan, 2012). The program, which later became The Picker Institute (Shaller, 2007), wanted to draw attention to how patients and their families experienced care. The first

large-scale survey regarding patients' opinions of the care they received as an inpatient occurred in 1988 by Cleary and colleagues; the study was published in 1991. They noted that previously, the "process of care has been evaluated almost exclusively on the basis of information available in medical records; patients' observations were not usually included in quality assurance activities" (Cleary et al., 1991, p. 263). A search for the terms "patient-centered care" and "patient-centred care" in the titles of scholarly work to date (11th October 2021) on Google Scholar yielded 4345 items. As shown in Figure 5.2, interest in patient-centred care picked up after the pioneering work of the Pickering Commonwealth Program around the late 1980s and surged over the last 30 years, with 80% of the scholarly literature produced in the last ten years. The notion gained traction because healthcare organisations felt the urgency at that time to develop a competitive advantage to attract patients (Beatrice et al., 1998). The program "moved the state of the art forward… in the areas of measuring patient satisfaction and providing a practical tool for industry use" (Beatrice et al., 1998, p. 241) and was able to communicate the results of the program to both academic (Bruster et al., 1994; Cleary et al., 1991, 1992, 1993; Delbanco, 1992; Delbanco et al., 1995; Gerteis, Edgman-Levitan, Walker, et al., 1993; Laine & Davidoff, 1996) and lay audiences (Gerteis, Edgman-Levitan, Daley, et al., 1993).

Although there were some variations among practitioners and scholars regarding what patient-centred care consisted of (Barry & Edgman-Levitan, 2012; R. M. Epstein & Street, 2011; Little et al., 2001; Shaller, 2007; Stewart, 2001), their definitions coalesced around several aspects: attention to psychosocial context of patients, provision of high-quality information to patients and their families members to facilitate shared decision-making, coordination and integration of care among healthcare professionals, and provision of high-quality, evidence-based healthcare. Some contradictions, however, arise

from the focus on patient-centred care. For instance, Epstein and Street (2011) asserted that patient-centred care requires healthcare professionals to be "more mindful, informative, and empathic" and "transforms their role from one characterized by authority to one that has the goals of partnership, solidarity, empathy, and collaboration" (p. 101). One of the major concerns of a patient-centred approach was that it might contradict an evidence-based medicine approach, given the former's focus on patients' preferences. However, Epstein and Street (2011, p. 100) argued that "that debate has been laid to rest; proponents of evidence-based medicine now accept that a good outcome must be defined in terms of what is meaningful and valuable to the individual patient…[and] patient-centred care, as does evidence-based medicine, consider both the art of generalizations and the science of particulars." However, contrary to Epstein and Street's (2011) assertion, I argue that the debate is far from over, and in fact, the contradictions between patient-centred care and evidence-based medicine will never be entirely resolved because healthcare exists in a complex institutional environment that is more than a single doctor interacting with a single patient. Patient-centred care is in contradiction with more than just evidence-based medicine, but a number of other notions, such as shared leadership and resource optimisation. The central source of contradictions comes from the three facets of the meta-organising logic of patient-centred care:

1) What does a patient want and need?
2) What do healthcare professionals think a patient wants and needs?
3) What do other patients want and need?

These three facets are rarely aligned because of the complexities of interprofessional care in which healthcare professionals have to attend to the needs of multiple patients, which presents challenges for the facets to be operationalised concomitantly. Additionally,

healthcare professionals often differ in their approach to providing care. An organising logic is "actionable because it is believable, and believable because it is actionable" (Friedland, 2014). For patient-centred care to be actionable, it needs to be believable. One will be hard-pressed if asked to find a dissenting voice to the notion of putting the patient at the centre of considerations in healthcare institutions. Although patient-centred care is believable, it is not readily actionable because of the inherent contradictions of its three facets.

In both REHAB and EPI, among the most challenging areas in delivering patient-centred interprofessional care were assessing and making projections about patients' recovery trajectories and formulation of discharge plans, but for different reasons. These two challenges present contradictions in which healthcare professionals were forced to confront contradictory logics in their institutional environment. Healthcare professionals going about their mundane day-to-day work had to make choices, thereby exercising agency so that they could cope and move the day along. In these instances, the collisions in interinstitutional relationships were laid bare, allowing the phenomenon of the paradox of embedded agency to be unpacked. In the sections to come, I unpack how healthcare professionals navigate institutional complexities and confront the contradictions of delivering patient-centred interprofessional care by decoupling and combining the different facets of patient-centred care and traversing between organising logics. Table 5.1 maps out the details of the meta-organising logic of patient-centred care and the three organising logics of medical leadership, shared leadership, and resource optimisation.

Patient-Centred Care in REHAB

In REHAB, patient-centred care provided an orientating function, similar to that of a compass, in providing healthcare professionals with the general direction they needed to

navigate their daily practice. For instance, healthcare professionals across the occupational spectrum often spoke about patient-centred care as an ethos that should guide their decisions in mundane day-to-day practice. To healthcare professionals in REHAB, which takes great pride in its interprofessional approach to care, it meant embracing shared leadership in their approach to patient-centred care where the views of different professional groups were heard and respected:

TABLE 5.1
Organising Logics of Interprofessional Care

Logic	Patient Centred Care	Medical Leadership	Shared Leadership	Resource Optimisation
Central belief	Raison d'être of healthcare is patients	Medical doctors are experts in evidence-based medicine and are legally responsible for patients.	Expertise is distributed across professional groups	Healthcare resources are scarce and must be optimised to allow the greatest access at the lowest cost
Values	Agency and relationship	Knowledge, authority, professionalism	Distributed knowledge, egalitarianism, professionalism	Cost and time efficiency
Key question	What does the patient want and need?	What does the doctor think the patient wants and needs?	What does the team think the patient wants and needs?	What is good for the system? What do other patients want and need?
Currency	Rapport	Authority	Voice	Cost
Power	Patient	Profession	Team	Metrics
Mechanism	Rapport with and knowledge of patient	Systems / Hierarchy of professions	Turn-taking	Administration and bureaucracy
Practices (examples)	Sharing information with a patient; inquiring about patient's wants; hiring patient advocates; hiring case managers	Doctor as the decision maker for discharge and medication; power to invoke Mental Health Act	Interprofessional meetings; structured sharing by professional groups	Means-testing; prioritisation of discharge and therapies; estimating patient's potential for recovery

> Nurse Jade: Dr Clara is always very consistent. She will go to the PT, OT, ST and she does not miss out the nurses. She is very approachable. She values the input from the team and is very patient-centred. Dr Fiona conducts very good case conferences… Both of them are very holistic and very aware of the history of their patients… and their family medical histories. Because we feel valued in case conferences, we show up with the intent to contribute.

Additionally, knowledge of one's patients and attention to their psychosocial context, and thus being able to treat a patient holistically, was one of the key elements to patient-centred care in REHAB. As asserted by Dr Zicker, his desire to be patient-centred led him to choose rehabilitation medicine as a speciality:

> Dr Zicker: I tell them junior doctors that there are three different hearts as a physician. There is one heart that looks at intervention, that means those people that love to do procedures and all. Then they can become cardiologists, respiratory physicians, and even gastroenterologists, for example. Then the second kind of heart is for those who love diagnoses. That means they want to discover some syndrome in the future, for example, different criteria that diagnose particular condition with a specific type of treatment. Then they can become neurologist or whatever. Then the third category, what I call the quality-of-life physicians. That means they focus on patient-centric care, looking at more than the condition but the individual. So that will be geriatrics, palliative and rehabilitation medicine. When I was a junior doctor, I realised that I am more focused on why patients cannot discharge, what is the psychosocial context and what are the other ways of facilitating their discharge. Of course, I care about the diagnosis, but if patient is still lying there after treatment, they still need some other care before they can go home.

Beyond a problem that needs to be intervened and a puzzle that needs to be diagnosed, a patient-centred approach requires healthcare professionals to incorporate a patient's social

and cultural context, personal preferences, and unique individual circumstances to customise and calibrate their care accordingly.

Building and Maintaining Rapport: A Cocktail of Hope and Reality

The bedrock of patient-centred care is the strength of the relationship between healthcare professionals and their patients. Some healthcare professionals in my study called it rapport, while others used stronger words such as alliance. Their relationships with patients served several important functions. A strong relationship allowed healthcare professionals to assess patients' emotional states, needs and wants, among other aspects of care. Strong levels of trust allowed patients to stay engaged with treatment and therapy. Critically, an engaged relationship with their patients acted as a lubricant for challenging situations when contradictory organising logics coincided. Patients in REHAB typically had four main conditions: Stroke, spinal cord injuries, traumatic brain injuries, and limb amputations. These conditions were typically life-changing, and patients were understandably anxious to know about their recovery trajectories. Effectively communicating their prognosis was an essential part of the roles of the healthcare team, but this role frequently fell onto the shoulders of the medical team:

> Dr Zicker: A patient will not understand when you tell him or her that she has a left middle cerebral artery infarct secondary to cardioembolic phenomenon as a result of the ischemic heart disease. All these words are foreign to them. What they want to know is whether they can eat again orally, whether they can walk again, whether they can take care of themselves. Sometimes it's as simple as that. These are the pertinent questions they would ask.

Patients were most emotionally vulnerable in the months after they acquired a life-changing injury or condition. It was thus critical for healthcare professionals that they

provided enough hope for patients to keep their patients engaged and steer them towards positive and constructive responses towards their condition:

> OT Jenny: I usually do not tell them straight that it is impossible for them to do a certain activity anymore… that is completely dashing their hope, second of all, who am I to say that they are not going to make drastic improvements, because I'm not certain. A lot of them will have a lot of anxiety in the upper limb recovery. They have a lot of hopes when they have a very flaccid limb and or a limb with very high tone… "I want it to work like before, I want to be able to sign my cheque with it" and things like that. I think it is a matter of telling them objectively what the research says. I usually won't say such things until a therapeutic alliance is built. If you say such things right at the start, and then they feel that you are dashing their hope and then they think that you are not confident working with them. Most of the time, they won't ask too early on until a trust is built between us.
>
> Dr Zicker: Who are we to determine that we should dash their hopes? If they fulfil the negative predictive medical and psychosocial factors, we will try to manage it slowly. We don't dash it immediately like I mentioned. We still hope that patient can go into acceptance stage in and won't be in denial forever. So we will try to manage them when they are go into the anger and depress stages.

Many nonmedical healthcare professionals were quite hesitant to deliver negative news, even as they recognised that providing accurate information to patients was an important part of patient-centred care. While they had accurate information about their patients, they often struggled with the timing in which they should share the information. They prioritised their rapport with patients over the provision of accurate information for fear that being the bearer of bad news would jeopardise patients' engagement with therapy sessions. In this regard, nonmedical healthcare professionals preferred doctors to take the lead rather than sharing the responsibility in communicating the bad news to patients as they deemed that doctors had the authority:

PT Bella: We start off with psychoeducation to educate the patients, provide the patients with some materials to read up. This is a team effort… some of the patients may be in a bit of denial, but we know there're limitations with spinal cord injuries, and they may return to how they were previously. Sometimes therapists need to them break the bad news so that they can concentrate on the training and concentrate on the remaining muscles, but we prefer to have doctors to tell them… We don't want to break the rapport. We will be diplomatic. We will tell them that our assessment, and break down into smaller steps for them to work on. We don't want to break the hope, but some patients need to be told directly. For others, I will still keep the hope and tell them there's a possibility, but it will be quite long. We prefer to let the doctors take care because they listen to the doctors more.

OT Leonard: We try to leave it to the doctors… they are the team leaders and they have the medical knowledge. It's a kind of a touchy issue. If you are the one who breaks the news to them, they will view you as a bearer of bad news. Rapport can be affected, so sometimes it's always better to leave it to the medical team. Most of the time, we give them some hope, because with that at least we still can get them to participate in therapy. If they do not trust you, it's very hard, really. It comes to a point when the relationship is no longer therapeutic. So that's why this is a line that sometimes we have to tread very carefully with certain patient groups.

To protect their rapport with patients, healthcare professionals frequently engaged in a number of practices concomitantly to buffer the impact of the eventual prognosis, including delaying giving a prognosis, adopting an arm's length approach by using scientific language, deploying multiple messengers, and breaking down goals into small feasible steps. By delaying providing a direct answer, healthcare professionals intended for patients to develop insight regarding their own conditions while not being the bearer of bad news:

PT Angie: I always say, "You should wait for the next 6 – 9 months things may change." I would say, "You know stroke, sometimes it takes a very long time." They always ask about upper limb recovery, which sometimes never comes back. I'll have to let

them keep that in mind with them that it may not come back, not say in a negative way, but just to frame in such that we are working towards it… "Let's see how it goes, let' see how it goes."

PT Bella: The acceptance or denial will sink in when they are closer to discharge. They will start to realise that the life has changed, and what we taught them in rehab will need to be translated into a real situation, the real world. For example, we will bring our para-patients out to take a bus or a train to try out their wheelchair skills when they are closer to discharge. They will realise the difference and what they need to confront… and may feel a bit moody. We may get the help of our psychologists to check in with them… some of them may hide at home for long periods after discharge.

An effective and frequently used practice among therapists was to bring in the evidence from the scientific literature and talk about the evidence in an emotionally detached manner. By answering patients' questions using the scientific literature, it allowed them to maintain their objectivity, hedge their responses, and yet demonstrate empathy as they pivoted from scientific language:

OT Jenny: So later, they may ask questions like "Do you think my hand will work again or erm how long is this going to take?" I will tell them what the research says, "Generally what the research say is that you know by two weeks if you have this movement and that movement, then your prognosis for recovery to a higher percentage is better. There is a higher likelihood for you to recover to a certain higher percentage but it will not likely be a 100% like how you experience in the past." But if they lack that movement, it is like a death sentence to them isn't it? So most of the time I will tell them that, that is what the research says but of course research is usually done in certain constraints, and there are still person-to-person variations. After telling them that, because they will still remember what I said about the research right, then I try to skew them and change their perspective… "If let's say you can't you move this arm, is there another way for you

to do that thing you want to do?" Then they are more willing to still engage rather than think that this person ah is not going to help me. The key is don't break that alliance.

Another frequently used and highly effective practice was to enlist the help of volunteers from the patient support groups. These volunteers were viewed to be highly credible and could build rapport with patients quickly because of their personal journey. Many patients were also eager to hear from the volunteers because they were able to connect in a highly personal manner and relate to patients deeply:

OT Leonard: Another strategy is to actually to bring in support from ex-patients who were in the same shoes as them. They can actually explain to them that I'm all in the same boat, I've walked what you've walked, I've been through what you've been through. In order for you to move on maybe that is one of the ways that you need to start to accept the condition first. They have already gone through the whole rehab programme, they are already in the community. Like in spinal cord cases, it is a lot easier to breakthrough to these patients.

Healthcare professionals in REHAB were cognizant that patients needed to accept their condition for therapy to be efficacious. Many patients understandably grieve for long periods of time and pine for the recovery of a limb that has lost its functions. However, as explained by OT Leonard, patients lose precious therapy time and window of recovery as they are unable to focus on learning alternative ways to perform a function that will provide them with some level of independence after discharge:

OT Leonard: If they don't accept their condition and are impairment-based, we cannot teach them the strategies to be independent. By impairment-based, it means that they, let's say for stroke, they could be focusing on the affected non-functional hand. They just want to keep training it so we cannot move in and then like to teach them compensation strategies… how to wear your shirt with one hand, how to do things with certain modifications. Let's say for example if they want to take a

shower, it will be safer to shower on a chair or a commode. You can't do it standing, but you still can get a shower. With certain equipment you can still be independent. But if they are very impairment-based, we can't breakthrough with them because those activities have no meaning to them. Once a patient finds no meaning like certain things you want to do with them at therapy, there's no way to actually bring them to a level of independence that they could potentially achieve.

As such, healthcare professionals were careful to infuse a small dose of reality to move the patient by taking small steps. As detailed above, healthcare professionals employed an elaborate set of practices to titrate a cocktail of hope, reality, and humility to patients and infused this cocktail at opportune and appropriate moments by balancing what the patient wants to hear with what the patient needs to hear.

PT Victoria: I think hope is necessary for motivation. All patients need hope, and sometimes you need to hope on their behalf when they cannot hope anymore. But they also need to be realistic about the current situation. I usually say I also believe that there might be a chance they can recover. But at this point, given these circumstances, what is the next step? What is the next thing we need to do, in order to arrive at that stage? And you also have to keep on living, so the hope cannot stop you from living now. It cannot be like "I'm hoping for that thing, then I start to live." You have to start living now, in the current situation, while still maintaining this hope… from my perspective as a physio, I will do everything I can to help the patient achieve their hope of full recovery. I will show them that I will try all things, so I won't ever say that this method or this treatment has no use for you. Most treatments do not do any harm, so there's no harm trying, but I will say that the research on this shows it may not be very helpful, but if they want to try, I don't mind… and in that process of trying then I can then have the credibility to say, "Look we've tried this X number of times, it's not really working, but on the other hand, you know, if we try this, it's a higher chance. How about we do it

> concurrently? It's a negotiation, yeah, and I feel that the patients need to see that you're willing to try with them.

Healthcare professionals might acquiesce with what the patient wanted, even when they did not think it would benefit the patient. The intent was to provide enough hope, to ensure that the patient stayed engaged for therapy sessions, and to build enough rapport and credibility to allow them to nudge patients in a different direction.

The Zero-Sum Game of Discharge Planning

Assessing a patient's recovery trajectory and formulating a discharge plan is part and parcel of delivering healthcare anywhere. Although a highly mundane activity, it is actually replete with contradictions that healthcare workers have learnt to tackle on a day-to-day basis. This situation was especially so for REHAB, which was part of Singapore's public healthcare system. Like any public healthcare institution, REHAB had to optimise its resources so that it could serve the largest number of patients with the most severe needs in the fastest possible time. These expectations were consistent with public organisations, which were always under scrutiny for efficiency and accountability. The need to optimise resources meant that hospital administrators often resorted to metrics, such as length of hospital stay, among other key performance indicators, to ensure public money was well spent. However, the need to optimise resources was often at odds with the needs of patients because demand for healthcare was overwhelmingly higher than supply. This situation forces healthcare workers to confront contradictory logics on a day-to-day basis.

In REHAB, patients were grouped by how their hospital stays were financed; they were either considered "private patients" in which their hospitalisations were paid through by private insurance or personal financing or were by subsidies once they met the means

test criteria to be "subsidized patients." Means testing is a practice used to determine the level of subsidy a patient receives. Patients with a higher per capita monthly household income get a lower subsidised rate. Beds in hospitals are categorised by the class of the wards. Class A, B1, B2, and C. Class A wards are single-bedded, whereas B1 wards are four-bedded, but both classes of wards have an attached bathroom and toilet and many other amenities (such as a television and choice of meals). Private patients can also choose their primary specialist during their stay in the hospital. Class B2 and C wards, which are the only wards eligible for government subsidies, can have up to six and eight beds in a room, respectively. Class A beds can cost a patient 15 times more than Class C beds. Patients can choose the class of ward they wish to be admitted to, but only class B2 and C wards are eligible for government subsidies. This classification also has downstream implications for the cost of treatment, clinic charges, as well the rate patients pay at step-down care or sub-acute facilities post-discharge for patients who are not well enough to return home.

This seemingly simple and basic premise of delivering what is good for a patient quickly encountered contradictions when a decision to extend the stay of a patient could potentially have deprived another patient of a hospital bed, therapy session, or doctor's consultation. This situation meant that healthcare professionals had to engage in practices to "lubricate" contradictions such as these. Patient-centred care would normally prioritise a patient's choice and preferences. But in a resource constraint environment of public healthcare, issues such as when a patient starts therapy, duration of therapy, areas and scope of therapy, location of a rehab facility, and duration of hospital stay had to be carefully balanced by the healthcare professionals to ensure that resources were optimised for current and potential patients. In other words, in a resource constraint environment, the provision of patient-centred interprofessional care is a zero-sum game, where healthcare

professionals have to constantly make judgments about patients' potential to benefit from intensive rehabilitation:

> ST Esther: Our case conferences frequently discuss matters like dates for discharge to home or to community hospitals. They would not want to have an extended length of stay, because we get a lot of referrals. If patients are staying at rehab for longer than they need, it's depriving others of the chance to come in for therapy. So if they are more suitable for other services that are more slow streamed, and they can receive like the same amount of therapy at a different facility, then extending their discharge date will be depriving others the chance to come. It's more an equity kind of problem, if not just for the KPI.

As a result of limited resources, the scope of rehabilitation also had to narrow down to only the most basic and essential therapies. Areas of therapy that could enhance the quality of life beyond the most basic were very limited for patients post-discharge:

> Dr Tony: I think down here we focus very much on the basic ADLs – whether they are able to dress or shower themselves. I don't have think we have much time to work on the other more instrumental stuff or higher order goals, such as language and communication. Because of manpower and financial constraints, we are held back in terms of how much we can dish out to the patient. A typical patient comes here, you get two to three hours of therapy in a day. That's very little considering there's 14 hours of waking moment. We tend to focus on physical, occupational and speech therapy. Other types of therapy tend to be very ad hoc.

The scientific evidence suggests that rehabilitation should start as early as possible to provide the best chance for patients to recover to the best of their potential. Clinicians in other institutions would rightly want to refer their patients to rehabilitation as soon as possible, but this was not always possible. Given REHAB's reputation as a premier centre for rehabilitation, the waiting list for admission was always very long. This meant that there was constant pressure to discharge patients. However, some clinicians became concerned

that some of the patients were referred to REHAB too early, and were not able to benefit from rehabilitation as they had very low arousal and, in some instances, were still medically unstable, which meant a precious slot for rehabilitation was not optimised:

> PT Angie: To reduce the length of stay, perhaps patients who need to come here for a very intense period of rehab, I think they will benefit from it. But if they have very low arousal or at the point in time they are not very well. Perhaps they will be housed in the community hospitals first for them to stabilise. And then make the transfer to, say a rehab institute like ours.
>
> Nurse Kaylee: We sometimes have patients who may not be medically stable and who are not ready for rehab. These cases are more challenging, but the intent is to promote early rehabilitation. Some research studies showed that early rehabilitation is beneficial, so we are training to recognise the signs of deterioration so that we are prepared for these types of patients, who can come to rehab as early as a week after their episode of stroke, once their GCS (Glasgow Coma Scale) scores are stable.

Healthcare professionals preferred to work with patients who were engaged, positive, and persistent in pursuing therapy. However, many of these patients would reach a stage where they would be making improvements in very small increments. For these patients who have "plateaued," healthcare professionals would take steps to discharge them to a step-down facility even though the patient wanted to continue to receive therapy at REHAB. This arrangement inadvertently meant that these patients would receive less intensive rehabilitation services:

> Dr Tony: Obviously money is always the issue. And the question is who is this money from? Is it the patient's money or is it the hospital money that we are saving? We try to step down the patient to the community to extend the period of rehabilitation, but what prevents us from discharging the patient early is rehabilitation support and

intensity. I think that is the holy grail to really set up a team that can provide the same intensity and expertise in an outpatient setting.

PT Victoria: So then at the end of the day, what does the patient want? I think the challenge in the hospital setting is the length of stay thing. I'm sure that every doctor and every therapist will want to do all they can as much as they can. But the thing is there is also limited resources. So the patient cannot stay for as long as they like. So that's why I said our therapy goals then end up much more limited? Like how can I get this patient home, safely, and hopefully referred to the correct services so that they can continue with their rehab.

In sum, healthcare professionals had to constantly balance incommensurable expectations brought about by multiple organising logics in a complex institutional environment. As described by a REHAB medical social worker:

MSW Penelope: Our senior consultants don't care that much about this KPI (about length-of-stay). They understand the complex needs of this group of patients, and they are willing to put their reputation at stake instead of blindly following some guidelines. Some of them are true rebels. They existed before such KPIs and red tape existed. So I respect them for their guts… They have to balance between the KPIs set by some foreign body and the true spirit of rehab. However, together with the therapists, the doctors have to deal with problems in resource management… They need to discharge patients who have already plateaued, so that patients who have potentially the largest gains can receive the therapy.

Orientating themselves to the meta-organising logic of patient-centred care, healthcare professionals had to engage in practices such as estimating a patient's potential, among other practices, to lubricate the contradictions to facilitate coherent patient-centred interprofessional care in REHAB.

Patient-Centred Care in EPI

EPI specialised in the detection and management of patients with early psychosis. One of the unique features of EPI was its commitment to dedicate resources to support patients experiencing their first episodes of psychosis, with highly specialised services for a period of two to three years. This approach ensured a high level of continuity of care, thereby providing patients with their best chance of recovery. This arrangement materialised the notion of patient-centred care in the form of an institutionalised set of practices. Hard-wired into EPI's operationalisation of patient-centred care was its logic of shared leadership, which emphasised the different expertise that healthcare professionals from different occupations could contribute to an overall assessment to facilitate the formulation of a well-rounded treatment and recovery plan for their patients:

> Dr Maya: MDT approach is about putting the patient at the centre. The patient is central to what we are doing. And by that, I mean that everyone has their own skillsets, and each one of us do our best in improving the quality of life of the patient, which includes reducing the symptoms and finding out what they want to do to achieve their goal. We have different skillsets and we step in to help each other out. But the focus is primarily always the patient… It is about not compartmentalising treatment, and knowing what each other is doing, so everyone comes together and we are all on the same page. There is a collaborative effort so you don't feel so alone and struggle with patients with difficult social situations so that there's less burnout among the treating team.

A pivotal part of EPI's patient-centred approach was its use of case managers and peer support specialists (PSS) as the centre of their care arrangement as part of a multi-pronged approach to build rapport with patients and their families. In EPI, case managers support patients and their families as a single point of contact. Many patients and their family members needed extra help to navigate the healthcare system, especially if this was their

first encounter with psychosis. During these instances, case managers provided a reassuring presence:

> SCM Dylan: I think the role of case manager was structured in such a way that positions us as the epicentre of the client's journey. Compared to other MDT members, we are closer to clients in their journey. We are endorsed by other team members because we know our patients, and we have the autonomy. We also play the social worker's role sometimes. I suppose we also journey with client's family. When something is not right, we are the first one to know. We escalate, trigger, and manage.

On the other hand, peer-support specialists partner with other healthcare professionals to play a special role. With the word "peer" in their job titles, the intent was to leverage their lived experiences to support the recovery journey. As Dr Maya noted, the lived experiences set them apart from the other members of the treating team:

> Dr Maya: Many of our patients tell us, "You know, you haven't gone through it, so what would know," which I completely agree, you know? For us, it's very clinical, very academic, but the PSS are the people who have gone through it so, that helped.

Peer support specialists also served as patient advocates in interprofessional meetings to provide their perspective from a patient's perspective. Their lived experiences provided them with "street credibility" among patients, allowing them to connect with patients in a therapeutic relationship right from the start to focus on not just the patient but the patient's strengths:

> PSS Carter: We provide updates to the team based on our observations, our one-to-one interactions or our interaction with them in groups so that the MDT team has a fair view… In our sharing, we try to make it more strengths-based, more person-centred, as opposed to patient-centred. They might talk about the challenges, the diagnosis, but you know, they don't share on their strengths. So I think that's where the peer specialist comes in.

While EPI's commitment to delivering patient-centred care was unequivocal, what practices should ensue to materialise patient-centred care were not always straightforward. As I will elaborate in the following sections, the performance of patient-centred care requires healthcare professionals to traverse between different organising logics to lubricate institutional contradictions.

The Best Laid Treatment Plans

The organising logic of patient-centred care compels healthcare professionals to prioritise and meet the preferences and desires of their patients. However, patient-centred care in EPI sometimes required healthcare professionals to deny the preferences and desires of patients to deliver just the opposite of what patients wanted because many patients in EPI lacked insight into their own mental health conditions when they were first admitted into the hospital. This lack of insight presented several problems for healthcare professionals. For instance, patients might refuse to take their medications and insist that they be discharged from the hospital premises immediately. Peer support specialist and ex-patient at EPI, Daisy, noted that patients with very little insight and acceptance of their own conditions were the most difficult to help:

> PSS Daisy: The patients who are hardest to work with are the patient who cannot accept their illness or they don't think that they are ill. Then this opens another can of worms, like who are we to say that they are ill if they choose to live in a certain way… but the hardest people whom I find working with are those who don't have an insight to some of their experiences that they perceived as normal, but as their family members or people around perceived as not normal.

Despite the urgency, healthcare professionals in EPI would refrain from imposing treatment for as long as possible. Instead, they would attempt to help patients develop

some insight regarding the veracity of their thoughts. One of the practices used by PSS Daisy was to ask for specific details of their account:

> PSS Daisy: I don't argue with them and I try to understand where they are coming from to tease out their experiences. I'll ask for specific things. Because sometimes all these are just a feeling and it's very hard for them to quantify it. Through probing for specific things, they may come to the realisation that maybe there is some truth in what other people are telling me, that it's not real and it's all in the mind… And I think in to a certain extent it helps them to be able talk about what is bothering them, and what's bringing them down. I think this seems simple but I think it really helps the person feeling better about the whole situation.

Despite the challenges involved in working with patients with little insight, healthcare professionals in EPI would still attempt to tease out the reasons why patients were refusing medicine to find a middle-ground in which a patient's personal preferences could be meaningfully considered:

> SCM Yvette: It's the little things in our case management practice. A common scenario is a young person refusing to take their medicine. Our automatic response is, "no you can't blah blah blah." Over here, we have been practising more of understanding why they are refusing medicine, and consider how we can allow space for personal choices.

As illustrated by the experiences of PSS Daisy and SCM Yvette, healthcare professionals often encountered persistent incongruence between what patients wanted and what the caring team perceived as best in the interest of patients and their families. Just like colleagues in REHAB, healthcare professionals in EPI placed a high emphasis on building a strong rapport with their patients. A strong rapport was especially critical because they had to build the foundations for an engaged longer-term relationship with patients after they were discharged from the hospital, where they would need the patient

to act in their own best interests, such as continuing with their medications and staying away from activities that cause them to be more susceptible to relapses. As such, healthcare professionals in EPI would work on different ends as an interprofessional team to find a bridge, and usually the person with the most rapport with the patient, whatever the person's occupational role might be:

> Nurse Dominic: Some patients lack insight regarding their treatment and do not comply with their medication. We need to build rapport with them. Once we have rapport, it is easier for us to educate and advise them or get them to talk to us why they do not want to take the medicine. Once they let us know their reasons, we can tell our team doctors and we can psychoeducate them, and this may require several staff members to work together for reinforcement.
>
> Nurse Andrea: We are the only ones who are with patients 24/7. I think the feedback that we are giving is something that MDT members do not have a chance to observe. If we have rapport with the patient, the patient will tell us something that they may not share with the team.

To lubricate the contradiction between what patients wanted and what the caring team perceived as best in the interest of patients, EPI differentiated the goals for inpatients and for outpatients, prioritising the stabilisation of mental state for the former and the holistic development and recovery for the latter:

> Psychologist Willow: The objective of inpatient MDTs is the stabilisation of clients. Normally when they come into the ward, they would be acutely unwell, and so our first goal is normally to stabilise their mental state. I think partly because of that, the priority would be on biological treatments. It is also for the whole team to come together to offer differing opinions from different professional perspectives to see how we can enhance the care of the person. In contrast, for outpatient MDTs, we will spend more time looking into the holistic development of the person, including medication and therapies… We sometimes get carried away during inpatient

> MDTs. We can be so focused trying to stabilise the mental state and the biological treatment that we forget to attend to client's own preferences and opinions about their treatment. It is a challenging balance because they are not well and we have to manage the risk issues. So, the first line of treatment is usually biological in nature.

There were two strong reasons why EPI prioritised stabilisation of the mental state and, thus the use of medications as the first line of treatment. First, the duration of untreated psychosis (DUP), i.e., the time taken to start an antipsychotic drug from the first manifestation of psychotic symptoms, was found to be strongly negatively associated with poorer clinical outcomes among patients. This piece of scientific evidence meant that the longer EPI patients took to start their antipsychotic medications, the poorer their recovery and prognosis would be. Second, patients who were symptomatic, e.g., highly delusional or paranoid, would not be able to have functional relationships with the healthcare team, thus making other kinds of treatment, such as therapies, inefficacious. As such, the psychiatrist in the team might enforce treatment, but not without exhausting other options available to persuade the patient:

> Psychologist Willow: It will still be discussed with the person, but if the person still refuses, erm I think normally the case manager, the doctor they will still try to persuade and give more psychoeducation. If the person still doesn't agree after many many attempts, the doctor may decide to just start the injection. On the day itself, the nurses will still try to coax, but they have sometimes had to just enforce the injection. So, there is an element of coercion.

However, this approach was not always agreed upon by all members of the treating team, as there was clinical judgment involved in assessing whether a patient was so unwell that therapies and other forms of intervention would not be successful in persuading or encouraging insight. The argument against enforcing treatment was three-fold. First,

enforcing treatment might damage the rapport between the patient and the members of the team. Second, as observed by many EPI team members, patients would soon come to realise that they could be discharged sooner if they were agreeable and compliant, but would not be able to ensure that patients would continue taking their medications after they leave the hospital. Thus, many EPI healthcare professionals argued that it was better to persuade than to enforce. Third, not all patients who refused medication lacked insight into their own mental health condition. Some patients were very insightful about their condition but still decided against taking their prescribed medications for a variety of reasons. For instance, they might be very concerned about the side effects of the medications and, for some, the meanings attached to taking their medications. Some patients associate the meaning of taking their antipsychotic medications as an indication that they were still unwell:

> SCM Yvette: Some of them are very insightful and they would have made a choice after a lot of deliberation about the possible consequences. I have clients who have made agreements with me to watch their early warning signs and state upfront what they want to see happen or not in terms of their treatment in the event of a relapse. Unfortunately, there are those who refused treatment, ended up with a relapse, and being forcefully admitted as a result.

Providing patient-centred care in EPI required healthcare professionals to attend to constantly changing situations as more information was made available regarding a patient. Given the incongruence between the three facets of patient-centred care, healthcare professionals had to traverse between organising logics encapsulated under patient-centred care logic by enacting lubricating practices. When there was a lack of agreement among the treating team regarding what should be done, the medical team, given their medical and legal authority, would still have to balance the demands of shared

leadership, medical leadership, and patient-centred care after considering the views of the team. When this balance was not achieved, for example, in very complex situations, the team could feel "stuck" as they were unable to proceed:

> SCM Yvette: My assumption is that MDTs are led by the doctors. But, we can almost be on autopilot, i.e., going on without an actual lead at times. The decisions still go back to the doctors, but at the same time, I would say that we have more voice. We are not afraid of voicing out, and I can advocate for my client for matters that may contradict what the doctors are thinking. But there's good and bad about this. It runs smoothly if there are no major complex issues, but when there is a complex situation where there are a lot of different decisions to be made, I feel we are frequently stuck.

More often than not, however, members of the EPI team took turns to lead. They were highly aware of the ways of working of each member and also the strengths and limitations of what members could bring to the table. In the illustration below, the psychiatrist went against her own inclination to take the suggestions of other members of the EPI team:

> Dr Maya: First, we need to understand why there are different views. Because I think, ultimately, the person in the centre is the patient, and there are different views maybe because someone is missing out something, or you know, we think differently. I can think of an example. Because the person was really not getting better, especially quite symptomatic, hasn't been taking his medication regularly, which was why he was not getting better. So we felt that it's time we did try to talk to him, explain to him, give him a choice of medicines… but he just refused. It wasn't that he had side effects, but he just felt that he doesn't need it at all even though he was clearly very symptomatic. He was on the form, Form 2, which is a legal document where you can actually impose treatment. So we felt that it was time we force him to start on the injections. We didn't want to do that, because it's kind of, you know, loss of one's own sense of self and, it's a very restrictive a thing.

> At that point, one of the PSS was speaking to him and felt that we were a bit hasty, like "why not we try to talk to him a little more and he may be more amenable." We felt that time was running out; not only because his stay is increasing in the hospital, but also it is increasing the DUP, which is the duration of untreated psychosis. All the trouble the family took to bring him to the hospital… it doesn't seem like we are doing justice by not treating him well. Most of us were not very keen on waiting, but the PSS put it very strongly and said that, "if I were in his position, I will feel like I have no say at all in whatever that is happening around me." So, we gave him another week, the PSS spoke to him and he very very very reluctantly agree to take a specific antipsychotic, not the one which we want him to take, but we did start on something. So that how we dealt with different views.

The EPI team was able to work across professional groups to deploy multiple lubricative strategies to persuade patients to start on their medications that were consistent with a patient-centred approach.

To Discharge, or Not to Discharge, That is the Question

The main consideration of an EPI doctor's decision to discharge a patient or not hinges on the outcomes of their risk assessment. In Singapore, the Mental Health (Care and Treatment) Act empowers a medical practitioner to involuntarily detain a person in a psychiatric institution for treatment, either for the interest of the person or those around the person. Under the provision of the Act, a medical practitioner can sign an order to detain a person for a period of 72 hours in accordance with Form 1 in the schedule; one month after the expiration of the 72 hours (provided under Form 1) in accordance to Form 2; and a further six months in accordance to Form 3. Form 3 would require two additional practitioners to review if further detainment is in the person's best interest. The Act not only puts medical practitioners in EPI medically and legally responsible for patients under

their care, but it also empowers them to decide whether a patient could be discharged from the hospital or not:

> Dr Iris: The Mental Healthcare and Treatment Act in Singapore allows us to detain and treat patients involuntarily, so long as there's a mental illness or a suspected mental illness, and there is a risk to himself or herself. Risk is a huge concept and risk can be quite vague. It's kept vague on purpose so that doctors can have that leeway to make that clinical decision in the person's best interest.

Discussions regarding discharge plans at EPI were usually unremarkable but could be tension filled at times. These tensions were largely due to differences across members of the EPI team:

> AT Ruby: I recalled tangible tensions, but it wasn't articulated. There were no arguments, no heated debates over treatment plan or patients but I felt the tension in terms of you know how it should be done and what should be done first. I guess it's about primarily about who are to be discharged. I guess it is about releasing the patients as soon as possible, I think that is the general trend in the clinical settings. There were professionals who wanted to hold the client longer in the ward and there were professionals who wanted to discharge the clients earlier or earliest way possible. So that was the main tension that I experienced, and also how that client is to be supported after the discharge.

Although some of these differences were patterned along professional lines, they were mostly due to differences in assessments of risk, levels of rapport, and definitions of recovery. The primary consideration for doctors, among many other considerations, was the safety of the patient and those around the patient. Specifically, doctors had to assess patients for risk of suicide and risk of violence. The consequences of an inaccurate assessment could have deadly consequences:

> SCM Molly: My own ideas of recovery became different because I lost one client. I will never forget this boy when his mother asked me if he would recover. I told her yes… and

the boy jumped and died. The mother asked me this question the next morning, "You told me he would recover, why did he jump?" That changed my whole idea of what I say and how I think about recovery. The boy jumped because he had side effects, he had akathisia, and he was too akathisic, he just couldn't stand the restlessness, and so he just jumped. He didn't jump because he was unwell, he jumped because of the side-effects of the medications.

Risk assessments are highly personalised for patients and have to be formulated on a case-by-case basis. A patient may still be quite symptomatic but however, does not pose a risk to herself and others may still be discharged so that the patient could recover in her home environment instead of extending a patient's detainment:

Dr Iris: Each and every patient is different. I discharged a patient today. She has schizophrenia and has paranoid delusions about people setting up frequencies in the neighbourhood to monitor her, contaminating the water to harm her and her family. But she is not at risk of hurting herself or others other than a possible source of annoyance to her neighbours. She was warning others in the neighbourhood not to drink the water. She was arrested by the police and we put her on Form 1.

In addition to the outcomes of risk assessment, the other consideration critical for deciding if a patient should be discharged is the post-discharge environment. The environment should be one that is conducive to recovery. From a patient-centred care perspective, healthcare professionals want to make decisions in the best interest of the patients. This position was sometimes challenging for the EPI team because what was best for the client was hard to establish as they were forced to choose between poor options:

AT Ruby: One example was when a client was about to be discharged, she had an option of going to a group home or going back to their original family, and there was a debate on what is better for the client. One group was saying that it would be better that the client stays away from the dysfunctional family that does more

damage to the wellbeing of the client. The other group disagreed and supported the other way. I think the decision should be client centred; what clients need and what clients are good at. And whether we have a thorough examination over that information and then the decision can be made. It shouldn't be made based on what's available for the clients.

In my observations at EPI, the doctors and case managers were usually more conservative and cautious in their assessment of the post-discharge environment compared to the peer support specialists. The main difference seemed to be their tolerance for the risk of relapse. Whereas doctors and case managers saw relapses as the *opposite* of recovery and thus were generally cautious about patients returning to a stressful environment or stressful activity; peer support specialists tended to view relapses as *part* of recovery.

PSS Carter: The doctors are concerned about is safety, I think that's their main concern. That's why sometimes when a person wants to do an activity, they may not allow him to do. But for us is like, it's his life, if he wants to take the risk, he should be able to take the risk, even if it hurts himself a little bit, because that will then be a learning lesson for him.

While doctors and case managers were usually cautious about a stressful environment that may precipitate a patient's relapse, they were also frequently supportive in letting patients make their own choices, especially so for post-discharge decisions:

SCM Dylan: I have come to terms that I have to pace them, and let them go even though we are worried. You've to let go. If that's what they want ultimately, it's their choice right? He's stable in terms of symptoms, but psychosocially, I think he's got a lot more than he could cope with. He wants to go back to school post-discharge, but he is vulnerable, and given his current situation, the risk is he may not succeed. He asked me, "What if I want it?" We spoke to the father about the reality, the stress vulnerability model… but if that's what he wants, we will support him, cushion in whatever you know, and allow him to do it. That's something I am learning to just

> let go. In the end, it is not about me, but about him and his father as I have to bring the family in to make a decision. I can also see that having a goal is important, but it is reaching that goal in a conducive environment, in a step-wise fashion. If he wants it, my role is to support him.

Healthcare professionals in EPI frequently reminded each other of the need to act and to use words consistent with a "recovery-oriented culture." A recovery-oriented culture promotes hope, choice, meaning, and purpose. By recovery-oriented, the EPI team emphasised that patients should define what exactly recovery meant for them and maximise their potential to live a self-directed life regardless of their condition. Enforced biological treatments in the inpatient setting occasioned contradictions to recovery-oriented culture as it meant taking away patients' autonomy, even if only temporarily so that patients could be set on a path of recovery and discharge. A recovery-oriented culture also occasioned contradictions because what recovery meant differed in considerable measure among healthcare professionals, as well as among patients.

For healthcare professionals in EPI, recovery largely meant that patients could go on to enjoy relationships, engage in meaningful activities and sustained employment, and basically live a fulfilling life as any individual would. For many patients, recovery meant that they would not be required to continue to take medications, become "normal," and essentially meant being cured of psychosis. Juxtaposing these two conceptualisations of recovery, healthcare professionals viewed recovery as living *with* psychosis, whereas patients viewed recovery as living *without* psychosis. Healthcare professionals were cognizant that they needed to first instil some hope in patients and their families:

> Dr Maya: A very typical question that we get is, "Is it curable?", "Can I ever stop my medications?" Essentially we work with young people, so the families will also ask us, "Will he become normal again?" We will try to understand what they mean by

"normal." Because my idea of "normal" may not be someone else's. I will try to understand that and answer accordingly, tailor-make and share my answers accordingly, without giving them false hopes, without lying, and on the other hand, without sounding very hopeless as well.

Dr Iris: People coming in to us usually they think that it's end of the world when you've been diagnosed with something called schizophrenia or psychosis and there's actually a lot of stigma that's associated with it. I think we usually try to instil hope. People who come to us are usually very devastated and have a lot misconceptions about the illness. So we try to correct those misconceptions and instil some hope.

To ensure that patients remained hopeful but yet still had an accurate conception of psychosis, healthcare professionals employed a number of lubricative strategies to psychoeducation their patients. For instance, they normalised and destigmatised psychosis by identifying similarities between psychosis and other non-stigmatised health conditions:

Dr Iris: Psychosis is not a condition that can be cured. I usually give an example like diabetes. You cannot be cured of diabetes but you can control it. So patients who are acutely unwell can have medications to control their blood sugar level. Then there is diet control, exercise, and other lifestyle modifications. If those are done well, there's a possibility of a person having diabetes being off medications. I will try to draw parallels in schizophrenia.

Another strategy to balance hope and psychoeducation was to challenge the definitions and assumptions of having a mental health condition and reframe the definitions with patients:

PSS Carter: What I try to do is make the person see that the mental illness is a challenge, it's not a roadblock. Doesn't mean that you have to be perfectly cured to work, to start a family, to have hobbies, go out with friends, right. Even with part of the illness there, with the medical treatment, the illness can be reduced, but part of it being

that you still can enjoy life… the next question I'll ask is "what do you understand about recovery." Most people will say, "It means I get completely cured. That I have no illness at all." So I'll share with them our definition of recovery… which is a process of change where one improves his health or wellness, lives a self-directed life and strives to reach his full potential… remembering our strengths and using our strengths to become all that we can be.

Because healthcare professionals viewed recovery as living *with* psychosis and patients saw it as living *without* psychosis, patients were often reluctant to continue taking their medications after discharge as they saw medication as part of a symbol of being sick. A critical part of a patient's psychoeducation was then to associate medication as something that they take to continue to be well and that taking medication is part of a larger regime of practices that they need to do, such as sleep and dietary habits:

Dr Iris: If patients ask if they can be off medications, I usually say that, I'll say erm you can't cure it, but at this point in time, you are having a psychotic episode, you do require medications to adjust the chemical imbalance in your brain. After you are discharged from the hospital we do want you to continue taking the medications because we know that if you stop the medications straight away, your chances of relapse is going to be very high, and generally we recommend at least a year of continued medications. Then I'll say that's what the literature says, but it differs from person to person. I will also say that those who do better at taking care of the other aspects of their lives, managing their stress better, sleeping better, eating well diet will do better. Then I'll tell them if they want to be off medications in the future, then they really need to take care of all these things, and it's not possible to commit if they are going to be off medication in the future and can be cured.

Dr Maya: There are lots of people who are perfectly fine without any medication, which is true – like 25% of the population are fine without medication. Some of them might

> need a small dose, but you will still continue to do every single thing that you are doing… Some people, you know, when we cut down on the medication, the symptoms come back, so we need to monitor for that as well… Then, sometimes I would probably make it a little personal. But I tell them that, "Look, I'm taking antihypertensives for the last three years and, I don't want to take it every single morning, but you know, if I don't take it then, I won't be able to function.

As illustrated in the above examples, healthcare professionals enacted several lubricative strategies to provide "answers" to tough questions from patients and their families by inviting them to reframe their conceptualisations of recovery and normal meant. By reframing patients' definitions, comparing treatment regimes of psychosis with non-stigmatised conditions such as diabetes, and adding a dose of hope.

Findings Summary 1

The objective of this findings chapter was to develop an understanding of how professionals from different occupational groups collaborate in complex institutional settings. This chapter provides insights into the problem of trust and the problem of complexity. I focused my analysis on situations where healthcare professionals encountered contradictions to understand how care unfolded when they had to choose from contradictory options. My analysis revealed that a number of organising logics were guiding the manner in which healthcare professionals navigated their day-to-day practices. But not all organising logics were equal; patient-centred care had the rhetorical force to encapsulate the other organising logics of medical leadership, shared leadership, and resource optimisation. As noted, patient-centred care was not immediately actionable because it had three facets that were difficult to align. This lack of actionability meant that healthcare professionals had to interpret the situation, make judgments, and choose a

course of action that allowed them to be consistent with delivering patient-centred care, but in ways that did not violate the other organising logics.

In other words, interprofessional care was always in flux because of the multiplicity of perspectives and required healthcare professionals to continuously engage in the process of translation and stabilisation of actor-networks to accomplish patient-centred interprofessional care. Some of their strategies included delaying a response, quoting scientific studies and obscure language to project an objective stance, breaking down goals into smaller parts, using multiple messengers, and inviting patients to redefine their definitions. Although these strategies might seem ad hoc to an outsider, I found healthcare professionals deploying these strategies systematically. These strategies were important in helping healthcare professionals to traverse between organising logics, while using the logic of patient-centred care as an orientating compass. The concern regarding the dilution of professional logics by the logics of bureaucracy and market seemed to be unfounded.

Scholars of interprofessional care seemed to paint a relatively negative picture when they found contradictions in the course of clinical care (Huotari, 2003; Huq et al., 2017; Lingard et al., 2004, 2012; O'Keefe & Ward, 2018). However, the findings in my thesis demonstrate that contradictions are actually signs of a functioning system. For a multiplicity of objects and realities to exist, incommensurable organising logics is a feature and not a bug of a functioning system. As Fenwick and Edwards (2010) noted, multiplicity should need not be resolved. In PSYC, SCI, and STK, organising logics were constantly translated according to the salient clinical care juncture. The ongoing assembling of actor-networks afforded the conditions for durable interprofessional care instead of breakdowns when contradictions surfaced.

CHAPTER 6: HOW IS INTERPROFESSIONAL CARE ACCOMPLISHED?

Introduction

In this chapter, I provide an account of how professionals from different occupational groups collaborate in a complex institutional environment. This chapter focuses on the problem of extension. In essence, I try to describe how interprofessional care is accomplished. I am interested to understand how interprofessional care is continuously accomplished as an ongoing achievement, as opposed to understanding interprofessional care as a finished product. As Latour (2005, p. 27) noted, "it is best to begin in the middle of things, *in medias res*." As noted in the literature review, although inclusivity in participation has been shown to be linked with superior performance among interprofessional teams, it was also shown that participation from team members who were more junior or from a less prestigious occupation could not be taken for granted (Haan et al., 2021; Nembhard & Edmondson, 2006; Nishii & Mayer, 2009). I followed the actors and tokens (i.e., patients) by observing interactions in weekly interprofessional care. Sensitised by an ANT perspective, I observed how healthcare professionals enlist each other by coding their utterances. This approach affords robust actor-network data to be collected. Each speech utterance is an attempt to enlist another to be part of an actor-network to participate to associate with patients discussed at the meetings. My approach allowed me to observe how healthcare professionals circulated the tokens (i.e., patients) across the actor-network.

In this thesis, I performed various forms of analysis on PSYC, SCI, and STK teams, including 1) synchronic, diachronic, and parallel analyses, as outlined in Figure 4.2, to describe the sociotemporal regularities; 2) social network analysis to uncover the structure of social relations by studying interaction patterns among healthcare professionals; and 3)

role and position analysis using blockmodeling to demonstrate the various heterogenous actor-network, as Callon (2006) did in his analysis. Collectively, the findings describe the practices that professionals from different occupational groups did to grow their actor-networks. The findings also describe how some actor-networks were more diverse in terms of participation, while other actor-networks were dominated by a few selected individuals.

Synchronic, Diachronic, and Parallel Analyses

> "*A calendar expresses the rhythm of the collective activities, while at the same time its function is to assure their regularity*." Durkheim (1912/1995, p. 10)

Sociotemporal orders are ubiquitous and regulate the lives of individuals in society (Zerubavel, 1981). Temporal regularity in social life is well documented. Sociologists have found events and activities to reveal highly persistent orders in terms of sequences, durations, patterns of recurrences, and temporal location (Barley, 1988; Bluedorn, 2002; E. T. Hall, 1966; Perlow, 1999; Roth, 1963; Zerubavel, 1981). Sociotemporal orders in organisations provide a sense of familiarity, stability, and anticipation that allow individuals to develop a general understanding and a practical sense of when activities should happen, how long activities should last, when one should speak, and when one should or should not leave the room. Although much of these general and practical understandings are not explicitly stated in formal documents, individuals can often develop a keen sense of sociotemporal orders by observing and imitating others in their milieu and intuitively learning about the range of appropriate behaviours just by participating in ongoing events even if they may not be able to articulate those implicit sociotemporal orders.

Implicit general and practical understandings of sociotemporal orders provide both adhesive and lubricative effects that concomitantly keep healthcare professionals coherently organised while smoothening out any friction that may develop as a result of

ongoing adaptations to changing requirements of delivering responsive interprofessional care. These implicit general understandings of time provide an internal compass of what is considered appropriate – what is too long or too short in terms of time taken in a meeting, whose turn to speak, when to invoke a question, how frequent people should meet, what time of the day is appropriate to hold a meeting – are among the most important aspects that make interprofessional care possible. Healthcare professionals who participated in interprofessional care had an acute sense of what was considered an appropriate duration when providing patient updates in interprofessional meetings, but yet what was considered appropriate still depended on individual propensities. For instance:

> SCM Dylan: Just trying to think about the space and time, like oh my God, how long is this going to last? How many patients we have you know? Sometimes it's like "hey let's not drag too long." Besides MDT, there are also other informal platforms of enquiry. The MDTs are just too long. People just want it to be concise, don't beat about the bush. Time is precious, we have to do it in such a way that is efficient, and yet still get their inputs. It is a platform for challenging ideas but I'm not sure is it like ideal. So, there's always side-conversations behind the scenes.
>
> Dr Maya: I think I spoken about this many, many times in our department. I would like the MDT to be more concise. There should be a structure every time we talk about it. What happens is that different people have different ways of presenting their cases. With a structure, we can bring up all the important issues without digressing. Some of them does it in a very narrative fashion, "they went home, and then they went to the MRT and then they went to the mall." That's not important. Instead, say "they went on home leave, it went well, there was no paranoia, no hearing voices. So, in short, the home leave was successful, and we are looking at discharge."

In addition to general understandings of sociotemporal expectations regarding practices in teams, members of interprofessional teams also developed intuitions about the

sociotemporal peculiarities of others and self-awareness regarding how one compares to others.

MSW Penelope: The difference between Dr Robert and Dr Marie is that Dr Marie is a bit more free-spirited. Dr Robert is an educator at heart, respects all professional groups, but he can be quite intimidating as he will drill the team in terms of the details for the purpose of educating the team… which means his case conferences always take a very long time to complete.

Dr Zicker: For case conferences, I'm a very practical person. You do realise that my case conference is much faster than most of the other consultants. I like to focus on problems instead of reiterating previous problems that were already discussed. I tend to focus straight onto the discharge timeline, then I move backwards. What is preventing these patients from going home? Then we can be more focused to target the problems that prevent the patient from going home… it is more focused and we are able to move on faster.

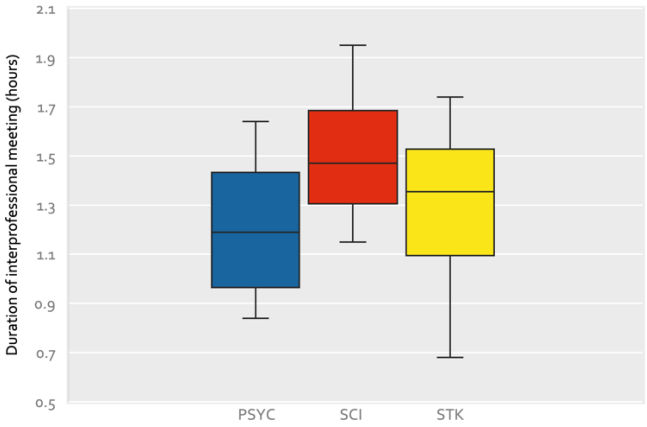


FIGURE 6.1. Boxplots Comparing Duration of Interprofessional Meetings of PSYC, SCI, and STK Teams

To capture the rhythm of interprofessional team meetings, I observed PSYC for 19 weeks and STK and SCI for 21 weeks each. Detailed time-stamped notes of speech act utterances by the second were recorded for 14 weeks for PYSC and for 16 weeks for STK and SCI. I was not able to collect data on week 5 of PSYC's interprofessional meeting as it

was a public holiday. Tables 6.1, 6.2, and 6.3 provide detailed information about the rhythm of each team's interprofessional meetings to facilitate synchronic, diachronic, and parallel analysis of sociotemporal orders. The duration of PSYC interprofessional meetings was relatively shorter in terms of hours (M = 1.21, SD = .27) than that of SCI (M = 1.51, SD = .23) and STK (M =1.30, SD = .30).

The boxplots shown in Figure 6.1 reveal that the teams had different expressions of regularity; STK interprofessional meetings were more varied compared to SCI and PSYC. One-way ANOVA of meeting durations of PSYC, SCI, and STK differed significantly ($F_{2,43}$ = 4.72, p = .014, f = .45). As SCI and STK were from the same institution, I performed an independent samples *t*-test for exploratory evidence of institutional effects on sociotemporal orders. The Welch's *t*-test showed that SCI and STK meeting durations were statistically significantly different, $t(28) = 2.10$, $p < .05$,with a large effect size of Cohen's d = .75 . To develop an in-depth understanding of the sociotemporal regularity of each of the teams, I constructed boxplots (Figure 6.2) to study the distribution and variability of each of the dimensions of interprofessional meetings, and performed one-way ANOVA tests to investigate the pertinent aspects of interprofessional meetings. Results of the one-way ANOVA tests in Table 6.4 suggests that the sociotemporal orders of the teams were statistically different. Similar to before, I conducted additional Welch *t*-tests to investigate if institutional effects influenced the manner in which healthcare professionals on SCI and STK interacted. To provide a visceral sense of the rhythm of the interprofessional meeting proceedings, I constructed Figure 6.3 to illustrate the sociotemporal orders of the length of a conversational turn and the number of turns in discussing patient caseloads meant for a healthcare professional in the respective interprofessional meetings.

TABLE 6.1
Descriptive Statistics of the Cadence of Weekly Interprofessional Meetings for PSYC Team

Recorded Session	Duration of meeting (hours)	Number of HCW in room (and spoke)	% of HCWs who spoke	Number of patients discussed	Number of conversation turns	Number of utterances	Duration per patient discussion (minutes)	Duration per turn (seconds)	Turns per patient
PSYC1	1.22	29 (22)	75.86	20	253	266	3.66	17.34	12.65
PSYC2	1.06	31 (24)	77.42	18	248	277	3.54	15.42	13.78
PSYC3	.84	28 (22)	78.57	15	118	140	3.36	25.64	7.87
PSYC4	.87	26 (20)	76.92	23	155	176	2.26	20.10	6.74
PSYC6	1.64	32 (26)	81.25	29	389	424	3.40	15.19	13.41
PSYC7	1.43	28 (21)	75.00	35	326	376	2.44	15.75	9.31
PSYC8	1.58	32 (28)	87.50	35	323	366	2.72	17.65	9.23
PSYC9	1.44	27 (23)	85.19	34	369	397	2.54	14.02	10.85
PSYC10	1.16	26 (22)	84.62	28	297	349	2.49	14.11	10.61
PSYC11	1.31	32 (27)	84.38	27	281	313	2.91	16.78	10.41
PSYC12	1.39	27 (20)	74.07	26	299	333	3.21	16.76	11.50
PSYC13	.89	22 (17)	77.27	21	167	198	2.53	19.09	7.95
PSYC14	.99	20 (14)	70.00	24	175	208	2.48	20.37	7.29
PSYC15	1.06	21 (17)	80.95	29	272	320	2.18	13.97	9.38
M	1.21	27.21 (21.64)	79.21	26	262.93	295.93	2.84	17.30	10.07
SD	.27	4.00 (3.95)	4.96	6.25	82.04	87.83	.50	3.20	2.23

TABLE 6.2
Descriptive Statistics of the Cadence of Weekly Interprofessional Meetings for SCI Team

Recorded Session	Duration of meeting (hours)	Number of HCW in room (and spoke)	% of HCWs who spoke	Number of patients discussed	Number of conversation turns	Number of utterances	Duration per patient discussion (minutes)	Duration per turn (seconds)	Turns per patient
SCI1	1.35	14 (14)	100.00	13	417	484	6.22	11.63	32.08
SCI2	1.28	19 (15)	78.95	14	449	559	5.49	10.28	32.07
SCI3	1.15	17 (16)	94.12	10	424	508	6.92	9.79	42.40
SCI4	1.40	17 (17)	100.00	12	470	545	6.98	10.69	39.17
SCI5	1.29	18 (17)	94.44	12	418	479	6.45	11.11	34.83
SCI6	1.50	16 (14)	87.50	14	497	566	6.42	10.85	35.50
SCI7	1.46	15 (14)	93.33	13	411	466	6.75	12.81	31.62
SCI8	1.39	14 (13)	92.86	11	433	494	7.61	11.60	39.36
SCI9	1.85	16 (16)	100.00	14	487	562	7.94	13.69	34.79
SCI10	1.83	16 (15)	93.75	16	601	696	6.85	10.94	37.56
SCI11	1.25	15 (14)	93.33	15	443	503	5.01	10.17	29.53
SCI12	1.74	15 (13)	86.67	14	538	592	7.46	11.64	38.43
SCI13	1.49	17 (15)	88.24	16	511	565	5.60	10.52	31.94
SCI14	1.48	16 (16)	100.00	16	586	661	5.56	9.10	36.63
SCI15	1.52	18 (16)	88.89	13	513	570	7.03	10.70	39.46
SCI16	1.95	15 (14)	93.33	17	623	707	6.87	11.24	36.65
M	1.50	16.13 (14.94)	92.84	13.75	488.81	559.81	6.57	11.05	35.75
SD	.23	1.45 (1.29)	5.82	1.95	68.89	74.48	.82	1.11	3.60

TABLE 6.3
Descriptive Statistics of the Cadence of Weekly Interprofessional Meetings for STK Team

Recorded Session	Duration of meeting (hours)	Number of HCW in room (and spoke)	% of HCWs who spoke	Number of patients discussed	Number of conversation turns	Number of utterances	Duration per patient discussion (minutes)	Duration per turn (seconds)	Turns per patient
STK1	1.25	12 (12)	100.00	23	366	509	3.25	12.26	15.91
STK2	1.54	20 (19)	95.00	23	508	707	4.03	10.95	22.09
STK3	1.57	18 (18)	100.00	23	440	618	4.09	12.84	19.13
STK4	1.37	20 (17)	85.00	22	417	536	3.72	11.78	18.95
STK5	1.51	20 (16)	80.00	23	387	491	3.94	14.05	16.83
STK6	1.53	15 (15)	100.00	22	476	609	4.19	11.61	21.64
STK7	.84	14 (14)	100.00	19	307	382	2.65	9.83	16.16
STK8	1.47	18 (17)	94.44	24	531	666	3.66	9.94	22.13
STK9	1.08	18 (15)	83.33	22	310	376	2.94	12.51	14.09
STK10	1.25	13 (13)	100.00	22	391	548	3.40	11.48	17.77
STK11	1.74	20 (16)	80.00	22	712	827	4.76	8.82	32.36
STK12	1.34	18 (16)	88.89	20	513	601	4.02	9.41	25.65
STK13	1.52	15 (14)	93.33	20	531	610	4.57	10.33	26.55
STK14	1.14	18 (16)	88.89	19	467	555	3.61	8.81	24.58
STK15	.68	14 (13)	92.86	16	283	343	2.56	8.70	17.69
STK16	.94	19 (16)	84.21	17	437	490	3.30	7.71	25.71
M	1.30	17.00 (15.44)	91.62	21.06	442.25	554.25	3.67	10.69	21.08
SD	.30	2.73 (1.90)	7.43	2.32	107.36	126.28	.63	1.78	4.92

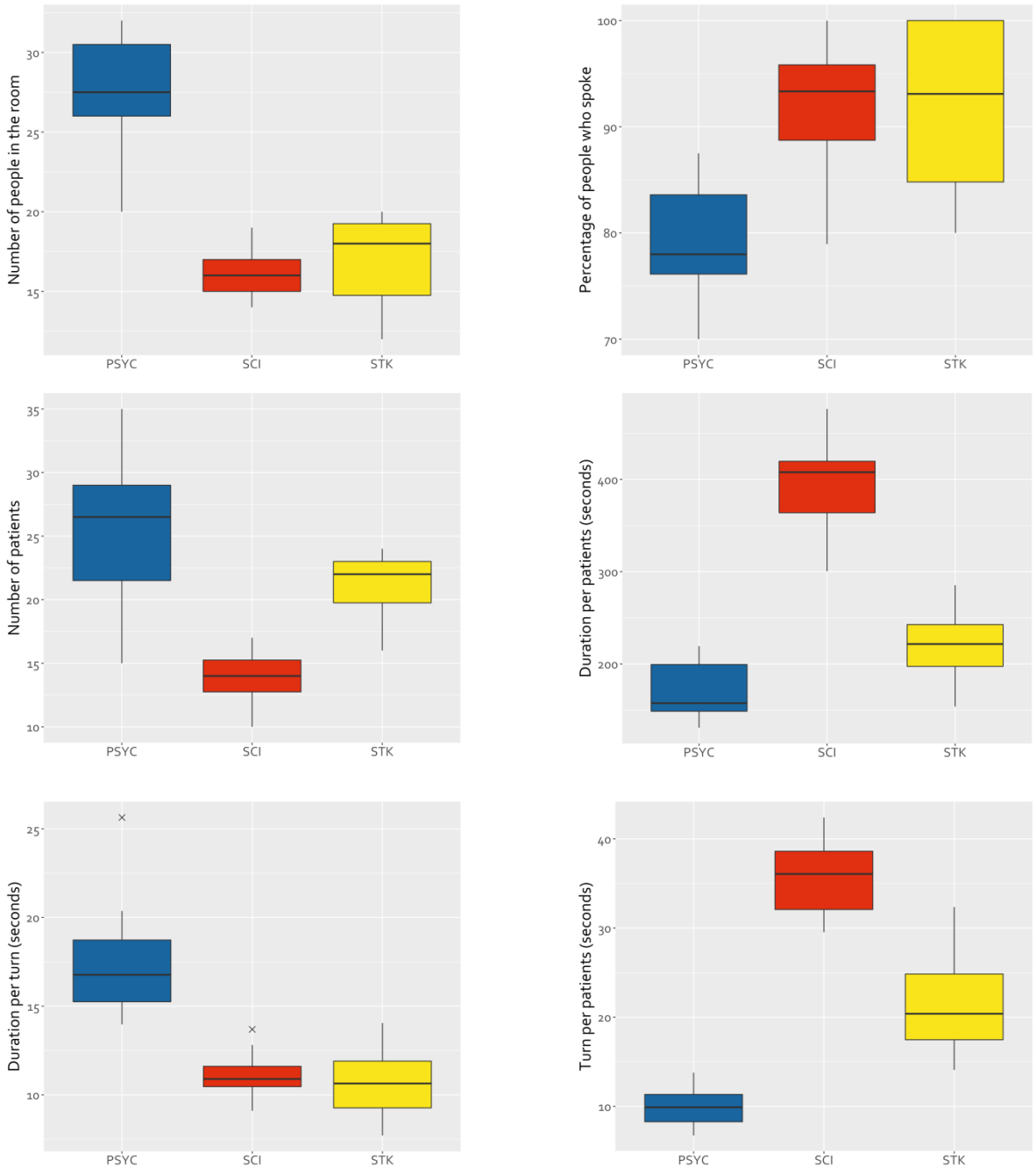


FIGURE 6.2. Boxplots Comparing Characteristics of Interprofessional Meetings of PSYC, SCI, and STK Teams

Figure 6.4 illustrates the number of patients that would have been discussed in 60 minutes of an interprofessional meeting. Comparing PYSC and SCI, for instance, by the time the PSYC team completed a discussion for three patients, the SCI team would have just started discussing its second patient. However, as the duration per turn was longer, it meant that each interlocutor had longer airtime before the interlocutor was expected to turn over.

TABLE 6.4
One-Way ANOVA and Welch's *t*-test for Comparing Interprofessional Meetings

Dimensions	One-Way ANOVA (comparing PSYC, SCI, & STK)	Welch's *t*-test (comparing SCI & STK)
Duration of meeting (hours)	$F(2,43) = 4.72$, $p < .05$	$t(28) = 2.10$, $p < .05$
Number of people in meeting	$F(2,43) = 67.85$, $p < .001$	$t(23) = -1.13$, $p = 0.27$
Percentage of people who spoke	$F(2,43) = 21.59$, $p < .001$	$t(28) = 0.52$, $p = .61$
Number of patients discussed	$F(2,43) = 38.18$, $p < .001$	$t(29) = -9.65$, $p < .001$
Duration per patient (seconds)	$F(2,43) = 130.96$, $p < .001$	$t(28) = 11.20$, $p < .001$
Duration per turn (seconds)	$F(2,43) = 43.64$, $p < .001$	$t(25) = .68$, $p = .50$
Turn per patients (seconds)	$F(2,43) = 173.04$, $p < .001$	$t(27) = 9.63$, $P < .001$

Synchronic, diachronic, and parallel analyses: Summary

Collectively, the results of the boxplot analyses, one-way ANOVA and Welch's *t*-tests provide evidence for two important findings. First, parallel comparisons of SCI and STK (in Pauper Hospital) and PSYC (in Timber Hospital) revealed that institutional effects were at play in shaping the sociotemporal orders of the teams. PSYC sociotemporal norms differ significantly from SCI and STK. As shown in Table 6.4, SCI and STK were similar in the number of people who attended the weekly interprofessional meetings, $t(23) = -1.13$, $p = 0.27$; percentage of people who spoke up in the meeting, $t(28) = 0.52$, $p = .61$; and duration per speaking turn, $t(25) = .68$, $p = .50$. These similarities point to the effect of institutional staffing policy practices on team size and configuration, expectations on participation in

interprofessional meetings, as well as a range of appropriate time one was expected to speak at each turn. Differences in patient characteristics, such as complexity and acuity between the SCI and STK could explain the differences observed in the number of patients assigned to a team and the manner in which they were discussed.

Second, synchronic and diachronic comparisons of sociotemporal orders within each week and across a period of four months showed persistent regularities despite rotations of members within the institutions, demonstrating institutional persistence beyond variation in individual practices. These regularities provide supporting evidence that members of each team had a good grasp of the implicit general and practical understandings of interlocution. These understandings were critical for healthcare professionals to be functioning members of their respective teams. These regularities also bring several questions to bear. What happens when these regularities are "violated?" When do these nonregularities occur? Were there consequences or sanctions? Thus far, the analysis had assumed that members of a team were somewhat homogenous. Do the characteristics of individuals or situations matter? How does one know when one can speak or have to speak and speak for how long? In the next section, I use social network analysis to shed light on some of these questions.

Social Network Analysis

In the previous section, I conducted synchronic, diachronic, and parallel analyses to uncover sociotemporal regularities. In this section, I build on the understandings gained from the analyses to gain further nuances by uncovering explanations for the observed regularities. Specifically, I will present the results of social network analysis, corroborated

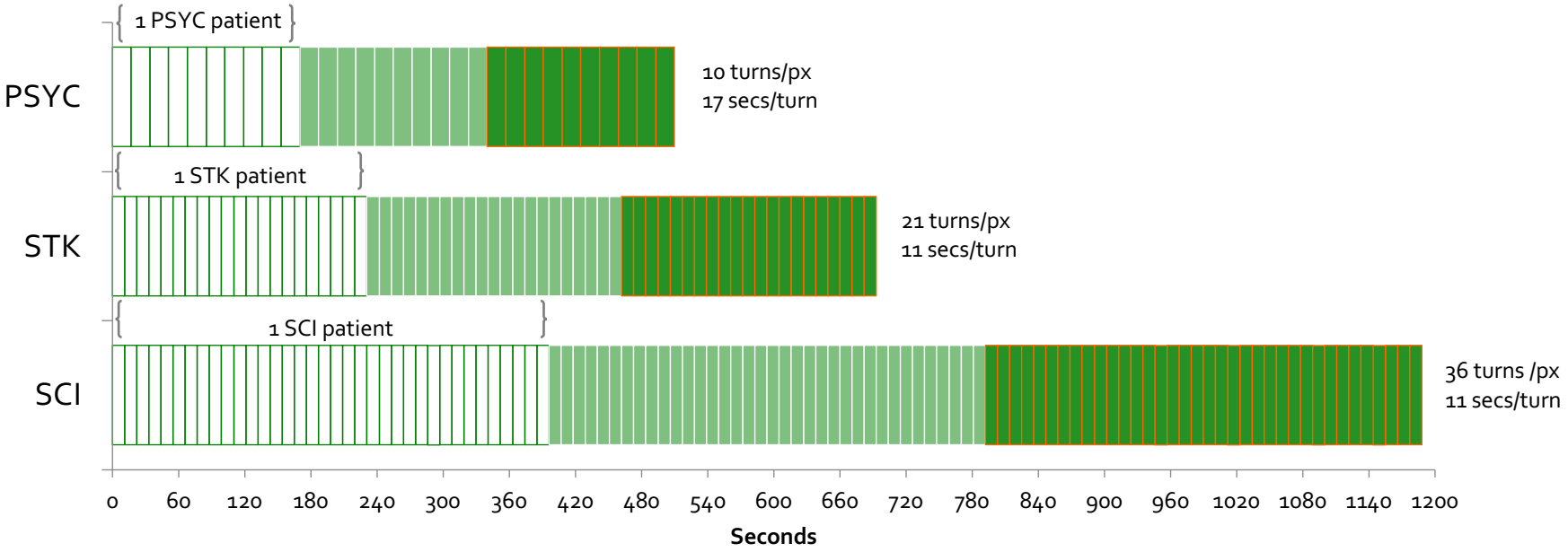


FIGURE 6.3. Rhythm of Interprofessional Meetings of PSYC, STK and SCI

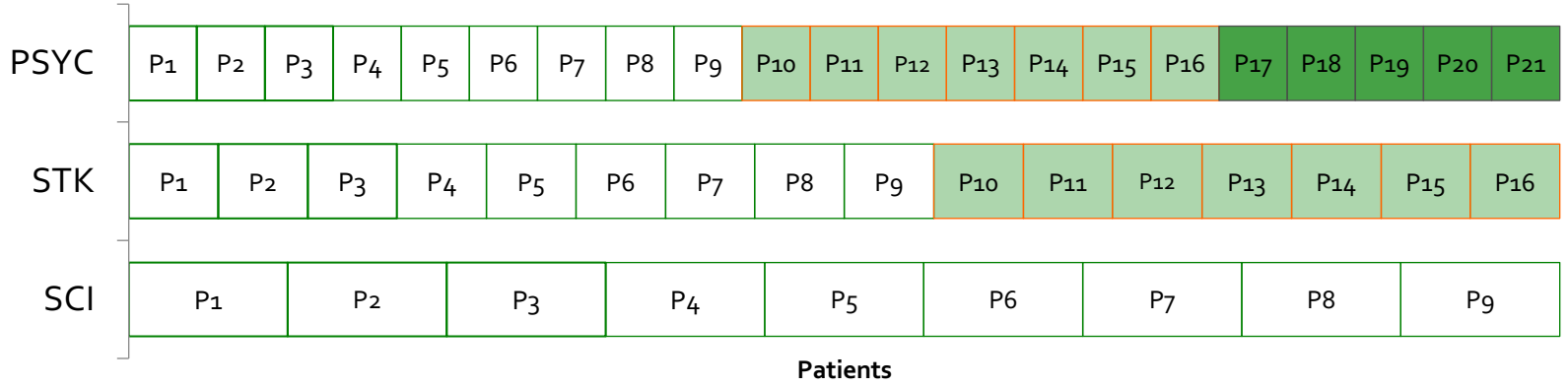


FIGURE 6.4. Comparison of Number of Patients Discussed in One Hour of Interprofessional Meeting

by narratives from in-depth interviews to uncover the structure of social relations of the teams behind those regularities observed.

As noted in the previous section, thus far, the analyses had assumed that the individuals within the teams were homogenous. Social network analysis will allow me to find out if and how the characteristics of individuals matter in sociotemporal regularities. As noted in the methods chapter, I coded the utterances made during the interprofessional meeting proceedings as the basic unit of interaction to construct the dataset for social network analysis. A healthcare professional could make multiple utterances before turning a conversation to another interlocutor. In all, 4144, 8958, and 8869 speech act utterances were recorded for PSYC, SCI, and STK, respectively. These utterances were expanded to construct edgelists, i.e., an exhaustive list of interactions between any two healthcare professionals. For instance, a psychiatrist who made an utterance when interacting with four other members of the team will generate four edges (e.g., Dr $\rightarrow$ Nr; Dr $\rightarrow$ OT; Dr $\rightarrow$ PSS; Dr $\rightarrow$ MSW). If his utterance was made for a period of 15 seconds, these edges would have a value of 15. The expanded edgelists consisted of 17293, 55477, and 47091 edges for PSYC, SCI, and STK, respectively, and edgelists were converted to adjacency matrices for social network analysis. To analyse and interpret the structure of social relations of the teams, I use a combination of network statistics, sociograms, and blockmodels (i.e., position and role analysis, in the next section).

Using the edgelists and the adjacency matrices, I created sociograms to study the structure of interactions in interprofessional team meetings. In my study, nodes in sociograms are used to represent individual healthcare professionals. The characteristics of individuals, such as their seniority, professional group, and interaction intensity in interprofessional meetings, can be used to characterize the nodes visually to assist in the

interpretation of social structures. I created the sociograms using the graph visualization software Gephi version 0.9.2 (Bastian et al., 2009). Specifically, I used the ForceAtlas2 graph layout algorithm (Jacomy et al., 2014) for the placement of nodes in the sociograms. This algorithm places the nodes that are connected closer to each other, and the most connected nodes are closer to the centre of the sociogram than those that have fewer connections. The interpretation of the sociogram requires relative comparison to other nodes.

In my study, healthcare professionals are each represented by a node (or vertex, point, and actor), and each relationship is represented by an edge (or line, link, tie, and relationship). The colours of the nodes represent the professional group of healthcare professionals. The shade of the colour represents the seniority of the healthcare professional. For instance, the darker shade of red represents senior doctors, whereas lighter shades of red represent junior doctors of various levels of seniority. The size of the node varies with the amount of airtime a healthcare professional uses over the period of observation. The ForceAtlas2 graph layout algorithm placed the most connected nodes at the centre of the graph and the least connected nodes at the periphery. In some instances, the thickness of the edges of sociograms is varied to represent the magnitude of communication between two nodes. However, I have restricted the variation of the thickness of the edges of the sociograms in this thesis to facilitate greater ease of visual interpretation. The intensity of communication between healthcare professionals will be elaborated in roles and positional analysis (i.e., blockmodeling) in the next section instead.

In addition, I also created stacked bar charts to study the effects of professional groups on interactions. I consolidated the airtime, i.e., time used to speak at each meeting, used by each professional group to compare the relative time each professional group was

represented at each interprofessional meeting. I matched the colours of the stacked bars to the colours of the sociograms to facilitate interpretation. Additionally, I calculated network statistics such as indegrees, outdegrees, and eigenvector centrality. Using the example above, the psychiatrist who addressed four members of the interprofessional team for 15 seconds would have an outdegree of 60 (i.e., 15 x 4), and each of the members would have an indegree of 15. Eigenvector centrality is a measure of the influence of a node in terms of its connectivity to important nodes in a network. All nodes are assigned a relative score based on their connections to other nodes; connection to important nodes will result in higher eigenvector scores. As an illustration of the utility of eigenvector scores, Google PageRank is based on an implementation of the idea of eigenvector centrality; websites with links to other important websites will be deemed as more important.

PSYC

Almost all the doctors of the PSYC team were routinely present in all interprofessional meetings. On average, interprofessional meetings, or MDTs (multidisciplinary meetings) as they called it in PSYC, were attended by 27 healthcare professionals, of which over 50% of members were case managers and approximately 25% of the team were doctors, with the rest of the 25% making up from peer support specialists, art and occupational therapists, medical social worker, clinical psychologist and nurse. Interprofessional meetings usually had a resident (i.e., a doctor training to be a specialist), registrar or an associate consultant (i.e., a junior specialist) responsible for pacing the meeting, making sure that all the patients on the list were discussed within a reasonable amount of time. Members of the PSYC team distinguished between leading the

administrative proceedings of the interprofessional meetings and leading the substantive discussions of patient management plans. For instance:

> Dr Iris: Hmm, usually the registrar is the one who leads the MDT. To me it's almost like an orchestra. It's a skill that the registrar needs to learn, and even for medical officers who are a bit more senior and feel more confident may orchestrate it as well. Basically the person who is leading it will need to be quite structured. You will need to know that, let's say roughly we have about 20 patients to discuss today within one and half hours. Even before we start, we need to have an idea so that we have a bit more time to discuss these cases which are a bit more complex.
>
> SCM Dylan: Administratively, you know there's a systematic way of like just go through the patient list, usually led by either registrar, or an MO. By and large, CMs know their clients and would also take the lead, such as my readmission case today, rather than the MO, even though administratively they are taking the lead. I suppose it is more of whoever knows the client better in terms of continuity of care, psychosocial domain, or any particular topic. Having said that, not all CMs are the same. Each of us has own personality, and it depends on how much you want to commit.

As noted by Dr Iris and SCM Dylan, interprofessional meetings were highly structured. Patients who were admitted last were discussed first to allow sufficient time for the respective team members to provide the context of the admission for the entire team. The patient list and the clinical pathway forms were critical artefacts that structured the proceedings of the meeting. As part of established practice, eleven pieces of information were routinely recorded in the patient list: (1) physical location of patient; (2) name of patient; (3) gender of patient; (4) whether patient was a new case or a readmission; (5) date of admission; (6) date last reviewed by doctor; (7) diagnosis; (8) presenting complaints and medical issues; (9) current and previous medication list, dosage; (10) treatment management plan for patient; and (11) assigned consultant and case manager. The clinical

pathway form incorporated major components of care so that they would be systematically assessed, such as the risk of suicide and violence, plans for ensuring safety, plans for pharmacotherapy, psychosocial interventions, physical health, and discharge planning. The administrative lead needed to ensure that efficiency, i.e., speed of meeting, did not compromise on the comprehensiveness of discussions.

> Dr Iris: Erm so, usually starts off from the bottom of the list; the newer patients get presented first so that they have a bit more airtime. It's like a checklist for us to every component, to make sure that we haven't missed anything out, but at the same time it's also giving airtime to different people. Maybe we need the psychologist to come in to say something, then the person leading it will need to make sure that somewhere during the discussion we'll get to hear from the psychologist. If it's a complex decision that needs to be made then we want to hear from everyone, but ultimately at the end of it there needs to be a decision or at least a treatment plan for the person. At the same time the registrar or whoever is leading it must be very mindful of all the things that's going on to make sure that all of these things are being documented.

Patient discussions usually start with the doctor or case manager providing the context of a patient's admission and would be supplemented with more details when a patient is a "new case," i.e., previously unknown to the team. The team would then provide a case formulation of the patient, discussing the biological, psychological, and social/occupational aspects of the patient. One of the unique challenges for PYSC team was to establish the baseline of patients' condition before admission. This was important because the team needed to distinguish between the behaviours of patients that were pathological from those that were probably due to their personalities. It was also important for the team to establish a baseline and changes in behaviours at various points in time of the patients' timeline to identify potential precipitating and perpetuating factors. As such,

one of the main goals of PSYC's interprofessional meetings was to provide, clarify, verify, and corroborate the impressions team members gathered in the course of their work. AT Ruby, Dr Maya, SCM Yevette, and PSS Carter demonstrated high levels of agreement regarding the role of interprofessional meetings in clinical care:

> AT Ruby: In my opinion, the MDT is for the team to communicate their observations and professional perspectives on clients, how they can come together as a team to build better treatment plans and execute those plans in a more effective way.
>
> Dr Maya: MDT approach is about putting the patient at the centre. The patient is central to what we are doing. And by that, I mean that everyone has their own skill sets, and each one of us does our best in improving the quality of life of the patient, which includes reducing the symptoms and finding out what they want to do to achieve their goal. We have different skill sets and we step in to help each other out. But the focus is primarily always the patient. Initially, I thought it was more multidisciplinary, but I think we are more interdisciplinary. It is about not compartmentalising treatment, and knowing what each other is doing, so we are all on the same page. There is a collaborative effort so you don't feel so alone and struggle with patients with difficult social situations so that there's less burnout among the treating team.
>
> SCM Yvette: At MDTs, we pull the information together. Our focus for inpatients tends to be a little more about the treatment, getting the person well as fast as possible, piecing all the different feedback together to know if this person is ready for discharge. On top of that, I'd like to think that we are recovery oriented and provide a holistic picture of the individual beyond the illness. That's where the PSS comes in with the person's strength, OT coming in with regard to employment and functioning to see the person in a more holistic way.

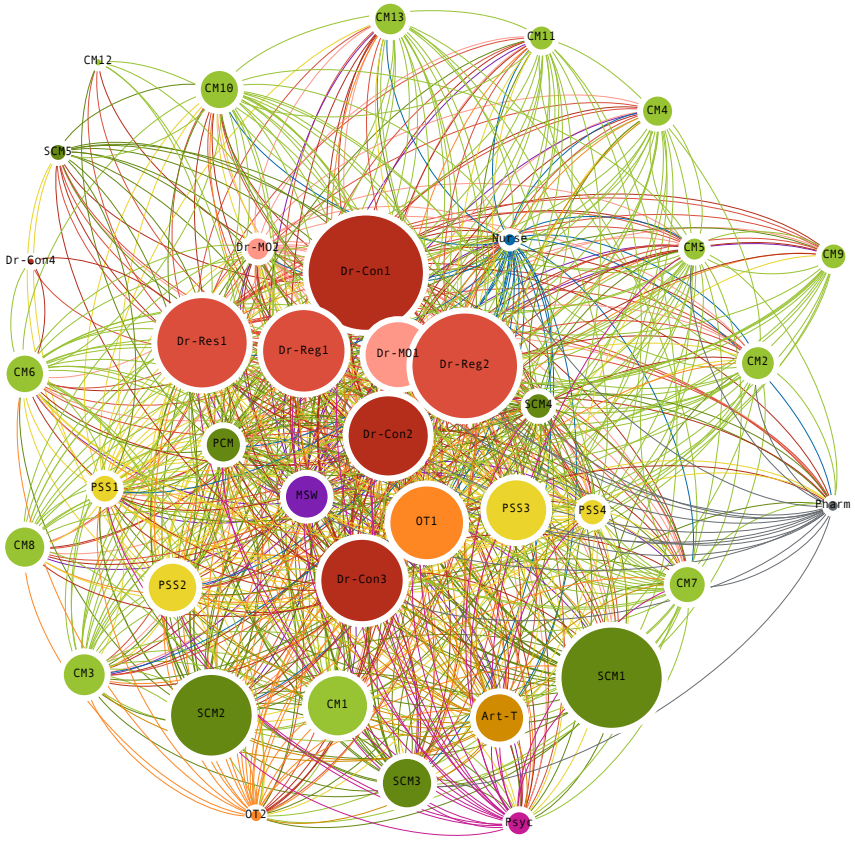


FIGURE 6.5. Airtime by Profession: Sociogram of PSYC Team Interactions over 14 weeks

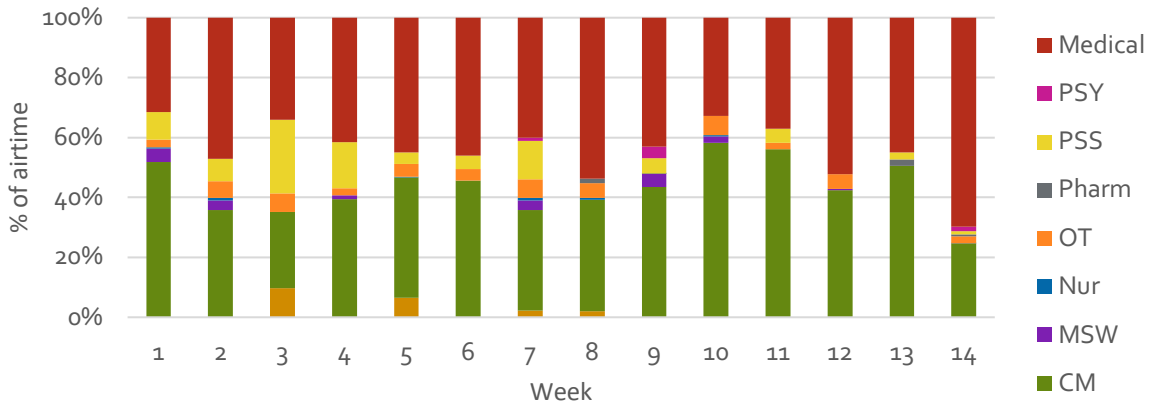


FIGURE 6.6. Airtime by Profession: Stacked Bar Chart of PSYC Team Interactions over 14 weeks

TABLE 6.5
PSYC Interprofessional Network Statistics

Actor	Indegrees		Outdegrees		Eigenvector Centrality	
	#	Rank	#	Rank	#	Rank
Art-T	4203	18	6830	15	.780	19
CM1	2774	23	8786	12	.721	22
CM2	1440	31	4277	23	.474	34
CM3	2598	25	5779	17	.654	25
CM4	948	36	3834	25	.497	33
CM5	2301	27	2488	32	.605	27
CM6	1358	33	5060	20	.595	28
CM7	2588	26	4804	21	.708	24
CM8	1581	30	5488	18	.447	35
CM9	1216	35	2954	28	.415	36
CM10	2248	28	5161	19	.594	29
CM11	1421	32	2818	30	.515	30
CM12	188	38	64	38	.145	38
CM13	1946	29	4080	24	.508	32
Dr-Con1	30881	1	17890	1	.998	2
Dr-Con2	18081	4	12087	8	.992	4
Dr-Con3	10524	7	12459	6	.956	7
Dr-Con4	106	39	28	39	.06	39
Dr-MO1	15584	6	9751	10	.992	4
Dr-MO2	5537	16	2488	32	.847	14
Dr-Reg1	19945	3	12471	5	.998	2
Dr-Reg2	17388	5	16291	2	.992	4
Dr-Res1	21005	2	13774	4	1	1
MSW	7843	9	5906	16	.898	11
Nurse	3682	21	883	35	.796	17
OT1	10223	8	11024	9	.917	8
OT2	2777	22	807	36	.646	26
PCM	7328	10	4507	22	.893	12
Pharm	1356	34	662	37	.513	31
PSS1	6199	13	3277	26	.858	13
PSS2	6731	12	6873	14	.841	15
PSS3	5732	15	8903	11	.915	9
PSS4	4112	19	3038	27	.811	16
Psyc	2686	24	2665	31	.709	23
SCM1	4068	20	15570	3	.725	21
SCM2	5204	17	12331	7	.791	18
SCM3	5942	14	7007	13	.762	20
SCM4	6986	11	2928	29	.904	10
SCM5	816	37	1503	34	.377	37

PSS Carter: I think the main objective of MDT is to let the team know of how the peers are doing, like we have inpatient MDT and we have outpatient MDT, so now we are doing together. So it's like the team will have a rough idea as of how the peers are doing. And also to give updates to the team based on our observations, our one to one interactions or our interaction with them in groups so that so that the MDT team, the PSYC team has a fair view of our peers. Sometimes like if I'm not sure if you've heard our peer specialist sharing, because for our sharing we try to make it more strength-based, and we try to do it person-centred. For the rest of the MDT team sometimes they are a bit patient-centred. They might talk about the challenges, the diagnosis, but you know they don't share on the strengths that much. So it doesn't come out as much as it should. So I think that's where the peer specialist comes in to share more on the strengths.

Although one of the main goals of interprofessional meetings was to have members of different professional groups contribute to the patient management plan, participation rates varied across professional groups and levels of seniority. As shown in Figure 6.5, the nodes of the PSYC team were arranged in a circular fashion, approximately by nodes from the same professional group in each concentric circle. The most central nodes in PSYC were the doctors, which were made up of psychiatrists, residents or registrars in training, and medical officers. The next layer was made up of an occupational therapist, a medical social worker, and peer support specialists. The nodes representing case managers formed the last concentric circle with the art therapist.

Two main observations can be made from Figures 6.5 and 6.6. First, professional groups mattered in terms of airtime. The doctors and the case managers accounted for the majority of the airtime at each interprofessional meeting. Peer support specialists and the occupational therapist were relatively much fewer in number but were able to have their perspectives registered consistently. The rest of the professional groups, such as the

pharmacists, nurses, and psychologists, were always at the periphery of interprofessional communications. Second, seniority mattered in terms of airtime, but for somewhat different reasons for doctors and case managers (the two professional groups in which an intragroup hierarchy existed in the team). As shown in Table 6.5, the airtime of doctors was the highest in ranking for outdegrees, i.e., airtime, with comparable levels between the consultants, registrars and residents. This observation was not surprising as noted in the interview data earlier, senior doctors at PSYC had intentionally required registrars and residents to lead in interprofessional meetings. Medical officers, who were the most junior within the profession, had less airtime but still more than the majority of the members in other professional groups. The impact of seniority was more pronounced for case managers than for the medical profession, with senior case managers having higher levels of airtime in general. Additionally, the eigenvector centrality measures were highly consistent with the other findings; doctors and senior case managers were more central and influential in the communication network.

Collectively, these findings beg the question: What inhibits the other professional groups from participating in greater intensity during interprofessional meetings? From the interview data, it seemed like a confluence of factors was needed to explain the phenomenon of lagging participation from some individuals, including confidence levels, which comes with seniority; perceived relevance, which comes with clarity of role and expectations; and time pressure, which comes with resource constraints. For instance, Dr Maya, Nurse Dominic, and AT Ruby spoke of the individual dispositional factors influencing participation:

> Dr Maya: One of the purposes of MDTs is to encourage people to speak up. The junior doctors have the confidence to question the seniors and to a certain extent and

also think. We decided that the seniors would step back and not lead the MDT. So it's more of the senior residents and the trainees who are actually leading it. Just training them as they will step up. If you are learning then you should step up, because the trainees would eventually become associate consultants and then they would be expected to run the MDTs. So, that's what we try to do for the junior CMs. We encourage them to talk, "please, please, bring up your problems. Give us your opinions." Some of them are still inhibited as well, to speak up, for a variety of reasons, I think we just need to make them feel more comfortable.

Nurse Dominic: Nurses don't really speak up. Some of us are a bit quiet in MDTs because we are shy or afraid to speak up, or maybe that's just the individual. Some of us fear that what we say is not considered right. Maybe that's why they don't really speak up. They are afraid that what they say is not really what the team is looking for. Like I said earlier, when it comes to nurses, we need to speak up, but I think it goes back to individual staff, whether they are confident enough to speak up or not. MDT wants from nurses, because we are with them 24/7. Obviously we see more than everyone else in the team.

AT Ruby: Usually I try not to speak up, because I was also growing up Asian you know, so I don't question, but I do see the value of voicing out because I believe in advocating. It's not about me sounding articulated or smart. It's not about impressing myself or impressing others. For me, it's about me focusing on advocating for the client. If I have enough justifications, I will speak out. That's my professional stance. Even if I lose my job, I will speak up anyway.

SCM Yvette, OT Maggie, PSS Daisy, and Psychologist Willow raised the importance of context, perceived relevance, and clarity of expectations in affecting levels of engagement in the team:

SCM Yvette: My role in the MDT is to represent my clients, to provide a full picture of them. I also contribute to the discussions of other clients by other case managers. So the

tricky thing about contributing in MDTs is we may not know the specifics of other CMs' cases well, making it hard for us to comment.

OT Maggie: Sometimes, the case manager brings up concerns and or maybe the doctor says something like "I'm quite stuck, can I get the inputs from others." Then it's like an invitation for us to like okay I think this person needs some help thing. If the person doesn't do the invite thing, I'll usually just like them proceed with the updates. Otherwise, I don't really chip in for the regular presentations... Sometimes, I feel that like people are not paying the most attention during MDTs as some information may not be relevant to them. I'm not like the best when it comes to paying attention during our sessions and sometimes only become attentive when someone flags something related to employment, or cognitive function, then I'll pay greater attention.

PSS Daisy: When I first started out, I was doing one-to-one support work mostly for outpatients. So when they went through during the inpatient MDTs, it wasn't relevant because I didn't know the people there, so I couldn't really contribute. When I started running the in-patient groups that it started to make more sense. I actually know all these people and I interacted with and I observed certain things about them. I started to be able to contribute to the discussion and speak up when I didn't agree or when I wanted to provide the patient's perspective.

Psychologist Willow: Usually, it's the MOs who are presenting the case. I wonder would it be different if it's actually led by different team members. Because of our backgrounds, we will have slightly different focus. The issues that are raised may be different and be given different levels of importance and relevance.

MSW Brooke: Okay, I must admit ah, during MDT I would be doing work, I'll be multitasking a lot because, my workload is quite high. Sometimes I to look out for keywords like, "has young children at home," "financial difficulty" then I'll be more alert. If it's a case that don't involve me, I'll switch off. So sometimes I do, I think I do waste, I have to admit I do waste people time because like sorry I haven't been, I have not been listening, what is it that you all want from me?

Additionally, time pressure and the size of the group were two frequently invoked reasons for the lack of participation. As presented in Table 6.1, on average, PSYC spent less than three minutes discussing each patient and had an average of 27 members each week. The combination of factors created pressure to self-censor for fear of prolonging the meetings. The large number of people in the room provided the additional risk of suffering embarrassment. As articulated:

> MSW Brooke: Last time when Dr Greta was around, when I give input, she would give gestures, like she would look at her watch and then she will tap tap on her watch – a sign for me to stop. I felt that there're things that I want to say but I've no time, then slowly I became more discouraged. Then when I see Dr Iris trying to manage the time, I also try not to say too much. There's an internal struggle inside… I find that the doctors are very mindful of their time as they have a lot on their plates. I'm also mindful of body language. Wherever possible I try to give succinct descriptions. But we are quite good already… compared to the other teams' MDTs.
>
> Dr Iris: If time is not a constraint, I would like people to contribute more. But that's not something that you can control because there will always be people who will give more suggestions even for cases that are not theirs, whereas there'll be some who are less comfortable to talk about the cases, or give their own opinions or suggestions. Possibly split up into maybe a smaller group, I find that in smaller groups, people are more open to talk. Larger groups sometimes people just drift off; we don't pay attention.
>
> OT Maggie: I don't ask a lot of questions. I personally feel that it's quite intimidating to be asking questions when there're a lot of people around. And I think there's some barrier, towards asking questions in a crowd. And there's this feeling of not wanting to take up so much time. I'd rather take it offline to discuss with the team directly treating and caring for the client. Unless it's like a super complex case where other case managers who are not directly involved in the care start speaking up, then that's an indication that maybe all of us can chip in also.

SCM Yvette: It is a bit hard to find a balance in MDTs. In the past, we were not sharing enough regarding our clients. Now we give more airtime to psychosocial issues, but time is a concern. Perhaps one thing I would like to see is contributions from more people. Some of the case managers are not comfortable voicing out in big groups, and would rather have side conversations after. It will be good if they can share more if they really feel very strongly for something.

Finally, the focus on biomedical treatment as opposed to other areas of care in interprofessional meetings also influenced the manner in which members of the PSYC participated in interprofessional meetings. For instance:

AT Ruby: I have a very positive experience of MDTs in PSYC, but I am not comfortable with the medically oriented approach. They tend to treat their patients with a lot of medications and I personally believe they can benefit a lot more from alternative therapies. Other than that, I feel that they have a lot of respect towards patients and the care they provide. In my own practice, I am the lead and that sets the tone of my language, and the choice of language, whether it's assertive, whether I'm eligible to throw questions. It puts me in a position where I feel that I have that identity or honour of a leader of the setting. Whoever comes in will sense that right away. In the hospital setting, the prime mode of treatment is the biomedical approach. I guess it boils down to the doctors because they decide on the medications and the dosage. So given the biomedical orientation, it is natural that doctors hold the authority over others. And there are challenges to contradicting doctors' decisions. Culturally in Asia, we have to think twice if we are going to question someone in a group setting. You don't want to look stupid… and you have to frame the question properly to challenge an authority.

Psychologist Willow: We sometimes get carried away during inpatient MDTs. We can be so focused trying to stabilize the mental state and the biological treatment that we forget to attend to client's own preferences and opinions about their treatment. It is a challenging balance because they are not well and we have to manage the risk

issues. So the first line of treatment is usually biological in nature… Fatigue is a reason. There are too many clients to go through and there is information overload. There's a huge list and you just want to quickly finish the meeting. I think that's truly how some people feel. Maybe because it feels like it is led by doctors, team members may feel that their involvement is less of a priority because of the focus on the biological aspects for the stabilization of mental state. They may think that it is not the right time to bring up certain issues as it may not be seen as the most important issue right now in the person's care. There were times where I would like to ask questions but held back because I was conscious how much time I would be taking. What I would do is to talk to the case manager after the MDT separately.

Dr Rowan: The thing about having an MDT is that you cover the different places, whether it's occupational therapy you know, physiotherapy, etc. It's very important to cover the different places, because the patient is a whole you see. Very often the doctor you know will get stuck in the medical part, treat with medicine, we look at the health status, but not so good at other things like maybe the function and how to return the patient back to community, assessing whether they can work at the job, at the workplace.

SCI and STK

STK and SCI teams shared many similarities in terms of interaction patterns in interprofessional meetings as both teams were based in the same institution, i.e., REHAB, and thus organised around the same constraints and affordances. Interprofessional meetings in REHAB took place in a room that comfortably accommodated about 20 healthcare professionals. The compositions of professional groups of both teams were identical – doctors, nurses, medical social workers, psychologists, occupational and physical therapists – except for an additional role for speech therapists for patients under

STK's care. It is important to note that both SCI and STK did not share any team members, with the exception of the ward resource nurse, even though the same notations were used in the figures and tables of both teams (i.e., Dr-Con1 in SCI ≠ Dr-Con1 in STK). Interprofessional meetings (or as they called case conferences in REHAB) were conducted quite differently from the other departments within the hospital and were highly valued by the teams despite their resource intensiveness.

> Psychologist Sophia: The manner case conferences are run is very unique to REHAB if we compare to the rest of Pauper Hospital. The whole idea of coming together to have a case conference to go through a whole list of patients so that the team would be to be on the same page in terms of care management. So there's this form that they do, filling up the form together, very goal directed, where everyone agrees on the care plans, discharge plans. It is best practice in the sense that instead of working in silos, we all come together, fixed time of the week, then we discuss the cases together. Albeit, it is very long and labour intensive. This is not a concept that is bought by the rest of the hospital.
>
> Dr Tony: The physical act of coming together, a fixed time where everyone comes in. I mean why do you need to be there physically to talk about the patient when you can do it on an electronic platform? First, you see each other's faces. When you ask something or you begin something, you can sense from body language, the tone, the nuances that you can't get from an electronic platform. Second, their attitudes, how engaged they are with the patient, makes a difference in how I decide how the patients can be managed.

Similar to PYSC, the patient list was a critical artefact that was crucial in structuring the proceedings of the interprofessional meetings. STK and SCI used the patient list to coordinate daily ward rounds and weekly interprofessional meetings. Several pieces of information were routinely put together to form patient lists, including (1) physical location of patient (as represented by bed number); (2) name of patient and other personal

identification details; (3) date of admission; (4) diagnosis; (5) operations and radiological examinations performed; (6) accompanying comorbidities; (7) social situation and main caregiver; (8) interprofessional treatment and management plans; (9) follow-up plans after patient discharge; (10) estimated date of discharge; (11) length of stay; and (12) assigned doctor/therapist. Usually, a medical officer would be responsible for collating the information into an A4-sized page with 4mm margins and font size 3 to fit 12 to 14 patients on each page.

During interprofessional meetings, the case notes of patients were projected on a screen by the team to facilitate discussions. At REHAB, two leading consultants were assigned for each team, and the lead consultants usually took turns to be present at the weekly interprofessional meetings. Occasionally, residents would take the lead when consultants adopted a more hands-off approach. As such, proceedings of interprofessional meetings at REHAB depended on the dispositions of leading consultants and residents.

> Dr Jack: Dr Bruce rarely leads actively. He usually gets all the therapists to provide the updates and progress on the patient first. He will interrupt the discussions when he feels something is not right. Like if Lokomat was used for an ASIA A (American Spinal Cord Injury Association Category A) patient, he may say something ask why Lokomat was used because he may think it is not going to help this patient as he is not going to be able to walk, and it is not cheap. Therapists may push back and argue that the patient has a bit of power, and we should try to see if he can improve… there's discretion about that. Dr Marie will provide her opinions in much less frequency, but she is more aligned with the therapists. Dr Owen, compared to Dr Bruce and Dr Marie, will actively provide his opinion, to intervene, and provide suggestions on what therapists should do for patients.
>
> MSW Penelope: The case conference is still very much run by doctors. Dr Robert has been saying that he wants to break away from that, but I do not know to what end.

Whoever is in charge of the case conference definitely makes a difference. Sometimes the difference is so huge when a different consultant takes over, the team can be quite lost as they are pulled into a different direction. I guess, as you observed, Dr John has one style, Dr Fiona has another. It is not really the way they lead the case conference, but the way they want to manage the patients, how much they can empathize with the patient and family, how much time they want to allow for rehabilitation, how intensive the therapy will be, and how the consultant perceive the prognosis, all affect the way the team is run.

Nurse Jade: Dr Fiona will explore a lot of different options, and she will do some teaching during case conferences. She will explain the diagnosis and let us understand the symptoms presented by the patient and what that meant for therapeutic interventions. Dr Bruce is more philosophical. He will not tell you that you must do this or that, but he will make you rethink and come out with an idea yourself. Dr Robert is more directive, and people will choose to keep quiet when he's around.

The physical location of patients was used as a guide to decide on the sequence in which patients were discussed by the team. Patients living in sections of the wards with from the largest patient-to-cubicle ratio were usually discussed first. One of the reasons why this sequence was used was to facilitate the sequence in which staff nurses (also known as registered nurses) from respective nursing cubicles attend interprofessional meetings. Because interprofessional meetings were scheduled near mid-day, when several key nursing tasks were taking place, they had to take turns (by different sections of the ward) to come to the room from their locations for interprofessional meetings, which was between 20 to 50 meters depending on the section of the ward. Nursing assistants and enrolled nurses from the vacated section would provide cover for patients while the staff nurse attended interprofessional meetings. This arrangement made it logistically challenging for nurses to attend interprofessional meetings:

Nurse Lily: For case conferences, normally we will start from the C class because our bed number is from 1 to 98, so you know the doctors have a list of patients right, we start from the 98 that cubicle first, so we will call the nurse in that team to come in when they start the case conference, once the nurses come in, so they discuss their own patients. Once the nurse is done, the nurse will go out to call another nurse, from another team. We will take turns to come in because we can't afford to get all the nurses to come in at the same time. As you can see, the case conference is more than 1 hour. And 11am to 1pm is quite busy for them because they have to serve lunch to their patients, provide assisted feeding and all that. It is also the lunchtime for some of the nurses. Let's say we have four nurses in the team, if two nurses go for their lunch, and one comes for the case conference, we would only have one nurse left in the respective cubicles. C class has two teams of nurses, and each team takes care of 24 patients. So once the nurses for C class beds are done with the case conferences, they will relay the message to get the nurse from B2 to come. If a nurse is unable to attend, then the relay is broken. It is difficult to arrange. For instance, a nurse may be in charge of 6 patients, in which, say only two patients are under the care of the spinal cord injury team.

Dr Zicker: Sometimes nurses don't come to case conferences... That's not ideal. This is definitely a weak point for our hospital. Compared to when I was in another hospital for an attachment, the nurses speak up more, and they even present the cases... the nurses only manage her particular cubicle for a few days then they will switch. Maybe it's manpower, maybe it's different kinds of considerations. That seems to be the case. So it's, it's quite difficult to find a nurse who knows the patients from day one to discharge. Maybe that is the reason why they are, they are not so willing to speak up because they may not understand the patients very much.

After selecting a focal patient for discussion, a leading consultant would prompt occupational and physical therapists caring for the focal patient for their input. At REHAB,

rehabilitation activities by occupational and physical therapists were the key priority. This priority departed sharply from other departments in the hospital. Comparisons with how ward rounds were conducted in other departments accentuated this difference. Whereas patients from other departments would wait at their beds for medical teams to complete their morning rounds, patients in REHAB would be with their therapists in the REHAB gym and other locations within the facility. Although REHAB's medical teams would still conduct their morning rounds by the bedside, they would also round the facility to locate patients who were not by their bedsides so as to complete their review of patients under their charge. This was a subtle but important distinction in emphasis on the interprofessional approach to patient care. When consultants had queries about patients beyond the scope of physical and occupational therapists, they would prompt other professionals from other occupations for their input, although discussions inputs from more senior professionals were usually free-flowing with minimal prompting. Members who were new to the teams across the professional groups tended to be more reserved and rarely voiced their opinion "out of turn." The communication networks of SCI and STK were highly similar, providing evidence in support of institutional influences in structuring interactions of both teams. The sociograms and stacked bar charts for SCI are shown in Figures 6.7 and 6.8 and for STK in Figures 6.9 and 6.10. The most central nodes in SCI and STK were physical and occupational therapists and medical social workers. These healthcare professionals were most connected in the network, i.e., they had interactions with the greatest number of healthcare professionals in the team over the entire period of observations. This was not a surprising finding as they were core members of both SCI and STK teams and had longer tenures compared to their medical counterparts. Whereas members of the medical teams were rotated regularly, once every couple of months for

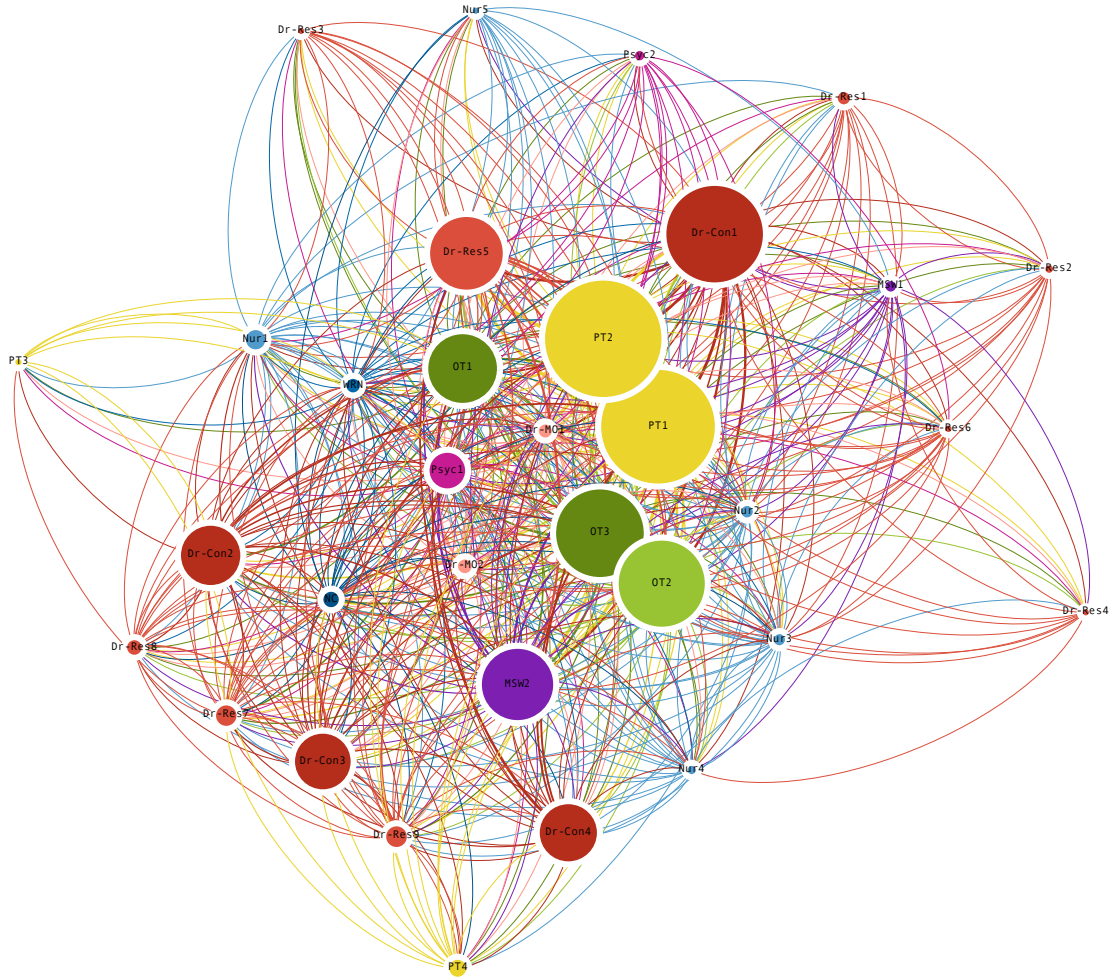


FIGURE 6.7. Airtime by Profession: Sociogram SCI Team Interactions over 16 weeks

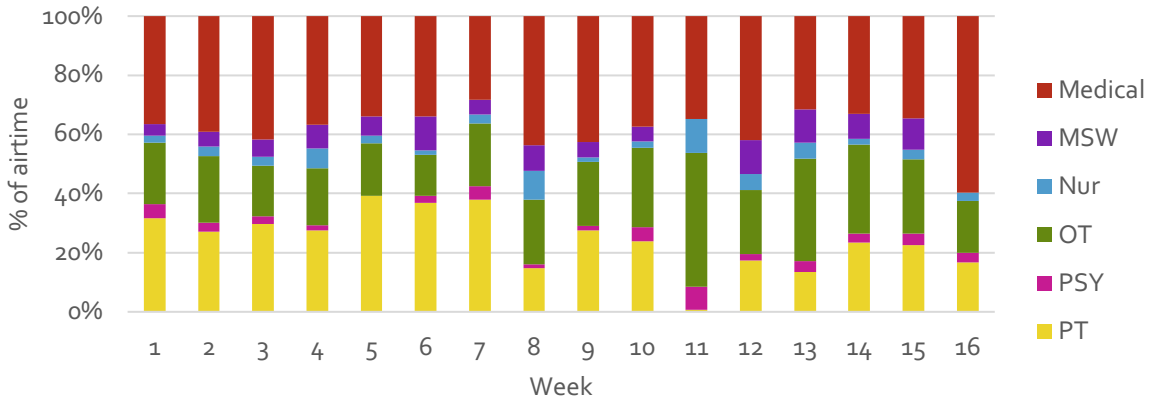


FIGURE 6.8. Airtime by Profession: Stacked Bar Chart of SCI Team Interactions over 16 weeks

TABLE 6.6
SCI Interprofessional Network Statistics

Actor	Indegrees		Outdegrees		Eigenvector Centrality	
	#	Rank	#	Rank	#	Rank
Dr-Con1	20368	11	49291	3	0.781	16
Dr-Con2	22762	9	29025	9	0.781	16
Dr-Con3	11899	19	27013	11	0.771	19
Dr-Con4	14757	17	27848	10	0.742	21
Dr-MO1	21095	10	3831	21	1	1
Dr-MO2	16668	15	4201	19	0.889	9
Dr-Res1	4292	24	3383	22	0.48	28
Dr-Res2	2964	26	883	28	0.447	30
Dr-Res3	969	31	108	32	0.436	31
Dr-Res4	454	33	36	33	0.34	32
Dr-Res5	33426	5	36277	6	0.799	15
Dr-Res6	2649	27	317	29	0.53	26
Dr-Res7	19009	12	7838	14	0.779	18
Dr-Res8	11029	20	4630	18	0.643	23
Dr-Res9	15655	16	7954	13	0.768	20
MSW1	4916	23	2474	25	0.584	24
MSW2	41229	2	35542	7	0.875	11
NC	18820	13	5091	17	0.852	12
Nur1	17662	14	7200	15	0.815	14
Nur2	10558	21	3014	23	0.882	10
Nur3	9373	22	2796	24	0.834	13
Nur4	3746	25	1257	27	0.71	22
Nur5	1148	30	114	31	0.459	29
OT1	31468	6	34129	8	0.986	3
OT2	28389	7	43603	5	0.97	4
OT3	38534	3	44438	4	0.969	5
Psyc1	33970	4	16082	12	0.958	7
Psyc2	2283	28	1855	26	0.489	27
PT1	47474	1	58626	2	0.989	2
PT2	26999	8	60130	1	0.965	6
PT3	706	32	126	30	0.268	33
PT4	1736	29	5903	16	0.566	25
WRN	12104	18	4096	20	0.924	8

residents and medical officers, the occupational and physical therapists usually remained for at least a couple of years, thus forming the bastion for patients' continuity of care. As highlighted by OT Jenny and Dr Tony on the importance of team stability:

> OT Jenny: First of all is the area relationship building. The team was more close-knit. Maybe because also there is more stability, there's fewer changes. Like MOs don't rotate as fast. I think now it's like "PAM PAM!" By the time you get to know the person, they are rotating out already. "Eh, all the best!" that kind of thing. They stay for much longer previously, and we have get together meals and all, and even share at a personal level. I think there's such things now, but much less. I don't see a lot of them mingling across the different professions. I feel that now somehow, communication is more fragmented but why is it so, I also can't pinpoint.
>
> Dr Tony: A good interdisciplinary team needs cultivation. Here, where you know we get people changing in and out regularly, it is hard. Having a stable team is important. Once you have different people coming in and out it makes things difficult because it takes time to cultivate a culture. If you have different doctors coming in and out, even if the PTs and OTs are stable, they may find it difficult to understand or even negotiate with a different consultant. If the consultant is stable and, and if the PTs OTs change all the time, then I have to relearn the person's personality and his workings and or her workings. And that takes time.

In REHAB, medical social workers were usually involved when it came to complex social issues that interacted with the medical issues of patients. For instance, a patient may not have a caregiver due to either complex family structures or that existing caregivers were physically or mentally unable to care for patients in the capacity demanded. The needs of patients who had suffered a stroke or spinal cord injuries were usually very complex and demanded significant financial, social, and emotional resources. Sometimes, patients did not have a home suitable to return to because their living environments were

unsuitable because of the various modifications needed as a result of a stroke or spinal cord injury, or in some cases, they did not have a home to return to. Medical social workers were involved in the management and coordination of applications for public financial assistance and tackling other complex social situations of patients. Psychologists were involved in the care when patients and their family members faced difficulty coping with the new situation. Conceivably, losing one's cognitive or physical abilities as a result of a stroke or spinal cord injury was a traumatic experience. Oftentimes, these losses were also accompanied by the fear of losing their livelihood, which in most cases, were also realized. Many patients and family members experienced extreme levels of stress, including a portion experiencing depression and suicide ideation. Psychologists would provide counselling and assess the need for additional interventions needed by the team, and communicate their findings to the team. Ward resource nurse was a role created only in recent years in REHAB. The intent of the role was to provide additional coordination support among the teams, patients and their families, and other specific external parties outside REHAB. In short, the greater the level of social complexity, the greater the involvement of medical social workers, psychologists, and ward resource nurses. Relatively straightforward cases usually did not involve those roles at all. Medical officers – the most junior medical staff – in SCI and STK played identical roles as they acted mostly as scribes. While medical officers spoke little in interprofessional meetings, their role was central as they did most of the relevant documentation on the electronic health records system. As such, medical officers were also located in the middle of both SCI and STK.

The above findings show that SCI and STK shared many similarities in the manner in which interactions took place among interprofessional team members. The placements of the nodes of the various professional groups were very similar; physical and occupational

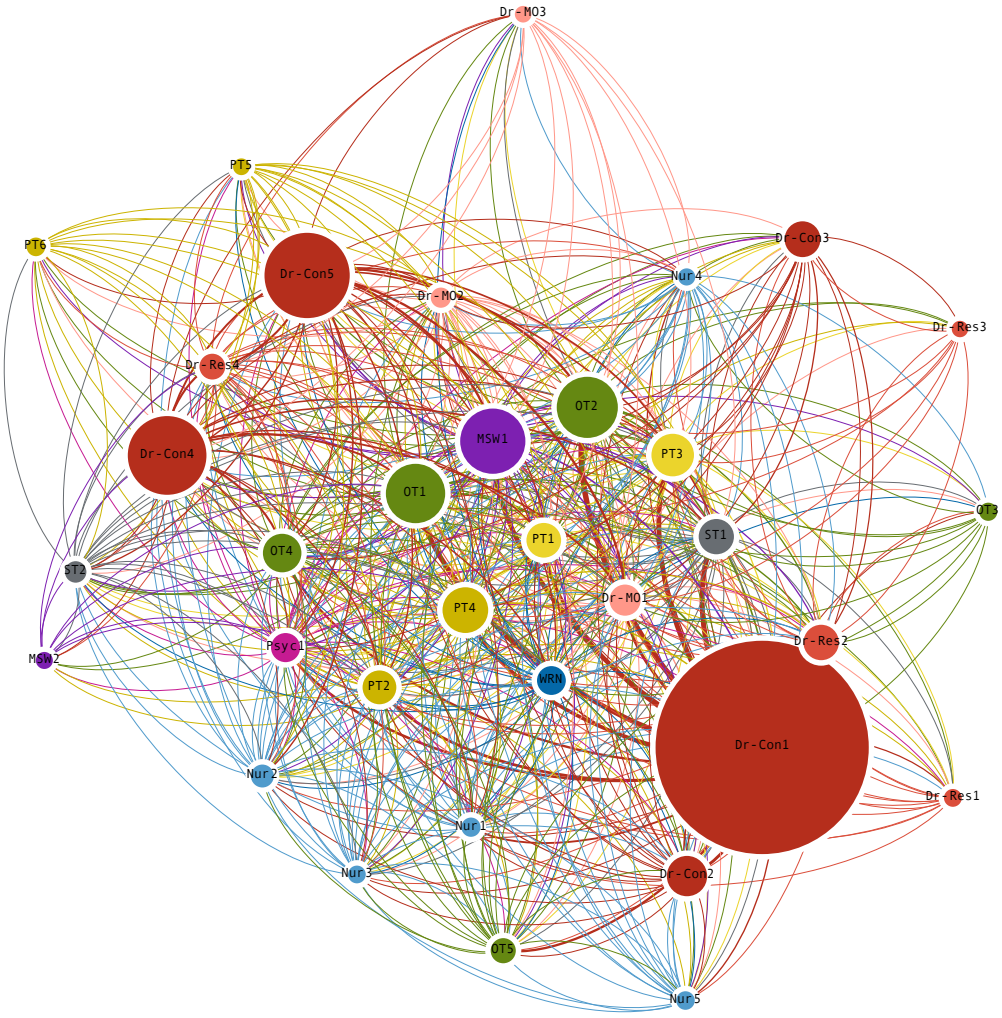


FIGURE 6.9. Airtime by Profession: Sociogram of STK Team Interactions over 16 weeks

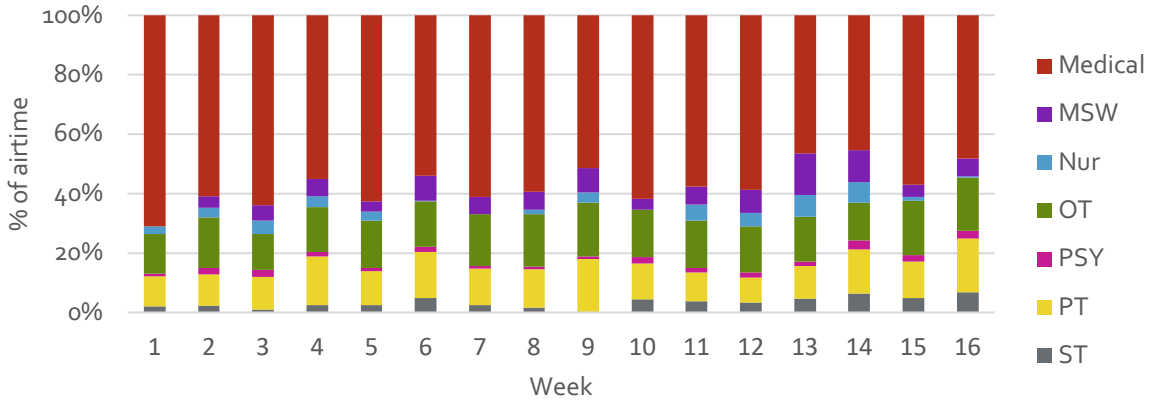


FIGURE 6.10. Airtime by Profession: Stacked Bar Chart of STK Team Interactions over 16 weeks

TABLE 6.7
STK Interprofessional Network Statistics

Actor	Indegrees		Outdegrees		Eigenvector Centrality	
	#	Rank	#	Rank	#	Rank
Dr-Con1	19314	8	103224	1	0.81	14
Dr-Con2	11308	17	12566	9	0.724	23
Dr-Con3	3030	25	10204	11	0.552	28
Dr-Con4	9922	18	32679	3	0.784	17
Dr-Con5	13079	15	36129	2	0.76	19
Dr-MO1	22741	7	7759	16	0.984	3
Dr-MO2	5536	23	2015	23	0.829	13
Dr-MO3	532	33	152	33	0.409	31
Dr-Res1	2153	27	767	28	0.426	30
Dr-Res2	25077	4	10000	12	0.804	15
Dr-Res3	344	34	30	34	0.261	34
Dr-Res4	13184	14	4956	19	0.802	16
MSW1	29265	1	25624	4	0.972	5
MSW2	1051	30	369	31	0.293	33
Nur1	6499	20	1526	24	0.751	21
Nur2	6862	19	3462	21	0.781	18
Nur3	2014	28	739	29	0.76	19
Nur4	3034	24	435	30	0.7	25
Nur5	3027	26	1164	26	0.593	26
OT1	24362	5	22546	6	0.998	2
OT2	26670	3	23482	5	1	1
OT3	808	32	963	27	0.338	32
OT4	17432	10	11630	10	0.908	12
OT5	6114	21	4607	20	0.729	22
Psyc1	16251	12	6697	17	0.919	11
PT1	17466	9	9609	14	0.958	7
PT2	17414	11	9155	15	0.949	8
PT3	23902	6	13741	8	0.982	4
PT4	14460	13	15392	7	0.96	6
PT5	2001	29	216	32	0.555	27
PT6	1051	30	1204	25	0.449	29
ST1	28181	2	9922	13	0.943	9
ST2	5834	22	2690	22	0.72	24
WRN	12282	16	6546	18	0.932	10

therapists were in the centre of sociograms (Figures 6.7 and 6.9), whereas the other professional groups were scattered across various off-centre locations in the sociograms. Although the airtime of the medical professionals was comparable with the occupational and physical therapists, and in some cases, they had much more airtime, as indicated by the size of their nodes in the sociograms as well as the stacked bar charts (Figures 6.8 and 6.10), they were less influential in the communication networks, as indicated by their eigenvector centrality scores in Tables 6.6 and 6.7. The airtime of consultants in SCI and STK seemed to vary considerably across leading consultants, corroborating the assertions made by other healthcare professionals regarding the importance of dispositions. SCI and STK had average participation rates of more than 90% of healthcare professionals who were present in the meeting room, and at times, everyone in the room participated and contributed.

Lacklustre participation mainly came from nurses and other allied health professionals who were not occupational and not physical therapists. For nurses, in addition to the logistical challenges mentioned above, nurses in SCI and STK seemed to face similar issues experienced by PSYC. Although nurses were always represented in interprofessional meetings at SCI and STK, they consistently remained at the periphery of the meetings. They rarely voiced their opinions.

> Nurse Jade: Some nurses are very fearful to voice out. They have different attitudes, aptitudes, and levels of courage and confidence. I believe the consultants value our feedback regardless of whether we feel the feedback is significant or not. But some consultants will ask for the PT, OT, ST for their views, but skip nurses. I guess it is a two-way thing. If nurses do not speak up over time, doctors will just pass us over… For example, Dr Anna does not have much confidence in nursing. This is what I have observed in the last ten years. In case conferences where we discuss

the FIM scores collectively, she will change our scores to hers, even though we should be the ones most familiar with how patients are doing regarding ADLs such as transfer, showering, toileting, and bladder bowel control of our patients. Dr Clara is always very consistent. She will go to the PT, OT, and ST, and she does not miss out on the nurses. She is very approachable. She values the input from the team, and she is very patient-centred. Dr Fiona also conducts very good case conferences, but she is super smart and makes us fearful of saying something stupid. Both of them are very holistic and very aware of the history of their patients… such as their family medical history. Because we feel valued in case conferences, we show up with the intent to contribute.

Nurse Lily: Expectations… like I've said, if I'm a junior nurse right, I wouldn't know what I need to do when I go for a case conference. How are you going to expect me to contribute? When I first came to rehab also, they'll just say, "Go for the case conference," that's all, no one will tell you what you are supposed to do… it will be good if they can tell nurses about the expectations… I think it's tough for the nurses… For instance, I've been nursing this patient for two days… but the case conference required me to summarize the patient's progress for the past week for the weekly case conference. PTs and OTs can provide weekly updates. But for nurses, it really depends on the nursing teams' updates also. If my nursing colleague was unable to tell me what happened to the patient, I can't provide the appropriate update. Although we just work on one shift, we have to update for three shifts. Moreover, we are not on duty every day, so we may not know a patient's condition that really well for the past week.

Given the consistency in behaviour among nurses across PSYC, SCI, and STK teams, the lack of free participation among members of the nursing profession seems to suggest issues deeper than just dispositions and logistics and points to more fundamental issues such as professional cultures. The ecology of professions in healthcare, formal training, and informal socialization are strong candidates to explain the consistency.

The clinical focus on occupational and physical therapy in REHAB also influenced the manner in which members of SCI and STK participated in interprofessional meetings. This focus was a double-edged sword; it allowed a dedicated channelling of resources and attention to matters of occupational and physical rehabilitation but also diverted resources away from other aspects of clinical care that may not be immediately pertinent.

Dr Zicker: It's very important because basically you can see that as, as a doctor or as a consultant especially, anyway you also saw, see that I spend less than 10 mins on each patient, most of the time. While the therapist spends nearly an hour. Their assessment, uh things that they do with them are relatively hands-on. While for me, guilty to say, normally because I've different layers of junior doctors like medical officers, the middle layer which is the registrars... I tend to do more of the consultancy role. That means I provide advice and provide some of the care plans. So, so in a way the therapists will actually know the patient better. Yeah, so that is the reason. It's also because of the ratio la. Because they are managing like six patients while I see 20 plus patients, sometimes even more. For time management, that is how we do it. But that is an excuse, but anyway, that is the reason why they will know their patients better, their opinion will be taken very heavily.

ST Esther: I feel like case conferences are more PT OT driven, partially because our goals cannot be met within an in-patient stay on its own. So a lot of the time, the EDD, estimated date of discharge date, is primarily set by the PT OT goals. As a result, ST seems to be not as crucial because it does not necessarily affect the discharge date. Our role during case conferences is to update them on our patient's progress and if they have any like issues that can impact other professionals, like, let's say if they have difficulty understanding instructions or any strategies that need to be used to help them understand. Then that is how we can tell our PT OT colleagues about how to help the patients... also prognosticating, so for example, for NG tube can also affect the discharge date as well. Whether they will be able to be off the

NG tube by discharge or will they need a bit longer time depends on care needs. If the patient's family are unable to learn how to do NG tube feeding, then they would end up staying longer for one or two weeks.

Nurse Kaylee: OTs and PTs definitely have things to share, and the consultants expect them to share, but not for nursing. They are not expecting from us. They won't ask us. Sometimes, I ask the junior nurses why they did not speak up in case conferences. They said they were afraid to speak up, and maybe that's the reason why they didn't call on nurses… When I was a junior nurse, I was also afraid to speak up and express my thoughts during case conferences… I think a certain fixed format will help build the confidence of the nurses.

Social network analysis: Summary

To recap, the main purpose of this section is to examine if heterogeneity in interaction behaviours existed among members of PSYC, SCI, and STK. If heterogeneity (or homogeneity) existed in interactions, how could these patterns be explained? In this section, I combined evidence from ethnographic observations of interprofessional interactions with narrative accounts of healthcare professionals. The evidence suggests that participation, and thus contribution, varied considerably across individuals, but the reasons why they varied are much more complex (as opposed to simple dichotomous comparisons) and emergent (as opposed to scripted monolithic influences) than the literature suggested.

First, hierarchies in the ecology of healthcare professions and hierarchies in organisations meant that the medical profession and those more senior in organisational rank behaved in ways that suggested greater perceived liberties in voicing their perspectives. Hierarchies shaped interactions through two mechanisms. The first was through the division of labour (e.g., medical officers as scribes in REHAB), and the second

was through personal confidence and institutional legitimacy that came with familiarity in general and practical understandings of the workings in the respective institutions.

Second, while these hierarchies mattered, institutional and organisational priorities such as clinical focus (e.g., biomedical treatment for PSYCH and occupational and physical therapies for REHAB) shaped team configurations, team size, and the manner in which interactions took place in interprofessional meetings. A key difference between PSYC, SCI and STK was that patients in SCI and STK were often in a stabilized condition, mostly ready to commence rehabilitation therapies, whereas patients admitted to PSYC were mostly in an acute state and thus needing the most urgent and intensive attention. These differences in goals shaped the teams' interactions. One of the main goals of the PSYC team at the interprofessional meetings was to stabilize patients through the use of biomedical interventions, whereas in REHAB, the goals were to rehabilitate through therapies to facilitate discharge. These priorities meant that members of certain professional groups, such as doctors (in PSYC) and occupational and physical therapists (in REHAB), were more central in interactions within their respective teams. These priorities in clinical care meant that expectations of one's professional role responsibilities served to mitigate individual propensities to reduce participation. These priorities were also manifested in physical artefacts such as forms; categories used to triage and assess patients; the manner in which patients were organised within the facilities; and the schedule in which interprofessional meetings were held (which clashed with the busiest times for nurses in REHAB).

Third, as unambiguously and repeatedly reinforced by healthcare professionals' interviews across the institutions, professional groups, and seniority – individual dispositions matter. The manner in which doctors led; the latitude a healthcare professional perceived in interjecting into others' jurisdictions; and personal values, priorities, and

general and practical understandings of situations; shaped interaction behaviours in interprofessional meetings to produce heterogeneous behaviours.

The findings regarding hierarchies in the ecology of healthcare professionals and organisations, and organisational priorities are consistent with the ANT perspective. These hierarchies cannot be taken-for-granted as they are neither fixed nor predetermined structures. Rather these hierarchies need to be continuously re-established by the process of enrolment and translation. Additionally, the ANT perspective also suggests that power and authority are not centralised in individuals but rather distributed across entities of various natures in the entire actor-network. Collectively, the analyses provide strong evidence that institutional, organisational, professional, team, individual, and patient characteristics influenced, but none determined, the observed interaction patterns. Agency in interprofessional meetings was a complex and emergent phenomenon that did not avail itself of simplistic explanations. Different factors influenced the way in which healthcare professionals behaved and how actor-networks were assembled. While some factors may have more strongly influenced behaviours, none were deterministic of the manifest interactions. However, critics may look at the evidence presented so far and say that the analyses were confounded by the manner in which I categorized my observations – which would be a fair point. How do we separate institutional factors from professional, individual, or any other factors? The short answer is that the separation of the factors is not possible as these factors were intricately intertwined and interacted in very complex ways. However, what is possible is to investigate which factors probably had larger influences. In the next section, I conduct a roles and positions analysis, or blockmodeling for short, of my data to shed light on how these factors might have influenced interactions. As I will elaborate in the next section, blockmodeling does not require preconceived categories of

actors and thus afford the opportunity to uncover novel phenomena about the nature of the interaction between structure and agency. Additionally, blockmodeling is one of the best methods currently available to rigorously examine the central problem of this thesis, which is the paradox of embedded agency.

Roles and Positions Analysis: Blockmodeling

The game of football has several positions – goalkeeper, defender, midfielder, and forward, but the role (e.g., player maker, false 9, sweeper, captain) of a player may vary considerably depending on many factors. These factors include a coach's overall strategy for a certain game and tactics in response to emerging situations, the relative strengths and weaknesses of other players on the field and the bench of a player's team as well as the opposing team, and even the score at another game. While some roles in football tended to be taken up by players in certain positions, there is much fluidity in the heat of the game. A player's position may be predetermined before a game, but the player's role may evolve rapidly in the course of a game; it is unthinkable that a player enters a game with a script. For a group of players to play as a team, they need to adapt and influence each other in a game and collectively orchestrate the play moment-by-moment. But players do not enter a game *tabula rasa*; they enter the game with dispositions, and the origins of their dispositions can be highly varied. Some players are more influential than others, and this can often be inferred from the price professional football teams are willing to pay for them. Beyond a player's dispositions, practices at the club, such as the manner in which the owners of the club interact with the coaching team or the manner in which coaches interact with players, are also as influential, if not more influential, in shaping the performance of a team. However, how individual and club components interact to shape the outcome is very

complex and difficult to tease apart. In this regard, a team of different healthcare professionals are not very different from a football team.

The central problem of this thesis focuses on understanding how professionals of different occupations work together in complex institutional settings. In this thesis, thus far, I have relied on existing categories such as professional groups and seniority of healthcare professionals as an important starting point for interpretation (e.g., by professional group and seniority). Using preassigned roles and positions to conduct analysis is often very effective in uncovering insights. Professional groups are effective categories for analyses because they quite conveniently encapsulate a complex set of dispositions that bundle together in ways that are not amenable to unpacking. The importance of professional groupings' influence on behaviours was also highlighted by Bourdieu (1990, pp. 8–9): "Belonging to a professional group brings into play an effect of censorship which goes far beyond institutional or personal constraints: there are questions that you don't ask, and that you can't ask, because they have to do with the fundamental beliefs that are at the root of science, and of the way things function in the scientific domain." The strength of this approach is its relative simplicity and intuitiveness in operationalizing research and when interpreting its research output. The weakness of this approach is that the discovery of latent novel phenomena will be hindered by filtering the data through existing conceptualizations. An alternative approach is an analysis of roles and positions by way of blockmodeling, an advanced technique in social network analysis.

Blockmodeling has several strengths (Borgatti & Everett, 1992; Breiger, 1974; Breiger & Mohr, 2004; Mohr & Friedland, 2008; White et al., 1976). First, it provides a disinterested avenue in which the analytical outputs are not based on any *a priori* categorizations such as professional groups or seniority and can proceed with just

rudimentary observed behavioural data, e.g., the duration in which a healthcare professional spoke. Second, it also allows an operationalization that takes practice theory's ontological commitments seriously by focusing on doings and sayings, the basic unit of activity as defined by Schatzki (2001). For this study, I took the perspective that the smallest unit of interaction was an utterance. I used Searle's (1976) taxonomy of speech acts, which consisted of assertives, directives, commissives, declaratives, and expressives, as the basis for determining the nature of utterances. As noted in the methods chapter, I made further distinctions for directives uttered in some form of instruction, as well as utterances in the form of a query. Third, blockmodeling is one of the very few available methods that can rigorously quantitatively examine an idea like structuration, i.e., structure and agency are mutually constitutive (I will elaborate more about this in the subsection *Interpreting Blockmodels*). Blockmodeling, however, suffers from two key weaknesses. First, it is extremely computationally intensive. Second, its research output is highly technical and requires rather elaborate procedures and explanations.

Before I proceed to detail the process of blockmodeling, it is essential that I elaborate on what the terms "position" and "role" mean in social network analysis. In analytical network terms, position refers to "an aggregate of individuals who are similar in their relations with others in the network," whereas role refers to "a system of relations, either for an entire group or from an individual's perspective" (Faust, 1988, p. 316). Actors who are connected to other clustered groups of actors in the network in the same way, are conceptualized to be in the same position. Role is used to refer to the relationship between positions. Therefore, in blockmodeling, once the positions are identified, the role relations among actors can be mapped out.

To examine the roles and positions of each of the three teams, I performed blockmodel analysis on the utterances made by the team at interprofessional meetings to identify latent positions and roles that the methods in prior sections did not allow. Blockmodeling is an advanced technique in social network analysis to identify positions and roles in networks, based on the foundational work of White, Boorman, and Breiger (1976). The intent of blockmodeling is to reduce a large network into interpretable structures so that greater insights can be derived about the nature of relationships among entities in a network that are not manifest even from close scrutiny. As mentioned earlier, one of the key strengths of the blockmodeling approach is that researchers do not have to impose any *a priori* categories about the relationship between actors, as well as attributes about actors, into the analytical model. As such, blockmodeling allows the identification of latent and emergent structures that would not be easily identifiable using simple network analytical techniques or network metrics. Blockmodeling identifies blocks of actors based on a chosen notion of equivalence (e.g., structural equivalence, general equivalence). Actors within a block are considered to be similarly located in a network, i.e., same position, and these actors play the same role as actors within another block.

I used the R statistical package blockmodeling (Žiberna, 2018) to carry out blockmodeling analysis. Detailed technical and mathematical explanations of blockmodels are beyond the scope of this thesis and can be found in the works of other scholars (Doreian, 2012; Doreian et al., 2005; Žiberna, 2007). In the process of blockmodeling, I searched for optimised solutions with three to five blocks from 1000 randomly selected blocks. I used the median number of seconds of interaction between two healthcare professionals of each network as the criteria to determine whether blocks were "complete" or "null." Blocks with values below the median were considered to be null blocks. In the

ideal situation, the criteria should be determined using prior substantive knowledge. However, in the absence of substantive knowledge, I used the guidelines provided by Žiberna (2007). After comparing the generated solutions with three to five blocks, I selected solutions that were most interpretable using my substantive knowledge of each of the teams (Faust & Wasserman, 1992; Žiberna, 2007).

The two main outputs from blockmodel analysis were the optimised blockmodels and image matrices. Blockmodels are basically permutated adjacency matrices in which approximately generally equivalent healthcare professionals are clustered together as a block. Healthcare professionals within each block are assumed to share the same position in networks. For instance, if doctors and psychologists are clustered into the same block, they would be deemed as enacting the same role as the rest of the network. In this thesis, the terms block and position are used interchangeably when describing blockmodeling analysis. The relationships between blocks in networks are defined by their roles to each other. Image matrices are summaries of the average values of each block of the corresponding blockmodel. It is important to repeat the point that the blockmodeling process is blind to the characteristics of the actors and only uses interaction data to allocate the various actors into their respective blocks.

Interpreting Blockmodels

Faust and Wasserman (1992) recommended three approaches to interpret blockmodels: (1) using actor attributes to validate blockmodels; (2) describing individual positions, and (3) describing the overall blockmodel. Specifically, I examine (1) the characteristics of individual healthcare professionals within each block; (2) the composition of professionals within a block; (3) the intensity (i.e., the value within and across blocks) and

direction of interactions a healthcare professional had with other healthcare professionals and their characteristics; and (4) the overall relationship between blocks. While interpreting blockmodels, I used substantive knowledge gained from ethnographic observations of each healthcare professional, team, and institution, in addition to an understanding of the surrounding context about the nature of care for patients with psychosis, spinal cord injuries, and stroke to develop an interpretation of blockmodeling outputs. The blockmodels (left column) and corresponding image matrices (right column) shown in Figure 6.11 visualize interactions between every member of each team ever present over the entire observed period.

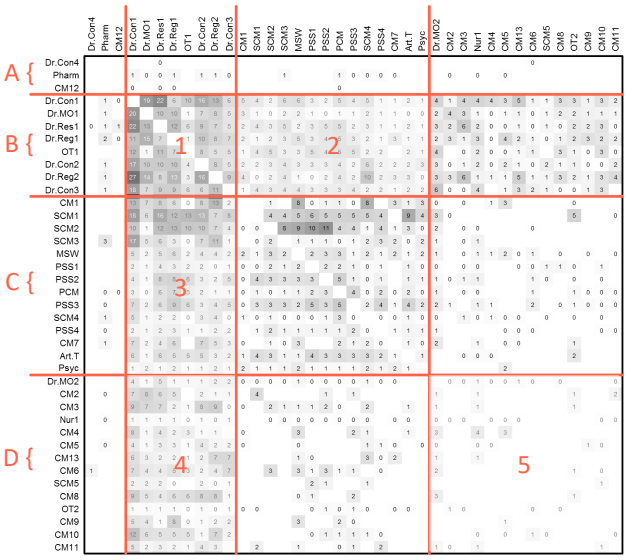
The blockmodels and the image matrices can be interpreted akin to something of a heatmap of interactions. The thick red lines divide up the members into blocks. I have overlayed PSYC's combined blockmodels in Figure 6.11 with guiding notes to facilitate illustration. Blocks along the diagonal represent interactions among members of the same block. The exact location (e.g., R1C1 or R3Cr) of a position with the network does not affect the interpretation. Block 1 (row 2 column 2; R2C2) represents interactions among members of set A, and the number 99 on the second row and second column of the corresponding image matrix represents the average number of seconds of interactions among members of set A was 990 seconds (99 x 10 as values in the cells were multiplied by 0.1 to conserve space). The matrices are directional, i.e., block 2 and block 3 are not symmetrical. Block 2 (R2C3) represents interactions from members of set B directed to set C, whereas block 3 (R3C2) represents interactions from members of set C directed to set B. Members within the same block do not mean that they interact with each other regularly, but rather that they have similar interaction patterns with similar others in the team (i.e., general equivalence), and thus they share the same position. For instance, block 4 shows that

members of set D directed most of the contributions in interprofessional meetings to members in set B, and block 5 (R4c4) shows that they rarely interacted with each other, and some may not have even met each other. For simplicity, I will refer to specific positions held by sets of actors using the labels R1C1, R2C2, and so on.

Cells along the diagonal within each block represent self-talk (which was not coded). The cell with number 88 in STK's block, indicated by a red arrow, showed that Dr.Con1 directed 8800 (88 x 100) seconds of interaction at OT1. In STK's image matrix, the block indicated by a green arrow has a value of 24. This number was derived by adding all the interactions in the block (i.e., 88 + 98 + 24 + 4 +12 + 23 + 5 +4 + 28 +8) divided by the total number of cells (i.e., 3 x 4; self-talk not coded). The number in the block represents the average interaction Dr.Con1, Dr.Con2, OT1, and OT2 had with each other during interprofessional meetings.

Findings from Blockmodeling

If interactions among healthcare professionals in interprofessional meetings were lacking in enrolling diverse participation, the blockmodels should show clustering of actors by structural dimensions such as professional groups, seniority, or gender. If the teams were able to accomplish diverse participation in contributing to decisions in team meetings, i.e., behaviours are largely determined by unique individual experiences and meanings, blockmodels should reveal variability in behaviours that elude any perceivable patterns or regularities occasioned by structural demographic dimensions. The findings from blockmodeling showed that neither of the abovementioned accounts is sufficient to explain the results of blockmodeling singly.

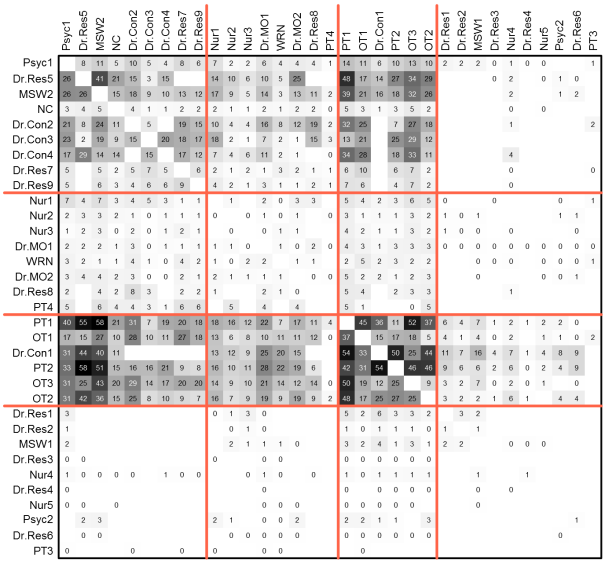


* all values in cells were multiplied by 0.01

PSYC

	1	2	3	4
1		2	1	0
2	4	99	26	18
3	1	47	19	3
4	0	31	4	2

* all values in cells were multiplied by 0.1

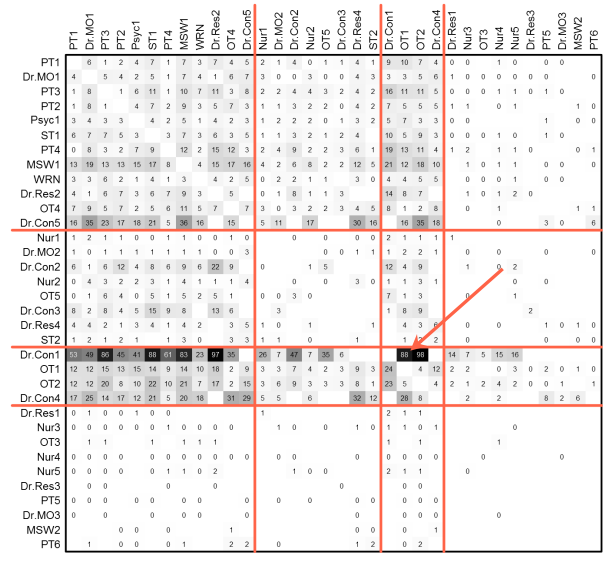


* all values in cells were multiplied by 0.01

SCI

	1	2	3	4
1	10	5	15	0
2	2	1	3	0
3	22	12	32	3
4	0	0	1	0

* all values in cells were multiplied by 0.01



* all values in cells were multiplied by 0.01

STK

	1	2	3	4
1	7	3	8	0
2	3	0	3	0
3	24	8	24	3
4	0	0	0	0

* all values in cells were multiplied by 0.01

FIGURE 6.11. Combined Blockmodels and Image Matrices of PSYC, SCI, and STK over Study Duration

As shown in Figure 6.11, all three teams exhibited the classic centre-periphery structure (Faust & Wasserman, 1992) to various extents. The centre-periphery structure is characterized by an internally cohesive core position (i.e., interacts strongly with each other within the position) that is connected to other relatively less internally-cohesive positions. For PSYC, R1C1 was a null block consisting of a pharmacist, a senior doctor, and a case manager. Only the pharmacist attended the meeting routinely, but his role was limited as his expertise overlapped with that of the doctors. Most interactions in PSYC were either directed at or directed from R2C2 – the core block. When interactions were directed at a position, it meant that the actors were the targeted recipients. When interactions were directed from a position, it meant that the actors from that position were initiating conversations. All but one of eight members of R2C2 were doctors. All other doctors in PSYC were transient in their involvement and allocated to other blocks. R2C2 enacted the roles of an orchestrator in directing the flow of interprofessional proceedings and a decision maker and arbiter of deadlocks when there is a lack of consensus. R3C3 consisted of mainly senior case managers, peer support specialists, and other healthcare professionals who were the sole representatives of their professional group, i.e., medical social worker, psychologist, and art therapist. Interactions within R3C3 were relatively much less, and most interactions were directed to the core decision-making group, which consisted of doctors, thus providing the role of subject-matter experts in relation to the rest of the team. R4C4 consisted mainly of junior case managers whose contributions were limited to providing updates on the cases under their charge and enacted the role of a bridge between patients and the interprofessional team.

Although both SCI and STK also exhibited interaction patterns of the classic centre-periphery structure, the compositions of their core positions were different. For SCI, its core

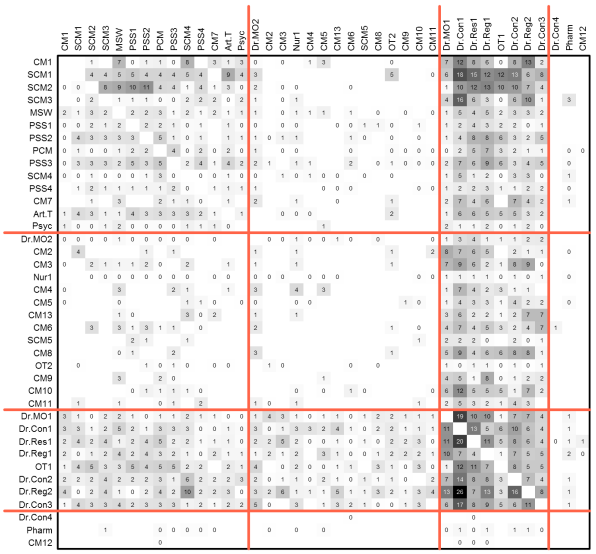
block R3C3 consisted of two physical therapists, three occupational therapists, and a senior consultant. The semi-periphery position, R1C1 consisted of six doctors; including three senior consultants, a medical social worker, a nurse clinician and a psychologist. The subject matter experts, i.e., the therapists, were in the core block, whereas the decision makers were in a semi-periphery position. For STK, its core position at R3C3 consisted of two occupational therapists and two senior consultants. Its semi-periphery position R1C1 consisted of a composition of therapists, doctors of three different levels of seniority, a nurse, and a psychologist. Compared to SCI, discussions pertaining to activities of daily living, which fall under the ambit of occupational therapists, took precedence over discussions of other domains. This could be due to their concern and prioritization of the discharge of patients back to their homes. R2C2 and R4C4 positions of both SCI and STK were periphery to the overall interprofessional proceedings as they were essentially "null blocks," i.e., their interaction intensity was below the median level. It is noteworthy to mention that Dr-Con1 used the most airtime in STK; three times more airtime than the next senior doctor (see Figure 6.10 and Table 6.7). Her disposition and interaction styles shaped the trajectory of discussions in ways that made STK quite different from SCI. Additionally, the blockmodels of SCI and STK corroborated my ethnographic observations that the occupational and physical therapists worked very differently with each other in SCI and STK. Whereas the therapists in SCI were knowledgeable of each other's assigned patients and frequently contributed to the discussion even for patients not under their charge, therapists in STK restricted their discussions to only their assigned patients.

To develop greater nuance in understanding the roles and positions of healthcare professionals in interprofessional care, I parse the utterances into separate modes of agency by using Searle's taxonomy of speech acts. Speech acts are particularly fitting for

TABLE 6.8
Teams and Speech Acts

Speech Acts	PSYC		SCI		STK	
	secs	%	secs	%	secs	%
Assertive	55251	90.95	67343	78.14	56868	76.06
Directive-Question	3314	5.46	9243	10.73	7527	10.07
Directive-Instruction	1483	2.44	5869	6.81	7534	10.08
Commissive	585	0.96	1156	1.34	1019	1.36
Declarative	91	0.15	2296	2.66	1642	2.20
Expressive	22	0.04	274	0.32	176	0.24
All	60746	100	86181	100	74766	100

the purpose of understanding how interprofessional care was reconstituted as an ongoing accomplishment for two reasons. First, speech acts embody a multifaceted range of speakers' intentions: to inform, to direct, to request, to declare, to apologize, and even to commit themselves to perform a future act. Second, healthcare professionals strategically use different speech acts to coordinate ongoing activities by enrolling other healthcare professionals into the actor-network. In other words, speech acts are a window through which organisations are actively constituted by actors. By studying speech acts, I capture the process of organising and thereby studying interprofessional care as an ongoing accomplishment in a rigorous manner. Table 6.8 shows the proportion of each type of speech act uttered by the teams through the weeks in which speech utterances were recorded. The proportion of different types of speech acts uttered by STK and SCI were very similar, with the greatest difference shown in the proportion of directive-instruction of over 3%. Close to 80% of all utterances by STK and SCI were assertives, compared to PSYC, in which 91% of all utterances were assertives. The highly similar speech utterances patterns of STK and SCI, compared to PSYC, provided corroborative evidence of institutional influences on the manner in which teams interact. Notably, commissives,

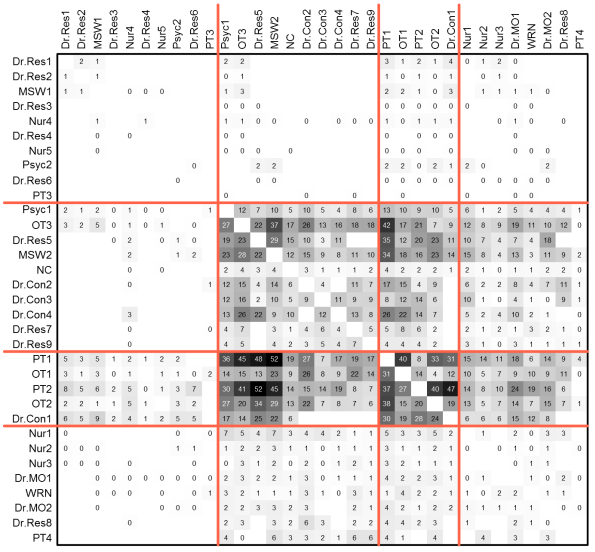


* all values in cells were multiplied by 0.01

PSYC

	1	2	3	4
1	18	3	45	1
2	4	2	31	0
3	22	14	84	3
4	0	0	2	

* all values in cells were multiplied by 0.1

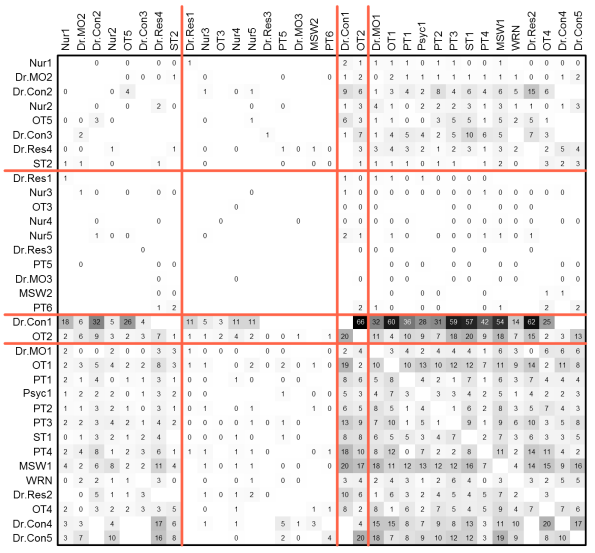


* all values in cells were multiplied by 0.01

SCI

	1	2	3	4
1	0	0	1	0
2	0	10	11	4
3	3	19	26	9
4	0	2	2	1

* all values in cells were multiplied by 0.01



* all values in cells were multiplied by 0.01

STK

	1	2	3	4
1	0	0	3	2
2	0	0	0	0
3	8	3	43	23
4	3	0	8	6

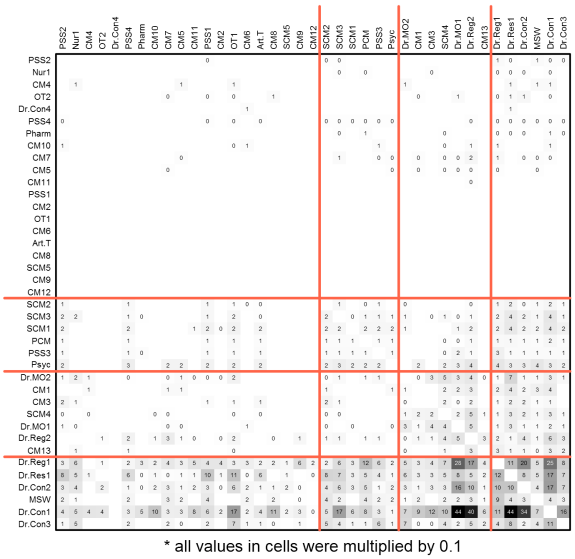
* all values in cells were multiplied by 0.01

FIGURE 6.12. Assertives – Information Networks of PSYC, SCI, and STK

declaratives and expressives made up only a very small proportion (1 – 4%) of all speech utterances across all teams.

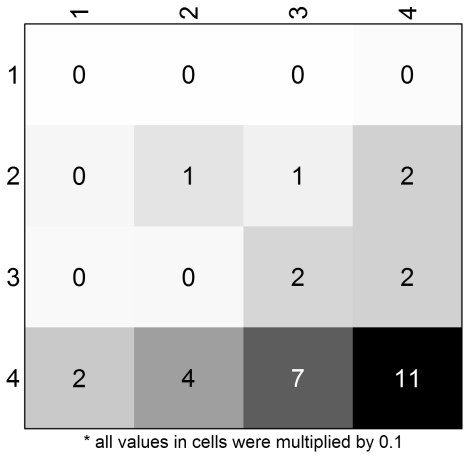
Assertives are utterances spoken with the intent to transmit information to represent something, and they consist of the greatest proportion of all utterances for all three teams. For the most part, healthcare professionals articulated assertives as part of the enactment of their professional role in an interprofessional team. In the context of interprofessional meetings, assertives often came in the form of reporting outcomes or findings of certain completed tasks, providing information about patients, giving updates on patients' progress, and reporting results of medical investigations previously embarked on (such as blood tests and radiological scans). Healthcare professionals might also articulate their hypotheses to explain trajectories of patients' progress (or lack of progress) or make arguments or opinions about treatment plans or projections about lengths of stay. Figure 6.12 shows the blockmodels of the assertives blockmodel of the three teams. Comparing the overall blockmodels (Figure 6.11) with assertive blockmodels (Figure 6.12) revealed that they were identical for PSYC and almost identical for SCI and STK. The only difference was OT_3 for SCI and OT_1 and OT_4 for STK. In both instances, the healthcare professionals mentioned switched from the core block to the semi-periphery block.

Directives are utterances spoken with the intent to get the hearer to do something. In the context of interprofessional meetings, the two dominant forms of directives are questions and instructions. Directive-questions were important devices used in interactions to steer the direction of interprofessional proceedings. Questions were used in two ways in interprofessional meetings. The first was in the form of asking for advice, questions directed from a junior professional to a senior professional. The second was in the form of asking for a report or some form of assessment based on institutionalized responsibilities.

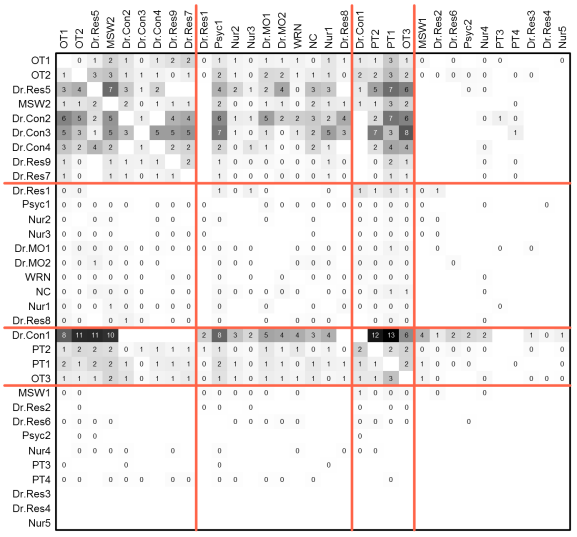


* all values in cells were multiplied by 0.1

PSYC

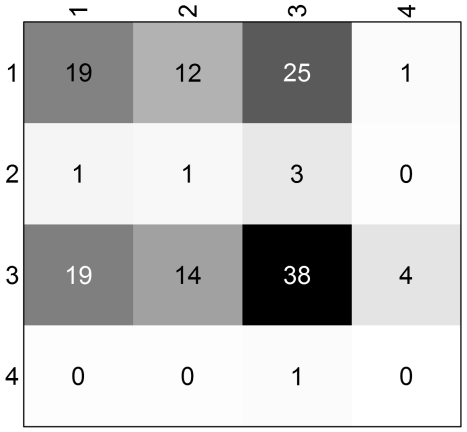


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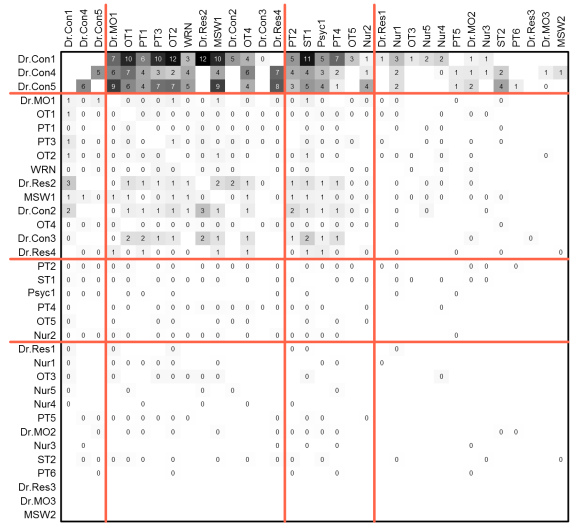


* all values in cells were multiplied by 0.01

SCI

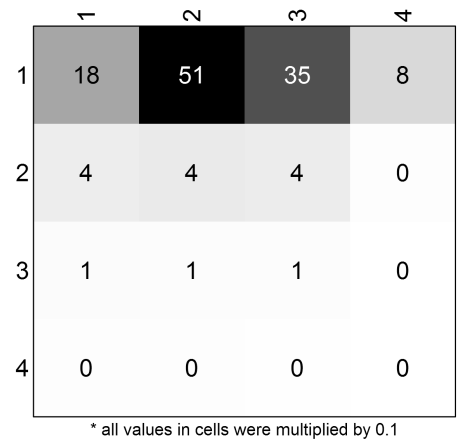


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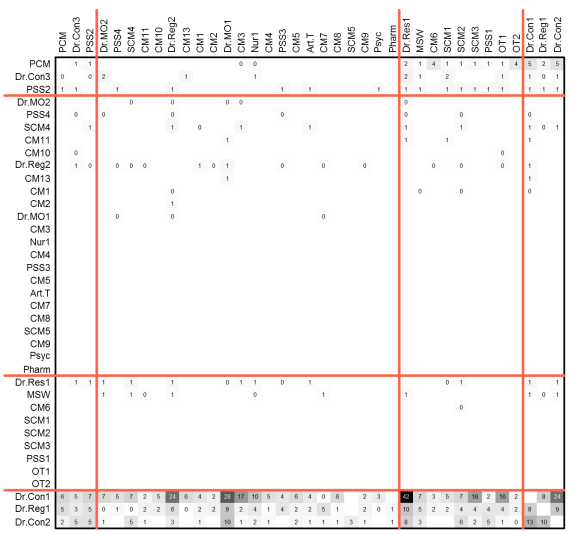
* all values in cells were multiplied by 0.01

STK



* all values in cells were multiplied by 0.1

FIGURE 6.13. Directive Questions – Advice and Accountability Networks of PSYC, SCI, and STK

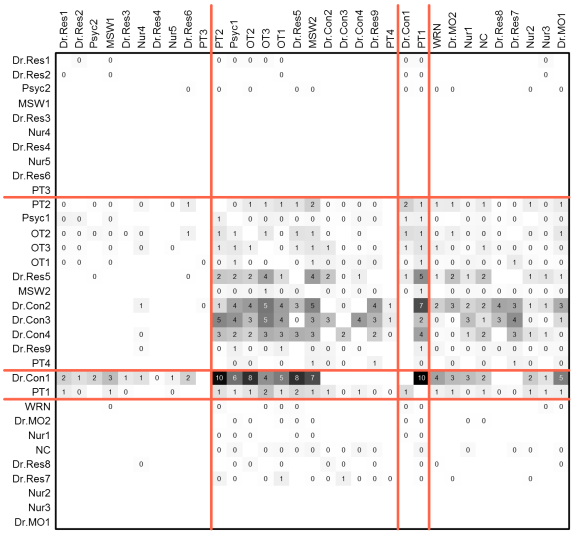


* all values in cells were multiplied by 0.1

PSYC

	1	2	3	4
1	1	0	1	2
2	0	0	0	0
3	0	0	0	0
4	5	4	6	12

* all values in cells were multiplied by 0.1

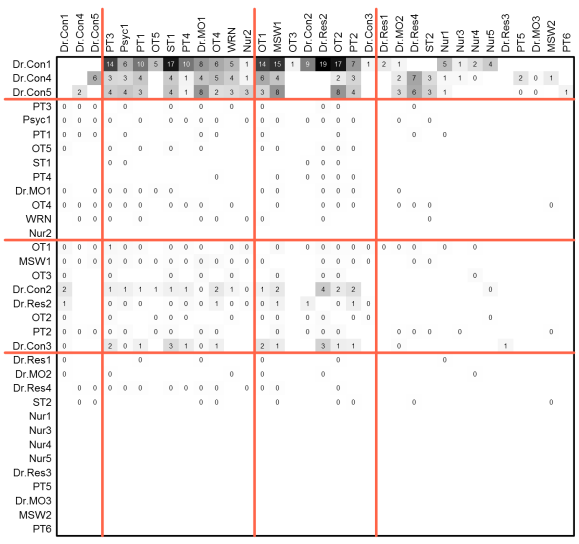


* all values in cells were multiplied by 0.01

SCI

	1	2	3	4
1	0	0	0	0
2	1	10	12	7
3	7	25	58	14
4	0	1	1	0

* all values in cells were multiplied by 0.1



* all values in cells were multiplied by 0.01

STK

	1	2	3	4
1	13	47	50	11
2	1	0	0	0
3	2	3	5	0
4	0	0	0	0

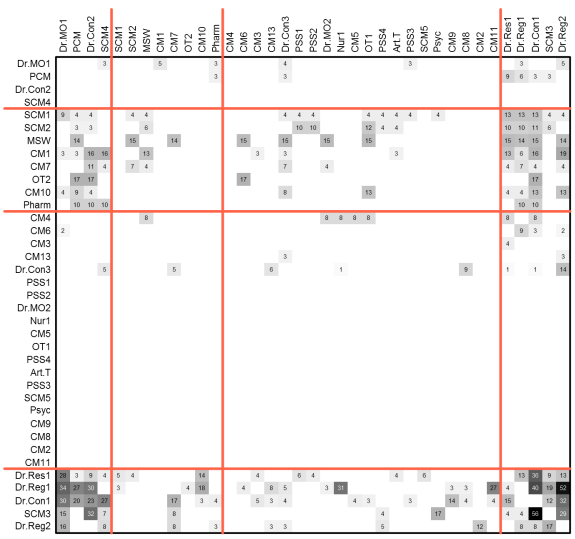
* all values in cells were multiplied by 0.1

FIGURE 6.14. Directive Instructions – Control Networks of PSYC, SCI, and STK

The direction in which these questions take, unsurprisingly, was from a senior professional to a junior professional. Because the directionality of questions could be inferred from the blockmodels, insights could be drawn from examining the extent to which members of the interprofessional team used directive-questions.

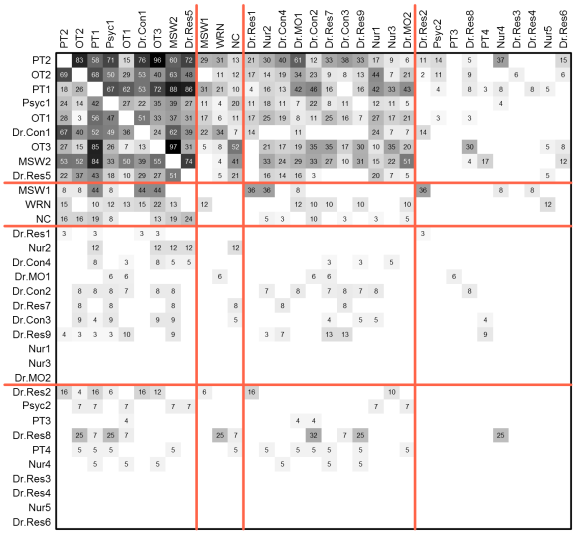
The blockmodels also revealed that the speech act of directive-instructions, which formed 10.1%, 6.8%, and 2.4% of all communication speech acts in STK, SCI, and PSYC respectively, were mainly the implicit prerogative of doctors. Figure 6.13 provides the blockmodels of the directive-questions, and Figure 6.14 provides the blockmodels of the directive-instructions. The core blocks for PSYC (R4C4 for Figures 5.13 and 5.14) and STK (both R1C1 for Figures 5.13 and 5.14) revealed that asking questions and providing instructions were predominantly enacted by doctors. All other healthcare professionals belonged to either null blocks or blocks with minimal airtime. The core and semi-periphery blocks of SCI directive-questions and directive-instructive blockmodels remained highly similar to its combined and assertive blockmodels. While both blockmodels showed the switching of members from one position to another, the blockmodels continued to contain members from diverse professional groups.

Commissives are speech utterances to communicate to hearers of one's commitment to a certain course of action. In the context of interprofessional care, responsibilities are highly institutionalized by the institutions that healthcare professionals are embedded in, and also the process of professionalization wherein healthcare professionals are socialized into their roles. As such, it was uncommon for healthcare professionals to utter commissives about actions they were expected to perform under their roles and responsibilities routinely. My ethnographic observations suggested that healthcare professionals uttered commissives when a certain course of action was not



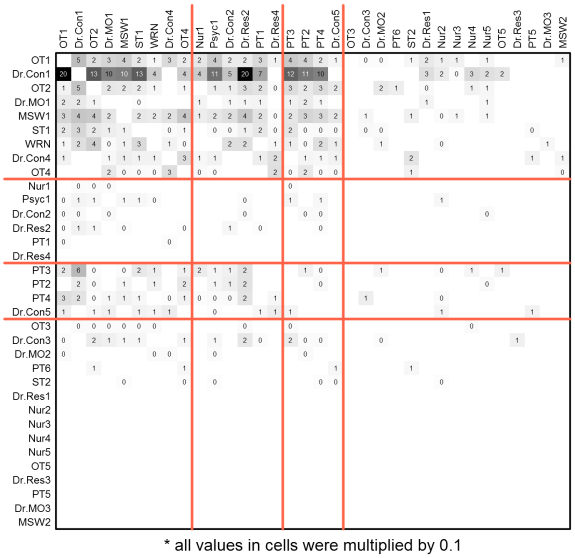
PSYC

	1	2	3	4
1	0	0	0	1
2	5	1	1	7
3	0	0	0	1
4	16	2	2	19



SCI

	1	2	3	4
1	46	16	18	3
2	14	2	5	2
3	2	1	1	0
4	2	1	1	0



STK

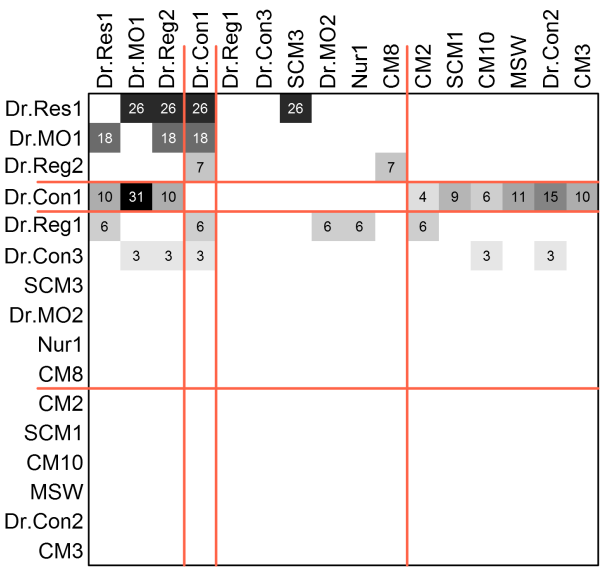
	1	2	3	4
1	24	19	22	3
2	2	1	1	0
3	9	7	2	1
4	1	0	1	0

* all values in cells were multiplied by 0.1

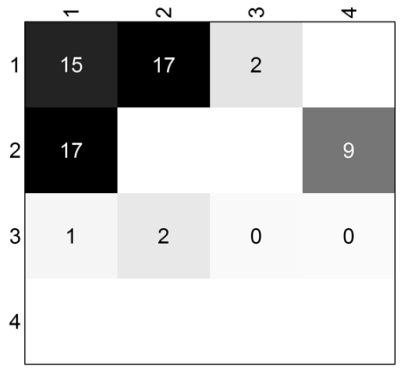
FIGURE 6.15. Commissives - Agency Networks of PSYC, SCI, and STK

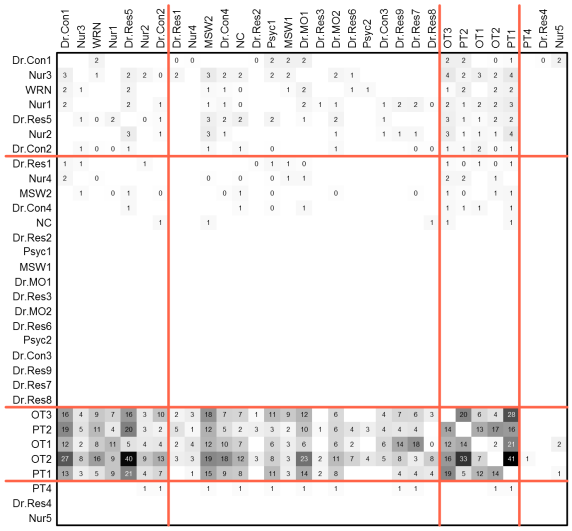
expected of them, non-routinely acted on by a particular professional, or required a certain level of discretionary effort to the extent that a professional utter commissives for the purpose of coordinating efforts or signalling diligence and commitment to patient care. One of the most frequent commissives that involved doctors committing themselves was speaking to patients' family members. Family members of patients usually preferred to speak to doctors as they viewed doctors to be more knowledgeable. Another reason that required doctors to speak to patients' families was that non-doctors usually required doctors to break negative news. Figure 6.15 provides the blockmodels for commissives for the three teams. For PSYC, the core block (R4C4) consisted of four doctors and a case manager, and the semi-periphery block (R2C2) consisted of a mix of professionals. The core block directed its commissives mainly towards R1C1 and among themselves in R4C4, whereas the semi-periphery block directed its commissives towards R1C1 and R4C4, but few interactions were directed towards themselves at R2C2. The commissives blockmodels of SCI and STK were relatively more evenly distributed across professional groups compared to PSYC. Almost all professional groups were represented for the core and semi-periphery blocks of both REHAB teams.

Figure 6.16 shows the blockmodels for declaratives for the teams. In the context of interprofessional meetings, healthcare professionals mostly used declarative statements to categorize patients regarding their premorbid and existing functional statuses, as well as the nature of patients' conditions. In essence, the authority to utter declaratives was a form of institutional power. In STK and SCI, healthcare professionals made regular declarations regarding patients' functional independence. For instance, patients were assessed on their ability to do a range of activities such as self-care (e.g., eating, grooming, bathing),



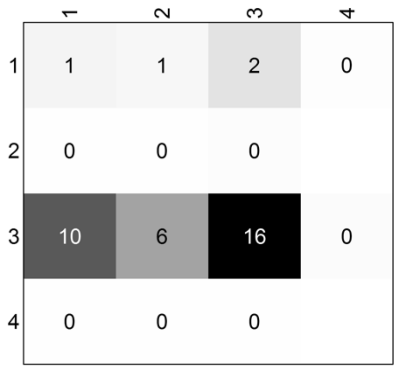
PSYC



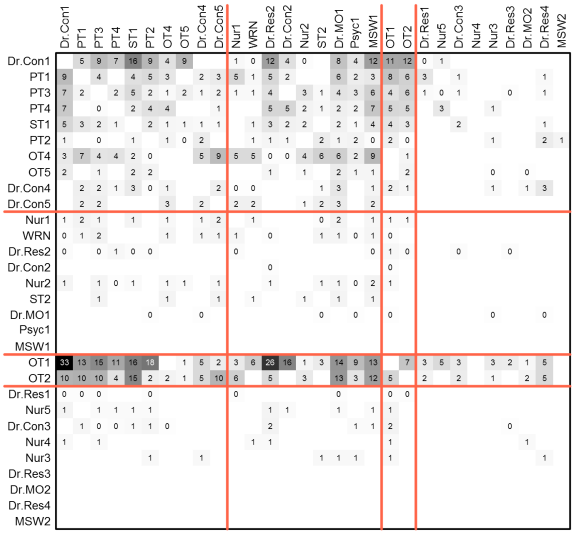


* all values in cells were multiplied by 0.1

SCI



* all values in cells were multiplied by 0.1



* all values in cells were multiplied by 0.1

STK

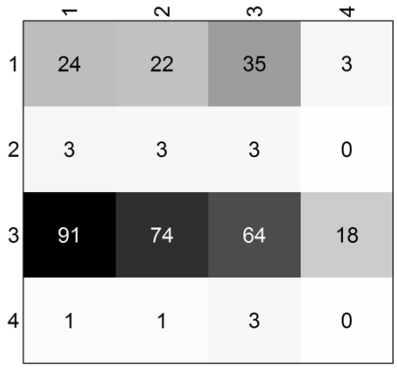
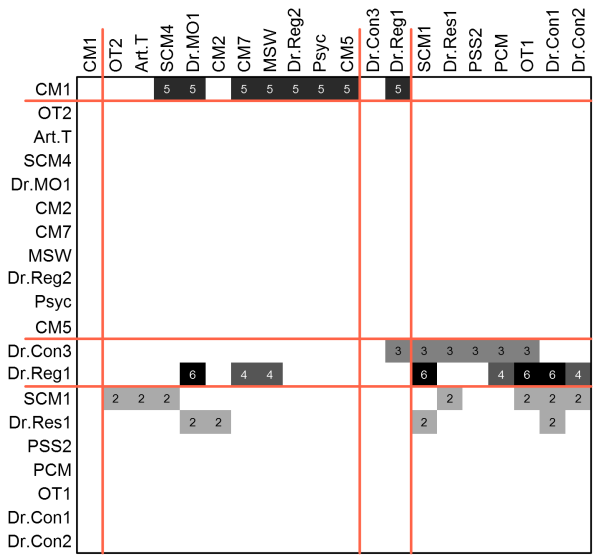
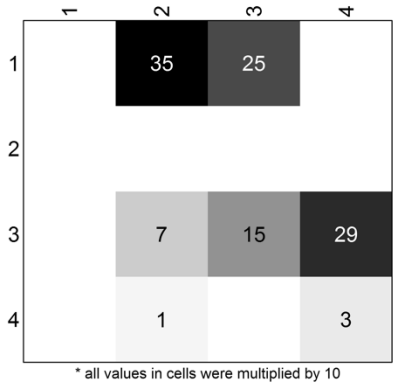


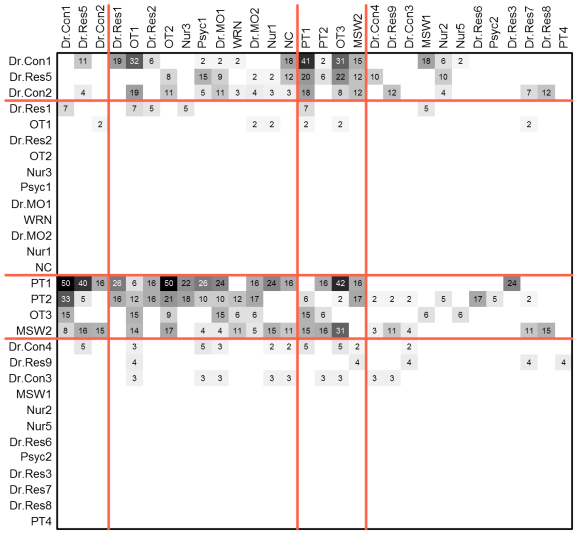
FIGURE 6.16. Declaratives – Authority Networks of PSYC, SCI, and STK

sphincter control (e.g., bladder and bowel management), and social cognition (e.g., social interaction, problem-solving). Based on these assessments, healthcare professionals in REHAB then proceeded to declare a score to indicate which level of functional independence patients should be categorized. These categories were given high emphasis and monitored closely by the hospital for performance assessment. As shown in Figure 6.16, occupational, physical, and speech therapists in STK (R1C1 and R3C3) and SCI (R3C3) formed the core and semi-periphery blocks for declaratives blockmodels. Declaratives were used to a much greater extent in STK and SCI as compared to PSYC. The proportion of declaratives was 15 and 17 times more in STK and SCI compared to PSYC. A possible reason for this disparity could be the nature of psychiatric conditions. PSYC was subjected to greater levels of uncertainty as diagnosing psychiatric conditions was more nebulous compared to diagnosing a physical condition, which has the benefit of using radiological scans and physical observations. One of the frequent tasks required of PSYC was to establish the baseline condition of their patients, and they frequently relied on narratives of patients and their family, friends and acquaintances to differentiate what was pathological and what was base-line personality. Nonetheless, core and semi-periphery blocks consisted of four doctors and none from other professional groups. In sum, the concentration of therapists in declarative blockmodels of REHAB teams and the concentration of doctors in that of PSYC showed the influence of professional groups on behaviours. It also demonstrated the authority that was institutionalized in professional groups. However, the influence of individual dispositions, such as doctors in STK, as well as the nature of patient conditions, also seemed to influence interprofessional team behaviours.

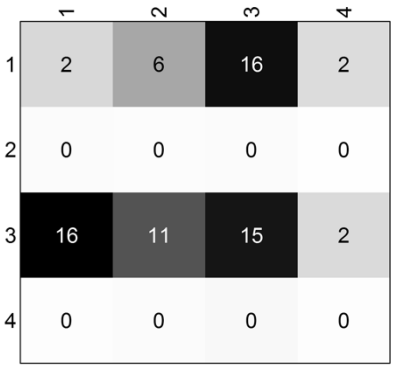


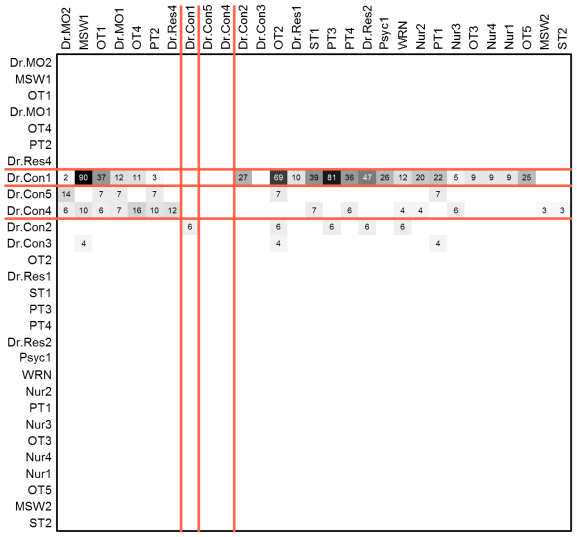
PSYC





SCI





STK

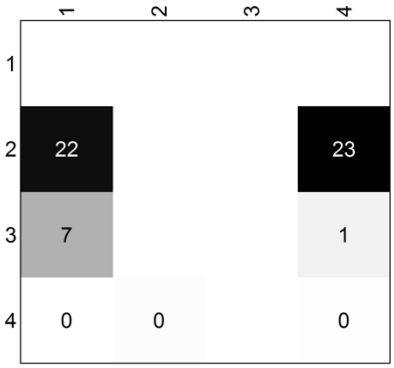


FIGURE 6.17. Expressives – Psychological Safety Networks of PSYC, SCI, and STK

Figure 6.17 shows the blockmodels for expressives of the three teams. In the context of interprofessional meetings, expressives refer to utterances to express a psychological state. Examples include utterances for complaining, complimenting, apologizing, and congratulating. As shown above in Table 6.8, the proportion for expressives of all speech act utterances were less than 1%. This is an expected finding: it is hard to imagine, say 5% of utterances in interprofessional meetings to be expressives. Nonetheless, the small proportion of expressives meant that the blockmodels were difficult and probably not meaningful to interpret. There is little guidance in the literature for this circumstance.

Blockmodeling: Summary

The combined blockmodels (Figure 6.11) revealed that all three networks exhibited some form of the classic centre-periphery structure, but their core and periphery blocks were quite differently composed. The influence of the professional group was perceptible across all teams and most perceptible in PSYC, but it influenced SCI and STK very differently, even though they were embedded in the same institutional environment. The parsing of the combined blockmodels by the various speech acts demonstrates the multiplexity and complexity of relationships among healthcare professionals. Each category of speech act could be roughly conceptualized to be one of the various roles enacted by healthcare professionals. For instance, assertives evinced the roles in information exchange, directive-instruction showed the roles in administrative authority, and declaratives indicated the roles in subject matter authority. Speech acts were particularly useful as they captured the action of the teams as they reconstituted interprofessional care by continuously coordinating with each other.

Findings Summary 2

This chapter focuses on the problem of extension. From an ANT perspective, it looks specifically at the process of enrolment. By studying how healthcare professionals strategically deploy different speech acts to include other professionals, I described how interprofessional care is accomplished by enlisting other actants into actor-networks. I am interested to understand how interprofessional care is continuously accomplished as an ongoing achievement, as opposed to understanding interprofessional care as a finished product. I problematized the taken-for-granted accomplishment of interprofessional care by studying it as an ongoing accomplishment that required continuous reconstitution. I asked the question, "How is interprofessional care accomplished?" This findings chapter aims to provide the evidence to describe the practices that make interprofessional care possible, i.e., practices that contribute to the ongoing reconstitution of interprofessional care. As the synchronic, diachronic, and parallel analyses showed, each team demonstrated regularities peculiar to each team in multiple mundane aspects of delivering care. This regularity provided a basis in which proprietary actions could be evaluated for self and others. But as mentioned, this set of analyses assumed that members were homogenous in their behaviours. As such, I performed social network analysis to investigate if heterogeneity exists in interaction patterns. Social network analysis revealed that while these hierarchies mattered, institutional and organisational priorities such as clinical focus shaped team configurations, team size, and the manner in which interactions took place in interprofessional meetings. The roles and positions analysis by way of blockmodeling showed the heterogenous networks that were formed via different types of utterances as healthcare professionals enlist each other. Collectively, the analyses and descriptions showed that interprofessional care's accomplishment requires attention to entities such as

healthcare professionals and patients, but also other entities such as organisational arrangements, institutional arrangements, and clinical unit's temporal norms. It shows how expertise networks were an assemblage of heterogeneous materials.

CHAPTER 7: DISCUSSION AND CONCLUSION

This thesis is concerned with how professionals from different occupational groups collaborate in complex institutional settings. The study aims to fill the gaps in the sociology of occupations and professions literature by expanding our understanding of the changing relationship between experts, expertise, and society. The study scrutinises how professionals from different occupational groups work on tasks and problems (Abbott, 1988, 1991). The fact that this lacuna exists in the sociology of occupations and professions literature is somewhat curious. Given the expansive scope of this literature dedicated to understanding how individuals were trained and socialised to attain expert status and how different occupational groups engaged in jurisdictional battles over claims of exclusive technical competence for specific tasks and problems, it is surprising that it has so little to contribute to the discussion to our understanding of the changing relationship between expertise and society (Abbott, 1991; Anteby et al., 2016). After all, few scholarly communities can legitimately claim jurisdictional control over this domain than sociologists of occupations and professions.

In this concluding chapter, I will focus on outlining the contributions of this thesis to the sociology of occupations and professions literature. To demonstrate the contributions of this thesis to the literature, I will provide a recap of the important societal developments that have impinged on the relationship between experts, expertise, and society. Additionally, I will also reiterate the gaps in the literature reviewed in Chapter 2 and interpret the findings presented in Chapters 5 and 6 in light of the gaps. I will conclude the thesis by discussing the limitations of the study as well as identifying some possible areas for future research.

Experts, Expertise, and Society: Gaps and Contributions to the Literature

Profound changes have been occurring with regard to the manner in which occupational and professional work is organised today (Anteby et al., 2016; Larson, 2018; Saks, 2021). The consequence of these changes is the development of a contradictory relationship between experts, expertise, and society. Expertise is demanded to address, comment on, and resolve serious challenges that confront society (Bijker et al., 2009; Eyal, 2019). Yet, the moment expertise is provided on those matters, the general public, organisations, politicians, academics, and news outlets will begin to criticise, comment, and counter expert opinions (Bijker et al., 2009). The conundrum of expertise describes this situation where there is a simultaneous reliance and distrust of experts (Beck, 1992b; Bijker et al., 2009; Jasanoff, 1998; Limoges, 1993; Nowotny et al., 2001). As aptly put by Nowotny and colleagues (2001, p. 215), "[e]xpertise is at once contested, problematic, central, and indispensable." This contradictory relationship is characterised by three related but separate issues, namely, the problem of trust, the problem of extension, and the problem of complexity. The literature has thus far identified the problems of trust and extension (Collins & Evans, 2002; Eyal, 2019) but has insufficiently conceptualised the problem of complexity. This thesis unpacks what the problem of complexity constitutes and provides an empirical examination of how healthcare professionals navigate the complexity brought on by the risk society and the hybridisation of organising logics. Collectively, these intricately related problems come together as a conundrum of expertise (Eyal, 2019).

As noted in the literature review Chapter 2, the literature has been observed by scholars that it is at an "intellectual standstill" or "intellectual impasse" (E. H. Gorman & Sandefur, 2011, p. 279). The literature is currently unable to contribute meaningfully to the discussion on the implications of the problems of trust, extension, and complexity (Anteby

et al., 2016). There are at least three reasons for this shortfall. First, the literature has been unproductively concerned with definitional issues. The result of this fixation is the neglect of substantive issues regarding how professionals actually tackle tasks and problems (Abbott, 1988). Abbott (1991, p. 19) described the debate about professions as a "definition bog from which one might never emerge," and Evetts (2006, p. 519) exclaimed that the trait-based manner of defining professions "is now largely assessed as being a time-wasting diversion in that it did nothing to assist our understanding of the power of particular occupations (such as law and medicine, historically) or of the appeal of 'being a professional' in all occupational groups." The challenges of defining what occupations or professions are methodically detailed in the literature (Abbott, 1988; Leicht & Fennell, 1997; Wilensky, 1964). Despite the amount of attention spent on definitional issues, there has been no consensus among scholars on how occupations or professions should be defined. By focusing on who is or is not a professional, scholarly studies became insular in their concerns.

Second, extant inquiries in the literature do not lend themselves to understanding the relationship between experts, expertise, and society, as well as understanding how professionals from different occupational groups collaborate. Anteby and colleagues' (2016) integrative review noted that the literature focused on two main lines of inquiry. The first line focused on understanding the life histories of occupational groups and the socialisation of junior members. Studies in this line of inquiry focus on how individuals receive the credentials required and the socialisation process that allows junior members to gain legitimacy as a member of a profession (Becker et al., 1961; Bucher, 1965; Khalili et al., 2013; McCann et al., 2013; Price, 2009). Socialisation studies provide useful insights to understand how the most junior members of occupational groups navigate their new

environments as they work towards becoming full-fledged members. However, these studies offered very few insights beyond the phenomenological experiences of the immediate environment where the studies were conducted. The relationship between experts, expertise, and society, and the collaboration between occupational groups, were not deemed to be within its remit and thus not prioritised. The second line focused on how occupational groups make contesting claims to certain tasks and problems against other groups (Anteby, 2010; Bechky, 2003; Bergeron et al., 2021; Heusinkveld et al., 2018; Xyrichis et al., 2017). Jurisdictional studies, on the other hand, provided useful insights about the relationship between occupational groups but suffered from irrelevance after jurisdictional contests were settled. As noted in previous chapters, jurisdictional contests are actually relatively rare and only occur during the initial stages of the inception of an occupational group, when new tasks emerge, or when an existing division of labour for existing tasks becomes inadequate. More importantly, the premise of jurisdictional studies is decidedly lopsided in their view of interprofessional relations (Anteby et al., 2016; Berman, 2006). Their premise – professionals from different occupational groups are adversaries – does not have the conceptual latitude to study collaborations between occupational groups.

Third, the manner in which expertise is characterised in the literature presents the greatest hindrance to understanding the relationship between experts, expertise, and society. Although this thesis draws from and seeks to contribute to the sociology of occupations and professions literature, I have conceptualised expertise differently so that the focus of the thesis, i.e., collaborative relations between occupational groups in complex institutions, can be adequately studied. As noted previously, the sociology of occupations and professions is currently a sociology of experts (Eyal, 2013). It conceptualises expertise

as an attribute of experts, a quality that individuals gain through a process of credentialisation to gain licensure. This definition does not recognise the meaningful inputs of those without credentials, such as service users and laypersons (Collins & Evans, 2002; S. Epstein, 1995; Jasanoff, 1997; Rabeharisoa & Callon, 2004). The manner in which expertise is currently conceptualised is problematic because scholars, particularly those in studies of science and society, have found that laypersons, lay experts (S. Epstein, 1995), or experience-based experts (Collins & Evans, 2002) were able to contribute to the work of credentialed experts to improve the capacity to tackle tasks and problems better and faster than without. The inadequacy in incorporating laypersons meant that an important conduit that links professionals to society is neglected in the sociology of occupations and professions. Instead of conceptualising it as an individual attribute, I conceptualised expertise as an attribute of a network, as "a capacity to carry out certain specialized tasks that are either impossible to carry out in its absence, or that are performed better, faster and with greater certainty of desired outcomes in its presence" (Eyal, 2013, p. 36). As noted, the literature also assumed that the contributions of credentialed experts in interprofessional settings are unencumbered by organisational and institutional constraints.

In the next few sections, I will recap the gaps in the sociology of occupations and professions literature reviewed in Chapter 2. Specifically, I will reiterate how the extant literature is ill-equipped to address the problems of trust, extension, and complexity. I will interpret the findings of the thesis presented in Chapters 5 and 6 in light of the gaps in the literature reiterated in the previous section. Specifically, I will detail how this thesis contributes to the sociology of occupations and professions literature and our understanding of the problems of trust, extension, and complexity.

The Problem of Trust

As noted by a number of scholars and observers, the disdain for experts is pervasive and global but not new (Eyal, 2019; Gore, 2007; Nichols, 2017). The tenuous position of experts in society is exemplified by labels such as "crisis of expertise" (Eyal, 2019), "war on expertise" (Saks, 2021), and "death of expertise" (Nichols, 2017). The relationship between experts and laypersons was different. There was a time, as Limoges (1993, p. 417) noted, "when the mobilization of experts was a taken-for-granted, unproblematic aspect of decision-making processes. That confidence has vanished." One can point to a number of reasons to explain the precipitous dip in public confidence. These reasons include high-profile errors made by experts (Cole, 2006; Kennedy, 2001; Lynch et al., 2009; Wynne, 1996), widespread social media disinformation (Collins et al., 2022; Lazer et al., 2018; Nichols, 2017; O'Connor & Weatherall, 2018; Pennycook & Rand, 2021), and growing anti-intellectualism (Hofstadter, 1963; Merkley & Loewen, 2021), as reasons for the diminished trust.

A prime example of this diminished trust in experts is epitomised in behaviours such as vaccine hesitancy. Vaccine hesitancy is an especially regrettable phenomenon given the number of human lives that were lost to largely preventable diseases (American Academy of Arts and Sciences, 2014; Goldenberg, 2021; Reich, 2014, 2020). The delay or selective administration of vaccine administration reflects the reduced trust in experts and institutions among members of the public. Eyal (2019) noted that the real question is not why experts are mistrusted but why anyone would ever trust experts. In other words, he asked the question: Why does trust exist? The difference is subtle but important. Eyal's (2019) emphasis is that trust cannot be assumed and taken for granted; trust has to be constantly re-established by experts when working with laypersons. Traditional ways of

building trust have emphasised the provision of information (Goldenberg, 2021; Jasanoff, 1997; Limoges, 1993). However, as the example of vaccine hesitancy revealed, the provision of information did not build the necessary trust that could change the minds and behaviours experts had hoped for (American Academy of Arts and Sciences, 2014; Goldenberg, 2021; Reich, 2014). Rather, building trust, as emphasised by Limoges (1993, p. 418), required "a process [that] cannot be reduced to the set of statements uttered by experts, [and] is first and foremost the results of collective learning and assessment." The process of building trust requires experts to incorporate the concerns, values, priorities, and knowledge of laypersons, especially the recipients and users of expertise, into the process of assessment and decision-making (Limoges, 1993; Nowotny et al., 2001).

This thesis has sought to unpack the process of how healthcare professionals from different occupational groups collaboratively build trust with the recipients of their care. The primary reason why the extant sociology of occupations and professions is unable to contribute meaningfully to the problem of trust is that its focus is mainly on how experts are socialised and how occupational groups gain professional status. Scholars of occupations and professions have not prioritised gaining an understanding of the relationship between professionals and their service users. This thesis makes a contribution to the literature by studying how professionals of different occupational groups collaborate to build trust with their service users, i.e., patients and their caregivers. The healthcare professionals in both REHAB and EPI saw the building and maintaining of trust with their patients as a prerequisite for effective care. Most of them described this trust relationship as "rapport," while some used stronger words such as "therapeutic alliance" to describe the relationship. They saw establishing a strong rapport with their patients as opening a

conduit that would allow them to access the emotional states and needs of their patients and thereby provide more effective care.

The quality of trust between healthcare professionals and their patients was threatened in a number of ways in REHAB and EPI. Patients who were admitted to REHAB and EPI were all seriously unwell and needed complex medical care. Most of the patients with stroke and spinal cord departments sustained life-changing injuries. Imaginably, patients were not always able to accept the drastic changes and thus remained in a state of denial, which interfered with rehabilitation therapies. Patients' denial of the life-changing nature of their injuries often got in the way of treatment as they focused on trying to regain the functions that were highly unlikely to restore. When patients were focused on their impairments, they often missed out on the narrow window of opportunity to learn the strategies to compensate for their impairments. Without accepting the permanent nature of their experienced impairments, patients were unable to benefit from therapy sessions.

To ensure that patients remained productively engaged in therapy sessions, healthcare professionals controlled the manner in which patients received information by strategizing the content, sources, and timing. Healthcare professionals in REHAB collaborated through a variety of strategies to dispense a cocktail of hope and reality to build and maintain their rapport with patients. They trod a delicate tightrope of information management to preserve the relationship. Although it was important that patients knew that their experienced impairments were most likely permanent than not, healthcare professionals used a mix of delaying, avoiding, emolliating, hedging, "empiricizing," or buffering strategies when patients asked them about their prognosis. Depending on their assessment regarding the state of the patients, healthcare professionals – therapists in particular – chose to delay or avoid the conversation about

prognosis by tweaking the topic or asking the patient to wait for a period of time or "clarify" what their doctors said to them. In some instances, they emolliated patients by providing hope about the possibility of improvement of some function rather than providing their negative prognosis. Sometimes they blended their optimism by hedging and lacing their responses with scientific language. Healthcare professionals in REHAB went the extra mile to protect their rapport with their patients to the extent that they prioritised the quality of the relationship over the accuracy of information.

Healthcare professionals knew that the credibility of a message greatly depended on the messenger. As such, non-medical healthcare professionals deliberately leaf the breaking of bad news to their medical colleagues because they were viewed as leaders of the team and had legitimacy by virtue of their occupation. Another category of actors REHAB frequently enlisted as messengers were ex-inpatients of REHAB. Many REHAB patients, especially patients with spinal cord injuries, were followed up for life at REHAB after discharge. As such, many ex-inpatients also became volunteers in patient support groups. Patient volunteers were particularly effective messengers as they had lived experiences, providing them "street cred" that helped build rapport rapidly. New patients were often curious about the recovery process of those who experienced similar types of injuries.

For patients with psychosis, trust was threatened when healthcare professionals had to either enforce treatment or involuntarily detain a patient. Healthcare professionals in EPI frequently noted that the most challenging profiles of patients were those who had poor insight into their own mental health conditions. By poor insight, they referred to situations when patients did not think they were unwell or did not comprehend the extent of their conditions. The lack of patient insight presented a thorny problem for two reasons.

First, patients who lacked insight would often refuse treatment as well as refuse admission into a psychiatric facility. Second, the longer these patients went without treatment, i.e., the duration of untreated psychosis (DUP), the poorer their recovery and prognosis would be. As such, the healthcare professionals in EPI had to constantly consider the costs, or in Beck's (1992b) idea of risks or "bads" in respecting the choice of patients who had poor insight of their own conditions. The issue of risks will be further elaborated in the section on the problem of complexity.

To build trust, the healthcare professionals in EPI collaborated to deploy a number of mutually reinforcing strategies. Whereas REHAB's strategy centred around information management, EPI's strategy centred on long-term relationship and treatment management. Although it was important to them that medical treatment started as soon as possible, their strategy was to build a web of relationships with their patients and their caregivers. The first was to have a dedicated case manager for every patient to cultivate long-term relationships with their patients and their caregivers for the entire three-year duration while the patient was in the care of EPI. The intent of a case manager was to be the "epicentre" of a patient's interaction with the healthcare system. This practice of a dedicated case manager was unique within Timberland Hospital; most of the patients in other clinical departments did not have a dedicated case manager as it was a costly arrangement. Similar to REHAB, EPI also actively enlisted the help of ex-patients, but they went one step further by creating and institutionalising the peer support specialist role within the interprofessional team. Peer support specialists acted as patient advocates, and their lived experiences as a patient with psychosis provided a reality check on the patient-centredness of the care in EPI.

It was important for EPI to establish a web of relationships consisting of different healthcare professionals – psychiatrists, nurses, case managers, pharmacists, occupational therapists, art therapists, and medical social workers – as they needed to get an all-rounded view of understanding their patients, and also the relationships in the long term. Most of the patients would need to be on medication for life, and strong positive relationships with healthcare professionals were critical for medication compliance. With strong relationships in place, the healthcare professionals would then deploy strategies to manage the choices that patients make both in the short- and long term. Under the Singapore Mental Health Act, patients could be forcibly admitted to a psychiatric facility and have treatment imposed involuntarily. Yet, the psychiatrists in PSYC would largely refrain from using forced avenues unless absolutely necessary so that the relationships with patients could be preserved for the long term. Instead, they focused on persuasion and psychoeducation to help patients, and their caregivers reframed what living with psychosis meant, as well as the role of medications.

The Problem of Extension

The problem of extension was first surfaced by Collins and Evans (2002) over their concerns about issues such as that vaccine hesitancy (Chen & DeStefano, 1998; Deer, 2011a, 2011b, 2011c; Goldenberg, 2021). They were concerned about "a tendency to dissolve the boundary between experts and the public so that there are no longer grounds for limiting the indefinite extension of technical decision-making rights" (Collins & Evans, 2002, p. 235) and the lack of involvement of noncredentialled experience-based individuals who could contribute to technical decisions. As reviewed earlier, it was repeatedly shown that laypersons were able to contribute to the capacity of tackling even technical problems

as complex as that of AIDS research (S. Epstein, 1995), neuromuscular diseases (Rabeharisoa & Callon, 2004), and nuclear science (Wynne, 1996), if compatible modes of describing and defining the problems were available. In other words, Collins and Evans (2002) were concerned about the trade-offs between the inclusion of laypersons and the substance, or the lack thereof, of what was brought into technical discussions.

However, as argued in the literature review Chapter 2, Collins and Evans's (2002) concerns about layperson inputs and technical decisions were overly narrow. Essentially, if the concern is about making better decisions by including the inputs of relevant individuals who can meaningfully contribute to better outcomes, then the problem of extension must also consider how to include the inputs of other professionals working on the same tasks and problems in addition to the inputs of relevant laypersons. Collins and Evans (2002) treated the contributions of credentialed professionals in decision-making processes as a given. Evidence in the literature suggests that the unfettered contributions of professionals with lower status cannot be taken for granted in interprofessional settings (Apesoa-Varano, 2013; Barnard et al., 2020; Carpenter, 1995; Hewitt et al., 2015). These professionals, although credentialed, can be marginalised in organisations because of their relatively low status, role in occupational ecology, or organisational design. Strong evidence suggests that diversity in groups is associated with higher-quality decisions (Haan et al., 2021; Tomprou et al., 2021; Woolley et al., 2008, 2010, 2015, 2022). These findings regarding the diversity of inclusion and quality of decisions underscore the central concern of the research question of this thesis – how do professionals of different occupations collaborate?

By including the inputs of laypersons and marginalised professionals in the conceptualisation of expertise, this study also expands Collins and Evans's (2002) scope of technical decisions for the problem of extension to include decisions in other spheres, such

as administrative and social domains. As argued earlier, decisions will be less socially robust when the technical domain is artificially separated from other germane domains (Nowotny et al., 2001). As Nowotny and colleagues reminded us (2001, p. 166), "the great conceptual, and organizational, categories of the modern world – state, market, culture, science – have become highly permeable, even transgressive… [as] they are ceasing to be recognizably distinct domains." In light of the problem of extension, this thesis has sought to understand how healthcare professionals from different occupational groups afford greater inclusivity of both laypersons and marginalised credentialed experts in decision-making.

There are at least two reasons why the current literature in the sociology of occupations and professions is unable to adequately address the problem of extension. First, the way in which expertise has been conceptualized has limited the ability to include the perspectives of laypersons and professionals with low status and power in theoretical frameworks. Laypersons are not typically seen as having expertise relevant to the tasks and problems that professionals are hired to solve. As a result, an important link between expertise and society is overlooked in the sociology of occupations and professions. Additionally, the assumption that all professionals can provide their input without being influenced by their organizational and institutional contexts, regardless of their status and power, has led to a lack of examination of the diversity of inputs in decision-making. Instead of conceptualising expertise as an individual attribute, I conceptualised expertise as an attribute of a network, as "a capacity to carry out certain specialized tasks that are either impossible to carry out in its absence, or that are performed better, faster and with greater certainty of desired outcomes in its presence" (Eyal, 2013, p. 36). The second reason for the inadequacy of the sociology of occupations and professions literature in addressing the problem of extension is the assumption of conflict and competition between occupational

groups. This focus on conflict and competition is incompatible with a perspective of collaboration. As noted by Anteby and colleagues (2016), the sociology of occupations and professions literature has few resources to describe interprofessional work and lacks an understanding of how different occupational groups collaborate for interdependent work, as well as how the input of laypersons is included or not.

This thesis has sought to understand how healthcare professionals from different occupational groups afford greater inclusivity of both laypersons and marginalised professionals in decision-making. The problem of extension was multifaceted in nature and manifested similarly in both REHAB and EPI. Existing explanations of inclusion in decision-making in the sociology of occupations and professions literature would interpret the problem of extension as a matter of status hierarchy and jurisdictional struggles. Status hierarchy mattered in this study, but jurisdictional struggles did not occur. Additionally, more mundane organisational factors such as role design and resource constraints were key in explaining variations in the inclusivity of inputs from laypersons and marginalised professionals. Beyond these social and organisational reasons, individual characteristics and dispositions of professionals were critical in explaining the fallout of organisational and institutional arrangements.

This thesis has aimed to understand how healthcare professionals from different occupational groups can increase the inclusivity of both laypersons and marginalised professionals in decision-making. The problem of extension was multifaceted and manifested similarly in both REHAB and EPI. Previous explanations in the sociology of occupations and professions literature would view the problem of extension as a matter of status hierarchy and jurisdictional conflicts. While status hierarchy was a factor in this study, jurisdictional struggles did not occur. In addition, more mundane organisational

factors such as role design and resource constraints were important in explaining the differences in the inclusivity of input from laypersons and marginalised professionals. In addition to these social and organizational factors, the individual characteristics and dispositions of professionals were critical in explaining the impact of organizational and institutional arrangements on inclusivity.

As shown in Chapter 5, interprofessional meetings in SCI, STK, and PSYC had different temporal rhythms. Sociotemporal orders provided a sense of structure and predictability that enabled individuals to understand when certain activities should occur, how long an activity should last, when and how long to speak, and when to leave the room. A general sociotemporal "quotient" was important for new members to participate effectively. Due to REHAB and EPI's roles in training professionals for the public healthcare system, both departments regularly hosted trainees who were completing clinical rotations in REHAB and EPI. New medical residents, therapists, and nurses often struggled to participate in interprofessional meetings until they developed a general sociotemporal understanding.

In both REHAB and EPI, the inputs of professionals with low status and power were often marginalised. Marginalised occupations included nurses, pharmacists, psychologists, and speech therapists. The peripheral status of these occupations was evident in the consistent empirical trends observed in the sociograms, airtime charts, and blockmodels presented in Chapter 5. Their inputs were often marginalised because of their roles in the division of labour as well as organisational priorities, such as treatment and discharge plans. Conversely, professionals at the centre of decision-making – occupational therapists, physical therapists, senior physicians in REHAB, and psychiatrists in EPI – provided inputs that were critical, by design, to the functioning of the organisations. Time constraints, and

organisational priorities to maximise patient outcomes in the general population and minimise patient risks of harm (more in the next Section on The Problem of Complexity), influenced the process of which and how healthcare professionals were enlisted to participate in decision-making. Professionals in occupations whose inputs were critical for planning patient discharges, such as medical social workers, occupational therapists, and physical therapists in REHAB; and psychiatrists and case managers in EPI were heavily enlisted in decision-making. Professionals in occupations whose inputs were somewhat peripheral to organisational priorities, such as nurses, speech therapists, and pharmacists, were typically only marginally involved.

To increase the participation of both laypersons and marginalized professionals in decision-making, the healthcare professionals in REHAB and EPI employed various strategies to regulate the sociotemporal dynamics. Both departments structured the sequence in which information was presented by occupational roles. The impact of this arrangement was that an interaction space was carved out for each occupation to articulate their inputs. Information was presented by functional areas by using preformulated templates in either the electronic medical records system or some customised form. This practice of turn-taking among occupational groups often materialised without any promptings from anyone, although some of the doctors who were leading the interprofessional meetings would ensure the inputs of all occupational groups were provided by verbally requesting the inputs of all occupational groups specifically. This practice was particularly helpful in facilitating the input of nurses, who tended to be hesitant to provide their input. However, as mentioned in Chapter 5, the marginalisation of certain occupational groups also became quite obvious because of the practice of turn-taking when occupational groups were skipped over.

One of the most significant exclusions in the decision-making process was patients. Both REHAB and EPI included the input of patients and their caregivers through the deployment of healthcare professionals as "pseudo patient proxies." Although these professionals were not legally patient proxies, they served as conduits through which patient choices and preferences were communicated in interprofessional meetings. In REHAB, medical social workers and psychologists were expected to serve as pseudo patient proxies as their conversations with patients and caregivers often extended beyond clinical matters to include social, psychological, and financial issues. In EPI, case managers and peer support specialists were de facto pseudo patient proxies due to the design of their roles. As previously mentioned in Chapter 5, case managers and peer support specialists worked together to build rapport with patients and their families. Case managers served as the "epicentres" of EPI patients' interactions with the healthcare system, while peer support specialists provided a critical perspective informed by their own lived experiences.

Despite institutionalised practices to facilitate inclusion, individual characteristics and dispositions of professionals were critical in explaining the impact of these practices. As evident in the consistent empirical trends presented in Chapter 5, participation in interprofessional meetings could not be explained by occupational membership alone. Participation varied within an occupational group, and SCI and STK had quite different sociotemporal dynamics, although they belonged to the same department. In general, the participation in interprofessional meetings was more inclusive in SCI than in STK, and STK was more inclusive than PSYC. Participation from nurses was consistently low across time and institutional settings. One of the main reasons why participation from nurses was low was because of the manner in which nursing work was organised in each of the teams. Unlike their colleagues in other occupational groups, nurses were not able to just excuse

themselves from clinical wards to attend the meetings because a certain number of nurses needed to be in the wards at all times.

This thesis has expanded the notion of the problem of extension by focusing on the inclusivity of both laypersons and marginalised professionals in decision-making. The problem of extension was multifaceted and depended on status hierarchies, role design, resource constraints, individual characteristics and dispositions of professionals. Many of the factors that affect inclusivity in decision-making in interprofessional meetings were difficult to address because of the trade-offs and contradictions described in the next section.

The Problem of Complexity

The problem of complexity is the result of the culmination of two important societal developments, namely, 1) the rise of a risk society, and 2) the hybridisation of organising logics. The concept of a risk society was mooted by Beck (1992b) to bring to light the "latent side effects" (Beck, 1992b, p. 34) that came with the maturation of an industrialised society. Specifically, a risk society refers to the second phase in industrialisation when society gains a momentum that is difficult to control and predict (Beck, 1996). As such, members of a risk society begin to be concerned not only with the distribution of goods in an industrial society but also begin to be concerned with the distribution of "bads" or risks in society; both goods and risks tend to be inequitably distributed (Beck, 1992b). The upshot of the rise of a risk society is a phenomenon Eyal (2019, p. 97) described as the "scientization of politics" and "politicization of science." This phenomenon is characterised by the involvement of experts in what Weinberg (1972, p. 209) labelled as "trans-scientific," i.e., "questions which can be asked of science and yet which cannot be answered by

science." Examples of trans-scientific questions include questions such as how much an N95 mask can confer against a new pathogen or what is the risk of a patient with psychosis attempting suicide if he discharges from the hospital.

The hybridisation of organising logics refers to the co-existent of multiple organising logics in a single organisation (Blomgren & Waks, 2015; Pache & Santos, 2013). By organising logic, I refer to distinct ways in which different spheres of society are arranged. Some of the most prominent organising logics identified by scholars include bureaucracy, community, family, market, profession, religion, science, and the state (Fiske, 1991; Friedland & Alford, 1991; Nowotny et al., 2001; Streeck & Schmitter, 1985; Thornton et al., 2012). Pertaining to the focus of this thesis, scholars have been most concerned about the encroachment of bureaucratisation and marketisation movements on occupations and professions (Abbott, 1991; Anteby, 2010; Berman, 2006; Farrell & Morris, 1999, 2003; Freidson, 2001; Larson, 1977, 2018; Nicklich et al., 2021; Pohler & Willness, 2014; Spence et al., 2017; Starr, 1982). The consequence of the hybridisation of organising logics in organisations is the resultant contradictions. These contradictions come from inherent incompatibilities among the different organising logics. Some scholars have argued that professionals must resist non-professional logics (e.g., Freidson, 2001), whereas others are more neutral and argue that this hybridity would create new forms of organisations (Adler et al., 2008). While the literature is unambiguous about the contradictions that come with the hybridity of organising logics, what remains uncertain is how professionals navigate these contradictions (Blomgren & Waks, 2015; McPherson & Sauder, 2013; Nicolini et al., 2016; Sandholtz & Burrows, 2016).

As such, this thesis has sought to unpack the process in which professionals from different occupational groups collaborate to navigate the contradictions occasioned by the

hybridisation of organising principles in complex institutional settings. There are several reasons why the extant sociology of occupations and professions literature is ill-positioned to address the question of how different occupational groups collaborate to navigate the contradictions. First, as noted above, scholarly inquiries were relatively insular and did not extend much beyond socialisation and jurisdiction concerns (Anteby et al., 2016). In other words, the logic they were most concerned about was the organising logic of professionalism, and they sought to unpack it in their studies. Concerns about other organising logics, such as bureaucratisation and marketisation, were in relation to how these other organising logics encroached into how professional work was accomplished (Freidson, 1970, 2001). The assumption was that the presence of multiple logics in an environment was detrimental and to be resolved or that the logics were competing for dominance. To the best of my knowledge, no studies have investigated how different logics were complementary.

Second, most of the studies that looked beyond the logic of professionalism compared it in relation to only one other organising logic (Bévort & Suddaby, 2016; Currie & Spyridonidis, 2016; McPherson & Sauder, 2013; Thornton, 2002). As noted by Nowotny and colleagues (2001, p. 166), "the great conceptual, and organizational, categories of the modern world – state, market, culture, science – have become highly permeable, even transgressive… [as] they are ceasing to be recognizably distinct domains." The artificial separation of domains meant that studies performed in the tradition of professional logic were less socially robust as these studies were not sufficiently contextualised (Nowotny et al., 2001). Even for the rare studies that looked beyond two organising logics (Dalpiaz et al., 2016; Ertimur & Coskuner-Balli, 2015; Goodrick & Reay, 2011; Greenwood et al., 2010; Jha & Beckman, 2017; Malhotra et al., 2021; Pache & Santos, 2013; Palermo et al., 2017), the level

of analysis was mostly at the field or industry level. As such, these studies were highly abstract and not conceptualised at the level of "tasks and problems" (Abbott, 1988, p. 314) that was needed to elucidate the complexities of navigating multiple organising logics.

The central contradictions in this study were occasioned by the incompatibilities of the three facets of the meta-organising logic of patient-centred care, namely: 1) what does a patient want and need; 2) what do healthcare professionals think a patient wants and needs; and 3) what do other patients want and need. These different facets manifested differently in REHAB and EPI. Patient-centred care was a conundrum. Although it was the source of contradictions, it was also at once the orientating compass that aided healthcare professionals as they navigated and worked with the contradictions. The range of practices for navigation was provided by the other organising logics of medical leadership, shared leadership, and resource optimisation. The organising logic of medical leadership originates from the archetype logic of professionalism (Freidson, 2001), shared leadership was a blend of the archetype logics of community and professionalism (Adler et al., 2008; Fiske, 1991), and resource optimisation was a blend of the archetype logics of market and bureaucracy (Briscoe, 2007; Farrell & Morris, 1999). This blending of organising logics went beyond just the mixing of bureaucratisation and marketisation with professionalism. This hybridisation of organising logics creates highly complex institutional environments for healthcare professionals in REHAB and EPI.

In REHAB, the problem of complexity centred around the issue of discharge planning. Because REHAB was part of the public healthcare system, it needed to optimise the limited resource of hospital beds, therapy sessions, and other healthcare services to ensure the most benefit for the greatest number of patients. At the same time, REHAB also had the responsibility and duty to provide the best healthcare for each individual patient.

As such, the healthcare professionals in REHAB had to make continuous assessments of patients' recovery trajectories to formulate discharge plans for patients. As elaborated in Chapter 5, discharge planning, although a highly mundane activity, was replete with contradictions that healthcare professionals in REHAB had to navigate on a day-to-day basis. This process of discharge planning essentially required the healthcare professionals to respond to a number of "trans-scientific questions" (Weinberg, 1972, p. 209), i.e., questions that can be asked of experts but yet cannot be answered by experts.

To navigate the contradictions, the healthcare professionals in REHAB made a number of trans-scientific assessments to make decisions about discharge. These assessments included questions about a patient's potential for continued recovery, or if a patient had reached his or her potential of recovery; how a patient's access to therapy services would be affected after discharge; and whether a patient's home environment was conducive enough to receive a patient. These assessments were collectively decided in weekly interprofessional meetings. Given the trans-scientific nature of these assessments, the healthcare professionals in REHAB were not always unanimous in their decisions regarding planned discharge dates. When the team could not come to a conclusion on discharge dates, the organising logic of medical leadership came into effect, with the senior doctor being the arbiter of decisions, thus providing a path forward in navigating the contradictions among the organising logics of patient-centred care, resource optimisation, and shared leadership.

In EPI, the problem of complexity centred around the issue of risk assessment. The meta-logic of patient-centred care focuses on delivering healthcare that is aligned with what a patient wants and needs. As noted in the above section on the problem of trust, patients in EPI often lacked insight regarding their own mental health conditions. As a

result of their lack of insight, frequent tensions were found between respecting the choices and preferences of patients and their caregivers and the risk assessments made by healthcare professionals. In EPI, the objective of inpatients and outpatients differed. Whereas the emphasis for inpatients was the stabilisation of mental state, the emphasis for outpatients was holistic development and recovery. As noted earlier, in Singapore, the Mental Health (Care and Treatment) Act empowers a medical practitioner to involuntarily detain a person for up to 6 months, depending on the provision exercised. The Act thus puts a medical practitioner to be medically and legally responsible for the patients under their charge. The issue of risk assessment was most critical when the healthcare team in EPI had to decide if patients were well enough to be discharged and what kinds of activities patients were endorsed.

Risk, as noted by one of my respondents, "is a huge concept… and is kept vague on purpose so that doctors can have that leeway to make that clinical decision in the person's best interest." What was considered to be in the patient's "best interests" was frequently discussed and sometimes debated, in the weekly interprofessional meetings, as guided by the organising logic of shared leadership. Should a patient be discharged? Differences in judgments among healthcare professionals in EPI were mostly due to variations in risk assessments, levels of rapport, and definitions of what was considered recovery. According to my observations, psychiatrists and case managers were more risk-averse compared to peer support specialists. Whereas psychiatrists and case managers might not endorse activities that they deemed to put a patient at greater risk of relapse, peer support specialists saw relapses as part of the recovery process. The commitment to an interprofessional shared leadership environment could sometimes lead to an impasse due

to differences in risk assessments among healthcare professionals in EPI. In such situations, the logic of medical leadership kicked into action.

The findings in this thesis pertaining to the problem of complexity departs from the literature and demonstrate that multiple organising logics in a complex institutional environment need not be detrimental. Rather, multiple organising logics provided healthcare professionals with a range of accepted actions to work with different situations and thus allowed the delivery of healthcare in REHAB and EPI to be nuanced, values-driven, yet efficient at once by decoupling and combining different organising logics. In other words, the hybridisation and contradictions were a feature and not a bug of an efficacious institutional environment.

Limitations and Future Research

This thesis has at least three limitations. First, this thesis was concerned with how professionals collaborated across occupational boundaries in complex institutional settings for patients with spinal cord injuries, stroke, and psychosis. One of the insights from the analysis was that the organising logic of patient-centred care helped in providing an orientating focus when navigating complex institutional environments. Additionally, I noted the importance of incorporating the voices of laypersons in light of the problem of extension. However, the perspectives of patients, i.e., laypersons, were only sparingly incorporated into my study through the interviews with peer-support specialists in EPI. I did, however, collect substantial data from patients. I interviewed 43 patients with the conditions of spinal cord injuries, stroke, and psychosis for this thesis. In addition to in-depth interviews, I also collected photovoice data to see the world from the point of view of patients and a lengthy survey that measured several psychological and demographics.

However, I had difficulties formulating a framework that could meaningfully incorporate both data of healthcare professionals and patients. As a result, this thesis was not able to benefit from the insights of patients. Future studies should explore developing frameworks that can meaningfully incorporate patient data to push the theoretical frontiers of our understanding of how deep collaboration between patients and healthcare professionals can take place.

Second, the data I used for this thesis mainly consisted of interviews with 32 healthcare professionals in REHAB and EPI, as well as longitudinal observations of weekly interprofessional meetings. Although I also conducted observations in many other settings (see Table 4.5), these data were mainly used to sensitise myself to the context of the study. I had focused on collecting detailed data in the context of weekly interprofessional meetings because that was the only platform where all occupational groups were gathered. Collaboration among different occupational groups regularly occurred outside those meetings. Some settings where these interactions could take place include over the phone, at the bedside, or by email. It was infeasible to collect interaction data of all modalities, but future research should understand the effects of different settings on collaboration.
Third, although I had attempted to collect some patient outcome data from the three interprofessional teams during my pilot study, it turned out to be infeasible, given my lack of expertise in interpreting clinical notes. The findings of this study could only provide an account of how the different professions work across disciplinary and occupational boundaries, but it could not say whether greater diversity in decision-making led to superior patient outcomes or not. I made the inference that patient outcomes should probably be better because interprofessional teams held more rigorous discussions, which should then be translated to more holistic care. Although there is strong evidence available

in the literature that supports my inferences (Haan et al., 2021; Tomprou et al., 2021; Woolley et al., 2008, 2010, 2015, 2022), I would have been able to make a much stronger claim if I collected patient outcomes data of some sort. The ability to incorporate patient outcomes into a study would have given the study a lot more mileage and provided a greater impact on practice. Future studies should incorporate an assessment of patient outcomes.

Concluding Comments

This thesis examined how professionals from different occupations collaborated in complex institutional settings. The intent was to expand our understanding of the relationship between experts, expertise, and society. By scrutinising how professionals from different occupations work on tasks and problems, this thesis sheds light on previously neglected areas in the sociology of occupations and professions: the problem of trust, the problem of extension, and the problem of complexity. Future research should explore collaborative interprofessional relationships in interorganisational settings, as well as develop theoretical frameworks that can directly incorporate the inputs of laypersons.

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APPENDIX





Participant Information Sheet
(Healthcare Professional)

1. Study Information

PIS and Informed Consent Form for Health Professionals 070717.Version 1.0

Protocol Title: Complex problem-solving in interprofessional mental healthcare teams (OxTREC reference number 5117-16)

Principal Investigator & Contact Details:
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2. Introduction

You are invited to participate in a research study. It is important to us that you first take time to read through and understand the information provided in this sheet. Nevertheless, before you take part in this research study, the study will be explained to you and you will be given the chance to ask questions. After you are properly satisfied that you understand this study, and that you wish to take part in the study, you must sign this informed consent form. You will be given a copy of this consent form to take home with you.

Research studies are different from clinical care. They aim to provide a way to find out new information that might help people with similar conditions and illnesses such as yours or person you are caring for. This form aims to provide you with information about why this study is being done, a complete description of the study process and how you will be involved, and inform you of the possible inconvenience and risks you may experience during the process of this study.

This information will assist you to decide whether to participate in the study or not. This study is specifically carried out to understand the experiences of healthcare professionals taking care of patients with chronic conditions. This study will recruit at least 15 healthcare professionals in IMH over a period of 24 months.

3. Purpose of Study

The purpose of this study is to develop an understanding of the experiences of healthcare professionals providing care for patients with chronic conditions in healthcare institutions, as well as that of patients receiving that care. With this understanding, the study aims to uncover the conditions in which the needs of patients with chronic conditions can be adequately served by interprofessional teams.

4. What procedures will be followed in this study

If you take part in this study, you will be asked the following:

1. To provide your opinions about the care you provided as a healthcare professional of a patient with chronic conditions; and
2. To provide your ideas on how care can be improved.

The interview will be audio recorded to make sure what your mentioned during the session is capture in its entirety to facilitate analysis. The interview will take approximately 45-75 minutes.

5. Your Responsibilities in This Study

If you agree to participate in this study, you should follow the advice given to you by the study team. You should be prepared to avail time in the hospital or healthcare facility to undergo all the procedures that are outlined above.

6. What is Not Standard Job Description or is Experimental in This Study

The study is conducted for research purposes and is not part of your job description. Participation or non-participation in this study will not affect your rights and privileges as a healthcare professional. Your participation is completely voluntary.

7. Possible Risks and Side Effects

The study poses no more than minimal risk. To protect your identity and privacy, all research personnel are required to sign an agreement to maintain confidentiality of the activity. In addition to that, all recorded information will be stored in a secure computer with passwords. If the data is used, pseudonyms will be used instead of your name and any details that might lead to linking your identity to the data will be removed.

In order to protect your identity and the confidentiality of your information, all information and audio files that concern you will be stored on a central computer. Access to this information will be strictly controlled with the aid of a security code system.

8. Possible Benefits from Participating in the Study

There will not be any direct benefit to you in this study. It is hoped that the findings from this study will be used to improve the standard of interprofessional care that patients with chronic conditions will receive in the future.

9. Voluntary Participation

Your participation in this study is voluntary. You may stop participating in this study at any time. Your decision not to take part in this study or to stop your participation will not affect your job or any benefits to which you are entitled. If you decide to stop taking part in this study, you should tell the research team.

10. Confidentiality of Study Records

Information collected for this study will be kept confidential. Data collected and entered are the property of National Healthcare Group. In the event of any publication regarding this study, your identity will remain confidential.

Your records, to the extent of the applicable laws and regulations, will not be made publicly available. Pseudonyms will be used instead of your name and any details that might lead to linking your identity to the data will be removed.

However, NHG Domain-Specific Review Board and Ministry of Health will be granted direct access to check study procedures and data, without making any of your information public. By signing the Informed Consent Form attached, you (or your legally acceptable representative, if relevant) are authorizing (i) collection, access to, use and storage of your "Personal Data, and (ii) disclosure to authorised service providers and relevant third parties. "Personal Data" means data about you which makes you identifiable (i) from such data or (ii) from that data and other information which an organisation has or likely to have access. Research arising in the future, based on this Personal Data, will be subject to review by the relevant institutional review board. By participating in this research study, you are confirming that you have read, understood and consent to the Personal Data Protection Notification available at (https://corp.nhg.com.sg/Pages/PDPA.aspx).

11. Costs and Payments

There are no costs involved in participation in this study.

12. Compensation for Injury

NHG (IMH) without legal commitment will compensate you for the injuries arising from your participation in the study without you having to prove NHG (IMH) is at fault. There are however conditions and limitations to the extent of compensation provided. You may wish to discuss this with your Principal Investigator, Mr Issac Lim.

By signing this consent form, you will not waive any of your legal rights or release the parties involved in this study from liability for negligence.

13. Who To Contact if You Have Questions

If you have questions about this research study, you may contact the principal investigator (Issac Lim, issac_wy_lim@nhg.com.sg, +65 6359 6369)

If you want an independent opinion of your rights as a research subject you may contact the NHG Domain Specific Review Board Secretariat at 6471-3266. If you have any complaints about this research study, you may contact the Principal Investigator or the NHG Domain Specific Review Board Secretariat.

Consent Form

Protocol Title: Complex problem-solving in interprofessional mental healthcare teams (OxTREC reference number 5117-16)

Principal Investigator & Contact Details:
Mr Issac Lim
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I voluntarily consent to take part in this research study. I have fully discussed and understood the purpose and procedures of this study. This study has been explained to me in a language that I understand. I have been given enough time to ask any questions that I have about the study, and all my questions have been answered to my satisfaction.

By participating in this research study, I confirm that I have read, understood and consent to the National Healthcare Group's Personal Data Protection Notification.

_____ _____
Name of Participant Signature Date

Investigator Statement
I, the undersigned, certify that I explained the study to the participant to the best of my knowledge, and the participant clearly understands the nature, risks and benefits of participating in the study.

_____ _____
Name of Investigator / Person administering consent Signature Date

Participant Information Sheet
(Healthcare Professional)

1. Study Information

Protocol Title: Complex problem-solving in interprofessional rehabilitation teams (OxTREC reference number 5117-16)

PIS and Informed Consent Form for Health Professionals 300317. Version 1.0

Principal Investigator & Contact Details:
Mr Issac Lim
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2. Introduction

You are invited to participate in a research study. It is important to us that you first take time to read through and understand the information provided in this sheet. Nevertheless, before you take part in this research study, the study will be explained to you and you will be given the chance to ask questions. After you are properly satisfied that you understand this study, and that you wish to take part in the study, you must sign this informed consent form. You will be given a copy of this consent form to take home with you.

Research studies are different from clinical care. They aim to provide a way to find out new information that might help people with similar conditions and illnesses such as yours or person you are caring for. This form aims to provide you with information about why this study is being done, a complete description of the study process and how you will be involved, and inform you of the possible inconvenience and risks you may experience during the process of this study.

This information will assist you to decide whether to participate in the study or not. This study is specifically carried out to understand the experiences of healthcare professionals taking care of patients with chronic conditions. This study will recruit about 40 healthcare professionals in TTSH over a period of 18-24 months.

3. Purpose of Study

The purpose of this study is to develop an understanding of the experiences of healthcare professionals providing care for patients with chronic conditions in healthcare institutions, as well as that of patients receiving that care. With this understanding, the study aims to uncover the conditions in which the needs of patients with chronic conditions can be adequately served by interprofessional teams.

4. What procedures will be followed in this study

If you take part in this study, you will be asked the following:

3. To provide your opinions about the care you provided as a healthcare professional of a patient with chronic conditions; and
4. To provide your ideas on how care can be improved.

The interview will be audio recorded to make sure what your mentioned during the session is capture in its entirety to facilitate analysis. The interview will take approximately 45-60 minutes.

5. Your Responsibilities in This Study

If you agree to participate in this study, you should follow the advice given to you by the study team. You should be prepared to avail time in the hospital or healthcare facility to undergo all the procedures that are outlined above.

6. What is Not Standard Job Description or is Experimental in This Study

The study is conducted for research purposes and is not part of your job description. Participation or non-participation in this study will not affect your rights and privileges as a healthcare professional. Your participation is completely voluntary.

7. Possible Risks and Side Effects

The study poses no more than minimal risk. To protect your identity and privacy, all research personnel are required to sign an agreement to maintain confidentiality of the activity. In addition to that, all recorded information will be stored in a secure computer with passwords. If the data is used, pseudonyms will be used instead of your name and any details that might lead to linking your identity to the data will be removed.

8. Possible Benefits from Participating in the Study

There will not be any direct benefit to you in this study. It is hoped that the findings from this study will be used to improve the standard of interprofessional care that patients with chronic conditions will receive in the future.

9. Voluntary Participation

Your participation in this study is voluntary. You may stop participating in this study at any time. Your decision not to take part in this study or to stop your participation will not affect your job or any benefits to which you are entitled. If you decide to stop taking part in this study, you should tell the research team.

10. Confidentiality of Study Records

Information collected for this study will be kept confidential. Data collected and entered are the property of National Healthcare Group. In the event of any publication regarding this study, your identity will remain confidential.

Your records, to the extent of the applicable laws and regulations, will not be made publicly available. Pseudonyms will be used instead of your name and any details that might lead to linking your identity to the data will be removed.

However, NHG Domain-Specific Review Board and Ministry of Health will be granted direct access to check study procedures and data, without making any of your information public. By signing the Informed Consent Form attached, you (or your legally acceptable representative, if relevant) are authorizing (i) collection, access to, use and storage of your "Personal Data, and (ii) disclosure to authorised service providers and relevant third parties. "Personal Data" means data about you which makes you identifiable (i) from such data or (ii) from that data and other information which an organisation has or likely to have access. Research arising in the future, based on this Personal Data, will be subject to review by the relevant institutional review board. By participating

in this research study, you are confirming that you have read, understood and consent to the Personal Data Protection Notification available at (https://corp.nhg.com.sg/Pages/PDPA.aspx).

11. Costs and Payments

There are no costs involved in participation in this study.

12. Compensation for Injury

NHG (TTSH) without legal commitment will compensate you for the injuries arising from your participation in the study without you having to prove NHG (TTSH) is at fault. There are however conditions and limitations to the extent of compensation provided. You may wish to discuss this with your Principal Investigator, Mr Issac Lim.

By signing this consent form, you will not waive any of your legal rights or release the parties involved in this study from liability for negligence.

13. Who To Contact if You Have Questions

If you have questions about this research study, you may contact the principal investigator (Issac Lim, issac_wy_lim@nhg.com.sg, +65 6359 6369)

If you want an independent opinion of your rights as a research subject you may contact the NHG Domain Specific Review Board Secretariat at 6471-3266. If you have any complaints about this research study, you may contact the Principal Investigator or the NHG Domain Specific Review Board Secretariat.

Consent Form

Protocol Title: Complex problem-solving in interprofessional rehabilitation teams (OxTREC reference number 5117-16)

Principal Investigator & Contact Details:

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I voluntarily consent to take part in this research study. I have fully discussed and understood the purpose and procedures of this study. This study has been explained to me in a language that I understand. I have been given enough time to ask any questions that I have about the study, and all my questions have been answered to my satisfaction.

By participating in this research study, I confirm that I have read, understood and consent to the National Healthcare Group's Personal Data Protection Notification. I also consent to the use of my Personal Data for the purposes of engaging in research related to this study arising in the future.

_____ _____ _____

Name of Participant Signature Date

Investigator Statement

I, the undersigned, certify that I explained the study to the participant to the best of my knowledge, and the participant clearly understands the nature, risks and benefits of participating in the study.

_____ _____ _____

Name of Investigator / Person administering consent Signature Date