Trainee identity development and the general practice supervisory relationship.

A critical realist perspective.

James Boyer Brown

MBBS, MFM(Clin)

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Dedication

This thesis is dedicated to my father, Professor James Brown, whose research pioneered the science of women's reproductive endocrinology. His was a life of curiosity and integrity. He inspired me to undertake research and encouraged me to first undertake a medical degree which ended up being a lengthy detour!

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Abstract

General practice (GP) training in Australia is work-based training where the supervisory relationship is central to the trainee's engagement with the work of GP. In this context the GP trainee develops the professional identity of a general practitioner. The professional identity that the GP trainee develops matters because it frames the way they engage with the healthcare needs of patients and communities.

Relationships are the primary medium for identity development and, in GP training, the supervisory relationship is key. Therefore, to support the professional identity development of GP trainees, it is necessary to understand how this happens within their supervisory relationships. While there is a body of opinion on trainee identity development and on the GP supervisory relationship, there is little empirical work in this area and limited consideration of the association between trainee identity development and the supervisory relationship. This thesis addresses this gap. It contains four empirically based research projects with six publications. Using a critical realist frame, I draw on these to theory build on the nature of trainee identity development and the GP supervisory relationship. I build both descriptive theory and normative theory. The aim is to inform actions that impact on trainee identity development and the GP supervisory relationship in the Australian context.

The work of this thesis identifies important contexts for trainee identity development and the GP supervisory relationship. These are the cultural world of GP training, the organisation of GP training and the psychological needs of the trainee and the supervisor. Each of these contexts have identifiable properties that impact on the identity development of the trainee and on the supervisory relationship. In the cultural world of GP training there are key social Discourses that position general practitioners, patients and trainees. Critiquing these Discourses enables choice in how they are used. In the organisation of GP training in Australia there are multiple political agendas and organisational structures that variably support or undermine the relationships that frame trainee identity development, particularly the supervisory relationship. There are choices that can be made in the way that Australian GP training is remodelled for the future so that it better supports trainee identity development and the GP supervisory relationship. The psychological context holds important inherent needs and individual differences in meaning making that need to be

considered. The structure of a particular supervisory relationship, the skills that each of the trainee and supervisor bring, and the way they interact also have significant impacts on the identity development of the trainee.

Factors from each of the contexts of the cultural, organisational, relational and psychological need to be addressed both separately and collectively if trainee identity development and the GP supervisory relationship are to be supported. A key consideration is the issue of power. Effective clinical care is about empowering patients; effective supervision is about empowering trainees; and, effective training programs are about empowering the supervisory relationship. Finally, empowerment of others requires acknowledging our own power and, sometimes, the relinquishing of that power.

Thesis including published works declaration

I hereby declare that this thesis contains no material which has been accepted for the award of any other degree or diploma at any university or equivalent institution and that, to the best of my knowledge and belief, this thesis contains no material previously published or written by another person, except where due reference is made in the text of the thesis.

This thesis includes five original papers published in peer reviewed journals and one chapter published in a peer reviewed major reference. The core theme of the thesis is trainee identity development and the general practice supervisory relationship. The ideas, development and writing up of all the papers in the thesis were the principal responsibility of myself, the student, working within the Education Portfolio of the faculty of Medicine, Nursing and Health Sciences under the supervision of Prof Debra Nestel, Professor Marg Hay and A/Prof Deborah Colville.

(The inclusion of co-authors reflects that the work came from active collaborations between researchers and acknowledges input into team-based research.)

In the case of Chapters 3, 4, 5, 6 and 7 my contribution to the work involved the following:

Thesis Chapter	**Publication Title**	**Status** *(published, in press, accepted or returned for revision)*	**Nature and % of student contribution**	**Co-author name(s) Nature and % of Co-author's contribution***	**Co-author(s), Monash student Y/N***
3	Theory, a lost character? As presented in General Practice education research papers	Published	65%: Concept, collecting data, analysis, writing of manuscript.	**Cat Kirby** 9%: Data collection, analysis, input into manuscript. **Debra Nestel** 8%: Concept, analysis, input into manuscript. **Margaret Bearman** 8%: Data collection, analysis, input into manuscript. **Elizabeth Molloy** 5%: Analysis, input into manuscript.	N N N N

				Deborah Colville 5%: Analysis, input into manuscript.	
3	Theories and myths in medical education: What is valued and who is served?	Published	85%: Concept, writing of manuscript	**Debra Nestel** 15%: Concept, input into manuscript	N
4	Remodelling general practice training	Published	65%: Concept, analysis, writing of manuscript	**Catherine Kirby** 14%: Project management, analysis, input into manuscript **Susan Wearne** 13%: Data collection, analysis, input into manuscript. **David Snadden** 8%: Analysis, input into manuscript.	N N N
5	The supervisory encounter and the senior GP trainee	Published	65%: Concept, analysis, writing of manuscript.	**Mark Goldszmidt** 20%: Analysis, input into the manuscript. **Debra Nestel** 7.5%: Concept, analysis, input into manuscript **Tim Clement** 7.5%: Concept, analysis, input into manuscript.	N N N
6	Becoming a clinician: Identity formation and the general practice supervisory relationship	Published	75%: Concept, data collection, analysis, writing of manuscript.	**Debra Nestel** 10%: Concept, analysis, input into manuscript. **Helen Reid** 10%: analysis, input into manuscript. **Tim Dornan** 5%: analysis, input into manuscript.	N N N
7	Supervision in general practice settings	Published	90%: Concept, writing of manuscript.	**Susan Wearne** 10%: Input into manuscript.	N

I have not renumbered published papers however supplementary page numbers have been added in order to generate a consistent presentation within the thesis.

Student signature: **Date:** 17/10/2020

The undersigned hereby certify that the above declaration correctly reflects the nature and extent of the student's and co-authors' contributions to this work. In instances where I am not the responsible author I have consulted with the responsible author to agree on the respective contributions of the authors.

Main Supervisor signature: **Date:** 17/10/2020

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Glossary and abbreviations

ACRRM	Australian College of Remote and Rural Medicine.
Agency	The power of people to act purposefully and reflectively to remake the world in which the live(1).
Authorial stance	The position an individual projects for themselves to the external world and in doing so makes a claim for who they are(1).
Abduction	A tool of inference where a conceptual frame is applied to the empirical to create new understanding about the empirical(2).
Ch.	Chapter.
Clinical supervisory encounter	The interaction when a trainee, in attending a patient, calls on their supervisor for assistance. These often occur in the presence of the patient.
Constitutive properties	Causal properties that are fundamental to the existence of a phenomenon(2).
Contingent properties	Causal properties that may present in a phenomenon but are not essential for its existence(2).
Cultural world	A shared culturally structured world that is historically framed and is enacted in shared activity. Cultural worlds provide shared understanding and meaning and position the participants in the cultural world in relation to each other(1).
Communities of Practice theory	A social work-based theory of learning developed by Wenger. This learning theory takes the perspective of a working community where the members are connected by a common endeavour(3).
Descriptive theory	Theory that provides a conceptual frame to understand the nature of reality(2).
General Practitioner	A medical practitioner who is certified as generalist.
GP	General practice as a sub-speciality of medicine.
GP supervisor	A clinically qualified general practitioner who is accredited to supervise trainees.
GP trainee	A post-graduate pre-fellowship doctor training in GP.
Intern	A doctor on provisional registration in their first year having completed medical school and not yet on a specialist training pathway. Interns require close supervision.
Judgmental rationality	The act of making judgments on the basis of reason and subjected these judgments to rational critique(2).
Meta-theory	Theory about the nature and use of theory(2).
Normative theory	Theory that conceives of what should be done to achieve a particular purpose(2).
Object Relations theory	Object relations is a psychodynamic theory. The need for relationship is primary. The self is made up internalised relationships where the

	object is the internalised other. Identity is constructed from the dual world of internal and external relationships(4).
Personal Epistemology	An individual's particular way of knowing and learning arising from their individual needs, experiences, attitudes and capabilities(5).
Properties of a phenomenon	The structures and the mechanisms that a phenomenon has that cause its outcomes(2).
RACGP	Royal Australian College of General Practitioners.
Retroduction	A tool of inference where the theoretical abstractions are built from the empirical(2).
Rhetorical Genre Theory (RGT)	Rhetorical Genre Theory identifies genre as the nexus between individual intention and social context(6). They are typical social actions that address a recurrent situation where there is a common motive and common communication practices(7).
Strata	A critical realist concept of divisions in reality within each has it is own structures and mechanism. The psychological and the social are two examples of such strata(2).
Social Discourse	Talk that expresses and enacts a particular social arrangement within a cultural world(8). 'Discourse' is capitalised when it refers to social Discourse.
Symbolic capital	A term by Bourdieu representing social resources granted to and possessed by participants in a cultural world. These have value because of the meaning bestowed to them by the cultural world(1). Social symbolic capital includes social networks and group membership Cultural symbolic capital includes knowledge, institutional privileges and symbols of status.
Supervisory encounter	When a supervisor is called into a trainee's clinical consultation to provide support.
Theoretical Connoisseurship	The capacity to select a theoretical frame that is fit for purpose(9).
Vocational training	Training towards a professional certification, in this thesis this is training towards a fellowship of either ACRRM or RACGP.
Work-based learning	Learning in the context of contributing to the work undertaken by a working community.

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1. Introduction

1.1. Overview of thesis

The primary focus of this thesis is the identity development of general practice (GP) trainees within the context of the supervisory relationship. The setting is GP within Australia. Identity development of general practitioners is important because identity frames professional behaviour(10), GP professional behaviour impacts on the health of patients and their community and general practitioners are the mainstay of primary health delivery in Australia(11, 12). The supervisory relationship has been identified as a key context for the development of GP trainees and, in particular, for the development of their identity(13, 14).

In Australia, the core of GP training is work-based learning in community-based practice under the supervision of an accredited GP supervisor(15). GP training is currently in a period of change driven by concerns that it is not meeting community needs and by the political agendas of the Australian government and of the two GP professional colleges(16).

The purpose of this thesis is to inform action that supports trainee identity development and the GP supervisory relationship. I do this by theory building using a critical realist approach(2, 17). This approach is discussed in chapter 2(ch.2). Theorising to inform action requires two steps. The first step is to develop a conception of the nature of things as they are. The second step is to develop a conception of how things might be and what actions might lead to this(17). This thesis is based on four empirically-based research activities, each taking this two-step approach to theoretical development. Each research activity is covered by a chapter which includes: an introduction; one or two papers published from the research activity; and a discussion on the contribution of the research to the focus of the thesis.

Theorising is core to this thesis and so the first research contained in this thesis is on the use of theory in GP educational research(ch.3), both in how it is used and how it could be used(18). The second research project presented in this thesis examines tensions in GP vocational training and solutions for these tensions being developed locally and internationally(19)(ch.4). A key tension discussed relates to the organisation and delivery of supervision in GP training. The third research project investigated the supervisory encounter(20-22)(ch.5). This research project aimed to elicit what happens in the supervisory clinical encounter and to conceptualise how trainee education might be enhanced during these encounters. The clinical supervisory encounter is a key event for enacting the supervisory relationship and for trainee identity development. The fourth research

project investigated trainee identity development over time within the context of the GP supervisory relationship and how trainee identity development might be supported in this context(23)(ch.6). Following these research-based chapters is a chapter on 'Informing practice'(ch.7). The main component of this chapter is a piece I wrote for a major reference – Clinical Education for the Health professions(24). The thesis concludes with an integrative discussion(ch.8). The structure and content of this 'thesis including publications' is illustrated in Table 1.1.

The research contained in this thesis was undertaken as part of a larger program of research which I led during my candidature (appendix C). The focus of this research program was to inform the delivery of GP vocational training.

Table 1

Thesis structure by chapter, content focus and contribution to thesis

Chapter	Content	Contribution to thesis
1. Introduction	1.1 Thesis overview 1.2 What is identity 1.3 Personal context	• Thesis focus, purpose, context and structure • The conception of identity that I use • Reflexivity piece
2. Ontology, epistemology and methodology	2.1 A critical realist ontology and epistemology 2.2 Methodology 2.3 Critical realism as a frame for this thesis	• Summary of a critical realist approach • My use of a critical realist perspective
3. Theoretical orientation	3.1 Introduction: theoretical connoisseurship 3.2 **Research Paper**: *Theory, a lost character? As presented in general practice education research papers*(18) 3.3 Contribution of the *'Theory, a lost character?'* research to the thesis 3.4 **Journal commentary:** *Theories and myths in medical education: What is valued and who is served?*(25)	• Building theoretical connoisseurship for use in this thesis. • A conceptual framework for using theory in medical education research • Theory as a vehicle for cultural Discourses
4. Australian GP vocational training	4.1 Introduction: GP training, a changing environment 4.2 **Research Paper:** *Remodelling general practice training: Tension and innovation*(19) 4.3 *'Remodelling general practice training'*: research design, further findings and implications	• GP training and its tensions as a key context for the supervisory relationship and trainee identity development • A description of the application of realist research design • Theory building for re-modelling GP training particularly from the perspective of the supervisor relationship

5. The clinical supervisory encounter	5.1 Introduction: the supervisory relationship and the clinical supervisory encounter	• The supervisory encounter as an enactment of the supervisory relationship • Theory building to support purposeful action in undertaking the supervisory encounter • The interface between the personal, social and cultural through enactment of the genre of the supervisory encounter • Identification of the supervisory relationship as a key context for trainee identity development
	5.2 **Research Paper:** *The supervisory encounter and the senior GP trainee: managing for, through and with*(20)	
	5.3 Contribution of *'The clinical supervisory encounter' research to the thesis*	
6. Becoming a general practitioner	6.1 Introduction: exploring trainee identity development within the supervisory relationship	• A conceptual framework for trainee identity development within the supervisory relationship • A description of my application of critical realist methodology and research design to a research endeavour • An exploration of further theoretical perspectives and findings from this research • Exploration of cultural and psychological contributions to trainee identity develop, and the position of the supervisory relationship at the interface of the cultural and the psychological
	6.2 **Research Paper:** *Becoming a clinician: Trainee identity formation within the GP supervisory relationship*(23)	
	6.3 The research journey behind the *'Becoming a clinician'* paper research	
	6.4 Further conceptualisation from the research	
7. Informing practice	7.1 Introduction: the theory and practice of GP supervision	• A 'how to' for undertaking and supporting supervision in GP
	7.2 **Book chapter:** *Supervision in general practice settings; in Clinical Education for the Health Professions: Theory and Practice*(24)	
	7.3 Contribution of the *'Supervision in general practice settings'* chapter to the thesis	
8. Integrative discussion	8.1 Introduction	• A critical realist frame applied to the work presented in the thesis

	8.2 The supervisory relationship: impacts from three strata	• Conceptualisation of causality in the structure of a supervisory relationship from the dimensions of: ○ the cultural world of GP training, ○ the social construction of GP training ○ the individual psychology of the trainee and supervisor • Conceptualisation of causality in trainee identity development from the dimension of: ○ the supervisory relationship, ○ the cultural world of GP training, ○ the social construction of GP training ○ The psychology of the trainee • Conceptualisation of a curriculum to support trainees in beoming general practitioners, in the context of the GP supervisory relationship
	8.3 The supervisory relationship: more than the sum of its parts	
	8.4 Becoming a clinician: trainee identity development	
	8.5 Informed actions	
9. Other areas of research		• A synopsis of the limitations in the scope of thesis, other areas of research invited by the thesis, and relevant companion research done in my program of research not included in the thesis
10. Concluding reflections and comments		• Reflections on the journey that the PhD has been for me

1.2. What is identity?

In exploring identity development of GP trainees, I am exploring the development of their professional identity as a GP. My conception of identity is that it is a complex and dynamic composition of social position, social behaviours and self-perception. In this thesis, I take the position that there are many useful lenses on identity depending on what activity is being informed and whether this activity is in the realm of the cultural, social, relational or personal.

From a social perspective, identities are culturally defined and offered as different possibilities to different participants in that cultural world. In this way, cultural worlds position us and tell us who we are, and how we should behave(1). From a personal perspective, identity is the subjective self. It is what we are for ourselves and who we tell others we are(8). The subjective self arises from the interface between inherent desires and social structures(8), particularly the social structures of relationships with significant others. We develop a sense of self-identity through internalising relationships with others into self-objects. This process of developing an internal self-identity is by internal object formation which is a concept common to cultural theories of the development of self(1, 26) and psychodynamic theories of self – particularly Object Relations theory(27). Interactions with others are both the means of developing a self-identity and the means of enacting a social identity(1).

Professional identity sits in the context of multiple personal identities each arising from different spheres of a person's life and the communities in which they live and work. Wenger conceives identity as a nexus of multi membership and how we reconcile these as they sometimes clash and sometimes reinforce each other(3). He also describes some identities as being more core than others. Monroux identifies our core identities as those of gender, race and social class(28). She positions a professional identity as a secondary identity that is more or less difficult to integrate depending on the congruence between the professional identity and the primary identities. I explore the importance of the personal context of professional identity development in sections 3.4.2 and 8.2.4 in this thesis drawing on Billet's theorising on personal epistemologies(5).

1.3. Personal context of thesis

The work of this thesis is very much a product of my academic journey which has been driven by the desire to link scholarship with practice in my working world(29, 30). This key context for the thesis provides an important impetus for the work and an interpretative frame. In recognition of this I provide a reflexive piece that makes explicit the lenses I bring to this work. I briefly describe pertinent personal contexts and relationships and my motives and beliefs(17).

I am deeply engaged in the world of GP supervision at multiple levels. I am a GP clinician working in rural general practice in Australia. In practice, I supervise medical students, pre-vocational doctors, and general practice trainees. Many of these supervisory relationships have given meaning to my professional life. Some have continued as professional relationships. I work in GP vocational education(31). I have worked in a GP training organisation for 22 years as a medical educator, a director of training, and head of a research team. In these roles I have led a professional development program for supervisors; I have managed disputes between trainees and supervisors; I have created standards and policies for GP supervision; and, I have led a program of research with a focus on supervision. Recently I have taken on the role of Principal Medical Educator with the Royal Australian College of General Practitioners(RACGP)(32). RACGP is one of two colleges of GP in Australia both of which are currently in a process of taking on an increased role in managing GP vocational training which has been managed by the Australian Department of Health(31).

My academic experience and journey began with the physical sciences at high school. I subsequently undertook a medical degree at university. As a clinician I took an interest in psychotherapy and explored an Object Relations approach(27, 33, 34). Subsequently I became involved in GP vocational education which, in Australia, is strongly influenced by adult learning principles(35). Then I engaged in medical education research with a sociological lens. Key intellectual mentors for me in this more recent endeavour have been Debra Nestel, Tim Clement, Tim Dornan, Susan Wearne, Mark Goldszmidt and Margaret Bearman. All of these scholars have contributed as co-authors to papers presented in this thesis.

My personal motives and beliefs are shaped by the work I do and by my family and cultural backgrounds. As a medical practitioner I use the hypotheticodeductive method of diagnostic formulation on a daily basis. This is a process of theory development and testing. I value theorising that has a rational rigour. As a general practitioner I am confronted by different narratives and belief systems that people use to direct their actions and living. Many of these contradict my own narratives and belief systems and yet effectively give meaning to peoples' lives. This has led me to dispense with the belief that there is one correct 'God's eye view' on the nature of reality(17). As a general practitioner, I am invited into peoples' lives and I am trusted to share in both the joy and the suffering of their living. This is an enormous privilege. I am privy to the impact of social inequity and cultural oppression on the lives of people, and on the community that I live and work in. My patients are not confined to a hospital bed, rather they reside in worlds of their own where they have the autonomy to take or ignore my medical advice. The work of a GP is one of relationships and of enablement and empowerment. My family background is one that values living that makes an improvement to the world. I have a fundamental belief in agency and responsibility. I am a male

from a privileged white background living in Australia where the Aboriginal people have been dispossessed and their culture crushed. I have three daughters. I know the impacts of hegemonic gender and racial Discourses even as I contribute to them.

This thesis is very much a product of who I am. Its focus is a world I live in - general practice and supervision. In the work of this thesis, I have found an intellectual home in critical realism.

2. Ontology, epistemology and methodology

This chapter details my scientific philosophy in approaching the work of this thesis. It includes my position on the nature of reality (ontology), how that reality can be known (epistemology) and, how these both interface with my research procedures (methodology). I also detail my endeavours to ensure my research, and the conceptualising from it, have credibility or trustworthiness. My philosophical position and approach to this thesis is a critical realist one.

2.1. A critical realist ontology and epistemology

Critical realism is founded on the work of Bhaskar(36-38). Critical realism has a realist ontology and a constructivist epistemology(17). Its ontological position is that there is a real world that is not dependent on how we understand it, although our understanding is part of the real world. This real world is made up of both the observable and the unobservable(2). Critical realism's epistemological position is that our knowledge of the world is a construction(17). We know the world through theorising(2). In theorising we create mental models for identifying what things are, how they work and how we are to behave in order to achieve what we want. We hold theories as individuals, as a society and as a culture. Theorising is a core human activity giving direction to how we behave. While theories are constructions, they are also real and have a real impact on the world by the way they direct human behaviour(2, 17).

Critical realism is *critical* in five ways:

1. Critical realism considers that all knowledge claims should be opened to critique(2, 39).
2. Critical realism is critical of the position that agency is entirely based on underlying structures and precedents(2). Critical realism holds that humans are agentic and can make choices beyond structural precedents(40).
3. Critical realism is critical of universalist claims to truth. From a critical realist position, there is no 'Gods-eye perspective' of reality(2). All theoretical perspectives are constructed representations of reality that arise from personal, social and cultural contexts(41).
4. Critical realism is critical of theorising that disempowers some to empower others. It is particularly critical of ideological theorising that positions itself as a truism beyond questioning(37, 41).
5. Critical realism is critical in that it views that it is incumbent on humans to act purposefully to address inequity(38). In this way, critical realism is emancipatory in its approach. It holds

that humans have genuine agency(40) and views human knowledge as a means of emancipation through informing action(41).

2.1.1. Causality

Critical realism considers that causality is real, and that scientific endeavour can lead to understanding this causality(17). The causal mechanisms that lead from one thing to another can be known. A knowledge of causality enables informed interventions that can influence outcomes. Causality arises from structural properties and mechanisms acting in particular contexts. Causal properties are not observable in themselves, however the outcomes they lead to are observable. It is through observation of outcomes that humans can infer the underlying causal structural properties and mechanisms. This inference is done through theorising(2). Causal properties are both determined and emergent. Determined causal properties are those that arise from underlying structures. For example, food production by a particular group is in part an outcome caused by our physical need for food which in turn is an outcome of our biochemical structure. This conceptual layering of structure and causality is called stratification(2). Causality is also emergent. A phenomenon is more the sum of its parts and constantly generates new causal properties within itself(42). This concept of emergent causality is the space that makes human agency possible.

2.1.2. Human agency

From a critical realist perspective, human action is not solely an outcome of underlying biological, psychological, social and cultural structures: humans have the capacity to be intentional(2). That is, while there are structural precedents that provide the context for human action, human action is not absolutely determined by these(39). Critical realism has a fundamental position that humans can be genuinely agentic beyond the structures that constitute them and their world. They can develop new causal capacity. This is an emergent property or capacity of being human. This means that, in most circumstances, humans are not hapless actors following a predetermined script, they are capable of acting causally by choice. That humans have choice means that they also have responsibility. From a critical realist perspective, the responsibility we have is to be agentic in improving the world, particularly to enable creativity and to address oppression(38, 40).

2.1.3. Theory

In order to act purposefully, humans require theories to guide their action. In this way, theories have a causal impact on human behaviour. It is through theorising that we understand the world; it is through theorising that we can know how to act; and, it is through theorising that we can be purposefully agentic. Critical realism positions theorising as the core focus of scientific research. The

research of this thesis is primarily focused on the activity of theorising: I theorise about theory; I apply theory to empirical data; and, I use empirical data to build theory.

In my approach to theorising I divide theory into four levels of scope. These four levels of scope are based on categorisations developed by other theorists and are:

1. Theory that endeavours to frame the whole nature of reality – grand theory(43)
2. Theory that encompasses an area of social activity such as education - middle range theory(44)
3. Theory that conceptualises a particular phenomenon – object theory(9)
4. Theory that informs day to day living that can be considered 'common-sense' or minor theory(44).

Critical realism is a grand theory. The other main theories that I draw on this thesis as *a priori* theories are middle range theories. These include: Communities of Practice Theory; Rhetoric Genre Theory; Cultural Worlds Theory; and, Object Relations theory. The theory development I undertake in this thesis is primarily object theory because it is focused on particular phenomena such as the clinical 'supervisory encounter' in GP. I also use my object theories to speculatively theorise at the level of middle range theory. Prominent in the data I collected are the conceptions the participants hold about the situation they are in; this is minor theory.

As well as levels of theorising, there are types of theorising with each type achieving different things. This is the typology of theory that I use(2):

- Meta-theories: These are theories about theorising
- Descriptive theories: These are theories that provide a conceptual frame for understanding the properties of an object or phenomenon including its structures and causal mechanisms
- Normative theories: These are theories that frame how something ought to be. The imperative behind the 'ought' might be to pragmatically achieve a purpose, to achieve emancipation, to align with personal or cultural values, or to sustain an ideological position.

Critical realism is a meta-theory(2). The first work presented in this thesis is research-based theorising on theory and is also meta-theory(Ch. 3). Each piece of research in this thesis starts with building descriptive theory from empirical data and then progresses to use this descriptive theory to develop normative theory. Normative theorising is aspirational, considering what might be and how this might be achieved. Normative theorising depends on descriptive theorising to conceptualise how things currently are and what causes them to be that way(17). Normative theory can be both scientifically based and culturally based. Culturally based normative theory is often not explicit but

assumed. It can however be inferred from the way it is expressed through social Discourse(41, 45). Social Discourses express how a culture conceives the order of things such as social hierarchies and how people should behaviour(8). The research in this thesis on 'Becoming a clinician'(23) analyses the culturally based normative theories behind the social Discourses used by supervisors, trainees and patients(Ch 6).

2.2. Methodology

Methodology is the interface between a philosophical approach to science and the research procedures used(2). I now discuss critical realist methodology as it applies to my research.

The core purpose of scientific research, from a critical realist perspective, is to build knowledge for informing action(17). This knowledge concerns the properties of the real world. These properties are its causal structures and mechanisms which need to be understood if we are to be purposeful in our actions. These causal structures and mechanisms are in themselves unobservable, however their outcomes are observable. Research therefore has two parts. One is collecting observable (empirical) data and the other is using inference to conceptualise the underlying unobservable structures and mechanisms that caused the observed data. The product of scientific research is knowledge about these unobservable causal properties. This knowledge can be used for informing future action in a predictive way by a process of generalisation(2). Each research activity in this thesis took this two-step approach to reach generalised conclusions about properties of the world that cause particular phenomena.

The object of interest and the aims of a research activity together with the perspective of the researcher determine the data that is collected, the research methods used, and the *a priori* theoretical framing applied(17). In this way, the methodology of critical realist research has an eclectic approach to decisions about the choice of methods and theoretical framing. In the research contained in this thesis I used a range of research methods and *a priori* theories as deemed appropriate for the object of interest and aims of each research endeavour. These are represented in appendix A and table 2.

The choice of data and the sample it is drawn from is driven by the need for data that will exhibit the outcomes of the object, or phenomenon, of interest. It is from empirical outcomes that the underlying properties of a phenomenon can be abstracted. This means that sampling is purposeful(17). In order to understand the complexities of a phenomenon's properties, thick data is required(17). To achieve this, the sample size is often small(46). This was the case with the two studies examining dynamics of the supervisory relationship(ch. 5 and 6) where the sample size was limited to ten participants in each study. Although the sample size was small, the data collected was

extensive – fourteen hours of recorded conversation in one and thirty-one hours of recorded conversation in the other. With small samples, generalisability is not achieved by the size of the sample, rather it is achieved through conceptual abstraction which is called theoretical generalisation(2).

Using data to abstract the properties of a phenomenon is a process of theorising that occurs in two directions. Theory is used for interpretation of the data and theory is built from interpretation of the data. These processes are respectively abduction and retroduction(2, 41). I explore these two concepts below(2.2.1). Theories that are used for interpretation are derived from three sources. These are extant theory, personal theory derived from the perspectives of the researcher(s), and new theory developed through the research. Reflexivity is fundamental to critical realist methodology as the researcher and their perspective is a key source of theorising(17) and necessarily value laden(47). I have endeavoured to be explicitly reflexive in this thesis. I have aimed to be transparent in my stance and to be mindful of the impact of my values(47).

Conceptualising the general properties of a phenomenon requires considering what is constitutive of the phenomenon, that is, what is necessary for the phenomenon to exist(2). This means comparing multiple cases that exhibit the phenomenon and looking at an extreme case of the phenomenon where the constitutive features are likely to be more apparent(2, 17). The research I undertook for examining the phenomena of 'The supervisory encounter'(20)(ch. 5) and 'Becoming a clinician'(23)(ch.6) both used a multi-case study approach. The research on 'Becoming a clinician', in addition, took one case as an extreme case for deeper analysis to further conceptualise the constitutive properties of trainee identity development.

Critical realism conceptualises reality as stratified. Examples of different strata are: the biological; the psychological; and, the social(2, 36). This is relevant because structures and mechanisms from one stratum have outcomes in other strata which become causal properties of that strata. Therefore, to understand the properties of one stratum, relevant mechanisms and outcomes from other strata need to be understood. I use this concept of stratification explicitly in the integrative discussion(ch.8) to develop conceptual understanding of identity development as a phenomenon that has properties arising from the psychological, relational, social and cultural.

Finally, the issue of context is an important methodological consideration from a critically realist perspective. Outcomes from particular structures and mechanisms depend on the context in which they occur(2, 17). Outcomes are contingent on context(17). Therefore, in abstracting from an outcome to a property, the context of the outcome needs always to be considered. This means that to conclude that a property is constitutive of a phenomenon rather than contextually contingent, the

researcher needs to abstract from multiple instances of the outcome in multiple contexts over an extended period of time. This recommends collecting data from multiple sources, from multiple cases and over extended time. This was the approach taken across all research projects in this thesis.

2.2.1. The methodology of scientific theorising

As discussed above, critical realism considers that theorising is a fundamental human activity which is the means of generating knowledge for directing action. Theories are abstracted constructions and thus are necessarily fallible as representations of reality. Theories are not, however, equally fallible(2, 39). An important goal of science is to create theories that are less fallible by applying the principles of 'judgmental rationality'(37). Judgmental rationality requires making inferences that are logically sound and account for the ideology and values that the researcher and the context bring. Inference is a thought operation that moves from something to something else(2). Critical realism identifies four scientific methods of rational inference(2, 41) that can be used for theory generation:

- Induction
- deduction
- abduction
- retroduction

Induction and retroduction start with the data or the empirical to draw abstract conclusions. Induction makes generalisations from patterns in the data. Retroduction builds theories from the data(2, 41). These are important tools of inference because they provide the means of generalising from the particular which is a key scientific objective(2). Induction provides empirical generalisation which is inferring that an observation can extrapolated to occur beyond the particular context it was observed in. Retroduction provides theoretical generalisation which is inferring that an observation is the outcome of unobservable properties of reality. Deduction and abduction start with a premise and make a conclusion about the data. Deduction uses a simple hypothesis as the starting premise. Abduction uses a complex theoretical construction as the starting premise(2, 41).

Abduction and retroduction are key tools of inference in critical realism because they are theory based and creative. Abduction finds new things in data by applying a new theoretical lens. Retroduction creates new theoretical concepts from the data. It is through retroduction that the researcher infers the structures and causal mechanisms of a phenomenon by considering their observable outcomes(39). Retroduction asks 'what must exist for this outcome to be possible?'. In this way, theory about the phenomenon's causal properties is built. In research practice, retroduction and abduction are done iteratively. As new theory is built, the new conceptions are applied back to the empirical data in order to interpret the data in a new way. Application of new

conceptions to the data also provides a means of testing the new conceptions. This is called retrodiction(2). This iterative approach to abduction, retroduction and retrodiction is analogous to the hermeneutic cycle(29). I used this analytic approach throughout this thesis.

Two key retroductive strategies are: 1) to compare different cases; and 2)to study the extreme. Comparing cases provides a means of identifying properties of the phenomenon that are essential or *constitutive*, and to identify properties that depend on context or *contingent*. I use this strategy in: the research on theory(18)(ch.3); the research on the 'supervisory encounter'(20)(ch.5); and, the research on 'becoming a clinician'(23)(ch.6). Extreme cases exhibit a more pronounced presence of the outcomes of interest and this can assist in the inferring the associated causal properties. I use an extreme case for this purpose in the 'Becoming a clinician' research(23)(ch.6).

2.2.2. Judgmental rationality and trustworthiness in research-based theorising

I have discussed the application of judgmental rationality in the process of inference. Judgmental rationality is important for the trustworthiness of research design and for assessing theoretical fallibility. Its application to research design and theorising enhances the trustworthiness of the knowledge created. Research design that is trustworthy is rational, transparent, grounded in the empirical, and subjects its conclusions to critique(17).

As discussed above, rational research design selects research methods and *a priori* theoretical framing that suit the problem that is the object of the research. Often the required research design does not become apparent until the research has progressed and the nature of the problem and the object of the research become better understood. Discovery and design inform each other so that the research design often requires modifying as the research progresses(17). In section 6.3, I describe the research journey behind the 'Becoming a clinician' research and the way that the research design evolved as the research progressed. The methods employed in all of the research in this thesis similarly evolved as the project progressed. The data sought, the theoretical framing used, and the analytic methods employed were all revisited as the research problem became better understood.

Transparent research design requires being clear about the design itself and also making explicit the assumptions and personal theorising that the researchers bring to the research. Personal theorising is an important contributor to the research process but it will be from an individual perspective and be value laden. Transparency in personal theorising enables it to be subject to critique.

Trustworthiness in research design depends on the research and its theorising being grounded in the empirical. The empirical is the observable dimension of reality and is the anchor that theorising has

to the real world beyond the theory itself. This means that theorising should be generated from the empirical and be tested against the empirical(39). Testing theory against the empirical means looking for theory/practice contradictions which is the mental operation of retrodiction(2), also an act of judgmental rationality.

Trustworthiness in research requires being analytically critical. This means subjecting assumptions and theoretical development to critique. Critique means testing against empirical data, testing against alternative theoretical explanations and testing for logical consistency(17). It also means identifying and questioning ideological assumptions(2). I have endeavoured to be analytically critical in each of these ways in the research I undertook in this thesis.

Theory as the outcome of research is judged for trustworthiness by its: logical consistency; how effectively it represents reality; its explanatory power; and, how well the theory stands up to the critique described above(2, 17).

2.3. Critical realism as a frame for this thesis

Critical realism is sometimes an explicit frame for the pieces of work in this thesis and sometimes an implicit frame. My understanding of critical realism, as a scientific frame, only developed latterly in my PhD journey. What I found in my exploration of critical realism was a meta-theory that gave a frame for the way I had been thinking and the values I held. As a theoretical frame it explained reality as I experienced it and it gave me a model for being more purposeful in my research and practice. Because my understanding of critical realism only came latterly, most of the publications included in the thesis give it no mention. However, all the publications in this thesis were developed on premises that align with key premises of critical realism. These are:

- There is a real world that we can purposefully change through agentic action
- Our knowledge of the world is a construction that is more or less fallible
- Theorising is the basis of knowledge
- Research is for building knowledge and knowledge is for informing action
- Research design depends on the problem and phenomenon that it is addressing
- The judgment of the trustworthiness of research and its theoretical output is based on rationality, grounding in the empirical, reflexivity and critique
- Theorising and agency are contextual - key contexts are the cultural, social, relational and psychological
- Power is important and culturally framed

- Theorising, and the actions it informs, can be hegemonic particularly if ideologically based and unquestioned
- As humans we have a responsibility to be agentic in addressing inequity

While inequity is a concern to me, I do not take a hard critical perspective. My primary purpose is knowledge building research rather than ideological radicalism which is a position some take with a critical perspective(48).

3. Theoretical orientation

3.1. Introduction: theoretical connoisseurship

Use of *a priori* theory is fundamental to critical realist methodology(2, 17). This is a process of abduction that enables new insights to be generated from data by the application of a theoretical frame. Biesta et al describes skilled use of theory as "theoretical connoisseurship" which is the capacity to choose and use theoretical frames that are fit for purpose(9). This aligns with a critical realist approach to theory, which is that theories are meaning making constructions for guiding practice. There is no universally true, "God's View" theory, only theories that are more or less useful as a lens for a particular problem in a particular context(17).

Developing theoretical connoisseurship for me meant understanding how, and what, theory might be used in GP educational research. With this objective, I undertook a review of the use of theory in GP vocational education research. I asked three questions: 1) what theories are being used; 2) what tasks and roles are being assigned to theory; 3) what impact does the way theory is presented in the research story have on the reader. From this I developed a conceptual frame that described the use of theory – descriptive theory. I then theorised on how theory might be effectively used – normative theory. The main purpose of this work was to inform the practical use of theory; however, it was also about the nature of theory – meta-theory.

As I immersed myself in this data, I came to conceptualise a research paper as a form of story. This led to seeking theoretical frameworks for story telling as interpretative lenses for the review itself. Subsequently, I used the theoretical frames of Aristotle's poetics(49) and Campbell's monomyth(50) as *a priori* theories for the work.

3.2. Paper 1: Theory, a lost character? As presented in General Practice education research papers

Theory, a lost character? As presented in general practice education research papers

James Brown,[1,2] Margaret Bearman,[3] Catherine Kirby,[2,4] Elizabeth Molloy,[5] Deborah Colville[6] & Debra Nestel[1,7]

OBJECTIVES The use of theory in research is reflected in its presence in research writing. Theory is often an ineffective presence in medical education research papers. To progress the effective use of theory in medical education, we need to understand how theory is presented in research papers. This study aims to elicit how theory is being written into general practice (GP) vocational education research papers in order to elucidate how theory might be more effectively used. This has relevance for the field of GP and for medical education more broadly.

METHODS This is a scoping review of the presentation of theory in GP vocational education research published between 2013 and 2017. An interpretive approach is taken. We frame research papers as a form of narrative and draw on the theories of Aristotle's poetics and Campbell's monomyth. We seek parallels between the roles of theory in a research story and theories of characterisation.

RESULTS A total of 23 papers were selected. Theories of 'reflective learning', 'communities of practice' and 'adult learning' were most used. Six tasks were assigned to theory: to align with a position; to identify a research problem; to serve as a vehicle for an idea; to provide a methodological tool; to interpret findings, and to represent an object of examination. The prominence of theory in the papers ranged from cameo to major roles. Depending on the way theory was used and the audience, theory had different impacts. There were parallels between the tasks assigned to theory and the roles of four of Campbell's archetypal characters. Campbell's typology offers guidance on how theory can be used in research paper 'stories'.

CONCLUSIONS Theory can be meaningfully present in the story of a research paper if it is assigned a role in a deliberate way and this is articulated. Attention to the character development of theory and its positioning in the research story is important.

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[1]Monash Institute for Health and Clinical Education, Faculty of Medicine, Nursing & Health Sciences, Monash University, Clayton, Victoria, Australia
[2]Eastern Victoria GP Training, Churchill, Victoria, Australia
[3]Centre for Research in Assessment and Digital Learning, Office of the Deputy Vice Chancellor (Education), Deakin University, Geelong, Victoria, Australia
[4]School of Rural Health, Faculty of Medicine, Nursing and Health Sciences, Monash University, Churchill, Victoria, Australia
[5]Department of Medical Education, Faculty of Medicine, Dentistry and Health Sciences, University of Melbourne, Melbourne, Victoria, Australia
[6]University Department of Medicine, Royal Melbourne Hospital, Faculty of Medicine, Dentistry and Health Sciences, University of Melbourne, Melbourne, Victoria, Australia
[7]Department of Surgery, Faculty of Medicine, Dentistry and Health Sciences, University of Melbourne, Melbourne, Victoria, Australia

Correspondence: James Brown, Eastern Victoria GP Training, PO Box 261, Churchill, Victoria 3842, Australia.
Tel: 00 61 4 1950 0416;
E-mail: james.brown@evgptraining.com.au

INTRODUCTION

Alice	'Who in the world am I? Ah, that's the great puzzle! . . . Would you tell me, please, which way I ought to go from here?'
The Cheshire Cat	'That depends a good deal on where you want to get to.' (*Alice in Wonderland*, Lewis Carroll)[1]

Sword makes a compelling argument for research papers to be viewed as stories with abstract concepts as 'characters in a drama'.[2] She bases this on an extensive review of academic writing. From this perspective, *theory* is often a lost character in the stories of medical education research papers. Scholars identify *theory* as frequently absent,[3] underdeveloped[4,5] and awkward or trivial in its role.[6,7] The Cheshire Cat, in *Alice in Wonderland* ,[1] has sage advice for the lost: knowing who we are and which way to go depends on where we want to get to. This research paper is a story about where we might want to get to in casting a role for *theory* in the storytelling of general practice (GP) education research.

In crafting this paper as a story, we draw on Aristotle's ancient theory of tragedy as the most noble form of story[8] and Campbell's more modern theory of the 'monomyth'.[9] Both Aristotle[8] and Campbell[9] describe story in terms of a journey that starts with a challenge followed by an entry into the unknown that results in a discovery and concludes in a change for both the story's protagonist and the audience or reader. Aristotle[8] prescribes a protagonist that is known and a setting that is meaningful to the audience. We therefore first introduce our protagonist, *theory*, in the narrating of medical education research broadly, and GP education research specifically.

Hodges and Kuper define *theory* as: 'an organised, coherent, and systematic articulation of a set of issues that are communicated as a meaningful whole.'[10] The character of *theory* can be viewed from three different perspectives. The first perspective, scope, embraces a range that extends from grand unifying theories to macro theories pertaining to a system, and to micro or programme theories pertaining to particular interventions.[3,11] The second perspective concerns the position of the theory with respect to a research paradigm. For example, from a post-positivist paradigm, *theory* can be positioned as an expression of an external immutable truth.[4] Theories that align with culturally accepted beliefs, such as adult learning theory and its alignment with humanism,[12] lend themselves to being positioned in this way. By contrast, from a constructivist paradigm, *theory* can be positioned as one of any number of useful lenses on a phenomenon of interest.[13] This view has a more utilitarian approach to *theory* in which a theory is cast a role because it fits a purpose.[11,14] The third perspective refers to the lens taken on what it is to be a human. From this perspective, Bleakley et al. identify three prevalent lenses in medical education.[6] These include a *cognitive–behavioural* mechanistic lens focusing on processes of thinking, emotion and behaviour,[15,16] a *humanistic* lens focusing on an individual realising his or her potential,[17,18] and a *sociocultural* lens focusing on the social context of learning.[19]

The writing of *theory* into a research story is necessarily entwined with conceptions of the role of *theory* in medical education research. Rees and Monrouxe recommend using *theory* as a frame to provide a priori orientation and for making meaning.[3] As a frame, *theory* can provide coherence in advancing understanding of educational phenomena across multiple programmes of research.[20] Biesta et al. cast *theory* in a role in making meaning.[21] In this role they identify three possible tasks for *theory*: causal explanation; interpretation for plausibility, and emancipation by making the hidden visible.[21] Malterud et al. highlight the importance of *theory* for credibility.[22] Nestel and Bearman suggest that *theories* provide illumination as 'understandings of how people learn and how teaching is enacted'.[11] As well as contributing to the research story, *theory* should be an object of change as it is subjected to the research itself.[7,23]

Scholars call for education researchers to enrol *theory* in their work and in the literature they generate for the purpose of enhancing quality.[5,10,20] Key medical education journals expect research papers to include a meaningful role for *theory*.[24,25] A 2007 examination of research papers published in leading medical education journals indicated that close to half of papers did not explicitly include either a theory or a conceptual framework.[26]

The call for better engagement of *theory* in research publications suggests a need for greater

understanding amongst researchers of the nature of *theory* and how to use it.[10] Biesta et al. identify the skilled use of *theory* as theoretical connoisseurship.[21] This is the capacity to recognise which theory might serve the research purpose in a given context and how that theory might be used for that purpose. Biesta et al. suggest that to progress theoretical connoisseurship, we need first to know what and how *theory* is currently being used in education research.[21] One of the only ways we can know how theory is used in research is through the way it is written into research narratives.

Our research team has an interest in education theory, the writing of research stories and GP, family medicine vocational education research. General practice is situated in the ordinary world of day-to-day living in which the work is defined by personal and community narratives.[27,28] General practice vocational education is principally work-based.[29] In line with the call for the greater inclusion of *theory* in the medical education research literature broadly, Webster et al. identify 'the need to incorporate more theoretical frameworks into family medicine education research'.[30] Our overall aim in this literature review is to develop theoretical connoisseurship in GP vocational education research through exploring how *theory* can be written into its research narratives. We also suggest that understanding the use of *theory* in the literature of GP vocational education research is relevant to medical education more broadly.

To guide our investigative journey, we ask three related questions which frame the challenge. In GP vocational research stories:

1 What theories are being given an explicit role?
2 What tasks and roles are being assigned to theory?
3 What impact does the way theory is presented in the research story have on the reader?

METHODS

Study design

In order to address the challenge of investigating what and how *theory* is represented in GP vocational research, we chose a systematic scoping literature review.[31] We took a systematic rather than a hermeneutical approach[32] to paper selection to ensure that our selected papers covered the uses of *theory* in research stories by those in the field rather than by those that aligned with the preferences of the research team. We used three analytic approaches to our sample of papers: (i) content analysis for the descriptive component; (ii) thematic analysis for identifying the roles assigned to theory and how this was done,[33] and (iii) heuristic analysis for considering the impact of the representation of theory on the reader.[34] The heuristic analysis involved the following: engagement with an article; individual reflection on our experience as a reader, and explication of this experience independently and then in conversation with another researcher. Our thematic and heuristic analyses were interpretative and constructivist in approach and drew on the insights and experiences generated by our research team as they interacted with the data. We therefore reflexively[35] present the relevant perspectives of each author.

JB is a general practitioner and involved in GP vocational education delivery and research. He is involved in building research capacity in GP vocational education. JB is currently a PhD candidate with a focus on work-based learning in GP using an interpretative approach. In this context, he is interested in *theory* use and *theory* building.

MB is an educationalist and education researcher with many years of experience in health professional education and, particularly, in qualitative research. She has a keen interest in *theory*, most recently in practice theory. She is also fascinated by literature review methodology.

CK is an interdisciplinary researcher with quantitative and qualitative research experience in GP, psychology and education. CK has a strong interest in GP education research and professional development, and seeks to draw on knowledge, ideas and expertise from across disciplines.

EM is a physiotherapist and has worked in health professions education for over 15 years. EM has research interests in workplace learning, professional transitions and the role of feedback and assessment in promoting learning. She is interested in the role of *theory* in illuminating socially embedded phenomena in education.

DC is an experienced practising clinician, clinical educator and scholar who seeks to better integrate many sociocultural theories, including feminism(s), into her own teaching practices, including GP education in the topic of ophthalmic surgery.

DN is a health professions educationalist and researcher with over 30 years of experience. She has a particular interest in education theory and faculty development. She mainly adopts an interpretative stance in research and has contributed to a programme of research in GP education with a focus on identity development in trainees and supervisors.

Paper selection

We followed the PRISMA (*P*referred *R*eporting *I*tems for *S*ystematic Reviews and *M*eta-*A*nalyses) guidelines[36] to select our papers (Fig. 1). We searched Ovid MEDLINE, Ovid PsychINFO and ERIC (Educational Resources Information Centre) using the search terms detailed in Table 1. These terms were designed to capture published research papers in GP postgraduate vocational education that explicitly referred to *theory*. We limited our search to papers published from January 2013 to June 2017 as this represented recency. We examined the 'theory' terms used in recent publications on *theory* use in medical education to identify search terms. Known papers that fulfilled our criteria were used to judge the adequacy of the search. The team (JB, MB, CK, EM, DC and DN) read a selection of papers to develop inclusion and exclusion criteria that would achieve our purpose of collecting papers from our intended literature. The exclusion criteria are detailed in Fig. 1. We excluded papers when *theory* was used to frame only the content of an educational intervention and not to frame the educational process of the intervention. Adhering to the PRISMA guidelines, two researchers (JB and CK) screened papers by title, by abstract and then by a reading of the full paper. Where consensus could not be reached on the inclusion of a paper, a third member of the research team (MB) was engaged to enable a final decision.

Analysis

Our analysis was undertaken from interpretivist and constructivist perspectives.[35] We built an analytic framework iteratively as we interacted with the data and developed our conceptualisation. Our categories were developed using a synthesis of both deductive and inductive inquiry:[37] our development of categories was framed by our questions, and informed by our reading of recent literature on the role of *theory* in education research and by the way theory was represented in our selected papers. We

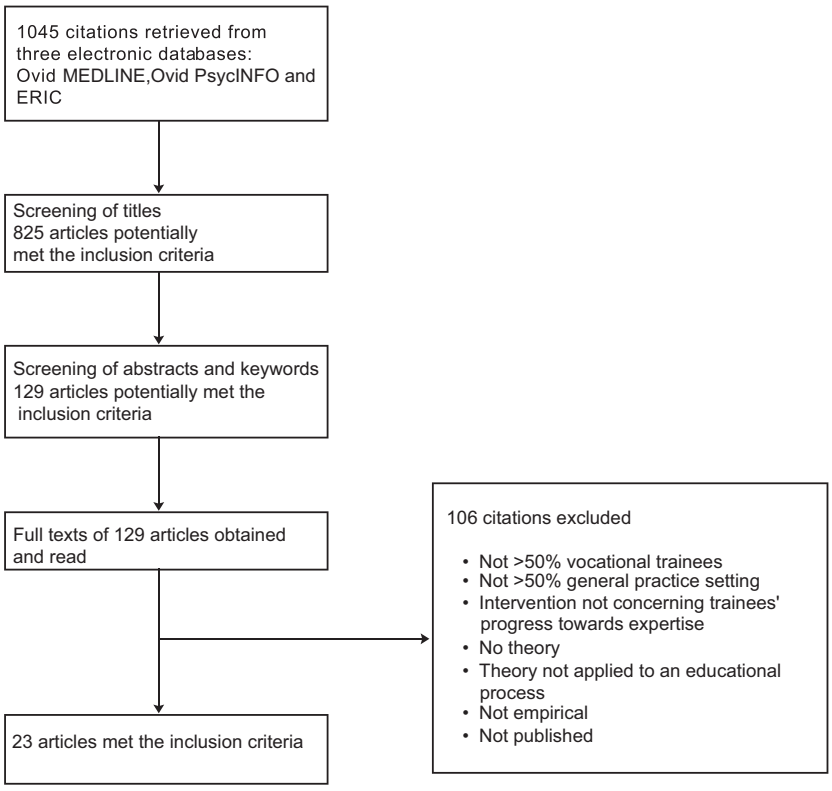

Figure 1 Summary of paper selection. ERIC = Educational Resources Information Centre

Table 1 Search strategy and terms

Online databases	Ovid MEDLINE, Ovid PsycINFO, ERIC		
Time period	January 2013 to June 2017		
Types of literature	Peer-reviewed empirical research papers		
Language	English only		
Search fields	All fields		
Search terms			
What activity?	What theoretical framing?	Where?	Who?
An educational intervention with an evaluation	Education theory Social theory	Work-based clinical learning General practice	Postgraduate medical Pre-fellowship
Research into the manner of an educational process	Psychology theory		
Search terms:			
Educat* Supervis* Teach* Learn* Train* Mentor* Skill Knowledge Performance Assessment Test	Theor*, Pedagog*,Framework, Concept*, Hypoth* Mainstream theories: • Adult + learn* • Learning + style* • Experiential + learning • Communit* + of + practice • Actor + network • Activity + theory • Zone + of + proximal + development • Reflective + practice or learning • Situat* + learning • Self-directed + learning • Cognitive + apprenticeship • Transformative + learning • Work-based + learning • Work-place + learning • Social + construct *	General + practi* GP Family + medic* Primary + care Family + physician Primary + physician	Resident* Registrar* Trainee* Post + graduate* Post-graduate* Intern Interns

ERIC, Educational Resources Information Centre; GP, general practice.

first read six papers and, as a team, developed an initial list of analytic categories. These categories were descriptive, interpretative and heuristic and were refined over a series of nine meetings informed by our progressive analysis of the data and by the areas of expertise we each brought. The component parts of our final analytic framework are detailed in Table 2. Each paper was analysed by at least two of the team; JB analysed all papers except two that he had authored.

Having identified the theories used, we grouped these to Bleakley et al.'s[6] typology of three theoretical perspectives taken in medical education: cognitive–behavioural; humanistic, and sociocultural. Although we grouped theories to their dominant perspective, we recognised that theories may take more than one perspective.[20,38]

We determined the tasks assigned to *theory* in each paper either according to what the authors said they were assigning *theory* to do or, more often, by identifying what *theory* was actually doing. Then we developed our conceptualisation of *theory* as a character with a role within a research story by looking for parallels between the tasks assigned to

(23)

Table 2 Analytical framework

Descriptive	Interpretative	Heuristic
• Authors • Primary theory • Other theories • Domain of educational interest • The parts of the paper in which theory was used • Methodology	• Task assigned to *theory* • Prominence of *theory* • Audience	• The impact of the use of theory on us as readers

theory in our papers and the tasks of Campbell's archetypal characters from his theory of the 'monomyth'.[9] Campbell theorises that great stories have archetypal characters, each with a role and a set of tasks.[9] The characters that held roles with parallels to the tasks we identified were: the 'Hero' or protagonist, who takes up a challenge and embarks on a journey of change and enlightenment; the 'Harbinger', who brings the challenge to light; the 'Ally', who supports the Hero on his or her journey, and the 'Mentor', who provides guidance and tools for the journey.

Finally, following Aristotle's view that the measure of a story is its impact on its audience,[8] we heuristically considered the impact of the way *theory* was used in each paper on how we, as readers, reacted to the story of the paper.[34]

RESULTS

Theory was explicitly present in 23 papers. The papers secured at each stage of our selection process are detailed in Fig. 1. The papers in which *theory* was found are listed by author in Table 3 with elements of our findings. A total of 13 papers used a qualitative methodology, six used a quantitative methodology and four used mixed methods.

What theory and what type of theory were used?

Theory was used in our selected papers both as a discrete theory, such as Wenger's theory of 'communities of practice',[39] and as areas of theorising such as 'theorising on reflective practice'. Some papers engaged a single theory, whereas others primarily engaged one theory and used other theories for secondary purposes. Two papers used constructs and ideas drawn from multiple theories without emphasising any one theory.[40,41] A total of 18 discrete theories and three areas of theorising were used. These are detailed in Table 4, in which each theory is categorised to Bleakley et al.'s typology of a theory's primary perspective (cognitive–behavioural, humanistic or sociocultural).[6] Perspectives, and then theories, are listed in order of their frequency of use as the primary perspective or primary theory. The most frequently taken perspective was a humanistic one. The most commonly used theories were those of 'reflective learning', 'communities of practice' and 'adult learning'.

Tasks assigned to *theory*

We identified six different tasks assigned to *theory* in the research stories of our selected papers. This finding was largely an interpretative one derived by what we saw *theory* doing in the paper; few papers were explicit in assigning a task to *theory*. The six tasks were: (i) to align with a position taken by the author; (ii) to identify the research problem; (iii) to serve as a vehicle for an idea; (iv) to provide a methodological tool; (v) to interpret the findings, and (vi) to represent an object of examination. Within a given paper, *theory* might have been assigned multiple tasks, sometimes by using more than one theory. In detailing the tasks assigned to *theory*, we reference articles within our set that provide examples of *theory* undertaking that task.

Theory for alignment

The most frequent task assigned to *theory* was to align *theory* with a perspective taken in the paper. Theoretical alignment might be performed for: the context of the research;[42] the choice of research methodology,[43] or conclusions made.[41] As readers, we experienced alignment as a positioning manoeuvre performed either to sensitise the reader to the author's perspective[44] or to give credibility to a stance.[45] In this positioning, language could be used to give the theory the status of an 'accepted orthodoxy' or an 'ideal'.[46] Ingham et al. opened their paper with:

> The application of adult learning theory, with its emphasis on a learner-centred approach, has for some decades in medical education been considered essential to facilitate deeper learning.[47]

(24)

Table 3 Papers with selected findings

Author(s)	Domain(s) of interest	Methodology	Primary theory	Secondary theories
Brumpton et al.[45]	An initiative of vertically integrated workshops Learning styles and level of education	Quantitative	Experiential learning – learning styles	Adult learning
Shaughnessy et al.[60]	An educational initiative of a written reflective exercise	Qualitative	Reflective learning	Cognitive scripts Diffusion of innovation
Govaerts et al.[42]	Cognitive process in performance rating	Mixed	Social cognition	Naturalistic decision making
Pelgrim et al.[46]	Feedback in the workplace A theoretical proposition from reflective theory	Quantitative	Reflective learning	
Barnett et al.[50]	Interest in online group education	Quantitative	Communities of practice	Technology acceptance model
Barnett et al.[51]	Perceived usefulness of online group education proposed initiative	Qualitative	Technology acceptance model	Communities of practice
Wiener-Ogilvie et al.[61]	Preparedness for independent practice Training placements	Qualitative	Situated learning	Communities of practice
Pelgrim et al.[62]	Personality traits of trainers and the impact of their feedback on trainees	Quantitative	The Big Five	
Barnett et al.[52]	An online group education initiative	Mixed	Communities of practice	
Stone[55]	Learning how to work with patients with unexplained symptoms	Qualitative	Symbolic interactionism	
van den Eertwegh et al.[56]	Communication skills development in two different training contexts	Qualitative	Transformative learning	
van Roermund et al.[48]	Learner-centredness in a group education initiative	Qualitative	Adult learning	
Nothnagle et al.[53]	A group education initiative to foster professional development	Qualitative	Professional formation	Communities of practice
Walters et al.[58]	Trainee resilience	Qualitative	Transformative learning	
Grierson et al.[54]	Curriculum impact on future practice intentions	Quantitative	Theory of planned behaviour	
Côté et al.[40]	Use of conceptual frameworks in feedback by preceptors	Mixed	Multiple theories; none used as a primary theory	Experiential learning Theory of expertise development Reflective practice

Table 3 (Continued)

Author(s)	Domain(s) of interest	Methodology	Primary theory	Secondary theories
Ingham et al.[47]	Motivation to supervise Supervisory practice	Qualitative	Adult learning	
Duggan et al.[57]	Reflection and communication Theory of reflective practice	Qualitative	Reflective learning	
Garth et al.[59]	Learning plans	Mixed	Adult learning	Social learning theories
Clement et al.[43]	Ad hoc supervisory encounters Wenger's theory of communities of practice	Qualitative	Communities of practice	Social learning theories
Veen and de la Croix[49]	Group reflective practice Conversational analysis	Qualitative	Epistemics of knowledge	Reflective learning
Côté et al.[41]	Advice giving by non-physician educators Feedback processes and content	Qualitative	Multiple theories; none used as primary theory	Experiential learning Theory of expertise development Situated learning Reflective practice Cognitive apprenticeship
Keister et al.[44]	A mentorship initiative Self-assessment	Quantitative	Self-determination theory	Dreyfus model of skills acquisition Reflective practice

With this opening, Ingham et al.[47] align the aim of their paper with the tenets of adult learning theory as a sensitising manoeuvre and, in using the adjective 'essential', position adult learning theory as an ideal to strive for. Later in the paper, they justify their conclusions by aligning them with adult learning theory:

> This behaviour is consistent with a learner-centred adult education approach.[47]

Theory to identify the research problem

Some papers used *theory* to identify a research problem. Brumpton et al. used *experiential learning theory* in this way by drawing on theories of learning styles to flag the possibility that there may be a problem with a mismatch between teaching and learning styles in their vertically integrated education programme.[45] Van Roermund et al. used the tenets of adult learning theory to flag the problem of matching the expectations and beliefs of educators with those of trainees in their peer debriefing workshops.[48]

Theory as a vehicle for an idea

Discrete theories were sometimes tasked with serving as vehicles for ideas or concepts. Theories assigned this type of task were theories with broad currency. *Adult learning theory* was used as a vehicle for the idea of learner-centredness.[47,48] *Experiential learning* was used as a vehicle for learning in the context of doing,[40,49] and *communities of practice theory* was used as a vehicle for the idea of people working together with a common purpose.[50–53]

Theory providing a methodological tool

Some authors gave *theory* the task of introducing or crafting methodological tools. These included tools for collecting data, tools for typology and tools for analysis. Grierson et al. used the theory of planned behaviour to design a questionnaire to collect data on intentions for future clinical practice by GP registrars.[54] Keister et al. used Dreyfus's model of skills acquisition for grading registrar progress.[44]

Table 4 Perspectives and theories used

Perspective	Used as primary perspective, papers, *n*	Theory	Used as primary theory, papers, *n*	Used as secondary theory, papers, *n*
Humanistic (focus on the individual and how he or she might be assisted in realising potential[17,18]	11	Reflective learning	3	4
		Adult learning principles	3	1
		Transformative learning	2	
		Learning styles	1	
		Self-determination theory	1	
		The 'Big Five'	1	
		Dewey's experiential learning		2
		Dreyfus model of stages of skill acquisition		1
Sociocultural (focus on the social and cultural context)[19,39]	7	Communities of practice	4	1
		Situated learning	1	1
		Conversational analysis: epistemics of knowledge	1	
		Symbolic interactionism	1	
		Social learning theories		2
		Diffusion of innovation		1
Cognitive–behavioural (focus on the individual's processes of thinking, emotion and behaviour)[15,16]	3	Technology acceptance model	1	1
		Social cognition and person perception	1	
		Theory of planned behaviour	1	
		Cognitive scripts		1
		Cognitive apprenticeship		1
		Ericsson's theory of expertise development		1
		Naturalistic decision making		1

Two papers did not have a primary perspective or theory but took an eclectic approach.[40,41]

Theory for interpretation

Biesta et al. suggest that *theory* is given interpretative tasks in education research as a way of providing an answer to 'why people are saying and acting in the way that they are'.[21] An example of this interpretative function was Stone's[55] use of symbolic interactionism as a means of understanding the way that doctors and supervisors dealt with unexplained medical symptoms:

> This study is grounded in the symbolic interactionism tradition with its fundamental assumption that reality and the self are known through interaction and expressed through communication and language.[55]

Theory as an object of examination

We identified two ways in which *theory* was used as an object of examination. The first was global in assessing the overall utility of a theory for a research purpose and the second was particular in testing a theoretical proposition, and building and extending a theory. Van den Eerwegh et al. determined that their findings on learning communication skills were consistent with 'transformative learning theory' and hence concluded that the theory had utility for framing further research in the communication skills domain.[56] Testing of a theoretical proposition was undertaken by Pelgrim et al., who examined the proposition from 'theories of reflection' that

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Table 5 Tasks assigned to theory *matched to Campbell's archetypal story characters*[9]

Campbell's archetypal character	Role	Our identified tasks assigned to *theory*	Example
Protagonist	The main character of the story	*Theory* as the object of examination	Testing of a theoretical proposition was undertaken by Pelgrim et al., who examined the proposition from 'theories of reflection' that reflection leads to change in action[46]
Harbinger	To introduce the challenge	*Theory* to identify the research problem	Brumpton et al. used *experiential learning theory* drawing on theories of learning styles to flag that there may be a mismatch between teaching and learning styles in an educational activity[45]
Ally	To be a companion to and support for the hero	*Theory* for: • Alignment • A vehicle for an idea	Walters et al. aligned their findings with *transformative learning theory*[58] Barnett et al. used *communities of practice* as a vehicle for the idea of a group with a common purpose[52]
Mentor	To provide wisdom and advice to the hero	*Theory* for: • Interpretation • Providing a methodological tool	Stone used the *theory of symbolic interactionalism* to interpret how supervisors and trainees dealt with patients presenting with medically unexplained symptoms[55] Griesen et al. used the *theory of planned behaviour* to develop a tool to measure future practice intentions[54]

reflection leads to change in action.[46] Duggan et al. endeavoured to *theory* build using an examination of trainee reflections on doctor–patient communication.[57] They used their research to advance a metaphor of an angler's float as a representation of how reflection sits at the interface between the explicit and the tacit and to highlight the tensions that can occur in this context.

Characterisation of the role of *theory*

In our conception of a research paper as a story in which *theory* is a character, we looked for parallels between the tasks assigned to *theory* in our sample and the tasks and roles assigned to Campbell's archetypal characters in his 'monomyth theory'.[9] We found meaningful parallels with four of Campbell's eight archetypal characters. These are detailed in Table 5.

Sometimes *theory* occupied two character roles in a single paper. Clement et al.[43] placed *communities of practice theory* as both the 'protagonist' and the 'mentor'. As the 'protagonist', the theory was tested by the data; as the 'mentor', the theory was used to interpret the data. This accorded with the imperatives for *theory* to inform research and for research to inform *theory*.

Prominence of the role given to *theory*

In examining the role taken by *theory*, we identified the 'prominence of the role' assigned to a theory as an important theme. We graded role prominence from 'cameo character' through to 'major character'. When more than one theory is used in a paper, each theory may be given a different degree of prominence. A theory as a cameo character typically appeared in one or two sentences in either the introduction or the discussion. A theory as a major character was a significant presence throughout the paper. Prominence was related to the role and tasks assigned to *theory*. Cameo roles were mostly as an 'ally' in the tasks of 'alignment for credibility' or as 'a vehicle for an idea'. Walters et al. gave transformative theory a cameo role by making a brief mention of this theory to add credibility to a finding:[58]

> This study also demonstrated that individuals can be stretched by supervisors to expand their limits of comfort at managing the key tensions. This finding is consistent with Mezirow's

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transformative learning theory which recognises that taking people to their "edge of knowing" can result in growth.[58]

Use of *theory* as a source for a methodological tool or use of *theory* as an object of examination matched with greater prominence.

Audience stance

We identified the theme of 'audience stance' as significant in considering the impact of the use of theory. We identified five audience stances of, respectively, the educator–practitioner, the faculty member, the policymaker, the researcher and the theorist. Some papers were explicit about their intended audience; most were not. When the paper was not explicit about its intended audience, we used the focus or main domain of interest of the paper (Table 3) as an indicator of the intended audience. If the focus was a discrete intervention, such as in Nothnagle et al.'s examination of a facilitated discussion group,[53] we identified the audience as educators–practitioners. If the domain of interest was a phenomenon investigated from a practical perspective, such as in Walter et al.'s examination of resilience,[58] we identified the audience as faculty members or policymakers. If the domain of interest was a methodological issue, we identified the audience as researchers. For example, Grierson et al. used the *theory of planned behaviour* to develop a tool to measure 'intention to engage in comprehensive practice'.[54] If the domain of interest was *theory* development, such as in Pelgrim et al.'s examination of theories of reflection,[46] we took the audience to be theorists. Some papers took more than one focus or claimed to speak to more than one audience.

What was the impact of the role assigned to *theory* on us as readers?

In line with Aristotle's imperative that the measure of a story is its impact on its audience,[8] we examined the impact of the way *theory* was used in each paper on us, as an audience. The impact we experienced was a confluence of the role of *theory* and the way that role was assigned, the prominence of the role, and the stance we took as the audience.

Impact in relation to the clarity of the role assigned to theory

We engaged more easily with *theory* when its role was articulated. It was more difficult when we were left to guess what role was being assigned, which was the case in most of the reviewed papers. Govaerts et al.'s paper[42] was a good example of a work that articulated the roles that *theory* would take in the paper. This paper dedicated a section within the introduction to the 'conceptual framework'.[42] Articulation of the philosophical assumptions behind the choice of theory was also a helpful orientating manoeuvre.[4] Clement et al.[43] did this in their exploration of Wenger's theory of communities of practice[39] as a sociocultural theory.

Impact in relation to the prominence of the role given to theory

The prominence of the role ascribed to *theory* had an important impact. As readers, the impact of *theory* on the story of the paper was most meaningful when *theory* was introduced early and was still an active character in the paper's concluding discussion, as in van Roermund et al.'s paper.[48] In papers in which *theory* was a cameo character, we experienced the fleeting presence of *theory* as a distracting diversion from the story. Some papers gave *theory* a strong role in the introduction, which was not continued in the rest of the paper. We experienced this as presenting *theory* as a prospective companion for the story, who then inexplicably vanishes.

Impact in relation to the stance of the audience

Audience stance determined the impact of the depth of development of the character of *theory* in the research story. Complex character development of a theory was valuable when the focus was *theory* and the audience theorists; however, this could be alienating in the context of a focus on an educational intervention and an audience of education practitioners. The paper by Veen and de la Croix was an example of this tension.[49] This paper examined the transition between case presentation and group reflection in facilitated peer debriefing groups. In doing so, the authors[49] tested the theory of 'epistemics of knowledge' for its utility and also engaged in building theory on reflection. This second endeavour involved complex exploration of *theory*. Although the paper[49] explicitly claimed to address educators as an audience, we found it a challenging read from the perspective of an educator–practitioner. It was, however, engaging to read from the perspective of a theorist.

DISCUSSION

We sought to uncover which *theories* are assigned roles in GP vocational education research papers, what these roles are and how the ways in which this is done impact on the reader. A total of 21 different theories or areas of theorising were used in our 23 selected papers. Prominent amongst these were 'adult learning theory', 'communities of practice' and 'reflective learning', all of which are macro or middle-range theories.[3,11] Theories with a humanistic perspective were dominant. This suggests that these theories and this perspective have particular currency in GP education research. Theories were enlisted for the roles of: achieving theoretical alignment for sensitising or justifying credibility; serving as vehicles for ideas; providing methodological tools; giving interpretation, and representing objects of examination. These roles aligned with those suggested by others, particularly for achieving alignment for credibility,[22] serving as an interpretative tool[23] and representing an object of examination.[7,23] We established that the impact of *theory* in its allocated role depended on clarity about its role, how prominent *theory* was in the research story and the stance of the reader.

We aimed to progress theoretical connoisseurship by identifying the ways in which *theory* could be used. By applying Campbell's[9] archetypal characterisation of roles in a story, we offer a framework for how a role might be assigned to *theory* and how this role might be integrated into the story of a research paper. In broad terms, characters in a story require an entry, development and an exit. Cameo appearances risk being meaningless or distracting. When *theory* is the object of the research, it is the protagonist. Both Aristotle[8] and Campbell[9] recommend that the protagonist be made familiar to the audience before the journey commences. We suggest that the introduction is the section in which this is done. The journey should bring a change or new insight, which should become clear in the discussion. When *theory* is used for credibility or as a vehicle for an idea, it functions as an 'ally'. As an ally, *theory* is a companion for the protagonist in the research story. Therefore, it should appear in the scene setting of either the introduction or the methods sections and be present in the conclusion. When *theory* is used in identifying the challenge or problem, it functions as the 'harbinger'. Harbingers need a strong presence in the introduction and a presence in the conclusion. When *theory* is used as either an interpretative or a methodological tool, it functions as a 'mentor'. A mentor character needs reason to be trusted and therefore needs development when it is first introduced to the research story.

The choice of theory for a particular role and how to use it depends on the field and the audience. If *theory* is to be used for credibility or as a vehicle for an idea, the theory requires currency with the target audience. The impact of the theory used is supported by articulation of the philosophical assumptions behind the theory.[4] These will differ depending on whether the theory comes from a cognitive–behavioural perspective, a humanistic perspective or a sociocultural perspective.[6] The depth of theoretical conceptualising should also be dictated by the intended audience in recognition of the fact that an education practitioner may not be engaged in the same way as a theorist by a theoretically dense exploration.

Our paper, in itself, is an example of the characterisation of *theory* in a research story. *Theory* as a generic construct was our 'protagonist'. We gave depth to her character in our introduction. Through our journey of exploration and discussion, we endeavoured to gain a view on how she might be a character in other research stories. We recruited Aristotle's poetics[8] as an 'ally' to give credibility to our approach and our conclusions. This theory was introduced and made familiar in the introduction to then be a presence in the subsequent sections of the story. Campbell's theory of the 'monomyth'[9] was our 'mentor', providing interpretation, guidance and a framework.[3] This theory was introduced in the introduction, made familiar in the section on methodology and appeared as a significant character in the findings and discussion. Our 'harbinger' was the literature on use of *theory* in medical education. This had prominence in our introduction and appeared briefly in our discussion. Our field was GP education research and our audience those who would use *theory* in their research, particularly GP education research. General practice is an eclectic discipline that draws on a broad palate of perspectives to serve its ends. It is also a discipline in which the narrative of the patient is paramount.[27] We therefore chose the story metaphor and drew on more than one theory to meet our ends.

The strengths of this research journey are also its limitations. We chose GP education research as

our setting and confined our examination to the past 5 years. This limited our sample to enable us to pursue analytical depth. General practice education research inevitably has its own contextual characteristics that may or may not pertain to other areas of medical education. We believe that GP education research is an important field in itself and also that conclusions drawn from research in this area have relevance more broadly. Our decision to examine works published within a period of only 5 years makes us unable to comment on changes in what is likely to be a changing environment. A more longitudinal view on the use of *theory* may offer insights to future directions of the use of *theory*. Our search terms required that a paper make explicit mention of a theory in order to be included. This meant that implicit theoretical orientations were not examined. This is likely to have resulted in the weighting of our sample away from quantitative papers in a positivist paradigm in which theoretical underpinnings are more likely to be assumed.[3] Qualitative papers dominated our selection. We took an interpretative approach in examining the use of *theory* and this enabled us to draw on the perspectives we held and on our reactions to reading the papers. However, this may not align with the interpretations and reactions of others. It is for others to judge the veracity and usefulness of our interpretation against their own experiences of the use of *theory* in the literature. The recommendations we make are drawn from our interpretation of the findings. In line with our constructivist approach, we recognise that our conclusions come from one of many justifiable perspectives. Our interest was the way in which *theory* was represented in research writing. We did not examine the way that *theory* was used in the research itself or the rigour with which it was used. These would be useful areas for further research.

CONCLUSIONS

> "Begin at the beginning," the King said, very gravely, "and go on till you come to the end: then stop." (*Alice in Wonderland*, Lewis Carroll)[1]

Our focused review suggests that *theory* does not need to be a lost character in our research stories. Casting *theory* meaningfully enables it to take a significant role. For *theory* to have impact on the research story, we need to be deliberate about the role we choose to give *theory* and explicit about the reasons for our choice of theory, and to attend to the characterisation of *theory* in our research story. By being explicit across these dimensions, education researchers can both add to the cohesive quality of their research writing and provide insights to help others in writing *theory* into their research stories. Through this, theoretical connoisseurship may be progressed.

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3.3. Contribution of 'Theory, a lost character?' to thesis

The overarching purpose of this paper was to inform the use of theory in educational research by building a conceptual framework for this. I retroductively built a descriptive meta-theory on how theory was used in medical education research papers using Campbell's archetypal characters to categorise the different roles theory was given and the purpose theory served. I used this descriptive theorising to further propose a normative theory on how theory might be used more effectively in research paper writing and therefore how theory might be used in the research process itself. I identified four key features of effective presence of theory in research writing. These were: 1) use of theory in a manner that is suitable for the intended audience; 2) a choice of theoretical perspective that suits the research purpose; 3) clarity about the role theory is given; 4) meaningful presence of theory within the research paper. A primary aim of this work was to build my own capacity for theoretical connoisseurship. I have endeavoured to use the insights from this work for guiding effective use of theory in the publications generated for this thesis. Table 2 details the publications that form this thesis, theories informing the work and how the theory was used.

Table 2

Theories used in each publication, the intended audiences, theory role and purpose

Publication	**Audience**	**Theories used**	**Theory Role**[1]	**Purpose of use of theory**
Theory, a lost character?	Medical education researchers	Campbell's Monomyth	Mentor	Interpretation
		Aristotle's Poetics	Ally	Alignment for credibility of methods and claims
Theories and myths in medical education	Medical education scholars	Campbell's Monomyth	Mentor	Interpretation
Remodelling GP training	Leaders in GP vocational training policy setting	Dialectic Theory of Institutional Change	Harbinger	Identify the research problem
			Mentor	A methodological and Interpretative tool

The supervisory encounter and the senior trainee	GP supervisors Faculty supporting GP supervisors	Communities of Practice Theory	Ally	Alignment for sensitising
			Mentor	Interpretation
		Rhetorical Genre Theory	Mentor	Interpretation
			Ally	Alignment for credibility of theory building
Becoming a clinician	Theorists GP supervisors Faculty supporting GP supervisors	Social theories of learning	Ally	Alignment for sensitising and for credibility of claims
		Holland et. al.(1) Cultural Worlds Theory	Mentor	Interpretative tool
			Ally	Alignment for sensitising and credibility of claims
		Sullivan's Dialogic Theory(51)	Mentor	Methodological tool
			Ally	Alignment for credibility
		Critical Realism Theory	Ally	Alignment for methodological credibility
Supervision in general practice settings	GP supervisors Faculty supporting GP supervisors	Activity Theory Communities of Practice Theory Billett's Workplace Pedagogy(52)	Mentors	Interpretation
			Allies	Alignment for Sensitising and credibility of claims

[1] Typology of the role of theory developed in the paper 'Theory a lost character?'(18)

3.4. Paper 2: Theories and myths in medical education: What is valued and who is served?

Following the publication of “Theory, a lost character”, Professor Kevin Eva, the Editor-in-Chief of Medical Education, invited me to write a commentary for a special edition of the journal focusing on myths in medical education. I chose to focus on the social function of theory in the medical education community, using parallels with the social function of myths. This commentary focused on the way theory functions as a vehicle for social values; and, that particular theories have prominence because they work to support the interests of those with influence(25). From a critical realist perspective, this is normative theory driven by ideological agendas. These agendas are not necessarily explicit or immediately apparent. Therefore, it is incumbent on the scientist to critique the ideological assumptions behind the use of theory so that the ideological agendas can be known and understood.

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COMMENTARIES

Theories and myths in medical education: What is valued and who is served?

James Brown[1,2] | **Debra Nestel**[1,3]

[1]Monash Institute of Health and Clinical Education, Faculty of Medicine, Nursing and Health Sciences, Monash University, Clayton, Victoria, Australia

[2]Eastern Victoria GP Training, Churchill, Victoria, Australia

[3]Department of Surgery, Faculty of Medicine, Dentistry and Health Sciences, University of Melbourne, Melbourne, Victoria, Australia

Correspondence: James Brown, Monash Institute of Health and Clinical Education, Faculty of Medicine, Nursing & Health Sciences, Monash University, Clayton, Victoria, Australia. Email: jamesboyerbrown@gmail.com

In their article "Myths and Social Structure: The Unbearable Necessity of Mythology in Medical Education", Martimianakis et al.[1] position myths as more than dated explanations of our world. They identify myths as shared narratives that fulfil social purposes well beyond simply providing explanatory interpretations. These purposes are:

- Shared meaning making
- A vehicle for values and ideologies
- A means of maintaining social power structures

They also position myth busting as an activity that is itself based on a myth held within our community of medical education. That is, the myth that places medical education as a natural science with an objective approach to truths that are verifiable, where facts are valued over meaning, and physical sciences are positioned as superior to social sciences. Martimianakis et al. recommend that, when we consider tenets held by medical education as myths, we should explore their social function as well as their explanatory function. In doing this, we can subject our meaning making, values and politics to critique as well as our "scientific" explanations.

In their article, Martimianakis et al. examine four educational beliefs and one theory that have persisted despite being "busted". In this commentary, we explore further the position that educational theory can take as a myth in being a shared narrative within our medical education community. An educational theory is defined by Hodges and Kuper as an "organised coherent, and systematic articulation of a set of issues … communicated as a meaningful whole".[2] This is essentially a socially shared narrative. In our recently published article, "Theory, a lost character?", we drew on the social function of myth to frame our investigation into the function of educational theory in educational research writing.[3] We drew on Joseph Campbell's work, which positions myths as narrativised social metaphors that have power and persistence because they have resonated with human experience over time.[4] We found that one function of theory was to be a vehicle for shared meaning making. This was particularly the case with middle-range theories[5] that have strong contemporary currency. It is helpful to view such theories, functioning in this way, as shared narratives and therefore as myths. Three such middle-range theories are: the *principles of adult learning*[6], *communities of practice* theory[7], and *competency-based education* theorising.[8] If we consider the function of each of these theories as myths within medical education, what then are shared meanings that they carry, the values they support and the political structures they serve?

> *… we explore further the position that educational theory can take as a myth in being a shared narrative within our medical education community*

Described by Knowles,[6] the principles of adult learning align with the humanistic thinking of Rogers.[9,10] Although much has been written questioning the validity of the claims of adult learning theory,[11] it persists as a frame for medical education research and practice. In the medical education lexicon, "adult learning theory" has become a shared vehicle for the idea of learner centredness.[3]

This theorising puts high value on individual autonomy and positions education as facilitating the individual's inherent capacity to "self-actualise". In doing so, it demands respect for the individual. This positioning of the individual serves both democratic and capitalist ideologies and power structures where the individual is viewed as a market and is attributed with responsibility for their situation, thus exonerating those who hold power and determine social policy.

Wenger's theory of communities of practice draws on treatises of social structure and social action that are significantly influenced by socialist thinking.[7] The phrase "communities of practice" has become part of the language of medical education research and practice, to carry the shared idea of groups working together with a common purpose.[3] This theory takes the perspective of the social context of learning, focusing on the interface between the learner and the community of practice in which they are engaged. Participation, engagement and meaning making are valued and privileged. The theory foregrounds learning as the business of communities of production, which it both serves and is shaped by over time. It also offers a means to conceptualise the social nature of identity, preferencing social structure over individual agency. From ideological and political perspectives, communities of practice theory gives priority to the needs of the social units of production that make up our society and serves particularly the agendas of those in charge of these units of production. This perspective gives little consideration to the object of the community's practice, which in medical communities is the patient.[9]

Competency-based education comes from scientific reductionism with a mechanistic view of education where the learner is an object that can be changed through targeted interventions.[8,12] In medical education discourses, "competency-based education" carries the idea of rationality and structure. This theoretical approach values efficiency and accountability and therefore prioritises outcomes over process and the objective over the subjective. Discourse in competency-based medicine uses the Cartesian language of biomedicine. From a political perspective, this serves faculty members by providing a simplified mechanistic model that avoids dealing with the complexity of learner motivation and meaning making in the context of relationships. It also fits with the discourse of efficiency and cost reduction that serves the funders and providers of education.[2]

Bordage[3] puts forward that different theoretical perspectives, rather than being more right or wrong in their explanatory function, each provide a different lens on different things. We suggest that as social narratives, theories also serve as different vehicles for different values and different centres of power. In these respects, they are also neither right nor wrong, rather, they provide the means for a window into what is valued and whose interests are at stake. It is only when theories are held up as truisms, rather than perspectives, that they become problematic as hegemonic tools.

... as social narratives, theories also serve as different vehicles for different values and different centres of power

... when theories are held up as truisms, rather than perspectives, that they become problematic as hegemonic tools

In conclusion, Martimianakis et al.'s foregrounding of the social function of myths is important. It expands the critique of medical education beliefs, beyond what they claim, to considering what they do to support certain values and certain centres of power. We have extended their examination of specific beliefs as myths to considering educational theories as forms of myths. Theories have an explanatory function and they also provide shared narratives that sustain particular values and particular political structures. In critiquing these functions, we can engage in a more explicit discourse about what values we choose to prioritise and whose agendas we are serving.

Theories have an explanatory function and they also provide shared narratives that sustain particular values and particular political structures

In critiquing these functions, we can engage in a more explicit discourse about what values we choose to prioritise and whose agendas we are serving

We contend that myths are more than an "unbearable necessity" in medical education; they are an important part of the social fabric of the medical education community. We suggest going beyond Martimianakis et al.'s call to tolerate myths as an "unbearable necessity" to celebrate them as valuable social tools to use, critique and modify for purposeful social ends.

ORCID

James Brown https://orcid.org/0000-0002-7262-1629
Debra Nestel https://orcid.org/0000-0003-2941-2298

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4. Australian general practice vocational training

4.1. Introduction: general practice training, a changing environment.

This chapter focuses on the Australian GP vocational training program and the context it provides for GP trainee identity development and the GP supervisory relationship.

Australian GP vocational training is work-based training where trainees learn as they contribute to clinical services. It is directed by the standards of the two Australian GP colleges and managed by nine regional training organisations under contract to the federal government(15, 53). The GP trainee works under the supervision of experienced clinicians in hospitals, community-based general practices and other health services. Core GP vocational training is three years duration and composed of discipline relevant hospital rotations and primary care placements. Trainees training for rural practice may extend their training to gain skills in relevant areas of practice. Before entering GP training, trainees may have had pre-vocational placements in GP as medical students or junior residents.

The two Australian GP colleges are the Australian College of Remote and Rural Medicine (ACRRM) and the Royal Australian College of General Practice (RACGP). These colleges set the standards for GP training including: training outcomes; required training time and activities; supervisor and placement accreditation; and milestones towards certification as an independent GP clinician(54, 55). ACRRM mandates a fourth year of extended training for rural practice. RACGP provides the option of extended training which enables the trainee to gain an additional rural fellowship. For RACGP, at least 18 months of training must be in community-based general practices. The colleges also direct selection of trainees and undertake formal trainee assessments for determining suitability for fellowship.

Nine regionally-based training organisations currently manage training under contract with the Australian federal government. These organisations oversee and deliver training, undertaking a range of activities including: brokering placement of trainees; provision of educational activities for trainees and supervisors; support for trainees; educational, financial and organisational support for supervisors and training practices; ensuring that training standards are met; and, monitoring trainee

progress. The training organisations are also responsible for accrediting GP supervisors and GP placements to the standards of the colleges.

During their training time in community-based GP, the trainee is supervised by GP supervisors who are experienced GP clinicians. A GP supervisor is responsible for: ensuring that their trainee practices safely; being available for support and advice for the trainee; and, providing formal and informal teaching. GP supervisors are required to be accredited to the standards of the professional colleges and are expected to participate in on-going professional development. For most trainees, their placements in GP provide their main training experience for becoming a general practitioner. In these placements, their relationship with their GP supervisor is highly formative(13, 56).

The Australian GP training program is currently in a state of change. Overall oversight and management will be transferred to the two professional colleges in 2022 with an associated redesign of the way training is delivered. The federal government's agenda in the redesign of training is to improve the distribution of general practitioners across Australia to provide more equitable access to healthcare(57). This change is seen by different stakeholders as both an opportunity and a threat, depending on their perspective. This means that there are a range of voices in the discourses around this change. These voices express overt agendas in terms of the laudable objectives of quality training and training doctors for community need, however the positions taken indicate other unstated agendas which are more to do with issues of influence and control. The voices that tend not to be heard are those of patients, trainees, supervisors and educators.

In this context I led a body of research, commissioned by one of the GP training organisations, to examine the ways training organisations were delivering GP training in Australia and how this might be improved. (58). This was a large body of work with a 96 page report and from which two papers were published(19, 59). The paper in this thesis provides important findings and conclusions from this research. In the section following the paper, I provide further detail on the research design and methods used in the project, and further relevant findings. I then summarise the impact of training structures on the supervisory relationship.

4.2. Paper 3: Remodelling general practice training: Tension and innovation

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Remodelling general practice training

Tension and innovation

James Brown, Catherine Kirby, Susan Wearne, David Snadden

Background and objective
The transfer of general practice training in Australia to the two general practice colleges is an opportunity for change in the model of training. The dialectical theory of institutional change suggests that change occurs where organisational structures of training are in tension with the needs of those delivering training, and effective change arises from innovation within these tension points. These tensions have also been faced by general practice training organisations internationally, where solutions have also been crafted. By exploring training tensions and responses to these, the aim of this study was to inform the remodelling of general practice training in Australia.

Method
Senior educators and stakeholder representatives in Australia and internationally were interviewed to identify tensions in training delivery and innovative responses to these. An interpretative qualitative analysis was undertaken.

Results
Eight key tensions and associated innovative responses were identified.

Discussion
Drawing from the findings, this article provides recommendations for remodelling general practice training in Australia.

AN OPPORTUNITY currently exists to review and revise general practice vocational training in Australia. Many of its structures have been in place for decades. However, the landscape of general practice training has changed considerably.[1] In 2020, responsibility for oversight of Australian General Practice Training (AGPT) is to be transferred from the Commonwealth Department of Health (DoH) to The Royal Australian College of General Practitioners (RACGP) and the Australian College of Rural and Remote Medicine (ACRRM).[2] Therefore, it is timely to examine ways in which general practice training might be revised to retain program relevance and to enhance outcomes.

The dialectical theory of institutional change provides a useful framework for identifying where change needs to occur.[3] This theory highlights that, over time, institutional structures tend to become misaligned with the needs of those doing the work of that institution. These misalignments result in tensions that propel those undertaking the work of the institution to develop workarounds that can be a further source of tension if there is a discordance between the workarounds and the institutional structures. A functional organisation will modify its structures to address these tensions by 'progressive reconstruction'. The alternative is leaving tensions to build to a point of crisis and institutional disintegration.

For AGPT to change by progressive reconstruction rather than by crisis, it is necessary to understand the tensions at the interface of its institutional structures and on-the-ground program delivery. Where there is tension, it is important to identify solutions that work in practice. There are two obvious places to identify such solutions. The first is at the 'coal face', where those doing the work of general practice training are creating solutions to deal with the tensions. The second is from similar institutions elsewhere in the world that are also faced with these tensions.

Insightful expert opinions on how AGPT might be remodelled have been published (Table 1).[1,4–9] There is, however, an absence of research investigating the perspectives of those delivering the program more broadly.

Therefore, with the aim of informing reconstruction of AGPT during the current period of change, the researchers explored the experiences of tension by those delivering the program, the solutions they are creating in response to these tensions and the solutions developed by international general practice training programs in similar environments.

Three questions were asked:

- What are the tensions experienced by those delivering the AGPT program?
- What solutions are those delivering the program enacting in response to these tensions?
- What are international solutions to these tensions?

(43)

Methods

The study was conducted using interpretive qualitative methods[10,11] and the dialectical theory of institutional change as its theoretical frame.[3] This theory holds that institutional change happens through the action of institutional inhabitants in response to tensions arising from incompatibility between institutional structures and the needs of the inhabitants to undertake their work. These actions are deliberate and may be individual or collective.

Sampling and data collection

Senior educators were purposively sampled in Australia and from five other countries. The choice of the five countries was based on the similarity of their model of general practice training to the Australian approach and on the countries' innovation and leadership in general practice training. Participants were invited to be interviewed either in person or via video/audio link. Prior consent was obtained. All interviews were recorded and transcribed. Interviews were informed by an interview guide based on our questions, carried out by one of the authors (SW) or a trained research associate, and lasted up to one hour. Prior to undertaking the interviews, publicly available documents were viewed pertaining to the interviewee's organisation to inform the interview and the subsequent analysis.

Participants

Australian-based interviewees were 10 senior educators from the nine Australian general practice regional training organisations (RTOs) and seven leader representatives from five Australian organisations within general practice vocational training: ACRRM, RACGP, General Practice Registrars Australia, General Practice Supervisors Australia and Leaders in Indigenous Medical Education. International interviewees were 11 leaders in general practice vocational training from Canada, Ireland, the Netherlands, New Zealand and the UK.

Reference group

A reference group was established and included representatives from two RTOs, the two general practice colleges and the DoH. This reference group provided advice on the research approach and on interpretation of the data.

Analysis

Analysis was undertaken iteratively, with analysis and data collection occurring concurrently.[12] The data were coded inductively and deductively using NVivo 12.[13] A priori codes were derived from our questions and theoretical perspective. From this, an analytical framework of key themes was created and reapplied to the data.

Consistent with the principle of reflexivity in qualitative research,[14] the researchers drew on their own experiences to understand the data. All the researchers are involved in general practice training including, between them, supervision, supervisor support, program development, health policy and academia. Three of the researchers are based in Australia and one in Canada. A significant driver for this research was the researchers' experiences of the tensions in general practice vocational training.

Analytic rigour was facilitated through testing and refining interpretations by constantly reviewing the data, ensuring multiple researchers analysed the same data and discussed the findings, and discussing findings with the reference group. Findings were tested for authenticity by workshopping these with six separate groups of general practice supervisors and medical educators.

Ethics approval was gained from Monash University Human Research Ethics Committee project 10033.

Table 1. Published expert opinion on issues facing general practice training in Australia

Issue	Expert recommendation
Meeting social accountability imperatives	Targeted recruitment and selection[4,5] Building integrated rural pathways[5] Better metrics for training outcomes[4]
Building cultural safety awareness	Organisational commitment to cultural safety[6] Building cultural education and mentorship capacity[6]
Containing the cost of training	Vertical integration[1] Cooperative rather than a competitive tender approach to training delivery[4,5]
Raising the standard of supervision	Increased support for supervisors[7] Supervisor peer support groups[7] In-practice supervisor professional development[7]
Improving preparation for community-based placements	Integration of hospital and community-based training[5,8,9] Base knowledge requirement and assessment for selection[8] More intensive orientation[8]

Results

Eight key tensions were identified.

1. Centralisation leading to disengagement
2. Difficulty engaging supervisors and registrars with cultural competency training
3. The cost of relational-based education
4. Variable quality in supervision
5. Out-of-practice assessment as a distraction from learning for practice
6. Different needs in the international medical graduate (IMG) cohort
7. Workforce imperatives compromising educational needs
8. Lack of preparedness for community-based training

The following sections first detail each tension, then describe what was being done to address the tension in Australia and internationally.

(44)

1. Centralisation leading to disengagement

In Australia, with a steady reduction in RTOs, there has been movement towards centralised educational delivery. The rationale for this included cost savings, quality assurance and development of specialised educational expertise. However, centralisation has compromised the engagement of practices and supervisors with training programs.

> *Our practices, registrars, supervisors were finding it difficult to know which, sort of, team or part of [the RTO] ... could answer their specific inquiry ... our supervisors got left out in the cold ...* (Australian RTO)

In response to this, initiatives have been taken by some RTOs to sub-regionalise their educational delivery to better build local relationships.

> *... [O]ur structure is to try and be as regionalised as possible within that big region. Trying to be as small and personable as possible.* (Australian RTO)

Canada, UK and Ireland had well-developed models of distributed delivery of education where there was a high level of autonomy in the sub-regions and a voice in overall program governance.

2. Difficulty engaging supervisors and registrars with cultural competency training

A remit of AGPT is to contribute to 'closing the gap' in Aboriginal and Torres Strait Islander health outcomes[15] by building cultural competency in registrars. Participants identified a tension in achieving this because of a lack of receptiveness by registrars and supervisors and siloed delivery of the Aboriginal and Torres Strait Islander health curriculum.

> *... [T]he supervisors, if they don't really believe that it's important and aren't supervising and questioning the registrars [about] what they're doing, then we're not closing the loop. And we're certainly not closing the gap.* (Australian stakeholder)

A response to this has been to build a commitment to cultural competency within the RTO from the top down.

> *... [H]aving your CEO and your board driving it was a huge benefit.* (Australian stakeholder)

In New Zealand, cultural educators were an integral part of the training program. Their role included teaching a Māori framework for healer engagement with patients.

3. The cost of relational-based education

Australia and comparative international countries invest heavily in supporting face-to-face education for registrars with their supervisors, visiting educators and peers. The key value of relational-based education was identified as supporting professional identity formation.[16]

> *... [T]he small group, I think, is the best place to teach professionalism. But to do that, you have to have interaction.* (Australian RTO)

Relational-based learning was, however, perceived to be costly in time and resources.

> *If we're going to fund educators, if we're going to pull registrars out of practices at a time, then I want to get biggest bang for buck ... travel costs are huge ... travel time is huge ... it's not just a cost to the registrar. It's a cost to the practice, it's a cost to the community.* (Australian RTO)

With fiscal tightening, there has been pressure to limit these activities and replace them with online education through which the value of relational learning can be lost.

> *If you take it online ... I don't think we have the full bandwidth of human communication ... which is what really medicine comes down to ... relationships with people.* (UK interviewee)

Both Australian and international training providers recognised that face-to-face education should be leveraged for its relational assets and used for networking and benchmarking. Information delivery could be moved to other modalities of education such as online modules and resources.

4. Variable quality in supervision

Participants described tensions relating to variable quality of registrar supervision. They identified three influencing factors. These were: the recent need to recruit large numbers of supervisors because of increased numbers of registrars, the workforce imperatives that motivate hosting a registrar, and the low priority that supervision often had for supervisors.

> *The recent challenge for RTOs has been to ... recruit enough practices and supervisors ... I think it has led to a dilution of some of the standards of supervision and in-practice training.* (Australian stakeholder)

> *... [T]he issue with needing to meet workforce needs as part of our contract is that you have to put registrars in places potentially where they're not going to get adequate supervision or appropriate education.* (Australian RTO)

> *We appreciate that it's a bit of a third or fourth tier of [the supervisor's] priorities ... [they're] all very busy.* (Australian RTO)

Initiatives taken to address this included tagging a proportion of practice payments to specifically compensate the supervisor for the imposition of supervision and encouraging supervisor local networking for peer benchmarking.

Internationally, decoupling of the registrar salary from their work output enables educational imperatives to be prioritised.

> *... [S]o whether you have a registrar or if you don't have a registrar should be almost work load neutral because the registrar will obviously see some patients when they're there but the trainer will see less patients than they normally see because they're doing lots of teaching.* (Irish interviewee)

Ireland, Canada, UK and the Netherlands had much greater professional development requirements for supervisors. In these countries, supervisor professional development is approximately 50 hours annually in comparison to six hours annually in Australia.

5. Out-of-practice assessment as a distraction from learning for practice

RACGP fellowship assessments are end-of-training, out-of-practice examinations. ACRRM assessments are a mix of in-practice and out-of-practice assessments taken during training and a viva-style examination at the end of training. Educators identified a tension where learning for end-of-training out-of-practice exams became a distraction from learning for practice.

> *Assessment drives learning and if you don't pass your exams, you don't become a [general practitioner], therefore I think there's a mindset amongst our trainees of … making sure they pass the exam.* (UK interviewee)

> *We're training for general practice. We're not training to pass exams.* (Australian RTO)

Internationally there has been a trend to move out-of-practice assessments earlier in training to assess foundational knowledge and skills for training and to use in-practice assessment for determining readiness for independent registration. New Zealand registrars undertook an out-of-practice exam after one year of training and a comprehensive full-day in-practice assessment at the end of training.

6. Different needs in the international medical graduate cohort

For the past 20 years, Australia has endeavoured to address the issue of workforce need in underserviced areas by recruiting and indenturing IMGs to work in these areas. These IMGs have become a significant component of the rural general practice trainee cohorts. This was identified as a tension as IMGs were expected to progress through a training program designed for domestic graduates at the same rate despite their varied background skills and experience.

> *… [A] lot of them have come, as you know, from a system that is so different and then they're put in relatively isolated areas, the odds are pretty much stacked against them.* (Australian RTO)

In Australia, the main response to this was to provide additional support when it became apparent that the IMG registrar was struggling.

In Canada, IMGs were required to undertake additional training, practice-based experience and assessment before being granted entry into vocational training.

7. Workforce imperatives compromising educational needs

> *… [T]he problem is that this [training] still is their major health workforce lever in the country.* (Australian RTO)

> *… [F]ee for service reliance and that's the big negative for medical education in this country.* (Australian RTO)

Participants identified a tension between workforce and educational imperatives. RTOs were required to place registrars in areas of workforce need. Further, the trainee's salary was derived from their work.

Action taken by Australian participants to protect educational imperatives included the provision of additional resources and funding where the shortage of clinical services was critical, such as remote and Aboriginal and Torres Strait Islander health services, and putting in place tight contractual arrangements relating to educational requirements.

In all five international models examined, general practice registrars were funded externally to the workplace in a supernumerary capacity for at least part of their training.[4]

8. Lack of preparedness for community-based training

> *… [T]he challenges of knowing the billing system, understanding which drugs to prescribe, knowing how to fit in with the [general practice] environment … rather than a large hospital … can be very difficult.* (Australian RTO)

The transition from hospital to community-based training was identified as a risk for both registrar and patient safety. Because registrar clinical services were required for funding their wages and to manage patient demand, there was a demand for registrars to attend patients from the start. Despite most having had no prior experience working as a general practitioner (GP), registrars were expected to be able to work under Level 3 supervision,[17] which required them to know when to call for advice.

Australian participants addressed this tension with pre-placement group educational sessions and specific skilling workshops. In some sites, initial direct supervision was being provided despite the absence of specific funding.

International programs addressed this issue by overlapping hospital and community-based training and providing for an initial period of observation and direct oversight of all consultations.[8]

Discussion

This research has identified key tensions experienced by senior people responsible for delivering AGPT. These identified tensions both overlap with and extend beyond the issues already flagged in published opinion. The dialectical theory of institutional change suggests that these tensions represent a discordance between the institution of AGPT and the experiences of those who work within it.[3] For AGPT to progressively reconstruct itself, it needs to address these tensions. Avoiding doing so will likely eventually lead to an institutional crisis. With stewardship of AGPT being transferred to the RACGP and ACRRM, it is timely to address these tensions. Some tensions can be addressed at the level of the RTO; others need addressing by the colleges; and others need addressing by government funders and authorities beyond AGPT. For the tensions that can be addressed at the RTO level, the dialectical theory recommends that these be approached by building on the responses already developed by those who work within general practice training. For those tensions that require action by the colleges

or authorities outside AGPT, we believe that international initiatives provide guidance. Using these principles, we make recommendations for addressing each tension. These are detailed in Table 2. Where these align with recently published perspectives, the reference is provided.

For changes that depend on governing bodies external to AGPT, the dialectical theory poses that necessary change can be precipitated through coordinated collective action by those within the institution. Collective action with a shared framework has the capacity for political pressure. Those within general practice training will need to exert such collective pressure if general practice placements during the hospital years and supernumerary funding for registrar wages are to be instituted. With both of these strategies there is already momentum towards change and there are tested frameworks for action. For models of general practice placements during hospital years, there is the decommissioned prevocational general practice placement program[18] and the remaining small-scale rural intern general practice placements.[19] The RACGP has recently supported prevocational placements for addressing the declining interest in general practice.[20] The National Rural Generalist Pathway initiative[21] proposes both early community-based placements and length-of-training contracts with a single employer. If there is a broad commitment to these changes by those invested in general practice training, the shifting political landscape will create opportunities to progress them.

Limitations

This research was broad in its scope and therefore limited in its depth. The reporting of our findings is necessarily an overview. The confines of this article do not grant the capacity to provide detail of the complexities underlying each tension. There are more perspectives on general practice training than the ones we accessed. It is notable that interviews were only conducted with single representatives of general practice registrars and general practice supervisors. These important stakeholders may describe other significant tensions and innovative responses. The analytic approach was interpretative and reflexive. While the interpretations were tested with a reference group and with meetings with supervisors and medical educators, the veracity of the interpretations depends on the resonance they have with those involved in general practice training.

Conclusion

This research identified areas of tension within AGPT and the responses created by those involved. It also identified international initiatives relevant to these tensions. These findings led to the generation of recommended actions and political focus by RTOs and colleges for remodelling general practice training to ensure that GPs are trained to serve the needs of the Australian community.

Authors

James Brown MBBS, FRACGP, FACRRM, MFM (Clin), Director of Education Quality Improvement, Eastern Victoria General Practice Training, Vic; PhD candidate, Monash University, Vic. james.brown@evgptraining.com.au

Catherine Kirby BSocSci (Hons), PhD, Research Manager, Eastern Victoria General Practice Training, Vic; Adjunct Senior Lecturer, Rural Health, Monash University, Vic

Susan Wearne BM, PhD, MMedSc, FACRRM, FRACGP, MRCGP, DCH, DRCOG, DFFP, GCTEd, Clinical Associate Professor, Academic Unit of General Practice, The Australian National University, Canberra, ACT

Table 2. Recommended actions for addressing identified tensions within general practice vocational training

Tension	Recommendations drawn from actions
Actions within the remit of the regional training organisations	
Centralisation leading to disengagement	Sub-regionalise educational delivery
Difficulty engaging supervisors and registrars with cultural safety training	Commit the entire organisation to cultural safety training with strong input from cultural educators and mentors[6,22]
Costly relational-based education	Emphasise peer benchmarking and role modelling for face-to-face activities Support factual knowledge acquisition with online educational platforms
Variable quality in supervision	Implement specific supervisor payments to provide recompense for the impact of supervision Increase personal development support for supervisors, particularly opportunities for local networking
Actions within the remit of the general practice colleges	
Variable quality in supervision	Increase professional development requirements for supervisors[7]
Out-of-practice assessment as a distraction to learning for practice	Use out-of-practice assessments for selection for suitability for training and in-practice assessments for certification for fellowship
Different needs in the IMG cohort	Institute pre-training general practice immersive experience and assessment for IMGs
Actions for governing bodies external to AGPT	
Workforce imperatives compromising educational needs	Fund registrar wages separate to fees generated by work output[4]
Lack of preparedness for community-based general practice training	Provide and require general practice placements during prevocational hospital-based training[8,9]

AGPT, Australian General Practice Training; IMG, international medical graduate

David Snadden MBChB, MCISc, MD, FRCGP, CCFP, Rural Doctors' UBC Chair in Rural Health, Northern Medical Program, The University of British Columbia, Vancouver, BC, Canada

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correspondence **ajgp@racgp.org.au**

4.3. ‘Remodelling general practice training’: research design, further findings and implications

The research project from which ‘Remodelling general practice training’ paper was written, is not fully represented in the published paper for reasons of word count. A full account of the research is detailed in a 103-page report(58). In this section I provide further detail on the research design and further relevant findings. I then discuss implications of this research for the supervisory relationship.

4.3.1. Research design of the ‘Remodelling general practice training’ research

The design of this research project used Maxwell’s realist approach to research design(17). In this approach, there are five inter-related components to research design which are: 1) the goals and purpose; 2) the conceptual frameworks brought to the research and created by the research; 3) the research questions; 4) the methods used; and, 5) validity. The research questions operationalise the research purpose and give it focus. Conceptual frameworks applied to the research include both extant theories that are chosen as they are found fit for purpose and personal theories brought by the research team. Conceptual development occurs as the project progresses and as data are collected and analysed. Methods are chosen for: their capacity to address the research questions; their fit with the conceptual frameworks applied to the research; and, their feasibility. Validity is achieved by: a rational transparent research design and conceptual development; anchoring theoretical development to the data collected; and, considering alternative interpretations. Key to Maxwell’s approach is the dynamic and evolving nature of the research design. The conceptual frameworks, questions and methods all evolve iteratively as the project progresses and the subject of the research is increasingly understood.

This project was conceived in the setting of Eastern Victoria GP Training(EV) program deciding to review and revise its training program. This was in the context that GP training would be undergoing a major transition in management from 2022 with a probable associated revision of its national structure. EV wished to establish itself as a national leader in GP training innovation and to contribute to the conversation on how the future Australian GP training program might look. The problem was that there was not a clear conception of how training was being delivered across Australia nor what constituted an effective model of GP training in Australia and internationally. This project aimed to address this gap and, in doing so, develop descriptive theory on how GP training was being delivered in Australia and normative theory on how it might be developed in the future. With this in mind, EV’s senior researcher - Dr Catherine Kirby(CK) - and I recruited A/Professor Susan Wearne(SW) and Professor David Snadden(DS) to the research team. SW is an expert in Australian and International GP training and DS is an international expert in GP training with extensive

experience in UK and Canada. A PhD level research assistant from another GP training organisation was also recruited to the research team. To support the research team, a reference group was established comprised of GP training experts from two training providers, the two Australian GP colleges, the Aboriginal and Torres Strait Islander community, and the Australian Department of Health. This reference group provided advice and direction in the development and delivery of the project and was a testing ground for conceptual development and analytic conclusions.

To contain the breadth of the work it was decided to focus on the areas of tension in training delivery, and the innovation that was occurring in these areas of tension both within Australia and Internationally. This was because the end goal was to inform change in Australian GP training, and the points of change and innovation were likely to be where there was tension. Drawing on the conceptions the research team brought to the project, and testing these with the reference group, the following research questions were developed:

1. How do Australian RTOs deliver, adapt, and innovate GP education and training?
    - What are the foundations of chosen approaches, and their perceived strengths and limitations?
    - What are the key challenges encountered by RTOs, the colleges, and other key stakeholders? And how are these currently being addressed?
2. What can we learn from GP training in countries with similar systems of general practice to Australia?
    - What similarities and disparities are evident between Australian and international models of GP training?
    - What are the perceived impacts on, and implications for, training delivery and outcomes?
    - What are the main areas of tension in the delivery of GP training within Australia and internationally?

The theory of institutional change was identified as an extant theory that suited our focus on tension and innovation(60).

For data, we decided to use: publicly available literature, both formal and grey literature; and, structured interviews of selected key informants from selected stakeholders in Australia and from selected international training programs. The reasons we chose key informants as a source of data were because this would give us efficient access to information and because it would give us insight into expert thinking on the issues we were exploring. We recognised that this was necessarily a limited window on our field of interest. The selection of Australian stakeholders and international training programs was done in consultation with the reference group by consensus. Those

stakeholders and international training programs are detailed in the above published paper. The intention was to achieve sufficient stakeholder and international representation to address our research questions while balancing the breadth of data collected against its depth, and ensuring the scope of enquiry was feasible.

Collection of data was framed by our focus on tensions and innovations. The interview schedules were based on our questions and themes arising from our literature review. The reference group gave advice. Interview schedules were piloted and refined as the interviews progressed. Examples of interview schedules are included in appendix C.

Interviewees were identified experts from within each of the stakeholder organisations and international training programs based on the knowledge of the research team and reference group. Potential interviewees were approached initially by email and then with a follow up phone call. Informed consent was secured. The research assistant and senior researcher (CK) Catherine Kirby interviewed the Australian interviewees and SW interviewed the international interviewees. Interviews were conducted by video- or teleconference. The interviews were transcribed verbatim. In all, sixteen interviews were conducted with key informants from Australian stakeholders and eleven interviews were conducted with key informants from the training programs of Canada, Ireland, the Netherlands, New Zealand and UK.

The analysis was done concurrent with the data collection and was both descriptive and interpretative. Analysis was both inductive and deductive based on our research questions, the expertise of the research team and our conceptual development. An initial reading and analysis of the data was undertaken. Key themes were identified and an analytic framework created through team discussion at a series of meetings. The team together tested candidate themes by examining these against selected data at the team meetings. Core to the analytic framework were the tensions experienced in training delivery and areas of effective practice achieved. The whole data set was then analysed to this framework using NVivo software(61). Revisions were made to the analytic framework as data were analysed. All data were analysed by multiple researchers and all researchers analysed a significant proportion of the data.

Interpretative rigour and trustworthiness were supported by: analysis of the same data by more than one researcher; team discussion in achieving analytic conclusions; constantly returning to the data to check interpretative development; testing the interpretative findings with the reference group. Our conceptual development was tested credibility and for alternative interpretations with six separate groups of Australian GP medical educators and supervisors.

4.3.2. Further findings and conceptual development from 'Remodelling general practice training' research

The published paper was limited in its representation of the research findings because of the word count limit. The full research report contains findings not included in the published paper(58) that are relevant to understanding contextual issues related to Australian GP training that impact on trainee identity development and the supervisory relationship.

In writing the paper, I made a pragmatic decision not to include tensions around the need to address GP workforce maldistribution through GP training. This issue is already prominent in the literature(62-65) and it is a major imperative for GP training in Australia. Workforce maldistribution was a tension we identified in the research. As elsewhere in the world, rural communities in Australia have poorer access to healthcare resources and worse health outcomes than urban communities(66). Historically, two approaches have been taken to address this issue in Australia. The first is compulsion; compulsion through geographical limitations on overseas medical graduates wishing to practice in Australia(67) and compulsion for half of entrants to GP training to do their training in a rural areas. The second is support for the rural pipeline, particularly through establishing rural clinical schools(68). The principle of the rural pipeline is recruiting rural students to medical school and retaining them in rural locations for the full span of the training journey from medical school to speciality fellowship(69). A new initiative is the establishment of the 'rural generalist' training pathway that provides for additional skills in emergency medicine and other medical speciality areas alongside core GP skills(66). There are other initiatives currently being developed by those delivering training. These include: selecting trainees with rural intent; building capacity and excellence in rural training sites; and, personal case-management support for rural trainees and rural training sites(58). These initiatives use inspiration and enablement, rather than compulsion, to direct trainees to rural practice.

Another issue found in the research, but not included in the paper, was that while supervisors are funded to provide formal teaching sessions in their practice, they normally receive no specific payment for being called into the trainee's consultation(58). This means that any call for assistance by the trainee is an uncompensated interruption to the supervisor's own clinical work(70). In this setting, the trainee easily perceives that they are an imposition when they call on their supervisor for assistance with a consultation.

In the international models of GP training examined, supervisors had greater status than in Australia. This was because requirements for becoming and remaining a supervisor were greater, the support

for supervisors was more substantial and the social rewards for being a supervisor were more tangible, including academic recognition.

Issues with the method of funding trainees was identified in the paper(19). Trainee wages were derived from income generated from their clinical work. Trainees and practices almost always had an employee/employer relationship. Sometimes this included the supervisor if the supervisor was part of the practice ownership. An employee/employer relationship does not necessarily align with the trainee/educator relationship.

4.3.3. Impact of training structures on the supervisory relationship

The 'Remodelling GP training' research identified properties from the structure of Australian GP training that have outcomes in the GP supervisory relationship and identity development of the trainee. These were:

1. Minimal professional development requirements and support for supervisors
2. Lack of payment for the act of supervision
3. Lack of status for supervisors
4. Trainee wages funded through trainee work output with an employee/employer relationship between trainee and training practice
5. Lack of trainee preparedness for community-based practice
6. Coercive placement strategies

These contexts all have implications for the supervisory relationship. For the supervisor, supervisor skills and engagement are compromised by: lack of professional development; low level of requirements; lack of status; and, inadequate support. For the trainee, self-determination and engagement are compromised by: coercion; lack of preparedness; and employer/employee hierarchies. The impact of these issues is discussed further with a critical realist lens in the integrative discussion (ch.8).

5. The clinical supervisory encounter

5.1. Introduction: the supervisory relationship and the clinical supervisory encounter

The core of GP vocational training is supervised work-based learning(71). In this context, the supervisory relationship has a significant impact on trainee learning and their journey to becoming a general practitioner(13, 72). Understanding how supervision is, and could be enacted, is important for informing decisions to support effective supervision. However, what actually happens in supervision is not well researched(73). The research that has been done is largely based on interview data which does not necessarily reflect what actually happens(74, 75).

A key event in supervision is the clinical supervisory encounter. This is when a trainee, in attending a patient, calls on their supervisor for assistance(76). The clinical supervisory encounter supports patient safety and is a powerful learning experience for trainees(77). It is also where the supervisory relationship interfaces intimately with the trainee's engagement with the clinical tasks of the GP workplace. The clinical supervisory encounter and the supervisor relationship are interdependent. The relationship is built through these encounters and the relationship frames the encounters(71). For these reasons, I chose to undertake a research project investigating the GP clinical supervisory encounter.

The supervisory encounter is a complex interaction involving a patient, a trainee and a supervisor with multiple agendas in play(76, 78). I determined that to understand the structure of the supervisory encounter, I required deep naturalistic data. I chose an exploratory multiple-case study design(79) with a small number of cases and collected audio recordings of actual supervisory encounters. Recorded contemporaneous reflections together with interviews augmented this naturalist data, these were guided by prompt sheets and interview guides (Appendix D). I aimed to first build a conceptual understanding of what happens during the supervisory clinical encounter and then to theory build on how these encounters might be enabled to achieve more educationally. This project asked: What happens when the trainee calls on their supervisor for help in their care of patients and how can trainees' learning be enhanced when this occurs?

While the data collection was undertaken prior to my PhD candidature, this paper is a secondary analysis of the data conducted during my candidature.

5.2. Paper 4: The supervisory encounter and the senior GP trainee

The supervisory encounter and the senior GP trainee: managing for, through and with

James Brown,[1] Debra Nestel,[2] Tim Clement[3] & Mark Goldszmidt[4]

OBJECTIVE Help-seeking supervisory encounters provide important learning experiences for trainees preparing for independent practice. Although there is a body of expert opinion and theories on how supervisor encounters should happen, supporting empirical data are limited. This is particularly true for the senior general practice (GP) trainee. Without knowing what happens during these encounters, we cannot know how to maximise their educational potential. This study aimed to understand what happens when senior GP trainees call on their supervisor when caring for patients and how learning can be enhanced when this occurs.

METHODS This is an analysis of data from a multi-case study of five GP supervisory pairs, each with a GP registrar and their supervisor. The data are recordings of 45 supervisory encounters, 78 post-encounter reflections and six interviews. We used Wenger's communities of practice theory and rhetorical genre theory as analytical lenses.

RESULTS The supervisory encounters followed a consistent format, which fitted the form of a genre. Within this genre, three dominant interactional patterns were identified, which we labelled 'managing for', 'managing through' and 'managing with'. Each pattern presented different opportunities and drew on different skills. The primary agenda was always developing a plan for the patient. Education agendas included acquiring knowledge, developing skills and achieving independence. Other agendas were issues of control, credibility and relationship building. Both supervisor and trainee could be purposeful in their supervisory engagement.

CONCLUSIONS For supervisors and trainees to achieve the educational potential of their supervisory encounters they require flexibility. This depends on understanding the genre of the supervisory encounter, the agendas at play, the options they have in engaging and having the skills to utilise these options. Educators can facilitate supervisors and trainees in acquiring this understanding and these skills. We recommend further research into the genre of the supervisory encounter.

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[1]EV GP Training, Faculty of Medicine, Nursing and Health Sciences, Monash University, Clayton, Victoria, Australia
[2]MCCC GP Training, Monash University, Clayton, Victoria, Australia
[3]Deakin University, Burwood, Victoria, Australia
[4]University of Western Ontario, London, Ontario, Canada

Correspondence: James Brown, HealthPEER, Faculty of Medicine, Nursing and Health Sciences, Monash University, Clayton, Victoria 3168, Australia. Tel: +614 1950 0416; E-mail: james.brown@evgptraining.com.au

INTRODUCTION

Ad hoc supervisory encounters are important to the senior medical trainee's preparation for independent practice. These encounters usually occur in response to a trainee's request for help, such as when they are responsible for a patient's medical care and want to verify a finding or seek support in determining a management plan. They also typically arise in settings where trainees have a high degree of independence and in the context of a longitudinal supervisory relationship.[1] Our current understanding of this social space, which is both complex and rich in learning opportunities, comes from a mix of literature. This includes literature related to social theories of workplace learning, empirical research and expert opinion-based publications. Taken together, the existing literature has identified concerns with the quality of clinical supervision[2,3] and with our understanding of the phenomenon itself. Key gaps include: a focus on what should occur, not how it occurs; an oversimplification of the social space that does not take into account heterogeneity of practice; a lack of attention given to the senior trainee–supervisor encounter (most studies have focused on more junior trainees); and over-reliance on interview and self-report as opposed to observational research. Without addressing these gaps and developing a better understanding of what happens during these *ad hoc* supervisory encounters, we cannot know how to support quality in supervision and maximise the educational potential of *ad hoc* supervisory encounters.

When a trainee engages their supervisor for help in the context of patient care, a complex social space is created. This social space can be seen as dynamic, with explicit and implicit agendas at play driven by the participants and by their cultural context. Social theories of workplace learning provide insight into the nature of this social space and how learning might occur within it.[4–6] Wenger's community of practice theory (CoP)[4] is one such theory and has already proven to be a useful lens for understanding this space.[7] Wenger gives central position to participation in the work at hand, in this case the care of the patient. Also at stake is the need for the trainee to gain the knowledge and skills (a regime of competence) required to progress towards assuming the role of a qualified practitioner (a full member of the community). A less explicit but powerful agenda is that of the practising community moulding its future membership into practitioners who conform to the community's cultural norms (identity formation). The relationship of established practitioners (old timers) with trainees (newcomers) is fundamental to granting the trainee credibility (legitimacy), enabling them to develop the required skills and to become the type of practitioner that is demanded by the practising community (identity formation and ownership of meaning). The way that this evolves is impacted on by the way that the trainee and experienced practitioner choose to engage (individual agency).

Empirical studies also provide insight into this complex social space and reinforce key theoretical considerations. The primary agenda of this social space is to enable the trainee to meet the needs of patient care.[8,9] Trainee learning is a secondary agenda and may be in tension with patient care.[10] There may be other agendas also in tension, including: the impact on supervisor time;[11,12] the trainee's need for credibility with their supervisor[13] and patient;[14] the work of relationship building;[14,15] and maintaining the status quo of cultural norms.[16] Taken together, both theory and empirical studies draw our attention to: the importance of balancing work-related tasks and educational ones; recognising and accommodating other competing agendas; ensuring that learning is optimally targeted to trainees' needs; and building a supervisory relationship. They do not, however, tell us how to achieve these things.

Attempts have been made to fill this gap through expert opinion. Chief among these are tools that supervisors and trainees might use to enhance learning,[17] including 'one minute preceptor'[18] and 'SNAPPS'.[19] These tools are based on the cognitive apprenticeship[20] model, which emphasises the skills of making cognitive processes visible so that they can be understood and learned. Expert opinion exists around other aspects of supervisory practice but most assume a 'right way' of supervising and do not sufficiently consider the heterogeneity of practice.[21,22]

Although there is a body of expert opinion on the complex social space that is created when the trainee calls for help, and it is well theorised, this social space has not been well studied. Reviews of the literature on clinical supervision have criticised the lack of observational data supporting current expert opinion.[1,21,22] Of the published observational studies, the focus has been on either the act of calling for help (rather than the subsequent interaction)[11,13] or the supervision of medical students[10,23] who do not have the independence and development of a senior trainee.

In order to know how learning can be supported when the senior trainee calls for help from their supervisor and to address concerns of suboptimal supervision, it is essential to understand what actually happens in the social space created subsequent to the call for help. With this understanding, supervisors and trainees could be more purposeful and better equipped to achieve more with their supervisory encounters. We therefore ask: What happens when the senior trainee calls on their supervisor for help in their care of patients and how can trainees' learning be enhanced when this occurs?

METHODS

Study design

The study was an exploratory multi-case design[24] where each case was a supervisor and trainee pair. Qualitative data were collected, including auditory recordings of supervisory encounters, post-encounter reflections by the supervisor and the trainee and interviews with each registrar and trainee.

A constructivist approach was taken in order to foreground participant perspectives and to build on insights from the research team during their interaction with the data.[25] JB is a supervisor and a medical educator in general practice (GP) vocational training. MG is a physician whose programme of research focuses on genres of communication and reasoning in clinical training environments. DN is a scholar in health professions education and TC is a social scientist. At the time of the study, both JB and TC were employed by the organisation the participants were recruited from. Their responsibilities included supervisors' professional development and programme quality assurance.

This study was approved by the Monash University Human Research Ethics Committee project number CF13/1225 – 2013000592. Participation was voluntary and each participant signed an informed consent form. Confidentiality was maintained.

Setting and sample

We investigated *ad hoc* supervisory encounters between Australian GP trainees and their supervisors in community-based placements where the encounter occurred after a trainee's request for assistance in patient care. Community-based Australian GP trainees are senior clinical trainees who are in at least their third postgraduate year. Five GP supervisor–trainee pairs were purposefully selected[25] from a pool of over 150 accredited rural supervisors. Selection was based on the criteria that: the supervisors were experienced; there was an established supervisory relationship; and the trainees were at a level of being responsible for their own caseload and still accessing their supervisor on an 'as needed' basis. We chose trainees in their second 6 months of a 1-year GP placement. We first approached supervisors from identified suitable pairs; if the supervisor consented, the trainee was approached for consent until we had recruited five pairs. This was achieved after approaching seven pairs.

Data collection

The primary data were weekly real-time audio-recordings of supervisory encounters following the trainee's request for assistance over a 10-week period. One day of the week was designated for recording encounters; patients attending the trainee on this day were asked for their consent on making their appointment. Then, if the trainee chose to call on their supervisor, consent was confirmed with the patient and a digital audio-recorder was activated. Trainees and supervisors also recorded *ad hoc* supervisory encounters that occurred in the absence of the patient. Forty-five encounters were recorded. These data were augmented by audio-recorded reflections by each trainee and supervisor, separately recorded immediately after each encounter, for which we provided a prompt sheet (Appendix S1). A semi-structured interview with each participant was also undertaken by a research assistant before recording of the supervisory encounters commenced. The interview protocol was based on the extant literature and our own knowledge of supervision (Appendix S2). In total, we collected 13 hours and 31 minutes of recorded data. The data were transcribed verbatim and anonymised.

Data analysis

This analysis was preceded by two previous analyses, which were used to frame this analysis. The first analysis examined the interview data alone and explored participants' perceptions of the purpose of supervisory encounters.[9] This sensitised us to understanding what was happening in the supervisory encounters themselves. The second

analysis focused on one of the five cases and provided a naturalistic presentation of a single supervisory encounter. That analysis explored the application of Wenger's social theory of learning[4] to the data.[7] Wenger's 'community of practice' theory was subsequently used to frame this analysis. This paper reports on our analysis of the complete dataset, with a focus on the recordings of the supervisory encounters and using the post-encounter reflections and interview data to add analytical depth.

As we explored the encounter data, we identified recurring patterns of dialogue. This led us to engage MG in the analysis and write-up because of his expertise in the language of supervision.[26,27] With his insight and guidance we applied rhetorical genre theory (RGT)[28,29] as a second analytical lens and tool. RGT has been used to understand the talk of medical education by other researchers inspired by the work of Lingard.[30,31] She positions RGT as a social theory of learning.[31] RGT proved a good fit with Wenger's CoP theory as both theories focus on the interface between the individual and the social structure that they work within.

According to RGT, a genre is a form of typified social action that arises in response to recurrent situations.[28] Genres can be written, such as a clinic visit note, and they can be oral, such as the interaction that occurs when trainees seek help from their supervisors in the care of their patients. Genres are typified social action in that the genre users (in this paper trainees and their supervisors) through the recurrence of situations, learn how to use particular communication strategies to achieve their purposes (social motives).[28] Within a given genre, participants are influenced by culture and context.[29] They are also influenced and constrained in their actions by their knowledge of the situation, the actions of others and their repertoires for handling that situation.[29] In the situation of help seeking, trainees' understanding of what they are trying to achieve, the expectations and actions of their supervisors and the strategies (repertoire) that they have developed for achieving their purposes all impact what can and cannot be achieved as a result of the encounter. The social action of a genre often extends beyond the current situation.[28] For trainees and supervisors, the actions taken during one encounter will influence their subsequent encounters and these effects are cumulative.

We first read all transcripts and then coded the themes. We coded by individual statement, by supervisory encounter and by case. We used an iterative process between emerging concepts and the primary data.[32] Our first endeavour was to describe the genre features of the supervisory encounters. In order to explore what was happening within this genre and the way that trainee learning occurred, we drew on both RGT and Wenger's CoP social theory of workplace learning as sensitising frameworks. Thus, we identified candidate explanatory themes both deductively and inductively. To test candidate explanatory themes, we applied them to the primary data, both within and between cases,[32] seeking congruence. Our final analytical framework is detailed under findings and in Table 1. Discrepant encounters were used to develop theoretical depth. Interpretive rigour was achieved by: employing a constant comparative approach;[25] triangulating[33] between our three sources of data; drawing on the experiential and theoretical backgrounds of the researchers;[33] and memoing.[34] JB and MG undertook a series of coding meetings where interpretation of the data was discussed. Once a conceptual model had taken shape, DN and TC were engaged to develop analytical depth and for further theorising.

RESULTS

We found both a common structure (genre) to the supervisory encounter and patterns of difference that helped to explain practice variability. In reporting our findings, we first describe the overarching genre of the supervisory encounter. We then explore three discrete patterns in the way the genre was exhibited, drawing on three explanatory themes. Next, we describe two additional explanatory themes: the impact of context on the encounters; and the impact of purposeful initiatives (agency) taken by trainees and supervisors on the way the encounter played out.

The genre of the *ad hoc* supervisory encounter

Analysis revealed that the supervisory encounter genre followed a common structure with the shared social motive of creating a plan of care for the patient. Quotes are annotated as follows: trainee 'T' or supervisor 'S'; supervisory pair 'A', 'B', 'C', 'D' or 'E'; source of data (interview 'I', encounter 'E' or reflection 'R'); and the encounter number.

> The reason I was seeking help was to clarify what the best referral pathway for a patient I had was.

Table 1 Explanatory themes and definitions

Explanatory theme	Definition
Individual actions	Individual actions are the actions of the participants in the supervisory encounter taken in the context of the shared social action that constitutes the supervisory encounter
Trainee learning	Trainee learning is both gaining a repertoire of knowledge and skills to engage effectively in practice (regime of competence) and the process of becoming a fully recognised practitioner (identity formation)
Other secondary agendas	Agendas include private intentions and social motives, which may be explicit or implicit. 'Other' refers to 'other than creating a plan' and 'other than trainee learning'. It includes issues of credibility (legitimacy), control and relationship building
Context	Context includes the context of situation, the background of the individuals and the context of culture
Agency	Agency is volitional, purposeful, engagement driven by individual intention

> It was a patient who needed relatively urgent investigation.(TAR5)

> And what we achieved was a plan.(TDR12)

Structurally, the genre had four distinct components: invitation and case presentation; further data collection; creation and confirmation of a plan; and handing back to the trainee. Box 1 demonstrates a supervisory encounter as an example of this structure.

Differences within a genre

Although the overarching genre structure was stable across encounters and the creation of a plan for the patient was always achieved, there were meaningful differences in how the genre was enacted and what other agendas were addressed. We identified three dominant patterns in the way that the genre of the *ad hoc* supervisory encounter was enacted and have characterised these by the position taken by the supervisor. We have labelled these patterns: 'managing for'; 'managing through'; and 'managing with'. Although each pair predominantly used one of these three patterns, we identified changes in use of the pattern within pairs and sometimes within encounters.

In our exploration of the three patterns and the ways these were enacted, we used our analytical lenses of RGT and Wenger's CoP theory. We identified three explanatory themes for understanding the difference within the three patterns and two explanatory themes for understanding how these differences occurred across the three patterns. The within-pattern explanatory themes were: individual actions; trainee learning; and other secondary agendas. The across-pattern explanatory themes were context and agency. The five themes are detailed in Table 1. The way these explanatory themes contribute to understanding the supervisory encounter within its overarching genre is illustrated diagrammatically in Figure 1.

In the next sections, we describe the three patterns of interaction and their characterisation using the first three explanatory themes. Following this, we describe the explanatory themes of context and agency and the impact of these on how the supervisory encounter was enacted.

Three patterns

'Managing for'

'Managing for' was typified by the supervisor responding to the trainee's invitation by taking over the consultation in directly engaging with the patient, collecting further data from the patient, developing a plan for the patient and then giving this plan to the trainee to execute.

The *individual actions* of the supervisor included: questions for elucidating matters of fact; attending to either the trainee or the patient in a two-way interaction; and articulation of his or her thinking, statement of a diagnostic opinion and direct instruction in the execution of a plan. *Individual actions* of the trainee included: an invitation where a proposed management plan was absent; input to the data collection restricted to interjections; and input to the formulation of a plan consisting of agreeing with the supervisor.

Box 1 Pair A, Encounter 5 (abridged), mapped to the proposed genre of the supervisory encounter

Invitation and case presentation

Trainee	I've just seen [patient name]
Supervisor	Yes
Trainee	He's come in with a good story for unstable angina, which he's putting down to a flu or virus or something like that. But he's basically had three weeks of exertional band-like pains across his chest, shortness of breath . . . . . So I'm just wondering, I mean he's pain-free really at the moment, but I think he needs fairly urgent investigation. . .

Further data collection

Supervisor	Is it daily?
Trainee	Any time he exerts himself, he gets the pain. He said he felt okay this morning when he woke up. He didn't have it, but he feels like his Weet-Bix [an Australian breakfast cereal] got a bit stuck, but he said that's a normal thing for him. So I don't know whether to read that, into that too much . . ..
Supervisor	So what do you want to do?

Creation of a plan

Supervisor	Well if he's got private health insurance you can zip him into [town] private – you know the private admission thing?
Trainee	Via the direct access?
Supervisor	Which I used yesterday . . .
Supervisor	Send him in . . . unstable angina
Trainee	Yeah . . .

Handing back to the trainee

Supervisor	Yeah, I reckon . . . the story aligns, sounds good.
Trainee	Okay thank you.
Supervisor	Ciao.

The main *trainee learning* opportunities involved the supervisor modelling skills and providing statements of fact:

> I learned from the way Supervisor C, you know, approached the child.(TCR3)

> I think I got what I want from Supervisor C – he gave me a more broad opinion about how to approach those vague symptoms.(TCR1)

Identified *secondary agendas* included moving responsibility for the consultation outcome from the trainee to the supervisor and retention of patients' position (legitimacy) as the centre of the interaction. By taking control, the supervisor was able to articulate information and points of view that the supervisor considered important to communicate. One supervisor saw this approach as time-saving, although this was not evident in the time taken for encounters with this pattern compared with the time taken for encounters from other patterns.

'Managing through'

'Managing through' was typified by the supervisor indirectly controlling the encounter by leading the

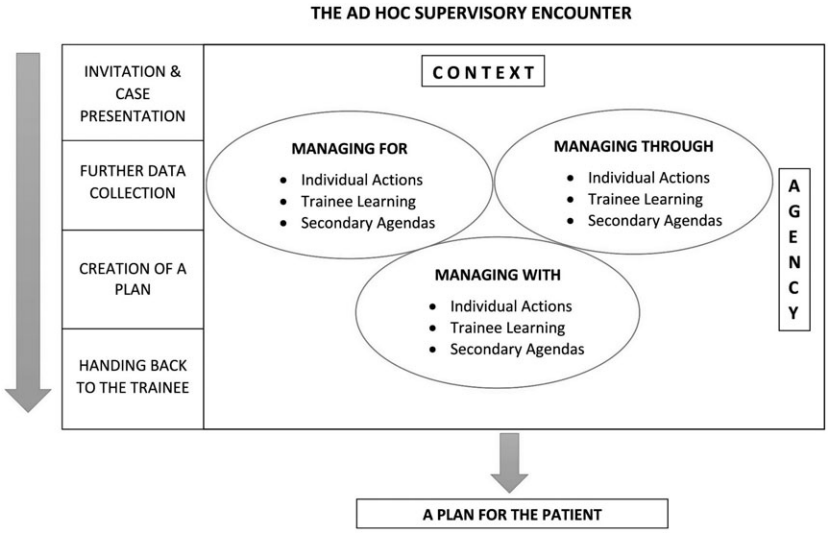

Figure 1 Conceptual diagram of the supervisory encounter

trainee and the patient to a supervisor-determined outcome:

> . . . yet I'm really guiding Trainee B to a certain end.(SBR4)

In the presence of the patient, the interaction was sometimes three-way, with the supervisor, trainee and patient all actively engaged. Sometimes it was two-way, with the supervisor and trainee engaged and the patient as an observer.

The *individual actions* of the supervisor included interrupting the case presentation to collect information relating to either the clinical issue or understanding the trainee's thinking. 'Cognitive apprenticeship'-style[35] leading questions were used during the data-collection and plan-development phases. Supervisors' questions in the data-collection phase diagnosed the trainee as well as the patient.[35] For example:

> You're . . . wondering about the look of the ear. So what do you reckon?(SAE1)

Leading questions in the plan-development phase achieved a plan for the patient while also crafting an educational experience for the trainee:

> Where do you think he got his campylobacter from?(SEE7)

The supervisor engaged the trainee and the patient in either two or three-way interactions, serving agendas that were clinical, educational and relational.

Individual actions of the trainee included an invitation without a clear statement of the problem or a proposed management plan; trainees were often able to articulate these on probing by the supervisor. The trainee also used interjection to demonstrate their knowledge:

> And then it spread over here and then it's gone up to here and then it's up usually in my eyebrows and around my eyes. Oh and a little bit here, it's just started. . .(Patient)

> And Novasone helps to clear it up after about four or five days but then three days later it comes back and we're getting a bit sick of it.(Trainee) (BE6)

Trainee input to the data collection and the formulation of a plan occurred in response to leading questions by the supervisor. At times, the trainee's credibility appeared to be at stake in the context of being questioned. This was evidenced by *individual actions* that served to recover the trainee's credibility, including the trainee interjecting to demonstrate his or her knowledge and the supervisor making efforts to affirm the trainee:

> You don't need me at all do you!?(SBE1)

Trainee learning was a dominant agenda in this pattern, with an emphasis on clinical reasoning skills. Other *secondary agendas* included moving control of the consultation outcome from the trainee to the supervisor and building the relationship between supervisor, patient and

trainee. Relationship building could include the use of humour:

Supervisor 'It will take ages to come back. I think, yeah, I've got a strategy in mind which I expect will win on this one.'

Patient 'Amputation?'

All laugh

Supervisor 'That's brilliant. That's brilliant. Unfortunately, our amputation clinic is booked, so it would take us probably three to four months to get you in.'

Trainee [laughing] 'The long-term outcome is not helpful!' (BE2)

'Managing with'

'Managing with' was typified by the supervisor responding to the trainee's invitation in the manner of a colleague. In the presence of the patient, the interaction was often three-way, with the supervisor, trainee and patient all actively engaged. Sometimes it was two-way, with either the supervisor or the patient as the observer.

Individual actions by supervisors involved constraining their engagement and responding to leadership provided by the trainee. If the supervisor asked questions, these were for information gathering rather than for leading. Diagnostic and management input was shared as an opinion rather than a directive:

> No, I was just wondering whether it makes any difference or whether doing them both at the same time is reasonable.(SEE3)

Often the main input by the supervisor was to affirm the trainee's plan:

> So really my task was to provide affirmation.(SBR3)

Individual actions exhibited by the trainees kept the trainee as the primary clinician in the care of the patient. Case presentations were well structured and included proposed diagnosis and management and a clear question:

> I'm thinking shingles, but it doesn't really fit the classic presentation. And I just wanted a second opinion because if it is shingles then obviously it's different management, yeah, so if you could come and look?(TEE6)

Trainees approached the supervisor either for affirmation of their plan or as a resource in developing a plan. They engaged the supervisor and the patient in a conversational way with a three-way style of interaction.

The agenda of *trainee learning* was evident in the trainees' requests for matters of fact:

Trainee 'Do they have to have been a patient there before?'

Supervisor 'Don't think so, they've just got to have private health insurance.' (AE5)

Skills of clinical reasoning were imparted through articulation of thinking:

> I think the question you have to ask is what's actually going to change based on the CT scan? (SEE10)

Sometimes the educational agenda served more than just the trainee:

> We took the opportunity to educate in three directions … in using Dermnet [a web-based dermatology resource] which I think also led us to a clearer direction of what was going on and treatment options. (SBR6)

Trainee learning emphasised supporting the trainee's development of identity as a competent independent clinician. Because this pattern was characterised by a high level of trainee autonomy, the supervisor's influence was sometimes constrained:

> … which in some ways is unfortunate because if I'm in the room there are things I might not say.(SEI)

There was one encounter where there was no clear evidence that the trainee was intending to act on a supervisor's concern:

> So I think essentially I was … trying to encourage Trainee E to monitor that patient, albeit by telephone and so on, which she seemed fairly reluctant to do.(SER5)

Impact of context

Although the broader cultural context was shared across all pairs and encounters, contributing to the overarching common genre, there were differences in situational context between pairs and between encounters. The situational context of each pair was shaped by the backgrounds of the individuals within the pair, which provided an explanation for the way they interacted and the range of educational and social tools used. Two of the supervisors had completed postgraduate training in education. The use of cognitive apprenticeship tools[35] by these supervisors was more apparent. The two trainees from the pairs that predominantly used the 'managing with' pattern were both more senior trainees with prior training in other areas of medicine.

The situational context differed between encounters within pairs, including: the particular patient and their issue; and the configuration of the trainee, the supervisor and the patient. Three configurations were observed: (i) supervisor, trainee and patient together; (ii) trainee and patient together and supervisor on the telephone; and (iii) supervisor and trainee together without the patient. Each of these three configurations appeared to have different constraints and different opportunities or affordances (Table 2). When the supervisor, trainee and patient were together in the room, the interaction was more complex, with a dynamic engagement with the patient and his or her issues. Tensions of credibility were evident and at times the patient and the trainee competed for the supervisor's attention:

Supervisor 'Feels a bit blocked?'

Patient 'And it echoes a bit. It feels like you've got water in your ear, which I have.'

Trainee 'Yeah, and so it got more blocked and feeling like it was um, ah . . .'

Patient (cuts in) 'Well since I used the, when I'm using oil and having water in my ear I feel like I can't hear properly. And I can't hear properly . . .'

Trainee (cuts in) 'Yeah, since the olive oil you haven't been able to get the hearing back . . .'

Patient (cuts in) 'But I haven't noticed my left ear causing a problem'

Supervisor (cuts in, and to the trainee) 'So you're worried about, wondering about the look of the ear, what do you reckon?' (AE2)

This dynamic could be seen to constrain the educational dialogue, which might highlight the trainee's areas of ignorance in the patient's eyes. Without the patient present, trainee case presentations were clearer in their diagnostic conclusions and more commonly included a proposed plan. There was also a greater propensity to position the patient as an outsider as the trainee and supervisor met the *secondary agenda* of building their relationship:

Supervisor '. . . sometimes the consultation is a toss-up between keeping them happy, letting them down or corroding your own philosophical stance . . .'

Trainee 'I feel like it's bad medicine to give him what he wants.'

Supervisor 'And it is. It is bad medicine.' (AE3)

In the absence of the patient, a pair who typically adopted a 'managing for' or a 'managing through'

Table 2 Impact of configuration of supervisory encounter

	Trainee, supervisor and patient present together	**Supervisor by phone**	**Patient absent**
Constraints	• Constrained educational dialogue • Tensions of credibility	• Compromised supervisor insight into the situation	• Compromised supervisor insight into the situation • Propensity to 'other' the patient
Affordances	• Patient centred • Socially rich • Immediate	• Trainee remains the primary clinician • Immediate	• Freedom to engage in educational dialogue

pattern might shift to a 'managing with' pattern. In all pairs, when the patient was absent, the agenda of *trainee learning* was more prominent:

> She didn't have a patient so it was a … it's a different interaction to one with a patient and it allows you to sometimes waffle sideways and go into random points a bit more …(SBR5)

Encounters that involved the supervisor remaining on the telephone appeared to take a middle ground between the other two configurations. Not being in the room could compromise the supervisor's insight into the situation. A particular example of this was a supervisor giving advice over the phone about smoking in the home where he inadvertently offended the patient's mother:

Supervisor [over the phone] 'So chest X-ray, see her tomorrow and if mum and dad are smokers make sure they don't smoke inside the house.'

Mother [speaks out loudly] 'I don't smoke around my kids …'

Supervisor 'Good, good, well [laughs] …'

Mother 'I even wash my hands and change my clothes.(AD13)

Agency within the genre

Consistent with Wenger's theorising, we defined agency as volitional purposeful *individual action* that is driven by deliberate intention.[4,36] Agency was active within the genre to achieve particular intentional outcomes. It was exerted in determining the pattern of the encounter, in taking educational initiatives, choosing context and protecting credibility. Supervisor D, who predominantly engaged in the 'managing with' pattern, explicitly and consistently exerted agency to shape his encounters to that pattern, framing the encounter as a discussion between colleagues:

> … when I go in I'll say "well we're having a conference here" or something, trying to put everybody at ease, because we all do that occasionally, bring in colleagues to help.(SDI)

We identified instances of trainees or supervisors exerting agency to shift an existing pattern. For example, in Pair D, who normally engaged in a 'managing for' pattern, there was an instance when the trainee made a point of looking up guidelines prior to contacting the supervisor and then delivered an uncharacteristically well-developed case presentation. The more sophisticated presentation positioned the trainee as the primary clinician, changing the pattern to 'managing with'. The intentionality of this action was evident in the post-encounter reflection:

> I did a very good research before calling Supervisor D. I went through all these letters from the specialist, recommendations, previous MSU [mid- stream urine]. I printed them out and did a bit of a statistics – which ones were working, which was resistant, all of this, and see what we could do. So, I had a fair bit of idea what we [were] actually dealing with before calling … I felt that it was very, very satisfactory the whole consultation with Supervisor D.(TDR7)

Agency in enhancing *trainee learning* through taking particular educational initiatives was evident. Supervisor B indicated in his interview that he chose to use the 'one minute preceptor model'[18] as a teaching tool; its use was clearly present in his encounters. Deliberate attitudinal education was also expressed:

> Flexibility is something I'm, in a wider sense, trying to instil.(SBR4)

Supervisor D spoke about the intention of fostering independence for the trainees:

> We want them to be building confidence and making decisions.(SDI)

He then at times chose the context of remaining on the phone for an encounter to encourage the trainee to be more independent:

> … I didn't go in there which I think was probably good for Trainee D.(SDR5)

Agency in choosing a context to protect trainee credibility was also evident. Supervisor E described postponing 'big teaching issues' for times outside of the encounter:

> So, if I have got big teaching issues I might … try and bring that up some other time.(SEI)

DISCUSSION

We asked: What happens when the senior trainee calls on his or her supervisor for help in the care of patients and how trainee learning can be enhanced when this occurs? Our findings provide insight into: the agendas at play in these supervisory encounters, both individual and social; the form of the encounter and how it is enacted as a genre; how this genre is impacted on by secondary agendas, context and agency; how trainee learning might happen within the encounter; and how the supervisor and trainee could act purposefully in these encounters. These findings can be used as a means of supporting supervisors and trainees to effectively address the agendas of their supervisory encounters and to do more with their encounters.

The agendas that we identified included creating a plan for the patient, transfer of control, protection of credibility, education and relationship building. These fit with Miller's typology of the social motives of genre, which are to address danger, ignorance or separateness (Table 3). They are also consistent with the agendas of the clinical supervisory encounter identified by others. We identified that the universal and primary agenda for the supervisory encounters was to create a plan for the patient.

In order to understand the form of the supervisory encounter we drew on rhetorical genre theory and identified a common genre. The genre that arose from the recurring situation of the senior trainee requiring assistance in the care of patients appeared to be driven by the agenda of needing a plan for the patient. The identified genre was found to have three dominant interactional patterns, which we labelled 'managing for', 'managing through' and 'managing with'. Which pattern a pair used appeared to result from how pairs navigate their secondary agendas through their repertoires of possible actions within the genre.

These patterns of interaction each have different assets and are characterised by the use of different social and educational tools (Table 4). The 'managing for' pattern places the care of the patient under the supervisor's direct management, keeps the patient at the centre of the encounter and offers learning by modelling. It might be conceived that this pattern offers most when there is a large discrepancy between the trainee's skills and the patient's needs. The 'managing through' pattern transfers responsibility to the supervisor while keeping the trainee engaged under guidance and providing the trainee with an experience that enables acquisition of cognitive clinical reasoning skills. It requires the supervisor to utilise 'cognitive apprenticeship-type'[20,35] educational tools. The 'managing with' pattern places the trainee as lead clinician, thus supporting the development of trainee independence while constraining the supervisor's clinical and educational input. This pattern requires the trainee to take leadership in the encounter, starting with a well-developed presentation, and for the supervisor to take the position of advisor rather than leader. This pattern would seem to be most suited for when the trainee's skills are close to sufficient to meet the patient's needs.

Our identified patterns of supervisory encounters build on the work of Goldszmidt et al.[27] in the setting of hospital internist teaching teams. They identified styles of supervision adopted by particular supervisors. These styles of supervision have parallels with our patterns of supervisory encounter. Their 'direct care' style, where patient care is prioritised, parallels our 'managing for' pattern; their 'mixed practice' style, where the focus is on trainee education, parallels our 'managing with' pattern; and their 'empowerment' style parallels our 'managing

Table 3 The agendas of the senior trainee supervisory encounter mapped to Miller's typology[28]

Miller's typology of social motives	**To address danger**	**To address ignorance**	**To address separateness**
Agendas of the supervisory encounter	• Creating a plan for the patient • Trainee relinquishing responsibility • Protecting credibility • Protecting supervisor time	• Education of: ○ The trainee ○ The patient ○ The supervisor	• Relationship building with the patient • Relationship building between the doctors

Table 4 Three patterns of the supervisory encounter, with each pattern's particular characteristics, affordances and required tools and skills

	'Managing for'	'Managing through'	'Managing with'
Characterisation	• Supervisor assumes overt management of the patient • Dyadic with trainee as observer • Patient centred	• Supervisor guides trainee to a supervisor-determined outcome • Both dyadic and triadic • Patient sometimes an observer	• Supervisor and trainee interact in a collegial style, with the trainee remaining the lead clinician • Both dyadic and triadic and directed by trainee • Patient sometimes an observer
Educational affordances	• Learning by modelling	• Cognitive skilling of the trainee	• Development of trainee independence
Tools and skills		• Supervisor uses cognitive apprenticeship skills	• Trainee provides a well-developed presentation • Trainee leads; supervisor is led • Skills of triadic engagement

with' pattern. Goldszmidt et al.'s styles offer a lens on the supervisor; our patterns provide a view on the supervisory encounter, which is determined by both the supervisor and the trainee.

Interestingly, during the 10-week period of data collection, we saw each pair operating predominantly in a single pattern. This suggests that the pattern of the supervisory encounter is more a feature of a particular supervisory relationship than being determined by the situational context. Rather than having a fixed pattern of supervisory encounter, it would be advantageous for a supervisory pair to be more adaptable in their pattern of encounter in order to achieve different goals depending on the situation and on the development of the trainee. Devitt postulates that genres both constrain and enable creativity.[29] Awareness of genre enables individuals to act more purposefully and to be more creative.[29] Although our findings suggest that trainees and supervisors can be purposeful within their encounters, this was without an explicit awareness of the genre in which they were operating.

We therefore contend that for the full potential of supervisory encounters to be fulfilled it is necessary for supervisors and trainees to know there is a choice, know the consequence of the choice and have the skills to execute that choice. We contend that this requires: the agendas of supervisory encounters to be explicit; the options for pattern of supervisory encounter to be known; and the participants to have the skills to navigate between these patterns. Trainees need to understand the impact of the way they deliver their case presentation and learn how to position themselves to lead the encounter. Supervisors need to recognise the way they engage in the social space of the supervisory encounter and the choices they have in this. They also need to be equipped with techniques that facilitate trainee thinking. The trainee and the supervisor need to know how to undertake a three-way engagement with the patient. They also need to be aware and purposeful in their choice of the configuration of the encounter: whether to meet in the patient's presence or absence or with the supervisor on the phone. In these ways the supervisor and trainee can achieve greater flexibility with their encounters and therefore achieve more with each encounter. Enabling supervisors and trainees to develop these understandings and skills is an important imperative for educators who support the development of supervisors and trainees.

The strength of our findings is the depth of insight they give to supervisory encounters after senior trainees request help. This was achieved by exploring recorded actual encounters and augmenting this with post-encounter reflections and interviews. In doing so, we limited ourselves to a small number of participants in a particular setting in a limited range of contexts and over a limited period of time. The degree to which our findings can be transferred to other settings must be determined by how readers judge them to resonate with their own settings.[33] We selected experienced supervisors; it would be valuable to know whether supervisors deemed otherwise used other patterns of engagement. We do not know the impact of

recording an encounter on the encounter itself or to what degree the participants were selective in the encounters they chose to record. We acknowledge that as researchers we brought our own perspectives into the analysis. This is particularly pertinent for the lead author, who is involved intimately in GP supervision. Although our perspectives provided a rich resource for interpreting the data, they undoubtedly influenced our direction of inquiry so that we necessarily attended to some things and not others. We took a constructivist rather than a critical stance and so did not focus on the implicit ideological agendas identified by others.[16,37]

The findings raise questions and provide insights. The supervisors and the trainees in our study differed in the range of educational and social skills they exhibited. We do not know whether this was by choice or because they were limited in their range of skills, or because they had the skills but were unaware of their potential use and value. We identified three patterns of supervisory encounter, there may be others. We pose that different patterns of supervisory encounters have different assets depending on the situational context and that supervisors and trainees can be purposeful in determining the pattern of their encounter. Whether these propositions actually hold is worthy of further research. Our exploration of the patient's experience was limited and so the patient's story remains largely untold. It would be valuable to investigate patients' perspectives to understand the degree to which patients are empowered or disempowered by the patterns that doctors use to engage in supervisory encounters.

CONCLUSION

We describe the senior trainee supervisory encounter in a longitudinal supervisor relationship as following a consistent format. Within this format there are three identifiable patterns. Each pattern calls on different skills and exhibits different assets and constraints. We propose that for the supervisory pair to maximise the educational potential of these *ad hoc* encounters, they need to recognise the pattern of supervisor encounter that they are engaging in and to have the skill set to modify this to match the circumstances and the trainee's development. We recommend further examination of the genre of the senior trainee *ad hoc* supervisory encounter and the patterns that supervisory pairs might adopt. A faculty's development of trainees and supervisors should include: enabling trainees and supervisors to identify the use of genre during the supervisory encounter; use of the genre flexibly; and having the educational and social skills to do this.

Contributors: JB, TC and DN together with a researcher conducted the primary project development and data collection. The analysis for this study was then undertaken by JB under the close oversight of MG. MG and JB together developed the conceptual model and theorised the findings. These were then reviewed and elaborated in collaboration between all four authors. JB led the writing of the manuscript and the other authors contributed significantly through the iterative cycles of revision. All authors approved the final version of the manuscript.
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Conflicts of interest: JB is a PhD candidate, GP supervisor and a medical educator in GP vocational training. TC is Manager of Educational Quality for a GP vocational training provider. Both JB and TC were employed by the training organisation that received the grant for this research and from where the supervisors and trainees were recruited. Both JB and TC had participated in the supervisor professional development programme. Funding for this project contributed to remuneration of DN as a senior academic consultant.
Ethical approval: this study was approved by the Monash University Human Research Ethics Committee project number CF13/1225 – 2013000592.

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SUPPORTING INFORMATION

Additional Supporting Information may be found in the online version of this article:

Appendix S1. Questions for post-encounter reflection.
Appendix S2. Topic guides for interviews.

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5.3. Contribution of 'The clinical supervisory encounter' research to thesis

5.3.1. Contribution of 'The clinical supervisory encounter and the senior trainee' secondary analysis and paper to thesis

My primary purpose with this work was to create a conceptual model of the clinical supervisory encounter. In doing so, I aimed to build knowledge for the use of trainees and supervisors to enable them to be more purposeful in achieving their intentions when they engage in their supervisory encounters.

The analytical work I did for this paper used Wenger's Communities of Practice theory(3) and Rhetorical Genre Theory(6, 7) abductively to develop new insights from the data. From this, I retroductively built a model to understand the properties of the clinical supervisory encounter. Using Rhetorical Genre Theory, I conceptualised the supervisory encounter as a social genre with the constitutive properties of a definable structure and the social motive of creating a plan for the patient. While the primary outcome of the clinical supervisory encounter was a plan for the patient, the supervisory encounter also has educational and social outcomes that depend on context and on choices that the trainee and supervisor make. These outcomes include trainee learning, relationship building and positioning of each of the trainee, supervisor and patient.

In genre theory, genres are the medium between the personal and the contextual(6). The personal and the contextual each impact on the other through the enactment of a genre. Personal intention and agency change context through the capability a genre enables. Inversely, context determines the bounds of agency through framing the structure of genre. Context is both cultural and situational. The cultural context frames how things can be done and how the participants are positioned(6). Situational context means that every enactment of a genre is unique, although, as in this research, particular variations in context tend to result in particular types of outcome. These are contingent causal properties. Important contingent variations in the situational context of supervisory encounter were whether or not the patient was present and the skills that the trainee and supervisor had to draw on.

The interplay between agency and context through a genre was evident in this research. The three patterns of the supervisory encounter achieved different outcomes. The structures of control, credibility and trainee identity that framed these patterns of the genre were culturally determined. The expression of these structures was contingent on the situational context, and the pattern of their enactment could be changed through the agency of the trainee and supervisor.

The three patterns of the genre of the supervisory encounter, that I identified in this work, had the same cultural context but different situational contexts. Different choices were made by trainees and supervisors and different outcomes were achieved. In the 'Managing for' and 'Managing through' patterns: the supervisor was in control; the trainee's credibility with the patient and the supervisor was often at stake; the trainee was positioned as the learner; and, the trainee learned how to manage the consultation. In the 'Managing with' pattern; the trainee was in control; their credibility was not under threat; the trainee was positioned as the lead clinician; and, the trainee learned how to be the clinician.

The importance of the supervisory relationship was evident in this work. Building their relationship was an important agenda for both the trainee and the supervisor and the pattern of the encounter was both a product and a determinant of the relationship. Wenger's Communities of Practice Theory helped to understand the structure of the supervisory relationships as evident in the data. The relationships evident in the data reflected Wenger's model of the new-comer and the old-timer relationship. The supervisor, as the old-timer, supported the legitimacy of the trainee in their participation in the work of general practice, supported them in building a repertoire of skills and supported them in making sense of the work. Furthermore, the manner of the trainee and supervisor engagement framed the identity of the trainee.

I have used the insights from this work extensively in my own work as an educator. I use it for providing education to trainees on how to effectively access their supervisor for clinical support. This is within my own supervisory practice and also for groups of GP trainees commencing clinical placements in GP. I use it for professional development for supervisors in their work of clinical supervision. I have also given a number of presentations and workshops to other medical educators in GP vocational training providing a model for the provision of education in undertaking supervisory encounters.

This work provided the impetus for a subsequent research project that is the basis of the next chapter of this thesis(ch.6). It brought to light the dynamic of trainee identity development in the context of the supervisory relationship. It also brought to light issues of cultural context and how power was framed, the impact of personal factors, and the possibility of choice. With these insights I conceived of, and undertook, a research project which used a similar methodology to specifically explore the development of trainee identity over-time within the supervisory relationship, again with the focus of the supervisory encounter.

5.3.2. Contribution of other papers from 'The clinical supervisory encounter' research to thesis

Three other papers were published from this research for which I was a secondary author. Two of these discussed findings pertinent to this thesis that were not included in the above paper.

The first paper was 'Perceptions of ad hoc supervision encounters in the general practice training'(21). This paper was based on the interview data alone. A key finding described in this paper was the issue of the trainee's psychosocial safety as a causal driver for initiating the clinical supervisory encounter. Trainees described distressing experiences of being in situations beyond their capacity:

> *It's just a horrible feeling being literally in a room with someone and one, not knowing what their problem is, and two, not knowing how to fix it….the first few months, every single day, you see something that you really have no idea about and it really does knock your confidence. It's pretty exhausting. – Registrar E*

This is a hazardous situation for the trainee with their social position at risk. The fear generated may lead the trainee to initiate a supervisory encounter. This is because of properties of both human psychology and properties of social genre. From a critical realist perspective, the desire to address alienation is an inherent property of human psychology(38). From a social genre perspective, addressing danger is one of the social motives driving a genre(7). For the trainee to have their social position at risk is to risk alienation. This psychological dynamic drives action and is a causal mechanism that leads to the outcome of a supervisory encounter which exists in part to address the dangers consequent to the trainee not knowing what to do with the patient's problem.

The second paper was 'Ad hoc supervision of general practice registrars as a community of practice'(22). This paper explored a single supervisory encounter from the data using Wenger's community of practice theory as an interpretative frame. Within this encounter there is a segment where we identified impression management by the trainee. Her identity as a competent doctor had been undermined and she acted to recover this through interjections demonstrating her knowledge. This action can also be perceived as arising from a desire to address alienation as identity gives us a belonging(3). Addressing separateness is a second social motive as a property of a social genre(7). The analysis of this encounter also identified identity protection by the supervisor. His authority as the primary clinician and the teacher is lightly challenged by the trainee. He acts to use humour to diminish the threat:

> *Trainee:* *So, some of it, it's partial thickness; those ones; and then there's probably superficial as well*

Supervisor: *Yep, fantastic. For some reason I'm stuck on degrees. So, we've got first and second degree but…*

Trainee: *Oh, you can do that too. We got told off for that the other day*

Supervisor: *Did you? You see, this is why I don't go to those sessions*

Trainee: *Okay good [laughs]; well first and second degree suits me fine*

These pieces are included for their contribution to understanding causal mechanisms that are relevant to trainee identity development and the supervisory encounter. These findings and ideas are picked up on in the next chapter(ch.6) and explored further in the integrative chapter(ch.8).

6. Becoming a general practitioner

6.1. Introduction: exploring trainee identity development within the general practice supervisory relationship

This chapter is based on a research project that aimed to explore trainee identity development within the GP supervisory relationship. The project was conceived after completing the initial part of the first investigation into the supervisory encounter(20). The experience of the first project demonstrated the richness of the data gained from audio recordings of clinical supervisory encounters and gave insight into the impact of the supervisory encounter on the trainee's identity as a clinician. From my experience as a supervisor, I was aware that trainee identity changed over time and this was paralleled by a change in the way the clinical supervisory encounter was enacted. Consequently, I chose to explore trainee identity development within the supervisory relationship using the lens of the clinical supervisory encounter and using the same methodology. I chose GP intern placements as a source of trainee/supervisor pairs to investigate. In Australia, interns have completed medical school and have the status of provisional doctors who are yet to enter a specialist training pathway. Their experience of a GP placement can be highly formative in a future decision to embark on GP vocational training(80). The overarching purpose of this project was to develop a conceptual model of identity development within the GP supervisory relationship. The aim of this was to knowledge build to enable trainees, supervisors and training programs to better support the development of the trainee's identity as a GP clinician. This research asked: what shapes the clinical trainee's identity in the context of GP supervised practice; and, how does the clinical trainee's identity change over time within GP supervised practice? As with the preceding three research projects in this thesis, I first build descriptive theory and then theorise how things might be done to more effectively achieve a purpose.

6.2. Paper 5: Becoming a clinician: Trainee identity formation and the general practice supervisory relationship

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PROFESSIONAL IDENTITY

Becoming a clinician: Trainee identity formation within the general practice supervisory relationship

James Brown[1,2] | Helen Reid[3] | Tim Dornan[3,4] | Debra Nestel[5,6]

[1]Faculty of Medicine, Nursing and Health Sciences, Monash University, Clayton, Victoria, Australia

[2]The Royal Australian College of General Practitioners, East Melbourne, Australia

[3]Centre for Medical Education, Queen's University Belfast, Belfast, UK

[4]Department of Educational Development and Research, Maastricht University, Maastricht, the Netherlands

[5]Monash Institute for Health and Clinical Education, Monash University, Clayton, Victoria, Australia

[6]Department of Surgery (Austin), University of Melbourne, Heidelberg, Australia

Correspondence
James Brown, Faculty of Medicine, Nursing and Health Sciences, Monash University, Clayton, Victoria 3168, Australia.
Email: jamesboyerbrown@gmail.com

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Abstract

Objectives: Becoming a clinician is a trajectory of identity formation in the context of supervised practice. This is a social process where the supervisory relationship is key. Therefore, to know how to support identity formation of clinical trainees, it is necessary to understand how this happens within the supervisory relationship. Our aim was to develop a conceptualisation of trainee identity formation within the general practice supervisory relationship to aid its support.

Methods: We took a critical realist approach using case study design and 'cultural worlds' theory as a conceptual frame. Each case comprised a general practice trainee and supervisor pair. Our data were weekly audiorecordings of interactions between trainee, supervisor and a patient over 12 weeks augmented by post-interaction reflections and sequential interviews. We undertook interpretive analysis using dialogic methods focusing on the doing of language and the cultural discourses expressed.

Results: We identified three social discourses centring on: clinical responsibility; ownership of clinical knowledge, and measures of trainee competency. Versions of these discourses defined four trainee-supervisor relational arrangements within which trainee and supervisor assumed reciprocal identities. We labelled these: junior learner and expert clinician; apprentice assistant and master coach, and lead clinician and advisor. We found a trajectory across these identity arrangements. Behind this trajectory was an invitation by the supervisor to the trainee into the social space of clinician and a readiness of the trainee to accept this invitation. Congruence in supervisor and trainee positioning was important.

Conclusions: In the supervisory relationship, trainee and supervisor adopted reciprocal identities. For trainees to progress to identity of 'lead clinician,' supervisors needed to invite their trainee into this space and vacate it themselves. Congruence between supervisor positioning of their trainee and trainee authorship of themselves was important and was aided by explicit dialogue and common purpose. We offer a model and language for trainees, supervisors and departments or schools to facilitate this.

1 | INTRODUCTION

General practice trainees transition from nascent to fully credentialed general practitioners by being involved in clinical care under supervision.[1] It is now clear that becoming a clinician is not just the acquisition of knowledge and skills, it is a trajectory of identity formation[2,3] much of which is a tacit process.[4] To meet the call for a more purposeful approach to addressing issues of clinician identity formation[5] we need to understand how this occurs.

Social theories of learning have led medical education researchers to examine the social dynamics of identity formation.[5,6] From this perspective, identity formation occurs in the context of participation in shared activities with others[7,8] where participants are positioned socially by each other.[9,10] This occurs within cultural frameworks, which also sustain structures of authority and power.[11] The identity an individual can claim depends on the identity they are granted.[10] Language is fundamental for forming and framing identities.[12,13] This happens through the enactment of cultural discourses with which a social group defines how things are done and what is and isn't acceptable.[13] A trajectory of joining a social group involves an individual appropriating the language and discourses of that group, which is then re-used in their own internal and external dialogues as expressions of their emerging identity in that group.[11,13]

To understand clinical trainee identity formation, we need to examine the dynamics of their workplace relationships, social frameworks and discourses. Both primary[14] and secondary[15] research have identified the supervisory relationship as fundamental to trainee identity development. Research into general practice supervision has confirmed that relational factors influence identity formation for the trainees[16] and the supervisors.[17]

Research on clinicians' identity formation has largely used post-event data from interviews[18,19] and reflective diaries.[10] To understand the social dynamics of identity formation, contemporaneous naturalistic data is needed.[20] Kennedy et al[21] and Clement et al[22] have used naturalistic data, with a focus on dialogue, to examine trainee identity in supervised practice. They showed that trainees do indeed conform to cultural norms because of hierarchical power structures. Their findings, however, were based on data from single moments in trainee identity trajectories. Identity formation is a longitudinal process and so research using sequential data points over time is needed to deepen understanding.

We therefore sought to explore clinical trainees' dynamically, evolving identity formation within supervised practice using naturalistic data collected over time. Our aim was to develop a conceptualisation of trainee identity formation within the general practice supervisory relationship to aid its support. We asked two questions:

1. What shapes the clinical trainee's identity in the context of general practice supervised practice?
2. How does the clinical trainee's identity change over time within general practice supervised practice?

2 | METHODS

2.1 | Conceptual orientation

We took a critical realist approach. That is, there is a real world that can be understood; that there are real outcomes that have causal processes; and that we can act purposefully through understandings gained from constructed perceptions.[23]

The theoretical framework of Holland et al[11] was used taking a sociohistoric approach to identity, viewing it as personal and social, historic and emergent. Identities are formed and enacted in figured worlds, which are culturally structured (worlds) with ways of doing and interacting organised around positions of status and power. Medicine can be viewed as a figured world. Key constructs from Holland et al's[11] theorising are summarised in Figure 1. This framework has been drawn on by others for examining identity formation in medical education.[10,24]

2.2 | Setting

This study was undertaken in Victoria, Australia, with trainees in 12-week general practice intern placements as the sample. These trainees were in their first post-graduate training year as provisionally registered junior doctors. This year is a period of significant transition between completion of medical school and entering a medical specialist pathway with the trainee completing 10–12 weeks of rotations through a range of disciplines. In a general practice rotation, trainees work in community-based clinics and attend primary care patients who book to see the trainee. The trainee is required to check-in with their supervisor before completing each patient consultation. This is often the trainee's first extended period in the role of a doctor making significant contributions to clinical decisions. The structure also provides the basis of a substantial supervisory relationship.

2.3 | Study design

Case study design[25] was used with trainee and supervisor pairs as the cases, each situated in a different community-based general practice. Case study design provided for a deep examination of supervisory relationships as contexts for identity formation. From a realist perspective,[23] this is necessary for understanding causal processes. Sullivan's dialogic methods were used to approach the data.[13] This methodology takes a social perspective on identity and its enactment through dialogue. It focuses on the 'doing' of language and uses discrete speech acts as the unit of analysis. Speech acts are characterised by their readiness for a reply or reaction.[13]

2.4 | Participants and recruitment processes

An open invitation was sent to supervisors and trainees from a pool of 11 potential trainee and supervisor pairs within a general practice training

FIGURE 1 Key theoretical constructs from Holland et al[11]

Figured world	A shared culturally structured world that is both historic and in a state of change as it is enacted when we undertake a shared cultural activity. A figured world provides us with language and 'artefacts' to participate and to make meaning through 'authoring' ourselves and that world
Positioning and addressing	The way we are placed and place others in relation to each other within a 'figured world.' Positioning is framed by hierarchies of power, entitlement and 'identity.' Positioning is enacted by the way we 'address' each other
Authoring, answering	We use 'dialogue' to author ourselves, our world and our place in it. This is a process of 'meaning making.' In answering the way the world 'addresses' us, we enact our 'authorship'
A 'Social Discourse'	A socio-historical framed talk that expresses and enacts a particular social arrangement within a 'figured world.' They are about who we are and what we do in relation to each other
Identity	Identities are ways we tell others and ourselves who we are. The context of an identity is its position in a 'figured world' and the way we 'author' ourselves in response to that 'positioning'
Imagining	Using inner speech to conceive a future identity in a 'figured world'
Play	Acting as if we are an 'identity' in a 'figured world' as a precursor to being that 'identity.' Play is a means of mastery and of creation

programme. In five of the pairs, both the intern and supervisor expressed interest in participating. Following detailed explanation of the project, the invitees from these pairs all provided informed consent to participate.

2.5 | Study procedures

We collected three types of data:

1. Audiorecordings of the dialogue from weekly supervisory encounters in the presence of a patient
2. Audiorecorded reflections on these supervisory encounters by both the trainee and the supervisor directed by a prompt sheet (Appendix 1)
3. Four sequential recorded semi-structured interviews with each supervisor and trainee from before, at two points during, and then following the 12-week placement - using topic guides (Appendix 2). The interviews were informed by an initial analysis of preceding data for the purposes of theory development and member checking.

Before recording an encounter, informed consent was established with the patient(s). Written consent was sought prior to the consultation by reception staff at patient check in and, if provided, confirmed verbally by the intern prior to switching on the recording device.

The interviews were conducted by two employed researchers and by the lead author (JB). In most instances, the interviewers were not known to the research participants.

A total of 31 hours of audio data were collected. These were transcribed verbatim and anonymised.

2.6 | Data analysis

Analysis was done iteratively, moving between the data and conceptualisation; and between the particular and the global. Memoing was used as an analytic tool. JB led the analysis and analysed all data in depth. The remainder of the team (HR, TD and DN) familiarised themselves with the full data set and analysed one or two of the cases in depth. JB met regularly with each team member for case-focused interpretative checking and development. The whole team (JB, HR, TD and DN) met for three extended meetings for cross-case analysis and overarching conceptual development. These discussions were theoretically framed and drew on the different perspectives that each of the research team brought. Our research team included two members native to general practice supervisory environments (JB and HR), one member native to clinical supervision but from another field of medicine (TD) and one member a sociologist and educationalist and hence, an outsider to the research context but an insider to the theoretical and methodological approaches (DN). Two were based in Australia and two in the United Kingdom. This mix of insider and outsider perspectives was important to both analytical rigour and depth.[13,26]

The supervisory encounter data were taken as the primary view on the supervisory relationship in action. The data from the interviews and reflections were used for checking and deepening the understanding of what was happening in the encounters[26,27]; and as a view on the meaning-making by the participants.[11,13]

In analysing the data, a focus was taken on the 'doing' of the talk[13] identifying its social actions. These social actions were categorised both inductively and deductively using the theoretical constructs of Holland et al[11] (Figure 1). From this, an interpretative framework with top-level themes arranged hierarchically was developed and applied back to the data. This analytic hierarchy of themes is illustrated in Figure 2.

Key 'sound bites,'[13] which exemplified the social actions, were identified. These were used to scaffold a narrative summary for each case. The narrative summaries were used for cross-case analysis.

One case, with a strong trajectory of trainee identity change, was chosen for further examination to explore causal processes underlying identity change. Identified causal process was tested against

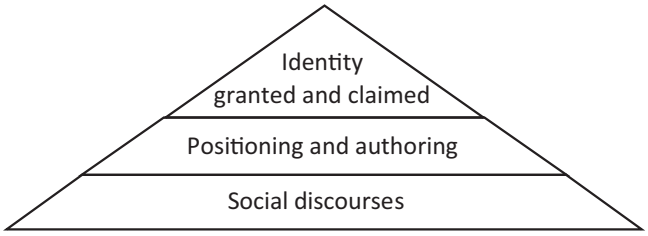


FIGURE 2 Hierarchy of top-level themes

the other four cases. This approach is consistent with critical realist methods for this purpose.[23]

2.7 | Ethics

Ethics approval was gained from Monash University Human Research Ethics Committee-project number CF14/2058 - 2014001069. Participation was voluntary. All trainees, supervisors and patients provided informed consent prior to participating.

3 | RESULTS

The results are divided into two parts. The first part concerns the way the trainee and supervisor identities were paired in a relational way and enacted through their shared discourses. The second part concerns how the trainee and supervisor paired identities could change over time.

3.1 | Part 1: Trainee and supervisor paired identities

We found that the trainee and supervisor assumed identities that were paired with each other in a relational and reciprocal way. We identified four distinct pairings of identities. These distinct pairings were not peculiar to any particular trainee-supervisor relationship as each trainee-supervisor relationship could change in the way they interacted and thus assume different paired identities at different times. We have labelled these four pairings of reciprocal identities as: (a) junior learner and expert clinician; (b) apprentice assistant and master coach; (c) co-clinicians, and (d) lead clinician and advisor. These paired reciprocal identities are represented in Figure 3.

The trainee and the supervisor enacted these paired identities through using different versions of three identifiable social discourses to author and position each other. These three social discourses were:

1. Discourse on attribution of clinical authority.
2. Discourse on the ownership of medical knowledge.
3. Discourse on the measure of trainee competency.

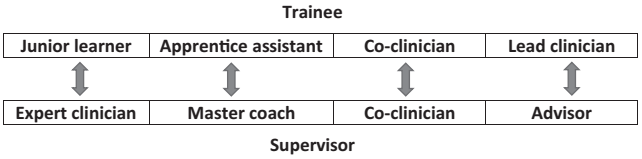


FIGURE 3 Trainee and supervisor paired reciprocal identities

The discourse on clinical authority might attribute responsibility for the care of the patient to the supervisor, to the trainee or to both. The discourse on ownership of medical knowledge positioned knowledge either as a commodity owned by a person and a mark of their authority or positioned knowledge as a communal asset to be shared. The discourse on the measure of trainee competency valorised different things by which to judge the trainee's performance.

We now describe each of the four sets of paired identities describing how they were framed by different use of the three social discourses and the consequent positioning and authoring that occurred between the trainee and supervisor within their relationship.

3.1.1 | Trainee as 'junior learner,' supervisor as 'expert clinician'

In this pairing of identities, the discourse on clinical authority assigned authority for patient care to the supervisor who made the clinical decisions with the trainee assisting. The discourse on ownership of medical knowledge identified medical knowledge as a personal asset for the trainee to seek and for the supervisor to dispense.

> *… you've got a guy who's got thirty … years' experience telling you stuff, you [the trainee] should be listening.*
> *(Supervisor C, pre-placement interview)*

The discourse on the measure of trainee competency gave value to the trainee's factual knowledge and their ability to collect and deliver a complete history and examination for the supervisor to then use for making a diagnosis.

> *He hadn't mentioned to me issues such as family history. He hadn't mentioned to me any exploration of past psychological issues with depression, etc.*
> *(Supervisor C, reflection 3)*

These versions of the three discourses positioned the trainee as a learner to report to the supervisor and to be taught. The supervisor was positioned reciprocally as lead clinician and expert. In the following extract from an encounter, we see this evident in the way that the supervisor interrogates the trainee in the presence of the patient:

Supervisor: What about constitutional symptoms. Anything there?
Trainee: The cold, sort of feeling hot and cold but that's really all.

Supervisor: Appetite, that sort of stuff.
Trainee: Appetite? I didn't ask. (Pair C, encounter 1)

This hierarchical positioning was paralleled with concordant hierarchical authoring by both the trainee and the supervisor.

> *I think that reinforces that, as a junior doctor, that you are in fact learning things, and retaining things …*
> *(Trainee C, reflection 1)*

3.1.2 | Trainee as 'apprentice assistant,' supervisor as 'master coach'

In this pairing of identities, the discourses on clinical authority and ownership of medical knowledge positioned the trainee as an assistant who made clinical suggestions; however, final responsibility and authority lay with the supervisor.

> *Rather than me having to make decisions about management, more like, suggestions of what I think I would do.*
> *(Trainee C, interview week 9)*

The trainee competency discourse valued trainee clinical reasoning and their ability to offer credible differential diagnoses and management options for the supervisor to consider.

> *What worked well was that I had formulated a bit of an impression of what I thought was going on.*
> *(Trainee C, reflection 5)*

The trainee and supervisor played 'let's pretend the trainee is in charge' where the trainee either made clinical propositions that the supervisor could accept or decline; or, the trainee was coached by the supervisor to come to a supervisor determined conclusion using questions and prompts. In this way, the trainee could appear to be making decisions however the consultation was actually controlled by the supervisor.

Supervisor: Yep … What do you think?
Trainee: It doesn't have any major concerning features, I suppose, to have a look at.
Supervisor: Yeah.
Trainee: It is irregular but that's really the only concerning feature. In terms of colour, it's reasonably uniform, you know, it's got some pigment through it but in a uniform distribution almost.
Supervisor: I think that's right. (Pair B, encounter 3)

The trainee and the supervisor authored themselves and each other in a way that aligned with the positioning of the trainee as the assistant and the supervisor as the leader:

> *[Supervisor] allowed me to present, you know, differentials and investigations that I might want to do, and then even lead me a little in terms of other things that he thought that I was missing, allowed me to sort of, go through the process of discovery.*
> *(Trainee A, reflection 1)*

3.1.3 | Trainee and supervisor as co-clinicians

In this pairing of identities, the discourse on clinical authority shared responsibility for clinical care between trainee and supervisor. The discourse on the ownership of medical knowledge positioned knowledge as a shared asset with both contributing knowledge to solve a clinical problem. Trainee and supervisor were positioned as 'co-clinicians' with both contributing to the development of the plan in a non-hierarchical way.

> *There was a good exchange of information and conversation between myself, [TraineeA] and the patient, and we formed a collaborative plan as to how to deal with the situation.*
> *(Supervisor A, reflection 7)*

The trainee competency discourse valued the ability of the trainee to adopt the role of the general practice clinician. Authoring by both trainee and supervisor was congruent with the non-hierarchical positioning:

> *I get the impression from [supervisor] that he thinks of me as a colleague and values what I have to say and has a reasonable degree of trust in my clinical judgement.*
> *(Trainee E, interview 2)*

3.1.4 | Trainee as lead clinician and supervisor as advisor

In this pairing of identities, the clinical responsibility discourse assigned clinical responsibility to the trainee with the supervisor providing support as far as was requested by the trainee. The ownership of knowledge discourse positioned knowledge as a resource to be sourced and shared. With this version of the knowledge discourse, the trainee called on the supervisor as an information source for the trainee to manage the consultation themselves. The competency discourse gave value to the trainee's capacity to assume the role of the 'lead clinician' for the patient.

> *… if what he has formulated from the consult appears to be appropriate and the patient interaction with him appears normal then by inference, I can presume that the consult has gone perfectly okay.*
> *(Supervisor A, interview week 10)*

The trainee was positioned as 'lead clinician' developing and delivering a diagnostic formulation and the management plan for the

patient whereas the supervisor was positioned as an advisory resource for the trainee to utilise in order to complete the consultation. This might be as a resource for additional information, an opinion or affirmation. *… the questions that I needed answered, [Supervisor D] was there to assist me in answering them myself' (Trainee D, reflection 3).*

Authoring by trainee and supervisor was consistent with the positioning of the trainee as the 'lead clinician' and the supervisor as an 'advisor.'

3.2 | Part 2: Change in identity over time

In this section, we describe how the pairing of identity might change within a particular trainee-supervisor relationship. We then explore the features within the supervisory relationship that facilitated this change.

3.2.1 | A trajectory of change in identity

Across the placements, we identified a trajectory of paired reciprocal identities. The participants talked about this trajectory and it was evident in changes in the predominant reciprocal identities each case adopted. The start and finish points were different across cases; however, overall the trajectory went from junior learner and expert clinician, to apprentice assistant and master coach, to co-clinicians, to lead clinician and advisor. Though this trajectory usually tended forwards, it could halt or go backwards. One case did not have a clear trajectory.

We use case B to exemplify this trajectory. At the start of the placement, the trainee and supervisor adopted the reciprocal identities of 'junior learner and expert clinician.' This was expressed in the way the supervisor quizzed the trainee in encounter 1:

Supervisor: Okay, so what options have you got?
Trainee: What options have we got? I think, given there's no evidence of fluid overload. There's no need to treat as for that at the moment. There's no oedema in the legs, there's nothing, no sound in the chest.
Supervisor: But he's short of breath.
Trainee: But he's symptomatic. Could we increase the Lasix (a diuretic)?
Supervisor: Yes.

Early authorship by trainee and supervisor identified the trainee as a 'junior' and a 'learner,' and the supervisor as the 'expert clinician' in a hierarchical world.

> *… we are very hierarchical in that, you know, he's the GP [general practitioner] and I'm the junior and he's providing some education as we go.*
>
> *(Trainee, interview week 3)*

The trainee competency discourse was about the trainee's ability to collect the information required for a comprehensive presentation.

> *I felt a little bit embarrassed that I hadn't completed an extensive examination. You know, I'm eager to impress and will certainly remember that for next time.*
>
> *(Trainee, reflection 2)*

Further into the placement, they tended to adopt the reciprocal identities of 'apprentice assistance and master coach.'

> *Supervisor to patient: So [trainee] can just run through what medications you may need,*
>
> *(Supervisor, encounter 3)*

Later in the placement positioning, authorship and the trainee competency discourse shifted to reflect the reciprocal identities of 'co-clinicians.' In encounter 7, trainee and supervisor together work towards a diagnosis for a patient's joint pain:

Trainee: … given we've got no crystals on microscopy (of the joint fluid), unlikely gout or pseudo gout, certainly not a good history for it really, there's a few key features. No microbes, no polymorphs so, and certainly not a septic type picture.
Supervisor: He'd be unwell.
Trainee: Well exactly, and so I suppose my best thought here is that there's some osteoarthritic change that we know is there.
Supervisor: Yeah.
Trainee: And that for whatever reason we've had some joint …
Supervisor: It's flared up …
Trainee: Inflammation following some, just irritation.

Both trainee and supervisor now also author the trainee as a 'co-clinician':

> *… the patient certainly saw me as a doctor with the knowledge to manage her conditions, that sort of thing.*
>
> *(Trainee, reflection 9)*

> *[on the trainee's involvement] it's good to have a second opinion and review.*
>
> *(Supervisor, reflection 9)*

The trainee competency social discourse has become about the trainee's ability to make clinical decisions:

> *… [trainee] is comfortable making decisions … ordering tests.*
>
> *(Supervisor, interview week 9)*

3.2.2 | Features within the supervisory relationship that facilitated the progression of identity change

Alongside the trajectory of reciprocal identities over time, we identified features about a supervisory pair that facilitated this trajectory. These features were particularly apparent on a deeper examination of pair E where there was a clear transition during the placement to the reciprocal identity of trainee as 'lead clinician' and supervisor as 'advisor.' Data from the other cases were used to refine this theorising. In summary, the facilitating features were:

1. The supervisor offering the trainee the possibility of 'clinician' identity
2. The trainee being ready to accept the offered identity
3. Time for the trainee to learn how to assume a new identity
4. The supervisor safety-netting as the trainee learned the new identity
5. Congruence in the trainee's and supervisor's authorship of their relationship
6. A strong relationship with mutual respect and goodwill

The supervisor offering the trainee the possibility of 'clinician' identity

In this pair, from the start Supervisor E imagined, authored and enacted an intention to position the trainee and himself as *co-clinicians* and then the trainee as 'lead clinician' and himself as an 'advisor.' He was also deliberate in supporting the trainee's position in the eyes of the patient.

> *With supervision it's about empowering the learners to use the knowledge they have … to make decisions … I always remain standing in the consultation … I don't take their bed, chair or the computer.*
>
> *(Supervisor E, pre-placement interview)*

As the placement progressed, this supervisor moved towards the position of 'advisor' and thus enabled the trainee to occupy the position of 'lead clinician.' He did this by occupying a more marginal social space in their shared clinical encounters. His input progressively reduced to verbal fillers such as '*mmm*' and '*yep*' and he progressively relinquished ownership clinical decisions by initially giving Trainee E options to choose from themselves and then later accepting trainee decisions that might be different to his own:

> *… even if it may not be necessarily the one that I would actually use, if it's still appropriate I won't interfere*
>
> *(Supervisor E, joint reflection 3)*

By the end of the placement, his usual input to management decisions became a simple affirmation of the trainee's decisions.

In one of the closing joint reflections, he invites a reversal of the position of expertise by seeking the trainee's judgement of his own supervisory role.

In contrast, in another pair, the supervisor retained the position of 'lead clinician' through persistent positioning of patients as his own and positioning of the trainee as a 'junior' through quizzing, correcting and overriding the trainee during the encounters. That pair did not progress beyond the reciprocal identities of 'apprentice assistant and master coach.'

The trainee being ready to accept the offered identity

Prior to commencing the placement, Trainee E imagined himself taking greater clinical responsibility:

> *Being an intern in the hospital you're as much doctor as you sort of are unit secretary … It's that movement from here's the information, what's the plan boss? So here's the information, this is my plan …*
>
> *(Trainee E, pre-placement interview)*

When positioned as 'clinician' by his supervisor, this trainee embraced the position.

In contrast another trainee did not express a readiness to accept the position of decision maker. That trainee did not progress beyond the position of 'apprentice assistant':

Trainee: … every patient needs to be seen by a GP, which is, I feel quite good about …
Interviewer: What are you least confident about?
Trainee: Making management decisions … like I will … rarely make decisions (Other trainee, pre-placement interview)

Readiness also required the trainee to have the requisite competencies for the offered identity. Trainee E expressed confidence that he had sufficient knowledge and skills to assume the identity of 'lead clinician.'

> *I'm reasonably comfortable with my medical knowledge in a lot of areas and I'm happy with my ability to … make the right sort of management choices*
>
> *(Trainee E, interview week 7)*

Time for the trainee to learn how to assume a new identity

Adopting a new identity took time. Learning new skills and a new disposition took practice. Confidence required familiarity through experience.

Early in the placement, Trainee E exhibited a lack of confidence in adopting the offered identity of 'co-clinician' by heavy use of hedging in giving his opinion. '*Sort of*' appears three times in this statement given during a clinical encounter:

> *Dental treatment is sort of the, the primary sort of management … I sort of thought …*
>
> *(Trainee E, in encounter 2)*

As the placement progressed, he authored himself as clinician with increasing strength, both within the consultations and in the way he spoke about himself:

> *saying, okay …, here is the problem and this is what we should do, rather than saying, oh, this is sort of what I think, maybe we should try this.*
>
> *(Trainee E, reflection 7)*

The supervisor safety-netting as the trainee learned the new identity

We have identified that it takes time between the trainee being offered a new identity and the trainee becoming confident in the skills and disposition of that identity. This means that there is a period when the new identity may be beyond the trainee's capacity. Supervisor E was aware of this and watched for evidence that the trainee was floundering in which case he would reposition himself and their reciprocal identities:

> *A couple of times I sort of started to talk and then let you continue, … it lets you take over and be responsible … I'm watching the way you respond and hopefully if you need some assistance we'd try and do it in a way that doesn't sort of compromise too much the relationship you have with the patient.*
>
> *(Supervisor E, joint reflection 3)*

Early in the placement, supervisor E could provide scaffolding to enable the trainee to make clinical decisions by offering a range of diagnostic options or treatment pathways, which the trainee could choose from. This provided a safety-netting 'retreat' to the 'apprentice assistant and master coach' reciprocal identity.

Congruence in the trainee's and supervisor's authorship of their relationship

This pair had a high level of congruence in the way they each authored their relationship and their approach to patients. They talked about this explicitly thereby facilitating congruence. There was congruence in the way that they addressed and answered each other and congruence in the way they talked about the doctor-patient relationship. Trainee E adopted some of Supervisor E's language. Supervisor E said in a joint reflection:

> *The role of a GP isn't as director of patients, it's really to be empowerer of patients, you know, try to help them identify what their needs are.*
>
> *(Supervisor E, joint reflection 4)*

Trainee E adopts the supervisor's talk 4 weeks later:

> *If you can empower somebody (the patient) to say, I have these health problems …*
>
> *(Trainee E, reflection 8)*

Another pair was not congruent in positioning, authoring and addressing. In that pair, the supervisor positioned their trainee as an 'apprentice assistant' as the trainee authored themselves as 'lead clinician.' This led to tension about who was in charge within the encounter and a sense of one being diminished when the other took the lead position. This other pair did not have a clear trajectory in their relational arrangement over the placement.

A strong relationship with mutual respect and goodwill

A notable feature of pair E was the strength of their relationship. This was evident in frequent expressions of mutual respect and goodwill and by the increasing ease of interaction between the two.

4 | DISCUSSION

We found that the trainee's identity was shaped by their supervisory relationship as trainee and supervisor enacted reciprocal identities in the context of engaging together in managing patients. These reciprocal identities were framed by three social discourses with which the trainee and supervisor authored and positioned themselves and each other. There was a trajectory of change in these reciprocal identities. This trajectory is represented in Figure 4.

We found key facilitators of this trajectory that were particular to each of the supervisor, the trainee and the supervisory relationship. This has important implications for supervisors, trainees and training programmes if they are to act purposefully to support trainee identity development towards that of 'lead clinician.'

The supervisor occupies a position of power in authoring the supervisory relationship; therefore, for the trainee to progress towards the identity of the 'lead clinician,' the supervisor needs to invite the trainee into that space and withdraw from it themselves. This is a staged invitation and withdrawal with each stage marked by a different positioning by the supervisor. The first transition requires the supervisor to 'play as if the trainee is the lead clinician' as the supervisor remains in indirect control. The second transition requires the supervisor to share the role of clinician with the trainee. The third transition requires the supervisor to position themselves as an advisory resource for the trainee as the trainee leads the clinical encounter. As well as this staged invitation and withdrawal, the supervisor needs to ensure that the trainee is not positioned beyond their capacity.

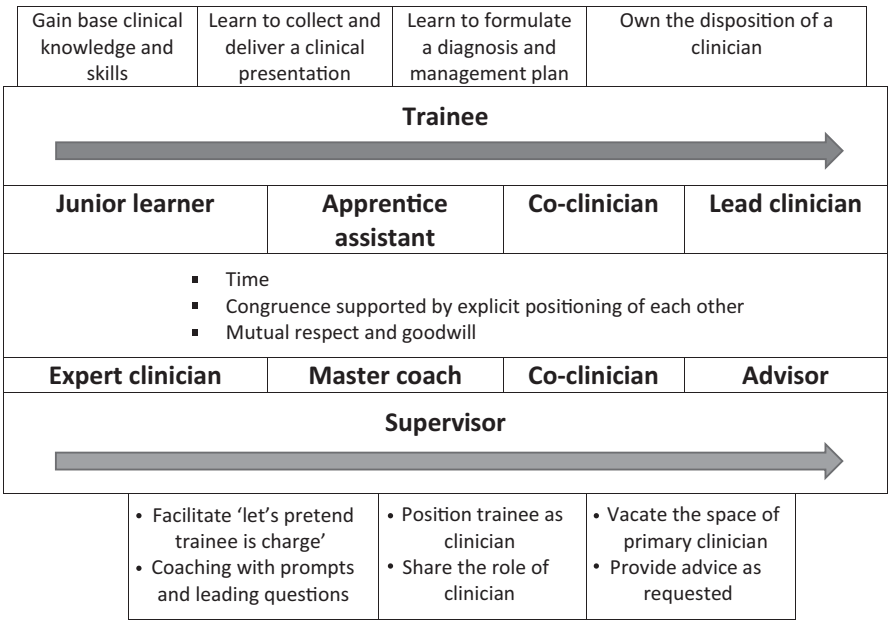
For the trainee to progress in response to the supervisor's invitation, they need to be ready to accept the offered identity. This requires first imagining themselves as clinician and then authoring themselves as clinician. It also requires acquiring the competencies needed for each stage of the trajectory. The trainee competency discourse suggests that first the trainee requires sufficient clinical knowledge; then they require the ability to collect and deliver a clinical presentation; then they require the ability to use clinical reasoning to form a credible diagnosis and management option; and finally, they require the disposition and ability to project themselves as a clinician.

Three features of the supervisory relationship are important for enabling the trainee to develop the identity of lead clinician. The first feature is sufficient time for the trainee to play the role of clinician for them to project the identity of clinician with confidence. The

FIGURE 4 Trajectory of trainee and supervisor reciprocal identities with associated positioning and versions of three social discourses

Reciprocal identities	Three social discourses		
	Attribution of clinical authority	Ownership of medical knowledge	Measures of trainee competency
1. Junior learner and expert clinician	Supervisor manages, trainee assists	Knowledge is a resource that trainee seeks and supervisor dispenses	• Factual knowledge • Ability to collect and deliver a clinical presentation
2. Apprentice assistant and master coach	Trainee proposes or is coached to clinical conclusions that supervisor may or may not accept	Knowledge is a resource that supervisor has authority in	• Clinical reasoning • Ability to form credible diagnostic and management options
3. Co-clinicians	Trainee and supervisor share responsibility	Knowledge is a shared asset to be brought to a common purpose	• Functioning as a clinician
4. Lead clinician and advisor	Trainee manages, supervisor provides advice	Knowledge is a resource to be sourced	• Functioning as a lead clinician

FIGURE 5 Diagram of reciprocal trajectory of trainee and supervisor identities and associated actions and facilitators



second feature is congruence in the way the supervisor and trainee position and author each other. This is assisted by overt articulation about how they are authoring their relationship. The third feature is mutual respect and goodwill.

Figure 5 provides a visual representation of the trainee and supervisor actions and the features of their relationship that support the trajectory of the trainee towards 'lead clinician.'

Supervisors and trainees need training programme support to deliberately engage with the actions that achieve this trajectory. For supervisors to relinquish the position of 'lead clinician' to the trainee, they need to be enabled to recognise the position of power they hold; and, learn how this might be transferred in a staged way depending on the trainee readiness. For trainees to adopt the position of 'lead clinician,' they need to know the skills and knowledge required, and to have the means to achieve these. They also need to know how to claim the position of 'lead clinician.' This can be taught. This research also provides evidence in support of training structures that enable longitudinal supervisory relationships as change within a supervisory relationship requires time.

Our findings and theorising resonate with other work in this field. In an earlier companion paper, three patterns of supervisory encounter were identified: 'managing for'; 'managing through,' and 'managing with.'[16] These reflect the enactment of this paper's first three relational arrangements. Billett also identifies the relational interdependence of workplace learning and the importance of the invitation by the workplace to the trainee and their response to this.[28,29] Our finding that a trajectory of identity development is supported by congruence in positioning and mutual respect parallels Telio et al's[30] features of a strong educational alliance-mutual understanding, respect and goodwill. Our trajectory of competencies that are part of a trainee's readiness to progress is consistent with ideas of staged competency development and associated entrustment that feature in the competency-based education and the entrustment literature.[31,32] The importance of supervisory support and scaffolding as the trainee develops the identity of clinician aligns with Vygotsky's 'Zone of Proximal Development.'[12]

This research provides an exploration of the social dynamics of trainee identity development and the reciprocal nature of trainee and supervisor clinical identities. Holland et al[11] and Sullivan[13]

describe identity as a contested space. Our findings support this, indicating the importance of the supervisor inviting the trainee into the space of clinician when vacating that space themselves as an act of relinquishing power. To achieve this, we suggest that it is important for supervisors and trainees to find congruity in their authorship of their relationship by being explicit about these things and our model provides a language for this. What is not clear are the personal, relational and social factors that impact on this transfer of power. This is an important area for further research.

4.1 | Strengths and limitations

The strength of this work is that it gives a dynamic view of identity by using naturalistic data collected over time. This research was based on five supervisory relationships in a general practice internship programme in rural Victoria, Australia over a limited time. Though this enabled depth to our investigation, it meant that the research was highly contextual. However, we believe that supervision in this context has much in common with supervision in many other clinical contexts. Our use of Holland et al's[11] theoretical frame gives both rigour and relevance beyond the field of enquiry. Our research team brought different perspectives, which enhances the credibility of our findings. As qualitative research, we made interpretative judgements in deciding what data spoke to our questions, what that data was saying and what this meant for identity formation within a supervisory relationship. We see our interpretative direction with this data as one amongs many justifiable directions. Our emphasis was on the trainee-supervisor relationship rather than the trainee-patient relationship. The trainee-patient relationship is an important context for trainee identity development and warrants investigation in its own right.

5 | CONCLUSIONS

The formation of the identity of clinician by trainees in the context of the supervisory relationship is a reciprocal process. It requires invitation by the supervisor to the trainee into the space of clinician identity, a willingness for the supervisor to withdraw from that space and for the trainee to be willing and capable to assume the identity of clinician. As the more powerful person in the supervisory relationship, the supervisor has a critical role enabling the trainee to form the identity of clinician by providing the space, invitation and support. Congruence between the supervisor's positioning of the trainee and the trainee's authoring of themselves is important and is aided by explicit dialogue and common purpose.

AUTHOR CONTRIBUTIONS

JB and DN, together with a colleague and a researcher, conducted the initial project development and data collection. JB, DN, HR and TD undertook the analysis including the theorising and development of the conceptual framework. JB led the writing of the manuscript and HR, TD and DN contributed through iterative cycles of revision. All authors (JB, HR, TD and DN) approved the final version of the manuscript.

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CONFLICTS OF INTEREST

JB is a PhD candidate, a general practice supervisor, and was also employed by the training organisation that received the grant for this research and from where the supervisors and trainees were recruited. Funding for this project contributed to remuneration for DN as a senior academic consultant.

ETHICAL APPROVAL

This study was approved by Monash University Human Research Ethics Committee, project number CF14/2058 - 2014001069.

ORCID

James Brown https://orcid.org/0000-0002-7262-1629
Helen Reid https://orcid.org/0000-0001-8530-1766
Tim Dornan https://orcid.org/0000-0001-7830-0183
Debra Nestel https://orcid.org/0000-0003-2941-2298

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APPENDIX 1
PROMPT SHEETS FOR POST-SUPERVISORY ENCOUNTER REFLECTIONS

Trainee post-supervisory encounter prompt sheet

Introduction

After each recorded consultation, we would like you to make a short audiorecording as soon as possible. This should take just a couple of minutes.

Remember that the consultation has been recorded, so we do not need you to describe what happened

For each reflection please record your answers to the following:

1. Your name.
2. Date and approximate time of encounter.
3. Please consider the following questions:
   a. How do you think the supervision encounter went?
   b. What worked well with the supervision?
   c. What could have been improved in the supervision?
   d. How do you think the patient saw you as a doctor?
   e. Was there anything from the encounter, which made you feel that your practice was good?
   f. Was there anything that you think made you feel more developed as a doctor?
   g. Was there anything that left you questioning your practice?
   h. Was there anything that left you questioning your identity as a doctor?
4. Anything else you think important or significant?

Supervisor post-supervisory encounter prompt sheet

Introduction

After each recorded consultation, we would like you to make a short audiorecording as soon as possible. This should take just a couple of minutes.

Remember that the consultation has been recorded, so we do not need you to describe what happened. We are interested in how you decided on your response to the intern's practice and how you judge the outcome of the supervision.

For each reflection please record your answers to the following:

1. Your name.
2. Date and approximate time of encounter.
3. Please describe:
   a. How do you think the supervision went?
   b. What worked well in the supervision?
   c. What could have been improved in the supervision?
   d. Was there anything that you think was affirming for the intern in terms of advancing their practice?
   e. Was there anything that you think left the intern questioning their practice?
   f. Anything else you think important or significant?

Thank You.

APPENDIX 2

INTERVIEW TOPIC GUIDE EXAMPLES

Topic guide for trainee pre-placement interview

Preamble

Thanks [name of intern] for agreeing to participate in our research.

The aim of our research is to explore what happens during intern supervision, about which there has been little research. Through this, we hope to understand the impact on the intern, what works well and why. We are especially interested in the development of their professional identity. By this we mean the process by which interns assume the identity of a doctor over the period of your studies, training and practice.

Before we start the interview, I want to reiterate a couple of things regarding your consent to participate. Any information or data that we gather from you will be de-identified. This means that you, your input, and the practice will not be identified in reports, papers, education resources or any other outputs, which arise from this research. The interview questions are grouped around four categories, which are: *questions about your background and interests; questions regarding your expectations of your general practice placement*, *and questions regarding supervision and questions about your perceptions of professional identity development*. Any questions so far?

Background details

We'll start off talking about you as an intern …

1. Can you briefly tell me about your journey to becoming a doctor?
   a. *[Did you study straight from school, or come to medicine by way of another profession? Did you do your medical studies in a graduate-entry medical course?* Where did you study medicine? *How was it? When did you graduate?]*
2. What experiences of general practice did you have as a medical student?
3. What are your perceptions of living and practicing in a non-metropolitan or rural area?
4. What other placements have you done during your intern year? *[How have they been? Can you tell me about your experiences?]*
5. How have the other placements influenced how you see yourself as a doctor?

Expectations of the general practice placement

1. How are you feeling about this placement? [Did you choose to do this placement? Here?]
2. What are you expecting from the placement? *[If not answered under 6].*
3. What do you think your responsibilities will be in the placement?
4. What expectations do you have with respect to clinical decision making in the placement?
5. How confident do you feel about consulting with patients in this placement? What are you most confident about? What are you least confident about?

Supervision

I'd like to ask some questions about your thoughts on clinical supervision.

1. In your experience, what makes a good clinical supervisor?
   a. *What are the elements of supervision?*
   b. *What is their responsibility?*
   c. *Do you think there are specific personality or personal characteristics of a good supervisor or teacher?*
2. Have you found that there are some ways of learning, which are more effective for you?
   a. *In terms of retaining knowledge, feeling confidence in your new knowledge and practice, etc?*
   b. *In terms of skills, demonstration, learning by doing etc?*
3. What has supervision been like in your internship so far? Has it differed between different placements?
4. What expectations do you have of the supervision you will receive in this placement? Anything you are looking forward to? Anything you are concerned about?
5. When you were a medical student, what sort of supervision did you have in general practice?

Professional identity

Let's talk about you as a developing doctor …

1. Were there any stand out experiences during medical school that really helped you feel as though you were becoming a doctor?
2. Has the internship influenced how you see yourself as a doctor?
   a. *[Can you think of any examples of where you have really felt like a doctor? What happened? What factors contributed to this feeling? What else might contribute to it?]*
3. How did you feel as you entered your first placement as an intern? How are you feeling now?
4. Can you think of any examples where you felt you were a long way from being a doctor? Can you describe?
5. What sort of doctor do you want to be?
   a. *Thinking about the ideal role for you?*
   b. *How would you like people to see you-your peers and your patients?*

Any questions or comments?

Thank you.

Topic guide for supervisor pre-placement interview

Thanks [name of supervisor] for agreeing to participate in our research.

We want to find out what happens during intern supervision, about which there has been little research. Through this, we hope to understand the impact on the intern, what works well and why.

We are especially interested if (and how) the supervision influences the development of professional identity of interns. By this we mean the process by which individuals assume the identity of a doctor over the period of studies, training and practice (White et al[33]).

Before we start, I want to reiterate a couple of things regarding your consent to participate in this interview. Any information or data that we gather from your participation will be de-identified. This means that you, your input, and the practice will not be identifiable in reports, papers, education resources or any other outputs that arise from this research.

The interview questions are grouped around four categories, which are: *background about you as a GP and supervisor, the context in which you are a supervisor, intern supervision and your perceptions of professional identity development*. So, if you're happy to continue ….

Background

We'll start off talking about you as GP and supervisor …

1. As briefly as you can, tell me about your 'journey' to becoming a GP.
   a. *Optional probe: Did you study straight from school, or come to medicine by way of another profession, or study in a post-graduate medical course?*
2. So that means you've been a GP for how long …?
3. And how long have you been a supervisor?
4. What level of learners do you supervise in general practice (that is, medical students, interns, registrars, anyone else)?
5. What motivates you to take on supervision?
6. In a few sentences, how would you describe your approach to supervising?
7. So, what skills and qualities do you think a supervisor needs? Have you attended any workshops or other events that you've found useful in your role as supervisor? Do you have any formal qualification in teaching or supervision?

Context

The context in which you work is of interest, so the next couple of questions explore your perception of the practice and attitudes to supervision …

1. How would you describe the culture that exists in your practice?
   a. *Optional probes: Is it team oriented? Individualistic? Interdisciplinary? Supportive?*
2. You've explained your approach to supervising. How is supervision viewed more broadly within the practice?
   a. *Optional probes: Is it encouraged? Ongoing? Is there any interdisciplinary supervision for the interns? For example, allied health, nurses?*
3. What impact do you think the supervision has on the day-to-day running of the practice?
   a. *Optional probes: Anything specific about intern supervision?*

Intern supervision

Now we'll turn our attention specifically to intern supervision. The questions consider your supervision practice across the whole clinical placement as well as specific supervision events. I'll offer prompts as we go.

1. Can you describe how you supervise interns-first, across the clinical placement and second, in a typical day?
   a. *Optional probes: Can you talk me through what happens in a typical intern supervision consultation (wave consultation)?* What are the logistics for wave consulting? Do you think your approach to supervision of the intern changes over the course of the placement?
2. Do you orientate the intern to this supervision process? If so, how?
3. Now that you've described how intern supervision works. What do you see as being really important when supervising interns?
4. What are your expectations of interns with respect to supervision?
5. What do you hope interns will achieve over the clinical placement period?
6. What level of responsibility do you hope they achieve?
7. Thinking about a specific intern, can you describe supervision that worked really well? What made it successful? Why was it successful?
8. Again, thinking about a specific intern, can you describe supervision that was not a success? Why do you think it was not successful? What factors contributed to it not working?
9. When the intern calls you into the consulting room, what considerations do you have for your relationship with the patient? And the intern's relationship with the patient?
10. When you are participating in the consultation, what impact does the supervision have on the intern-patient relationship? How do you balance the need to get things right, without undermining the intern?
11. How do you introduce interns to patients (or is it the other way round)?
12. How do interns generally address you in general practice?
13. How do you address the interns during the consultation?
14. Is there anything else you would like to say about supervisor-intern relationship over the placement? Do you think it is important? If so, how do you build and maintain the relationship in the work environment? How do you handle conflict or differences?
15. Do you think the supervisory relationship influences intern engagement in general practice?
16. Have you noticed what happens to interns' perspectives on general practice across the placement?

Do you have any questions?

Thank you.

6.3. The research journey behind the 'Becoming a clinician' paper

This paper was based on a large body of work that was undertaken over an extended period of time. Two research teams were involved. The first team developed, and undertook, the initial research project over a period of eighteen months producing 31 hours of recorded data and concluding with a detailed research report(81). Subsequently, a second team was brought together for a deeper analysis that resulted in the above published paper. This second piece of work was undertaken over 2 ½ years. My supervisor, Debra Nestel, and I were part of both teams. I led both teams.

Over the life of this work, the questions, theoretical frameworks, and analytic methods were revised as my conceptualisation developed through engaging with the data. This iterative approach to research design is entirely consistent with a critical realist methodology. As discussed previously, with critical realist methodology, the research design and methods are chosen as they suit the object of the research and modified as understanding of the object develops with progression of the research(17). The purpose remained the same throughout the endeavour. This was to develop a conceptualisation of trainee identity formation within the GP supervisory relationship. This purpose was born out of the preceding project examining the clinical supervisory encounter(20).

The starting questions were, over the course of intern GP placements:

- What happens to supervision?
- What happens to the identity of the intern?
- What happens to the intern's responsibility in decision-making?

The first research team chose Communities of Practice Theory(3) as a theoretical framework. Template analysis(82) was used for coding and concept development using *Communities of Practice* constructs as *a priori* codes for abductive inference(2). This analysis became the basis of a report written from the project for the funding body(81). Subsequent to this I returned to the data and the analysis and engaged the second research team for the purpose of a deeper analysis and the writing of the paper.

The initial analysis brought to light three things which guided the second analysis. The first was that trainee identity development was a dynamic process and that understanding causality in this development was important. This led to revising the questions to a 'how' question: 'How does the clinical trainee's identity change over time within GP supervised practice?'. The second thing that became apparent was the importance of the 'doing' of the dialogue in relation to identity statements and development. This led to exploring discourse methods. The third thing that became apparent was the significance of the cultural framing of the social Discourses I identified in the

dialogue and issues of power evident in these Discourses. A particular moment of revelation was an observation by Tim Dornan, one of the members of the second team, that the identity the trainee adopted depended on the social position the supervisor offered the trainee.

I subsequently explored a range of theoretical and methodological perspectives for applying to the data. My main references became Holland et. al.'s Identity and Agency in Cultural Worlds(1) and Sullivan's Qualitative Data Analysis, Using a Dialogical Approach(8). I used Cultural Worlds theory as the main theoretical framework for the paper and a Dialogic Approach as the basis of my analytic methods. Sullivan also provided additional theoretical framing. I read Gee's work on Discourse analysis(83, 84) in depth, this was theoretically helpful and informed my analytic methods. In developing my thinking, I made forays into the ideas of Bourdieu(85), Bakhtin and Vygotsky(86) which Holland et al, Sullivan and Gee draw on substantially. The conceptual frameworks of all these writers are interconnected with a critical focus and a cultural perspective on identity development. These writers position language as the fundamental vehicle for cultural structures. Cultures use language to create symbolic representations of real phenomena and thereby provide the means for managing the world through organising concepts and meaning making. In this function, language is both liberating and constraining(1). Language is also the means of building and perpetuating structures of social power through hegemonic Discourses. Engaging with these theories, alongside immersing myself in the rich data of these supervisory interactions, was an exciting intellectual adventure. Both the data and the cultural theory helped the other to come alive. As Sullivan states, 'creative mixing [of data and theory] allows meaning to emerge as a joint creation between the theory and the data'(8).

This conceptual work informed the writing of the paper 'Becoming a clinician', however there were significant areas of meaning making and conceptual development that I undertook that are not included explicitly in the paper because of word count constraints. In addition, during the review process I was asked to reduce the content of the findings, particularly in regard to the exploration of the 'three social Discourses'. In the next section, I discuss further theoretical framing and conceptual development from this work that informs trainee identity development and the supervisory relationship. As well as using a further exploration from a cultural perspective, I also look at the data from a psychological perspective using Object Relations Theory(4).

6.4. Further conceptualisation from 'Becoming a clinician' research contributing to thesis

The above published paper(23) focused on the relational perspective of the trainee's identity development conceiving the identities of the trainee and supervisor identities as paired within the supervisory relationship with changes in their paired identity occurring in a reciprocal way. I used a Cultural worlds lens for developing this conception(1). I also considered individual factors that impacted on the trajectory of trainee identity development, particularly facilitatory attributes of both the trainee and the supervisor. These cultural and the individual contexts for identity development were used for the insights they provided into my main contextual focus, which was the supervisory relationship. In analysing the data, I explored both the cultural perspective and individual psychological perspective of the trainees' identity development to a depth that was not provided in the published paper. In this section I detail the conceptual findings and development from this deeper exploration in relation to trainee identity development.

Scholars from both cultural-historic and psychological schools of thinking have theorised on identity development identifying important causal properties from each of these dimensions that frame identity development(1, 8). Holland et. al. offer two contrasting metaphors for each of these two perspectives on identity development(1). The metaphor for the cultural perspective on identity is a glass bottle filled with fluid. Cultural determinants of identity provide the shape of the container into which psychological content is poured. The metaphor for the psychological perspective is a tree covered in leaves. The inherent psychological structures are the trunk and branches which provide the shape which is then covered in foliage that is culturally derived. In both perspectives the cultural and the psychological are important, the difference is that the cultural-historic perspective sees cultural structures as primary and the psychological perspective sees the psychological structures as primary. Both perspectives where fruitful for me in building a concept of trainee identity development and underlying causal structures and mechanisms.

In this section I detail interpretive findings from an abductive approach that involved applying first a cultural theoretical perspective and then a psychological theoretical perspective as interpretative lens to theorise on what was happening in the research data. I then draw on Billett's theorising on workplace learning to take a further conceptual step in theorising on trainee identity development at the interface of the cultural and the psychological and the operation of the supervisory relationship at this interface.

6.4.1. A cultural perspective

6.4.1.1. Social Discourses and identity

From a cultural worlds' perspective, identities are cultural constructions which are defined by social Discourses. Social Discourses are socio-historic framed talk that express and enact a particular social arrangement within a cultural world. They are about who we are and what we do in relation to each other(1, 8). Humans internalise social Discourses to become the language with which they understand the world(8). In the 'Becoming a clinician' paper, I explored social Discourses that related to being a trainee. These concerned: ownership of knowledge; clinical responsibility; and trainee competence. These Discourses positioned trainees in relation to senior clinicians in a hierarchical way(23). In the data, there were other social Discourses that related to being a general practitioner. These Discourses positioned general practitioners in relation to patients, other medical specialists and allied health practitioners.

The Discourse that positioned general practitioners in relation to patients was predominantly hierarchical. Patients were cast as needy and ignorant and the doctor cast as the holder of social assets and as beneficent:

> *He (the patient)'s read the product information, never a good thing, (Trainee D encounter 5)*

> *Yeah, but I think in any case the patients see that there's a knowledge differential and they're happy you know that they're here with a question that I have the knowledge to answer… (Trainee B interview 2)*

This hierarchical Discourse, that elevates doctors in relation to patients, has been identified by other researchers(87).

There was a version of this Discourse that was more egalitarian, positioning the patient and the doctor in a cooperative arrangement with a common focus on the patient's problem. However, this Discourse could also have a hierarchical patronising tone:

> *You know, patients ultimately are the masters of their own destiny. We can guide and advise but sometimes they choose not to take up our advice, which is okay if they're not doing any harm to themselves, (Supervisor B reflection 3)*

The Discourse that positioned general practitioners in relation to other medical specialists had two parts. The first part related to their style of practice. General practitioners were patient centred and non-hierarchical whereas other specialists were disease centred and hierarchical, particularly in the setting of hospital-based practice:

GPs really are empowerers of people. We provide information to patients that enables them to make decisions about their own health… (Supervisor E interview 1)

One of the major changes between hospital practice, and general practice… [is that the interns] are closer to their…"superiors". (Supervisor A interview 1)

The second part related to clinical authority. The trainees brought a Discourse that gave medical specialities authority in ownership of clinical knowledge. The supervisors spoke a counter Discourse.

Trainee	*You know, I don't think that's my job to, I think that's probably the Cardiologist's job to tinker*
Supervisor	*Yes and no. … I think, you know, we've got, we can do these things. Just because there's a Cardiologist, … (Pair B encounter 1)*

…it's okay to change medication and tweak things if we see it appropriate and not just to wait for the specialist to do that. (Supervisor B reflection 1)

The Discourse that positioned the general practitioner in relation to allied health practitioners was hierarchical with the general practitioner positioned above allied health practitioners:

Doctors want to ask doctors, you know. There's a hierarchy and I think it's appropriate to sometimes seek help from your own professional members rather than necessarily nursing… I think it's just fact. (Supervisor B interview 4)

…[in regards to an allied health worker] there's sort of a hierarchy, …I'm at the top of the food chain in that I'm the doctor and hold the keys to prescribing and so on. (Trainee B reflection 8)

These Discourses all gave shape to the social position of the general practitioner that the trainee might become. As a general practitioner, they would be beneficent to needy patients while adopting an ethos of patient enablement. In relationship to other medical specialists, they would be countering a cultural norm that specialists know best. They would also be less hierarchical in their behaviour. In relation to allied health practitioners, as medical practitioners they would be in a position of authority.

6.4.1.2. Cultural and social symbolic capital

Bourdieu's concepts of cultural and social symbolic capital are important for cultural theorists(1, 85). Cultural and social capital are social resources that individuals and groups are provided privileged

access to and which are a source of social power, worth and position(88). Cultural capital includes education, physical artefacts such as a stethoscope, and institutional privileges such as those that go with a qualification. Social capital includes social networks and group memberships(26). Cultural and social capital provide respect, position and resources that can be used to achieve one's purposes.

In the 'Becoming a clinician' paper I identified the acquisition of requisite knowledge, skills and disposition in becoming a general practitioner, all of which are cultural capital. There was also other cultural capital that the GP trainee was granted. This included the title 'doctor', prescribing rights and the material setting and items to identify them as 'doctor':

> *I obviously have my own office with a computer and a bed…You have your name on the door, you've got your own stamp…so the community perceive you, because you've got all those things, … 'okay this is the person is a doctor in their own right' (trainee E interview 2)*

Access to social capital was also evident in the data and was important in positioning the trainee:

> *In this placement I was, you know, I was one of the team, I was one of the GPs doing the GP sort of job (Trainee E interview 3)*

These areas of cultural and social capital were made available to trainees by their workplace and their supervisor and were necessary for trainees to develop an identity as a general practitioner within their workplace.

> *And I think the way that [supervisor] conducted himself and the sort of language he used around our consultations said you're the doctor, you've got to make the decisions, (trainee E interview 3)*

6.4.1.3. Talking the right talk

A key area of cultural capital is learning to 'talk the right talk'. A social identity is enacted through the language of practice(1, 8, 83). Learning to talk the right talk requires first learning what the talk is and then learning to talk the talk with confidence. Owning the talk with confidence is reflective of owning the identity that goes with the talk(1).

When a trainee was early in their trajectory of identity development as a clinician, they were awkward in their use of the talk of a clinician and used hedging words that declared their lack of ownership of the identity of a general practitioner:

> *Well, **probably**, having **sort** of recurrent falls wouldn't be helpful for the back and shoulder pains **I suppose**. (Trainee C encounter 7)*

Confidence came with practice and paralleled a clearer authorship by the trainee of themselves as a clinician. This was particularly evident with trainee E:

> *I felt empowered to speak to patients in a way that, you know, I felt like I knew what was going on…I really do feel more like a doctor …when you go to the bakery in [town] and you hold the door for somebody and they say oh thank you doctor. (Trainee E interview 3)*

As the trainee came to talk the talk of the clinician with confidence, they became the clinician.

6.4.1.4. Embodiment

Bourdieu identifies embodiment as a process of acquiring cultural capital. This is when informational knowledge, skills and disposition become part of an individual's personhood or 'habitus'. Holland et. al. call this 'habituation' which is when an identity becomes stabilised and the authorial stance becomes automatic and unconscious(1). This concept of embodiment gives language for the mechanism of developing confidence in knowing that parallels becoming the clinician. When the trainee comes to use the knowledge of the clinician and talk the talk with confidence, they have embodied these things and become the clinician. In embodying this knowledge, the identity of the trainee as a clinician has stabilised(8).

6.4.1.5. Embodiment and identity development: Imagining, play and scaffolding

Embodiment in itself is a process. The trainees in our study were granted the cultural capital of the title 'doctor' however they exhibited awkwardness with the title when the knowledge, skills, and disposition of being a doctor was not yet embodied.

> *I don't like people to call me doctor. I don't like the nurses to call me doctor. I don't like the patients to call me doctor. I would never put doctor on my aeroplane ticket or my hotel booking…I feel a bit pretentious using the term…I'm not sure I've earned it maybe.(Trainee B interview 1)*

> *… sometimes, you fake it until you make it almost (Trainee A interview 1)*

Cultural theorists identify socially mediated imagining, play and scaffolding as mechanisms that lead to the habituation or embodiment required to enact an identity(1, 86). Imagining is visioning what it would be like to hold an identity, play is pretending to have an identity before actually being in that position, and scaffolding is support by a senior in adopting an identity(3, 52, 86).

Imagining, play and supportive scaffolding were evident in our data and exhibited in parallel with the trajectory of the trainee identity development. First the trainee imagined being the clinician using acquired social Discourses:

I'd like to see myself as, you know, the family doctor that's somebody who can look after everybody in the family from the cradle to the grave… (Trainee D interview 1)

Next the trainee played as if they were the clinician until the supervisor arrived and took over in the junior learner/expert clinician relational arrangement:

Rather than me having to make decisions about management more like, suggestions of what I think I would do. (Trainee C week 7 interview)

…you know, we have very hierarchical in that, you know, he's the GP and I'm the junior. (Trainee B interview 2)

Next the trainee played as if they were the clinician while the supervisor prompted them to a supervisor determined conclusion in the apprentice assistant/master coach relational arrangement:

Supervisor	*Do we get an x-ray?*
Trainee	*I think if we're doing an x-ray, we should do a chest x-ray as well.*
Supervisor	*Correct. (Pair B encounter 1)*

Finally, the trainee was able to author themselves as clinician with the supervisor providing support and protection. Here trainee E reflects on how their supervisor supported and protected them in their efforts to author themselves as clinician:

…being entrusted to have those tough discussions and those tough conversations, but being supported in a way to do it where I felt comfortable, and I felt I could do it (trainee E interview 2)

From a critical realism perspective, it is valuable for trainees and supervisors to understand this staged progression of imagination, play and supervisor support. Understanding this enables them to engage with these activities deliberately depending on the level of trainee development and the clinical context. This requires trainees and supervisors to know what they are doing and how to do it. In the 'Supervisory Encounter' paper, I identified things that the trainee and supervisor could each do to execute a particular style of supervisory encounter and therefore different levels of play and supervisor support. It is also helpful for the trainee and supervisor to have a common understanding of the level of supervisory support the trainee needs in a particular situation:

…by the end of it, [supervisor] and I had built an understanding of what cases I could manage confidently and what I would need more input in. (Trainee E interview 4)

This idea of staged progression in identity development in the context of a supervisory relationship aligns with the findings of others. Jarvis-Selinger et. al. identified these transitions as a series of crisis

points at which the supervisor plays an important role in providing support and safety(89). Walters et al identified configurations of trainee/supervisor/patient interactions that progressed in a staged way as the supervisory relationship developed(90). Their expert-centric configuration aligns with my learner/expert configuration; their doctor-orchestrator configuration aligns with my apprentice/coach configuration; and, their doctor-advisor configuration aligns with my advisor/lead clinician configuration.

6.4.1.6. Identity of clinician as a contested social space

Gee identifies that the possession of social goods is deeply consequential and is the basis of the politics of Discourse where there are winners and losers(83). Holland et. al. describe identities as 'hard won standpoints' and the space of authoring often a contested space(1). It was clear in the data that the position of the clinician could be a contested social space. The supervisor could claim this for themselves, or could invite the trainee into it while they vacated it. Amongst the pairs studied, the supervisor in our extreme case clearly stood back from contesting the social space of lead clinician and thereby enabled the trainee to claim the space and identity for themselves:

> *We encourage them all the time to make decisions and make decisions about management and investigation…I'll often say to them, look, you're the doctor and you make this decision. (supervisor E interview 4)*

In another pair, the supervisor held onto the position of lead clinician quite forcefully and prevented the trainee from taking the social space:

> In this interaction the supervisor sidelines the trainee ignoring their suggested diagnostic assessment:
>
> *Trainee* *…it would be my guess as to this right abdominal pain, it could be related to the diarrhoea but then sort of …*
>
> *Supervisor* *[To the patient] So this pain has only come on while you've had this diarrhoea is it? (Pair C encounter 5)*
>
> He often claimed the patient's as his own:
>
> *A long-term patient of mine (supervisor C reflection 4)*

In another pair, the trainee was assertive in claiming the space of lead clinician even as the supervisor sought to retain it himself. This ended in conflict which came to a head in encounter 7. The outcome was a damaged relationship:

I'm finding with [trainee] that I sometimes feel like there's almost a battle for the reins in that at times when I do step in and start to, well, take what I think to be an appropriate leading role, [trainee] will be fairly keen to get them back. (Supervisor D reflection 2)

I get mixed messages all of the time and it would leave me questioning whether I would want to come back and work at this practice … I find his supervision inconsistent. (Trainee D reflection 7)

Enabling a dialogue about the potential for contest between the supervisor and trainee for the social space of being 'the patient's primary doctor' may provide a means for minimising conflict. Faculty development for supervisors in this area may support supervisors with gaining the insight necessary to choose to relinquish control within this contested space so that the trainee can occupy it.

6.4.2. A psychological perspective

The subjective self is a key concept in both Holland et al's(1) and Sullivan's(8) theorising on identity. Sullivan views humans as born needy and that these needs lead to the development of the subjective self through their interaction with social processes(8). Bhaskar, from a critical realist perspective, identifies our primary needs as the need to address alienation and the need to achieve self-determination(38). Miller, from a Rhetoric Genre perspective, identifies our primary needs as the need to address separateness, the need to address danger, and the need to address ignorance(7). The mechanism by which the subjective self is developed from the interaction of inherent needs with the social is by embodiment, as discussed above, which Holland et al call subjectification. This is when the individual comes to internalise cultural capital, including the right talk and social Discourses, to become part of who they subjectively are.

In exploring the psychological perspective of identity development, I chose to use the theoretical lens of the psychodynamic theory of Object Relations(4, 27, 34, 91) because it has a parallel conception of internalising the social for constructing the subjective. Object Relations theory understands the self, or internal identity, to be constructed of internal psychic objects which are derived from internalised social experiences of relationship, particularly with significant others.

Object Relations theory places the need for relationship with others as the primary human psychological need. Through relationship we achieve both selfhood and the means of addressing anxiety. Through relationship we also meet the needs of meaning making and creation(4). These psychological needs align with Bhaskar's and Miller's primary needs as discussed above. Addressing alienation and separateness is about the need for relationship, addressing danger is about the need

to assuage anxiety, and addressing ignorance and achieving self-determination is about meaning making and creation.

I now first give examples from the data of the trainees' need for relationship, creativity and self-determination, and of the trainee internalising their supervisory relationships as they develop their identity as a GP. I then discuss the implications of this for training.

6.4.2.1. The need for relationship and the need for creativity and self-determination

The need for relationship was evident in the data, with the lack of relationship and the fear of being deemed a failure a source of significant anxiety:

> *I felt very isolated, you know…I just doubted my own abilities I suppose….you wake up at three AM thinking, oh should I have sent that patient home? (Trainee B interview 1)*

It was evident in the trainee's efforts to actively seek and build relationship with their supervisor and the workplace community:

> *I'm eager to please my supervisor. (Trainee B reflection 2)*

> *I definitely made an effort within the work place. I baked a cake every week. (Trainee B interview 4)*

The need for creativity and self-determination is the need for agency and was also evident in the data. Sometimes the supervisory relationship could compromise the need for self-determination:

> *It was really quite disrespectful…of me…it made me feel like a child…Put me in that sort of parent/child relationship, sort of territory… I'm an adult, you know. I just don't appreciate being spoken to, like… (Trainee D interview 3)*

Managing this conflict was a concern for trainees:

> *…(It's a) balance between catering to your supervisors' expectations and what they would do…versus forming my, you know, rationale… (Trainee D interview 1)*

Usually the need for relationship took precedence over the need for self-determination. When the trainee had a difference of opinion to their supervisor they almost always chose not to press the point.

> *[Supervisor] didn't adjust it and I would have. I mean, I dose Warfarin all the time in the hospital. (Trainee C reflection 2)*

6.4.2.2. The process of internal object formation

Trainees internalised seniors as objects that represented the ideal or the antithesis of the ideal:

> *[A supervisor], who I worked for here will go the extra mile…an extra mile kind of doctor is …how I'd like to be...*
>
> and
>
> *I had [another] supervisor last year…who absolutely grilled me every week; and it was, I mean it's horrible… I don't think that's an optimal way to learn (Trainee E interview 1)*

They also internalised and re-used the language and perspectives of their supervisors. As quoted in the 'Becoming a clinician' paper:

> Supervisor E said in a joint reflection:
> *The role of a GP isn't as director of patients, it's really to be empowerer of patients, you know, try to help them identify what their needs are. (Supervisor E, joint reflection 4)*
>
> Trainee E adopts the supervisor's language and perspective four weeks later:
> *If you can empower somebody (the patient) to say, I have these health problems…*
>
> *(Trainee E, reflection 8)*

6.4.2.3. The implications of trainee psychological needs and their internalisation of relationship experiences.

The needs for relationship, creativity and self-determination are important considerations in the engagement of the trainee with the workplace. A threat to the means of meeting a need leads to fear. The perception that someone else's agency has led to that threat leads to anger(4). Both these emotional reactions were evident in quotes given above. Fear undermines confidence and anger undermines engagement. It is therefore incumbent on the supervisor and the workplace to act to ensure that the trainee's needs for relationship, and for self-determination and creativity, are met.

The mechanism of internalising the perspectives of significant others in the workplace means that for the supervisor to be purposeful in this space, they need to be conscious that their behaviour and interaction with the trainee will impact on the general practitioner that the trainee becomes. This may mean a modification of behaviour or being more explicit in expressing their perspectives and values held so that the trainee's internalisation of these is done in a more informed and conscious way.

6.4.3. The interface between the cultural and the personal

Both the cultural and the psychological are clearly key dimensions or strata(2.2) that have a causal relationship with identity development. The interface between these two dimensions is also important.

6.4.3.1. Billett's theory of workplace pedagogy

Billett offers useful conceptual framing for the interface between the cultural and the psychological in the workplace(5, 52, 92, 93). He conceptualises this as invitation, personal epistemology and engagement. The workplace offers an invitation to the trainee which comes with a range of affordances and artefacts, cultural and social capital. The nature and the content of the invitation is determined by the cultural-historic context of the workplace. The trainee brings their personal epistemology which is their way of knowing and learning arising from their individual needs, experiences, attitudes and capabilities. Engagement between the trainee and the workplace depends on the interaction between the trainee's personal epistemology and the workplace invitation. This is an interactional space where there is the capacity for agency by both the trainee and those in the workplace. The outcome of the engagement has consequences for both the trainee and the workplace both of which change as a consequence(94).

The implication of this is that to support the GP trainee's identity formation, it is important to consider all of: the cultural context of the workplace; the invitation the workplace gives to the trainee; the cultural and social capital that the workplace offers the trainee; the personal epistemology of the trainee; the means and process of the engagement between the workplace and the trainee; and, the change that both the workplace and the trainee undergo as they engage.

6.4.3.2. The supervisory relationship and the interface between the cultural and the personal

The supervisory relationship sits at the interface between the workplace and the trainee. The supervisor offers a means of meeting the trainee's needs of relationship and self-determination. They also provide a conduit into other relationships within the workplace. The supervisor is also a vehicle for the cultural and social capital that the workplace may offer to the trainee. The supervisor is an important source of the social Discourses of the workplace. The way that the supervisor interacts with the trainee is an important determinant of the position that the trainee is given and future identity they are offered. The supervisor has the capacity to offer guidance and scaffolding for the trainee as they engage with their new roles and develop a new identity. The person of the supervisor can become a significant psychic object for the trainee to internalise in their identity development in becoming a general practitioner. These considerations give conceptual depth to understanding the place of the supervisory relationship in trainee identity development. They also

provide direction for choices that can be made by trainees, supervisors and training practices in the way that they engage with each other. I explore these considerations further in the integrative chapter (8.5.1).

7. Informing practice

7.1. Introduction: the theory and practice of general practice supervision

The final publication in this thesis is a peer reviewed book chapter I wrote for a major reference work 'Clinical Education for the Health Professions: Theory and Practice' published by Springer Nature. This chapter is for GP supervisors, trainees and training organisations. It takes the perspectives of three theories of work-based learning and applies these to the task of GP supervision. The theories used are Activity Theory(95), Communities of Practice theory(3) and Billett's Workplace Pedagogy(5, 52). The aim of this work is to knowledge build by bridging theory and practice. The purpose is to inform GP supervisors, GP trainees, the GP workplace and GP training organisations with key actions identified. This is to support these stakeholders to be more agentic in enabling effective supervision.

This chapter draws on the other work presented in this thesis as well as complementary research I undertook during my PhD candidature as part of the program of research I was leading (Appendix C).

7.2. Paper 6: Supervision in General Practice Settings

In Clinical Education for the Health Professions: Theory and Practice(24)

Supervision in General Practice Settings

James Brown and Susan Wearne

Contents

J. Brown (✉)
Royal Australian College of General Practice, East Melbourne, VIC, Australia

Gippsland Medical School, Monash University, Churchill, VIC, Australia
e-mail: jamesboyerbrown@gmail.com

S. Wearne
Health Workforce Division, Commonwealth Department of Health, Canberra, ACT, Australia

Academic Unit of General Practice, Australian National University, Canberra, ACT, Australia
e-mail: susan.wearne@health.gov.au

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Abstract

Supervision in the general practice (GP) setting is work-based education. This chapter draws on three social theories of work-based education to provide a focus for exploring the tasks of GP supervised practice. Based on this, we consider the roles and needs of the trainee, the supervisor, and the training practice. We also consider how training organizations that oversee the whole of GP training delivery might support the GP supervisor. We view the trainee as on a trajectory towards becoming a fully credentialed clinician with the associated responsibilities. This requires a change over time in the way that the trainee is identified and identifies themselves. The way that the trainee engages with the work-based training environment is crucial for how this happens. We view the supervisor as a key facilitator for enabling the trainee to effectively and safely engage with the training practice working community and its work. The supervisor also has an important role in scaffolding the trainee's development. The attitude of the supervisor and the nature of the supervisory relationship are key for these activities. The culture of the training practice and the way that the training practice engages with the trainee also matter. Functioning well, training practices can benefit from the trainee as both a contributor to the work and as a resource for keeping the training practice up to date. Finally, the support provided to supervisors by the broader training organization is a significant determinant for the way the supervisor engages with their supervisory role.

Keywords

General practice · Work-based learning · Supervision · Training · Theory and practice

Introduction

This chapter is about clinical education in the context of supervision in general practice (GP). It is intended as a resource for trainees, supervisors, and faculty who are teaching and learning in this context. The content draws on relevant theoretical models, research, scholarly opinion, and the authors' practical experience.

By "general practice" we refer to the delivery of primary medical care overseen by a primary care physician in the community context (Greenhalgh 2007). In some contexts, this is referred to as "family medicine." By "supervision," we draw on Wearne et al.'s definition of the GP supervisor:

> A GP supervisor is a general practitioner who establishes and maintains an educational alliance that supports the clinical, educational and personal development of a resident. (Wearne et al. 2012)

Table 1 Levels of supervision

Level 1	(a) Supervisor is present as the trainee consults overseeing all consultations
	(b) Supervisor joins all trainee consultations for the consultation conclusion
Level 2	Supervisor is called in as required and all consultations are reviewed at the end of each clinical session
Level 3	(a) Supervisor is available to attend as required by the trainee and monitors trainee practice
	(b) Supervisor is available for advice by phone
Level 4	Mentorship and loose oversight

Both authors are general practitioner supervisors and educational researchers in Australia. James Brown also oversees the professional development program for supervisors under a GP training organization. Susan Wearne also works as a senior medical adviser for the Australian Department of Health.

In Australia, GP is mostly delivered by medically trained generalists working in private group practices that provide GP medical consultations together with a range of nursing and allied health services. These practices receive funding to host medical students and GP trainees. Senior medical students and GP trainees learn as they contribute to the work of patient care by attending patients themselves under varying levels of supervision. A nomenclature of levels of supervision is provided in Table 1 (Medical Board of Australia 2017). This supervision is provided by a fully qualified general practitioner who is usually on-site attending to their own patients.

In Australia, universities oversee the placement and training of medical students and GP regional training organizations oversee the placement and training of postgraduate GP trainees. GP trainees have educational and supervision requirements based on their stage of training. Qualification (fellowship) as a general practitioner requires at least 4 years of postgraduate experience. For postgraduate training, practices and supervisors are accredited by one or both of the two GP professional colleges, Australian College of Rural and Remote Medicine and Royal Australian College of General Practice. Training standards are set by those colleges. Training and support is also provided for supervisors by regional training organizations. In other countries, universities, professional colleges, or training organizations may oversee postgraduate training and between 2 and 6 years postgraduate experience is required (Gupta and Hays 2016).

In the GP context, supervision is principally about patient safety and enabling the trainee to contribute to the work of patient care (Morrison et al. 2015). Education for the student and trainee is an important secondary agenda and provides the means for both trainee development and for work-place maintenance and evolution. Learning within supervision in GP is work-based education. In most settings, the supervisory relationship is over an extended period of time.

This chapter is divided into three sections. The first introduces three applicable work-based learning theoretical frameworks and describes a conceptualization of the learning trajectory of supervised trainees in GP. The second section examines seven core supervisory activities and draws on the theoretical frameworks, relevant

research, and the experience of the authors to recommend initiatives that supervisors, trainees, and the GP practice community might take to support learning. The third section examines the role of training organizations for supporting supervisors in their work of trainee education.

GP as a Training Environment, Trainee Progression and Theoretical Models

Work-based learning in GP under supervision is the main learning context for becoming a general practitioner (Gupta and Hays 2016). In this setting, trainees from medical student through to senior pre-fellowship trainee, learn as they contribute to the work of GP patient care.

In this section, first we consider three social learning theories that give different useful viewpoints for understanding work-place learning in GP; then we draw on these for the concept of a trajectory taken by the trainee towards becoming a fully credentialed general practitioner. We also look at the changing place of supervision depending on where the trainee is on the trajectory.

Three Theoretical Perspectives on GP Work-Based Learning

Theories of work-based learning are helpful for understanding supervision in general practice. While a detailed exploration of these theories is beyond the scope of this chapter, we introduce three prominent theories of work-based learning to inform the discussion. These theories are: Engestrom's Activity Theory (Engeström et al. 1999), Wenger's Communities of Practice (Wenger 1998), and Billett's theory of work-place pedagogy (Billett 2002) and personal epistemologies (Billett 2009). These theories view work-place learning as a social activity framed around four things: the work that is done; the community of workers who undertake the work; the learner; and, the resources and rules that the work-place uses to achieve its work.

Engestrom's Activity Theory takes the shared work object as its starting point. The concept is that work activities are defined by a common object and motive shared by a work team. In GP, this common object and motive is to create a plan for the patient (Brown et al. 2018). An activity system is a set of linked actions in a particular context bounded by a set of rules to achieve the object. Important in achieving the object is the use of artifacts which are resources that are both physical, such as a computer, and nonphysical, such as knowledge. Learning in an activity system is at two levels. The first is learning by the participants in the activity system in gaining access to the tools to achieve the object, particularly the tools of knowing. The second is learning by the system as a whole as it addresses the need to change over time so that it continues to achieve its object. This change may involve changing the conception of the object or be driven by the object itself, that is, the plan for the patient and the patient themself. For a trainee coming into the system of a GP clinic, they will need to re-learn the object of the clinical practice, gain access to new tools, and learn new knowledge including an understanding of the rules that

govern the clinic and GP more broadly. The community itself will also need to change in order to effectively incorporate the trainee as a contributor to achieving the object.

Wenger's Community of Practice theory starts with the community of practice engaged in a common endeavor. Learning is principally about the longevity of the community of practice through inducting and enabling the development of newcomers and with this, adapting the community itself so that it remains relevant to a changing task. Learning in a GP from this perspective is about bringing newcomers into the clinic community to be members of that community and to be part of ensuring that the clinic community remains current and has longevity. A newcomer engages on a trajectory which moves them from the periphery of the community towards becoming an integral part of that community. This trajectory of changing identity is determined by their engagement with the community of practice and the meaning that they come to own in this. This means that the trainee in GP develops an identity that is defined by their participation and mutual engagement with the practice community within which they are working and training, and the meaning that the trainee and the practice community make of the trainee's participation.

Billett's work-place pedagogy and personal epistemologies foregrounds the interface between the work-place and its trainee. On the one side, the work-place is characterized by the affordances or resources and privileges it does or doesn't offer the trainee including the degree and manner of invitation to the trainee. On the other side, the trainee engages with and embraces whatever it is that the work-place offers depending on the trainee's personal characteristics, motives, and the meaning that the work has for them. Learning for the trainee in GP then is about the trainee gaining whatever they need to contribute to the work of the practice which depends on what they offered and on their personal orientation.

All three theoretical frameworks view the trainee and supervisor as culturally bound in the education that they engage in. The trainee and supervisor, however, within the bounds of their cultural context, have agency. That is, they have the capacity to be purposeful in their choices and this has an impact on learning and development.

Bringing these three theoretical perspectives together offers important concepts for framing supervision in GP (Table 2). These theories also point to imperatives for: the object of the work – patient care; the community of practice – maintaining its capacity to get the work done and enabling the trainee to be an effective contributor to the work; and the trainee – their engagement and development.

From this, we can generate an overarching list of seven imperatives for supervision of trainees in GP:

1. Ensuring patient safety
2. Enabling the practice to get the work done
3. Keeping work practices up to date
4. Enabling the trainee to contribute effectively to the work of the practice
5. Engaging the trainee effectively
6. Keeping the trainee safe
7. Scaffolding the trainee's development

Table 2 Selected theoretical concepts from work-based learning theories

Concept	Concept in the context of GP training
Object (of an activity) (Engeström et al. 1999)	The purpose of an activity. In GP patient care, this is usually to craft a plan with the patient. In trainee education, this is usually to enable them to contribute to care
Artifacts (Engeström et al. 1999)	The tools to achieve an object. In GP these are things such as an ECG, clinical software, and clinical knowledge used to achieve a plan for the patient
Rules (Engeström et al. 1999)	The explicit and implicit procedures and ways of doing things that the GP clinic working community works within
Community of practice (Wenger 1998)	The group of individuals within the GP clinic working to provide GP clinical care for the clinic's patients
Participation and mutual engagement	The engagement of the trainee and the GP clinic's working community in providing patient care
Trajectory of identity (Wenger 1998)	Over time, moving on a trajectory from the position of newcomer to the position of an experienced contributing member of the clinic community. There is also the trajectory from medical student to senior clinician
Affordances (Billett 2002)	Privileged access given to the trainee by the clinic working community to the resources it uses to achieve patient care
Personal epistemology (Billett 2009)	A trainee's specific stance towards learning and engaging with the work of the clinic based on their individual history and beliefs

Trainee Trajectories and Supervision in GP

All three theoretical models identify learning as a process of change for the learner, the working community, and the working community's systems.

Wenger's theory describes the change for the learner as a trajectory (Wenger 1998). This is a trajectory of increasing engagement in a working community and has three components: (1) a developing repertoire of competencies; (2) increasing ownership of meaning; and, (3) increasing privilege and accountability. For the trainee in GP, this equates to: (1) increasing GP relevant knowledge and skills; (2) developing disposition and identity (Cruess et al. 2016) of a general practitioner; and (3) increasing independence with decreasing level of supervision (Yardley et al. 2012).

To explore this trainee trajectory in GP, we examine three levels of trainee and their typical development with regards to: knowledge and skills, disposition and identity as a GP, and their required level of supervision.

The Senior Medical Student in GP

Senior medical students will typically enter the GP environment equipped with: basic clinical information knowledge; the skills to undertake a history and examination; and, the ability to present their findings to others. Their clinical reasoning skills are usually not well developed. The senior medical student's identity is still that of a student but also as a nascent clinician.

There are many areas of informational knowledge these students won't know that are needed in GP contexts. This may be new information particular to the GP context; or, it may be new application of information learned elsewhere. The student's lack of rational clinical thinking skills and credentialing limits their clinical engagement to doing things on the supervisor's behalf such as collecting information, writing notes, and organizing investigations and treatment. Level-1 supervision is required. At this stage of their trajectory, the learning tasks are to: gain the necessary informational knowledge; understand its application; and, to develop the clinical reasoning skills to be able to craft credible differential diagnoses and management options. The knowledge demands of the work drive student information learning as gaps in their knowledge are made apparent. Recognizing the need for clinical reasoning skills and the means of gaining these depends on a supervisor engaging the student in the process of making diagnostic and management conclusions and showing them how to derive these from the patient clinical information the student gathers. Being enabled to contribute to clinical decisions is important for the student to begin to conceive of themselves as a clinician.

The Postgraduate Junior GP Trainee

The junior postgraduate trainee typically will have accumulated sufficient clinical knowledge to function as a junior doctor in the hospital setting. The junior trainee will usually have developed the core clinical reasoning skills required to build basic diagnostic assessments and management plans (Bearman et al. 2011). The junior GP trainee can be expected to have the identity of junior clinician and perhaps also that of nascent general practitioner. Not long after commencing a placement in the GP work place, they will be expected to be attending patients themselves under level 2 or level 3 supervision (Ingham et al. 2019). They too will be confronted by an information knowledge deficit. GP has its own spectrum of clinical presentations and issues; and, in community based medicine, appropriate management for a given condition can be different to best-practice in a hospital setting. There are clinical skills that the junior trainee will need to build in order to address patient needs in the GP setting. These include: learning to establish rapport and common agendas with patients; dealing with the undiagnosable; and navigating complex problems at the interface of the biological, psychological, and social (Greenhalgh 2007). They also need to learn the disposition of the general practitioner; particularly that of a patient-centered approach (McWhinney and Freeman 2009). This stage of the trainee's trajectory in GP can be highly stressful as they find themselves in a position of responsibility for which they are inadequately equipped (Morrison et al. 2015).

For the junior postgraduate trainee, the supervisor is required: for ensuring the trainee is allocated clinical responsibility that is commensurate with their ability; to be a resource for addressing gaps in the trainee's knowledge and skills; for clinical back up and oversight to ensure trainee and patient safety (Morrison et al. 2015); and, for being a senior mentor for supporting the trainee identity formation.

The Pre-fellowship GP Trainee

The pre-fellowship GP trainee conducts most of their consultations independently. Their knowledge and skill sets are sufficient for most circumstances. Their learning is a refining of these and preparing for practice following full credentialing as a general practitioner. This requires assuming the identity of general practitioner where they project themselves confidently in the role of general practitioner and receive recognition as such by both the patient and professional communities. They need to learn how to practice without supervision. This means learning to evaluate and develop their own clinical practice, developing referral networks and practices, and developing professional support networks. For the senior postgraduate trainee, the supervisor's role becomes primarily a mentoring one.

The Tasks of Supervision in GP

In this section, we build on the theoretical principles of learning under supervision and the concept of the trainee trajectory in general practice to examine the activities of the GP supervision. We identify these activities as:

1. Engaging the trainee in the working community
2. Conducting the ad hoc supervisory call-in
3. Teaching
4. Mentorship
5. Monitoring and feedback
6. Assessment
7. Facilitating an understanding of good practice

We draw on relevant research and the experience of the authors to provide recommended initiatives that supervisors, trainees, and the GP practice community might take support learning.

Engaging the Trainee in the Working Community

Consistent with the theoretical frameworks for work-place learning, engagement of the trainee in the GP work community is fundamental to achieving the imperatives of GP trainee supervision. The objective is for the trainee to be engaged and participating in the work-place in a way that contributes to the work while protecting patient and trainee safety and for the trainee to find meaning in being part of the working community. Key determinants of how this happens are the overall culture of the work-place (Wiener-Ogilvie et al. 2014), the attitude of the supervisor (Pront et al. 2016), and the response of the trainee (Billett 2009). A recent review of GP supervision literature identified key elements of the culture of the GP work-place for enabling trainee engagement as inclusivity and a flat hierarchy (Jackson et al. 2019). Cottrell et al. identified availability and approachability as being key supervisor

attributes (Cottrell et al. 2002). In achieving engagement of the trainee in the GP work community, there are important practical tasks for each of the supervisor, trainee, and the work-place community; and important resources to achieve these.

Orientation of the new trainee to the environment is foundational to engaging the trainee in the clinic working community and introducing them to the procedures and the resources it uses for providing patient care. This warrants significant investment of time and effort as so much of what follows depends on this. Ideally orientation should involve a staged engagement of the trainee with the work; as it is by engaging in the work, that meaning can be made of the work environment. In the GP setting, there are four discrete physical work areas to become familiar with. These are: the consulting room, the treatment area, the reception area, and the community external to the clinic premises including patients' homes, residential care, and GP-based hospital care. The trainee needs time of orientation in each of these work areas where they are introduced to the tasks, procedures, and resources as they guided in contributing to the activity. In the consulting room they might sit in with the supervisor and take the clinical notes; in the treatment area there will be patient treatments that they can contribute to as they are shown the procedures and facilities; in the reception area they can receive patients under the oversight of a receptionist.

There needs to be physical resources and set procedures to support the orientation itself. We recommend two physical resources. The first is an orientation checklist; Table 3 provides an example of areas of orientation that such a checklist might be organized around. The second is a summary of organizational procedures and frameworks that can be used by the trainee for making sense of the environment during orientation and later as a reference.

Material recognition of the trainee in the work environment enhances a sense of place and engagement for the trainee. These might include a designated consulting room or computer station. Signage and information fliers, that include the trainee, add to the sense of welcome and belonging.

The supervisor needs allocated time to develop a common vision with the trainee on the objectives and planned activities of the placement, ensuring that the aspirations and requirements of the trainee, the work-place, and the overseeing educational institution are addressed. This discussion needs to include clear delineation of the safety structures in place for when the trainee finds themselves in a situation beyond their capacity to manage on their own.

Engaging the trainee on a social level is important. This includes introducing and inviting them to the social component of the work-place including informal tea-room gatherings and organized social events. It is also valuable for the supervisor and trainee to spend time outside of the work-place for acquainting each with the other in a more informal way.

The trainee themselves is a key player in engaging with the working community. This means responding positively to invitations of inclusion by the practice community and the supervisor and reciprocating this with an interest in the people within the practice and the work that they do.

Key actions for engaging the trainee in the working community are summarised in Table 4.

Table 3 Important areas of orientation

Physical facilities
Within the clinic
External to the clinic
Social connections
Who's who
Informal social activities and places – e.g., lunches and tea room
Formal social events
Clinical consultation resources
Within the consulting room
External to the consulting room
Policies and procedures
Routine activities and processes
Policy manuals
Employment terms
Communication
Internal
External
Safety
Patient safety
Trainee safety
Accessing support
Emergency procedures
Education
Reference resources
Areas of expertise held by members of the team
Scheduled educational activities

Table 4 Summarises the key actions for the supervisor, the trainee, and the practice community in supporting the trainee's engagement in the working community

For the supervisor
Be available and approachable
Prioritize developing a relationship with the trainee
Schedule time with the trainee
Provide clear guidelines on when and how to call for assistance
For the trainee
Engage with the people within the practice community and their work
Respond positively to efforts by the practice community to engage with you
For the practice community
Orientate of the trainee to the procedures and resources of the work through guided engagement of the trainee in tasks with others in each work area
Provide
An orientation checklist
A reference manual of organizational procedures
A trainee designated work space, signage, and information fliers
Actively invite and include the trainee into both the practice work social environments

Conducting the Ad Hoc Supervisory Call-In

The trainee in GP will be attending patients under a level of supervision that should match their competency and experience (Table 1). Fundamental to working under supervision is for the trainee to be able to call on their supervisor for immediate help with the patient that they are attending at the time. We call this the "ad hoc supervisory call-in." We have conducted two in depth investigations into "ad hoc supervisory call-ins" in GP and identified the importance of this occurrence for: enabling the trainee to complete the consultation; protection of patient and trainee safety; learning; and, for trainee identity formation (Morrison et al. 2015; Brown et al. 2018; Clement et al. 2016).

There are several determinants that need to be in place to ensure that the "ad hoc supervisory call-in" occurs when it is needed. The first is that the trainee needs to know that they need help. The second is that the trainee needs to feel safe in calling in the supervisor; this requires addressing fears of inconveniencing the supervisor and of loosing of credibility with the patient or the supervisor (Stewart 2008). The third is ease of access to the supervisor (Kilminster et al. 2007). Therefore, in order to ensure that supervisory call-ins occur when required, the following need to be addressed. The trainee needs guidance on when they need to call the supervisor in. Building a checklist of presentations that require an automatic call in is valuable. The second is that the supervisor needs to be both approachable and accessible (Cottrell et al. 2002). This means a clearly articulated line of easy access to the supervisor by the trainee and for the trainee to be given a clear message from the supervisor that the interruption is welcome. This clearly depends on the attitude of the supervisor and the degree to which they feel inconvenienced. Allocating time within the supervisor's consulting session to accommodate "ad-hoc supervisor call-ins" is therefore essential. The third is that the call is conducted in a way that meets the trainee's needs and does not undermine the trainee in the patient's eyes.

There are several suggested formats for how the call in might be conducted to enhance the educational value of the supervisory call-in (Ingham 2012; Irby and Wilkerson 2008). Important for the identity of the trainee is how the supervisor and trainee position themselves during the supervisory call-in. In broad terms: the supervisor can take over; the supervisor can coach the trainee to a conclusion using prompts and leading questions; or, the supervisor can be a resource for the trainee to use to complete the consultation themselves with the supervisor providing an opinion, a piece of information, or an affirmation. Each of these three modes of engagement is indicated in different circumstances depending on the trainee capability and the patient need. An important consideration is the hierarchy between the supervisor and trainee expressed in this positioning as a pronounced hierarchical positioning of the supervisor over the trainee, which can undermine the trainee with the patient and therefore undermine the trainee's identity as a clinician in their own right. In order to avoid the trainee being undermined, the trainee needs to retain overall control of the call-in. For this, the trainee needs to be clear about what it is that they want and need from the supervisor to complete the consultation and then to make this clear to both the patient and the supervisor. In this way, even when the

Table 5 Summarises the key actions for the supervisor, the trainee, and the practice community in supporting the supervisory call-in

For the supervisor
Guide the trainee on when and how to call for assistance when attending patients Be available and accessible Avoid undermining the trainee with their patient Use a model for conducting a call-in Make a deliberate choice on whether to take over, coach, or be a resource
For the trainee
Be clear what is wanted of the supervisor and articulate this to the patient and supervisor
For the practice community
Have the systems in place to ensure that there is always an accessible supervisor and that this is clear to both the trainee and supervisor

supervisor takes over, having the supervisor comply with an explicit request by the trainee keeps the trainee as the overarching arbiter of the outcome. This is a complex skill and the trainee is likely to need coaching to be able to do this. The supervisor also needs to be aware of the way they position themselves when with the trainee and the trainee's patient and to be willing to allow the trainee to take the lead.

Key actions that support the supervisory call-in are summarised in Table 5.

Teaching

Teaching is a means of facilitating the trainee to gain the resources of knowledge, understanding, skills, and disposition to undertake the work of patient care. Teaching is also an important medium for the supervisor to engage with the trainee. Teaching in GP is both formal and informal. Work tasks are the main context and frame for teaching with the primary driver being to enable the work to be done.

The supervisor call-ins, as described above, have been identified as powerful informal learning experiences (Morrison et al. 2015). The other main venue for informal teaching is the so-called "corridor conversation" (Long et al. 2007). These are when the trainee and supervisor engage in unscheduled conversations in the absence of the patient to talk about the trainee's clinical work. These "corridor conversations" are not dissimilar to the supervisory call-in in that the main focus is to enable the trainee to complete immediate tasks of patient care. However, with the patient absent, "doctor-talk" can be used more freely; and, the trainee's learning needs can be explored more explicitly without the risk of undermining the credibility of the trainee with their patient (Kennedy et al. 2009).

Most GP training programs also cater for formal teaching with time scheduled specifically for education, usually when patients are not being attended. There are two approaches to using formal teaching time. The first is reactive, and the second is proactive. Both are important.

Reactive teaching is teaching based on the current challenges the trainee is dealing with in attending specific patients. This teaching ideally happens soon

after the trainee has attended their patient. A regular formal end of session debrief can provide effectively for this.

Proactive learning is learning in anticipation of what the trainee is likely to be faced with and challenged by. Proactive learning requires identification of trainee learning needs and planning a means to address these (Garth et al. 2016). Areas of "learning need" can be categorized as information knowledge, skills knowledge, and dispositional knowledge (Billett 1993). Information knowledge includes both clinical and bureaucratic information. Skills knowledge includes managing the GP consultation in all its challenging variations (Neighbour 2019), integration of the psychosocial, biomedical, and procedural skills and how to access resources to support clinical care. Dispositional knowledge is attitudinal and an important component of identity formation.

Identification of educational learning needs is supported by a structured and revisited dialogue between the trainee and the supervisor about the trainee's learning needs, and by specific activities to identify needs that might not be obvious to the trainee. Trainees identify learning needs as they are confronted with clinical issues in their work; experienced supervisors identify learning needs drawing on their own experiences particularly with previous trainees; and, the literature contains guidance on areas of likely learning needs (Neighbour 2019; Morgan et al. 2014).

Two educational activities that are particularly useful for identifying trainee learning needs that may not be otherwise obvious are trainee consultation observation (Kogan et al. 2017) and post consultation clinical note review (Morgan and Ingham 2013). Consultation observation may be by video or in person. Clinical note review is a review of the trainee's clinical notes by the supervisor and the trainee together to reflect on the consultation outcomes and the clinical thinking behind these. These activities can also serve as an assessment and monitoring purpose.

Having identified a learning need, a decision needs to be made on how to best address the need. This depends on the type of knowledge and being aware of where expertise is likely to lie.

For clinical information, authoritative references are likely to be the most reliable source of information. It can be unhelpful to view the supervisor as necessarily the authority on clinical information as while the supervisor's clinical knowledge should be adequate for the task, it is not necessarily up to date. The supervisor can provide advice on what references might be used for clinical information and how to access them.

While not necessarily being the best source of clinical information, the supervisor does know how to apply that clinical information to the contexts at hand (Cantillon and de Grave 2012). Therefore, if teaching is to focus on a particular topic area, the supervisor's skills are most applicable to contextualizing content knowledge that the trainee themself has sourced in preparation for the teaching session.

Skills knowledge and dispositional knowledge are best learned by a combination of observation, doing, and feedback on doing. This can be done by mutual consultation observation and role play. When the trainee observes the supervisor, it is valuable for them to have a framework of analyzing the supervisor's consultation with particular events and maneuvers within the consultation to identify. This is then

used to frame a discussion afterwards to explore the process of the consultation and the supervisor's thinking within the consultation. When the supervisor observes the trainee's consultation, a framework of consultation debrief is helpful. Table 6 details the domains of assessment used by supervisors in consultation observation that Govaerts et al. identified in their research (Govaerts et al. 2013).

Role plays also provide a powerful means for trainees to develop consultation schemas for difficult consultations. Pre-prepared role play formats can be a useful resource for this activity.

Key actions that support teaching are summarised in Table 7.

Table 6 Domains of consultation assessment identified by Govaerts et al. (2013)

1. Doctor Patient relationship
Rapport
Appropriate confidence and authority
Facilitating common ground
In the consultation agenda
In the management plan
2. Structuring the consultation
Establishing the full agenda early
Signposting
Clean sequencing of the components of the consultation
3. Clinical knowledge

Table 7 Summarises the key actions for the supervisor, the trainee, the supervisor and trainee together, and the practice community in supporting teaching of the trainee

For the supervisor
Be available and approachable
Use corridor conversations for giving advice to trainees that might undermine the trainee if given in front of the patient
Have a bank of scripted role plays for challenging consultations
For the trainee
Use corridor/tea room conversations for seeking advice that require "doctor talk"
Source best practice protocols and factual clinical information from reliable evidence-based references
For the supervisor and trainee together
Schedule end of clinical session debriefs
Engage in regular learning/teaching planning dialogues
Utilize the supervisors' expertise in contextualizing the application of clinical knowledge rather than as an authoritative source of factual knowledge
Engage in mutual consultation observation and debrief
Engage in formal trainee clinical note review
For the practice community
Schedule time for formal teaching
Allow time buffers for informal teaching

Mentorship and Role Modelling

Wenger's theorizing positions the "old-timer" as instrumental in enabling the new-comer to join a community of practice and embark on a trajectory of identity from being an outsider to becoming an integral part of the working community (Wenger 1998). An important part of what the "old-timer" gives to the newcomer is a vision of what it is to be an "old-timer" and how the new-comer might become an "old-timer" themselves. They do this through both talk and through example. The GP supervisor occupies the position of the "old-timer" for the GP trainee. In this position, they offer the GP trainee a model and vision for becoming a GP clinician both in their clinic community and in the community of medicine more broadly. They do this through role modelling and mentorship.

Role modelling can be by happenstance and can be deliberate. Deliberate role modelling and mentorship go together. Deliberate role modelling and mentorship depend on an investment by the supervisor in the trainee and their journey in becoming a clinician. This requires time, genuine interest, and a willingness to expose their thinking and to share their dilemmas and stories. Exposure of thinking is articulating to the trainee the rationale behind what they do either in the course of undertaking tasks or in purposeful reflection within a scheduled time together. Sharing dilemmas and personal stories are acts of vulnerability (Bearman and Molloy 2017). Exposure of thinking and story sharing can provide powerful exemplars for the trainee in developing their own practice and perceptions of what it is to be a GP. It can also give them a frame for developing strategies for managing the role of clinician within the context of multiple other life roles – what Wenger calls the "nexus of multi-membership" (Wenger 1998).

Role modelling and mentorship are important for the trainee in developing internal models of good practice (Tai et al. 2018) against which to judge their own practice. This is discussed further later.

As with all relationships, effective mentorship relationships are two way. Just as it is important for the supervisor to invest in the relationship, so too, it is important for the trainee to invest in the relationship. Identity formation is also two way. Research has indicated that the supervisor's identity as a supervisor is impacted on significantly by the degree to which the trainee places trust in the supervisor and is willing to be vulnerable with the supervisor (Garth et al. 2019).

Key actions that support a mentor relationship are summarised in Table 8.

Table 8 Summarises the key actions for the supervisor and the trainee community in establishing an effective mentor relationship

For the supervisor
Generate a genuine concern for, and an investment in, the trainee's professional journey
Be willing to share your own professional journey and challenges particularly in balancing multiple roles
Articulate the rationale behind what you do
For the trainee
Be proactive in engaging with your supervisor reciprocating their interest
Be willing to share personal challenges in engaging with the work

Monitoring and Feedback

From a work-based theory perspective, trainee monitoring and feedback has three purposes. The first is to achieve conformity by the trainee to the norms of the work-place, the second is to determine trainee privileging, and the third is to provide guidance for the trainee in building the knowledge required for the work-place (Billett 2009). The norms of a GP work-place are strongly framed by the more global norms of the profession and by the expectations and requirements of the society at large (Wenger 1998).

Feedback from the trainee to the practice is also important for ensuring the GP work-place remains current with its own practices.

Trainee monitoring and feedback require the supervisor to know how the trainee is performing. Some information about trainee performance will be gained by happenstance through their interactions as they work and learn together and through incidental feedback from patients and other staff. However, in GP, particularly for trainees working under level 2 supervision or higher, the trainee will be attending patients largely on their own with the supervisor having little direct view of the trainee's actual clinical work. This can be hazardous for patient care (Ingham et al. 2019; Byrnes et al. 2012). It is therefore essential for the supervisor to be proactive in gaining a view on the trainee's clinical practice. Regular consultation observation is the cornerstone for this and can be done by sitting in on trainee consultations, viewing videotaped trainee consultations and joint consultations. Important information on trainee performance can also be gained from reviewing the trainee's clinical notes (Morgan and Ingham 2013). Third party impressions of trainee performance are also valuable and can be sourced by actively seeking feedback from other team members or undertaking formal patient and colleague surveys (Wright et al. 2012).

There has been considerable focus recently on feedback in the medical education literature (Ramani et al. 2019). Feedback is understood as a core educational activity, as without knowing how we are performing, we don't know what we need to change and learn (Cantillon and Sargeant 2008). Feedback can be affirming, directive, or corrective. The academic conversation on feedback has moved from understanding feedback as something that is dispensed to the trainee to viewing feedback as a relational process. It has been described as a dialogue (Askew and Lodge 2004), an alliance (Telio et al. 2015), and a dance (Bing-You et al. 2017).

The measure of the value of feedback is its impact. The impact of feedback depends on: the way it is given; the receptiveness of the receiver; the nature of the relationship that frames the feedback; and, the cultural context that the feedback sits with in (Lefroy et al. 2015). There are well-used frameworks for engaging in feedback such as the Pendleton model, Calgary Cambridge approach, and the Reflective Feedback Conversation (Cantillon and Sargeant 2008). The receptiveness of the trainee to feedback depends on their readiness for feedback. This means that it is important for the trainee to have a voice in what they will receive feedback on. Receptiveness of the trainee to feedback also depends on the credibility that the supervisor has in the eyes of the trainee for both their clinical expertise and

Table 9 Summarises the key actions for the supervisor, the trainee and the practice community in supporting monitoring and feedback

For the supervisor
Proactively collect data relating to the trainee's performance
Have a framework for giving and receiving feedback
Develop a shared educational agenda with the trainee
Normalize feedback exchanges by having these frequently including at scheduled times
Ask the trainee what they would like feedback on
Ask for feedback on yourself – both as a clinician and as an educator
For the trainee
Share your educational goals with your supervisor
Determine what you seek feedback on and ask for this
Give feedback to your supervisor
For the practice community
Normalize feedback across the whole practice
Promote a culture of professional integrity and "no blame"

educational expertise (Telio et al. 2016). Telio et al.'s educational alliance model gives guidance on the features of a supervisory relationship that support effective feedback (Telio et al. 2015). These are a shared understanding of the trainee's educational goals and activities; a joint commitment to these; and, for the trainee to believe that the supervisor is invested in the trainee's well-being.

A culture within the practice that normalizes feedback is important for feedback to occur and to be effective (Ramani et al. 2019; Denny et al. 2019). When feedback is normalized, it becomes a frequent event that occurs both formally and informally across the whole practice. Trainee orientation needs to include an overview of feedback events and processes. It is also important for the supervisor to actively seek feedback from the trainee and to use this to demonstrably adapt their own practice. As well as normalizing feedback, this: increases the credibility of the supervisor with the trainee; models the use of feedback; and provides a means for developing the supervisor's clinical and educational practice. It is problematic if feedback only occurs in the context of a critical incident as this invites negative reactions of blame, guilt, and defensiveness.

Giving corrective feedback is often inhibited by its perceived risks (Denny et al. 2019). These relate to the potential reaction by the recipient of the corrective feedback who may find the experience destabilizing and respond with withdrawal or retaliation. This is particularly an issue for the trainee giving corrective feedback to the supervisor or the practice as they are dependent on their goodwill. These risks need to be addressed to enable frank feedback. Bing-You's metaphor of feedback as a tango is helpful (Bing-You et al. 2017). Drawing on this metaphor, feedback is a shared two-way endeavor where each is attuned and in step with each other.

Key actions that support monitoring and feedback are summarised in Table 9.

Assessment

Assessment sits alongside monitoring and feedback. Trainee assessment in the GP work-place concerns making judgments about the trainee for three areas of decision-making: (1) the level of supervision required by the trainee; (2) trainee learning needs that require addressing; and (3) trainee readiness for progression to the next stage of training (Wearne and Brown 2014).

Judgment of the level of supervision required is a process of entrustment of responsibility to the trainee. Because of the implications this has for patient and trainee, it is important for there to be a rigor behind this judgment. We suggest that these decisions be based on repeated observation of the trainee at work and that initial impression be tested with other information such as team review of the trainee and review of clinical notes (Wearne and Brown 2014). Ten Cate et al., have developed the concept of "Entrustable Professional Activities (EPAs)" as units of practice that can be used as signposts of developing competency (Ten Cate et al. 2015). An example of such an activity in GP might be managing a request for a termination of pregnancy. EPAs are a useful framework for developing a folio of clinical activities that require deliberate entrustment decisions before the registrar can determine themselves that they don't require supervision for the activity. Such clinical activities are those with higher stakes such as managing a sick child.

Supervisors can be in a position to make well-informed assessments of trainee performance and competence because they work closely with the trainee. However, using supervisor assessments for high-stake decisions on progress of training can be problematic for the supervisory relationship. Depending on supervisors for high-stakes trainee progress judgments adds to the supervisor/trainee power differential which can compromise the trainee's willingness to be frank with the supervisor and therefore compromise educational agendas (Garth et al. 2016). We recommend that supervisor assessments of trainees should be part of programmatic assessment but not be used as a stand-alone high-stakes assessment unless the trainee is engaging in reprehensible behavior. We suggest that high-stakes work-based assessments be undertaken by external experts such is currently done in New Zealand.

Trainee assessment of training placements is an important source of feedback for the supervisor, the training placement, and faculty. It is important to protect trainee safety in seeking trainee assessments of their training practices and supervisors. Strategies to do this are: building a culture of feedback; systematically collating and anonymizing trainee feedback for each site; and obtaining feedback from graduating trainees who have completed their fellowship requirements when their level of risk in giving a negative assessment is less.

Key actions that support assessment are summarised in Table 10.

Table 10 Summarises the key actions for the supervisor and the practice community in supporting assessment

For the supervisor
Be deliberate in assessing the trainee for decisions on the level of supervision required
Observe your trainee at work
Add rigor to level of supervision-related assessments by collecting information from multiple sources
Advise trainees early in the placement how they will be assessed
Assess your trainee for competency in high-stake presentations before entrusting them with the decision whether or not to call for assistance
For the practice community
Use external assessors for high-stake trainee progress assessments
Protect trainee safety if seeking trainee assessments of placements

Facilitating an Understanding of Good Practice

An important challenge for trainees is to develop a concept of good practice as conceived by and judged by the community within which they work (Wenger 1998). The GP supervisor is a key conduit for the GP trainee to learn this. Likewise, it is important for local working communities to bench mark their practice against external concepts of good practice as judged by the more global communities. The GP trainee has the potential to be a significant conduit for bringing concepts of good practice from the broader medical community to their local GP training practice (Engeström et al. 1999). Trainees will have recently worked in hospitals and they are exposed to global ideas of good practice through out-of-practice education.

For the trainee to learn good practice from their supervisor, they need to know what their supervisor does in particular situations and to understand the rationale behind this. Good practice in the local context may differ from good practice as conceived by the more global medical community. If the reasons for this are unavailable to the trainee, there is the risk that the trainee mistakenly judges the supervisor's practice as poor and thus, the supervisor's credibility is undermined (Denny et al. 2019).

For the training practice and the supervisor to learn good practice from their trainee, they need a nonhierarchical attitude to the ownership of knowledge (Jackson et al. 2019). This provides an environment that is safe for trainees to share what they know, particularly if it is at odds with the supervisor's practice.

Development of a mutual understanding of good practice requires two-way dialogue about clinical practice. It requires opportunities for the trainee to observe the supervisor's practice, to be privy to the thinking behind this practice, and to be invited by the supervisor to critique the supervisor's practice.

Experiences of the supervisor changing their practice based on information from the trainee can be key moments for building the supervisory relationship and for trainee development. These events build trust and a sense of safety for the trainee within the supervisory relationship; they build credibility for the supervisor; they

Table 11 Summarises the key actions for the supervisor, the trainee and the practice community to support the trainee to develop a model of good practice

For the supervisor
Articulate the rationale behind clinical decisions Invite critique of own clinical practice by the trainee Modify clinical practice when indicated by new knowledge brought by the trainee
For the trainee
Observe your supervisor at work Recognize that context may alter best-practice
For the practice community
Build a culture of democratic rather than hierarchical ownership of knowledge

provide a model for lifelong learning; and, they support the trainee's trajectory towards identifying themselves as a full member of the GP clinical community.

Key actions that support the trainee to develop a model of good practice are summarised in Table 11.

Shared Supervision

Supervision of a trainee in GP is increasingly shared between several general practitioners (Thomson et al. 2011). This arrangement has potential value and potential compromises. The value is trainee access to different clinical and supervisory approaches and expertise. The compromise is a dilution in the contact with any one supervisor for the purpose of forming a supervisory relationship. This can be addressed by having an identified primary supervisor for mentorship and support. If there are multiple supervisors for a trainee, it is important that they function as a team with the shared objective of supporting the trainee's learning.

Building and Sustaining GP Supervisory Capacity

Organizations that oversee the whole of GP training delivery have an important role in building and sustaining supervisory capacity (Garth et al. 2019). Just as the trainee and the supervisor can be usefully viewed as participants in a clinical community of practice, so too, the supervisor can be usefully viewed as a participant in an educational community of practice. This educational community of practice overlaps with the clinical community of practice with the supervisor being a member of both. In this section, we take a summary overview of how an organization overseeing training might provide a community of practice in which the supervisor participates where the shared enterprise is the education of trainees. We look at six core training organization activities that engage the supervisor with the object of enabling the supervisor in their work of trainee education. These activities are:

1. Supervisor recruitment
2. Inducting the new supervisor to the role

3. Supporting the supervisor
4. Facilitating supervisor peer networks.
5. Supervisor professional development
6. Engaging the supervisor in program development and delivery

In exploring these things, we again draw on the theoretical and research literatures on work-based learning.

Supervisor Recruitment

The motivation to supervise is important. For a prospective supervisor to desire the role of supervisor, the activity of supervision needs to fit with the general practitioner's narrative about themselves (Billett 2009; Garth et al. 2019). Our personal narratives are built on: past experience, trajectories that we can imagine for ourselves, and desired cultural rewards (Holland 2001). Therefore, it is important for training providers to: consider and foster trainees as future supervisors; have a clear trajectory for development as a supervisor; and, ensure that being a supervisor is rewarding (Garth et al. 2019; Ingham et al. 2015).

The roles and requirements of supervision need to be clearly articulated and documented. Credentials, sufficient remuneration, and privileging also need to be attached to the role of supervisor.

Inducting the New Supervisor to the Role

As with inducting the new trainee, the new supervisor will make meaning of the supervisor's role if their induction is done alongside an initial engagement in the work of supervision and scaffolding of this is supported by someone who is already an experience member of the supervisory community. Ideally, induction provides a staged increase in supervisory responsibility with expert oversight and support which decreases as the new supervisor becomes more experienced. A designated, experienced supervisor or educator is an obvious candidate to provide this. In doing so, they need to engage with the new supervisor proactively and to be reliably available for guidance, mentorship, and information as required. The training organization also needs to provide easy and reliable access to training-related information and advice that can be accessed by the new supervisor at short notice as needed. Ideally the administrator is a known contact for the supervisor. On-line reference resources can be useful for immediate access as needed. Many training organizations also provide orientation workshops that have the added value of enabling new supervisors to connect with each other. The standards and requirements of supervision need to be clearly articulated and documented for reference as required.

Supporting the Supervisor

Training organizations are important for supporting supervisors through: compensation for the impost of supervision; support for the work of supervision; and, social recognition to underline the importance of supervision (Brown et al. 2019).

Compensation for the impost of supervision includes adequate financial recompense and provision of relief from consulting responsibilities. Support for the work of supervision includes educational resources, supervisor professional development, and provision of structures to support supervisor peer networking. Social recognition includes certification and positions of status such as university appointments.

Supervisors require easy access to immediate advice for providing supervision and for meeting bureaucratic requirements. This can be provided through online references and expertise accessible by the phone.

There will also be times when training organization expertise is required for addressing problematic supervisory relationships.

Facilitating Supervisor Peer Networks

Supervisors being connected with other supervisors is important for: identifying as a supervisor; building supervisory skills; and for developing an understanding of good supervisory practice (Garth et al. 2019). This connection can be supported by program facilitation of in-practice supervisor mentorship, facilitated small group networks and small group interactions at workshops.

Supervisor Professional Development

Supervision is a complex task that justifies a defined professional development curriculum and syllabus (Morgan et al. 2015). In section "The Tasks of Supervision in GP" of this chapter, we identified and explored seven areas of activity required of supervision. These provide a framework for a supervisor professional development syllabus:

1. Engagement of the trainee in the working community
2. The supervisory clinical encounter
3. Teaching
4. Mentorship
5. Monitoring and feedback
6. Assessment
7. Understanding good practice

We also add:

8. Supervisor well being
9. Critical thinking

This syllabus can be delivered: online, through educational activity; on-site at the training practice; in small groups and in large workshops. In deciding what mode of delivery, it is worth considering the type of learning that is being supported. Online delivery for factual learning has the advantage of efficiency and convenience. In-practice, delivery enables direct connection with the actual work of supervision. Small group delivery enables peer-benchmarking, and large group enables connection with the broader community of supervisory practice (Garth et al. 2019).

Engaging the Supervisor in Program Development and Delivery

Engaging supervisors in program development and program delivery outside of their own practice is important for supervisor engagement and identification as an educator. It also provides a means for recruiting supervisors into medical education work beyond supervision and ensures education is based on their real-world expertise. Engaging supervisors in this way facilitates what Wenger calls "ownership of meaning" (Wenger 1998). Formal engagement of supervisors in program development also ensures that program development aligns with the realities of the work-based training that occurs within training practices.

Conclusion

Supervision in the GP settings is at its core, work-based learning. The supervisor's role therefore sits at the interfaces of trainee development, the work that needs to done, and maintenance of the training practice's capacity to do that work. In this setting, building trainee competencies is a part of a much bigger whole. This bigger whole includes the endeavors of: engagement and relationship building; making and owning meaning in the work; supervisor and trainee identity development; and the maintenance and development of the work-place. The ways that the supervisor, the trainee, and the training organization engage in these activities are key determinants of learning outcomes.

Cross-References

► Trends and Context in General Practice Education

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7.3. Contribution of 'Supervision in General Practice Settings' chapter to this thesis

A key purpose of this thesis is knowledge building to inform practice. This chapter was written to inform the practice of GP supervision and its support. I have drawn on the work behind this and the preceding chapters, to inform supervisory practice in other ways: to inform my own supervisory practice; to coach my trainees in accessing supervision; as a basis for workshops and presentations on supervisory practice; and, to create on-line resources (Appendix C).

In translating the work to practice, practice has also informed the work. Trainees, supervisors and educators have provided feedback on my thinking and offered their own ideas. This has provided an invaluable means of testing and refining my conceptualising.

8. Integrative discussion

8.1. Introduction

8.1.1. Overview of chapter

A primary purpose of the work is to inform purposeful actions that impact on identity development of GP trainees in the context of the GP supervisory relationship. Identity development frames behaviour(10) and is important for trainees, patients, the community and the profession. To inform purposeful action, I have built normative theory which describes how things can be done to better achieve intended outcomes. To build normative theory I have also engaged in building descriptive theory which describes how things are.

In this chapter, I draw together insights from the work of this thesis to further build conceptual understanding of trainee identity development and the GP supervisory relationship and how this might be better supported. I use, and extend, critical realist ideas introduced in chapter 2; in particular that purposeful agency can be enabled to achieve positive change through informed action. Informed action for positive change is achieved though theorising that uses rational judgment and a critical approach. A key theoretical construct in critical realism is causality which is based on the causal properties of a stratified reality.

GP trainee identity development and the GP supervisory relationship sit in the social(ch.4, ch.7) and cultural(3.4, & ch.6) contexts of GP vocational training. It is framed also by the psychological needs of the trainee and the supervisor(6.4). To conceptualise how these contexts contribute to trainee identity development and the GP supervisory relationship I consider each of the cultural, social, relational and psychological as separate interconnected strata(2.2) and trainee identity development as a phenomenon that sits within these strata(fig 1). I explore the cultural, social and psychological for their contribution to the supervisory relationship. I then focus on trainee identity development, first in the context of the supervisor relationship, and then in the context of the other three strata. Finally, through normative theorising, I consider how my descriptive theorising can inform action.

8.1.2. A critical realist frame

In chapter 2, I introduced key ideas from critical realism applied to this thesis. Here I recap relevant points from that chapter as they apply to this integrative discussion.

Critical realism has a focus on causality and agency with the presumption that we can intentionally alter our behaviours to achieve a desired change(38). It also considers that we can reasonably judge change, as either for better or for worse, using rational judgment(2). Positive change through agency

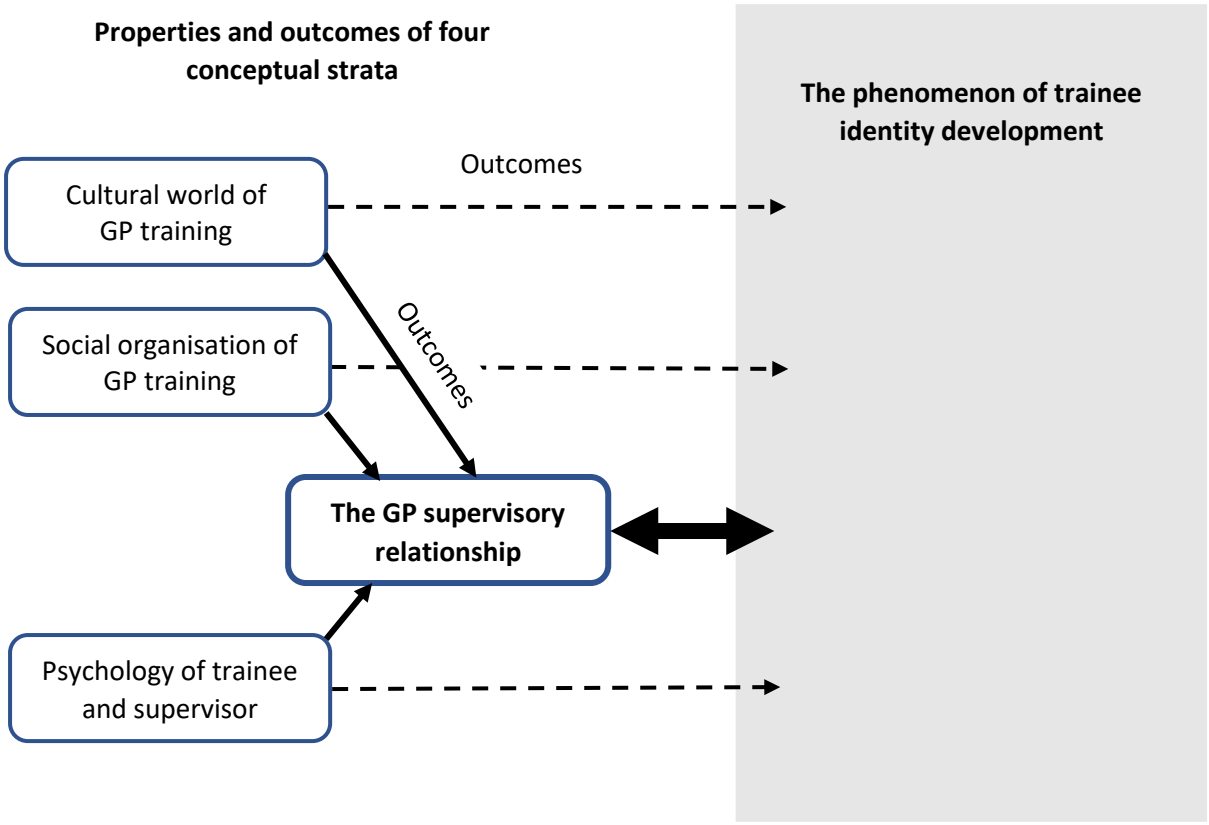
requires knowledge and taking a critical approach. Knowledge is achieved through theorising that has been subject to rational judgment. A critical approach means being critical of universalist claims to truth and being critical of cultural structures that maintain the dominance of one group over another(2). This demands understanding how power works. An important theme in this work is that of power and its working through the doctor-patient relationship(ch.6), the trainee-supervisor relationship(ch.5&6), and the social structuring of training(ch.4). Identification of the properties of power in this context enables us to use these purposefully rather than being beholden to them. In this integrative chapter, I engage in knowledge building for the purpose of informing agency in supporting GP trainee identity development and the supervisory relationship. This is done through further theorising and applying rational judgment and a critical perspective.

Critical realism views reality as consisting of multiple strata(2.2). Each stratum has its own properties(2.1.1) consisting of structures and mechanisms which have the capacity to produce outcomes that are contingent on context. Different strata are interconnected in that outcomes from one stratum can become properties in another in a causal way(2.2). Conversely, properties of a stratum have causal precedents from other strata. Properties are also emergent from within a stratum(2.1.1). Applying this to the supervisory relationship, I now conceive the supervisory relationship as a stratum that relates to three other conceptual strata: 1) the cultural world of GP training; 2) the social organisation of GP training; and, 3) the psychology of the trainee and the supervisor. The supervisory relationship therefore has properties that are outcomes of the three other strata and also properties that are emergent within itself.

Identity development is a phenomenon that has causal precedents in all four strata: the cultural; the social; the relational; and, the psychological(96). My primary focus is on the supervisor relationship as a context for trainee identity development where there is a reciprocal causal interaction. The supervisory relationship impacts on trainee identity development and trainee identity development impacts on the supervisory relationship(6.2). I also consider the impact of the other three strata as important contexts impacting on trainee identity development both directly and through the supervisory relationship. My approach to conceptual development is represented in Figure 1.

Figure 1

Four strata, their outcomes and the phenomenon of the trainee identity development.



8.2. The supervisory relationship: impacts from three strata.

In this section I draw on the work of this thesis to examine the relevant properties of three strata that lead to outcomes within the supervisory relationship.

8.2.1. The cultural world of general practice training

The cultural world of GP training was considered throughout this thesis. Cultural worlds are social constructions that position its participants and give them the language and the tools to enact that world(Ch.6). Cultural worlds also define legitimate activities and give form to those activities. GP training is within a cultural world that positions trainees, supervisors, clinicians and patients. It provides the cultural boundaries within which the trainee and the supervisor can author themselves and their relationship.

The 'Supervisory encounter' work(ch.5) identified the supervisory encounter as a social genre with the cultural imperative of creating a plan for the patient(20). This imperative was explored further in 'Supervision in general practice'(ch.7) – using the lenses of activity theory(95) and Communities of

Practice theory(3). From these perspectives, the object of the activity of GP patient care is to craft a plan with the patient which becomes a 'joint enterprise'(3) shared by the trainee and the supervisor. Communities of Practice theory suggests that educating trainees has two purposes: undertaking the work of the community, in this case patient care; and, continuation of the community, in this case the systems and profession of GP(3).

I have explored medical education theories as myths(3.4)(25). Myths are high level Discourses that provide a common language and shared understandings; they also declare and maintain a cultural order of things. They are both descriptive and normative theories that are based on ideology. Ideological theories are accepted by a community of practice as true representations of their reality. They have an internal logic that gives them credibility and utility for the community of practice. Adopted as truisms, they work to socially position the trainee, the supervisor, and the clinician in particular ways. In the 'Theory, a lost character?' paper(3.2), I identified the most prominent theoretical perspective in GP educational research as a humanistic perspective(18). This perspective puts high value on individual autonomy and positions privilege as a consequence of personal endeavour and merit(97). These presumptions promote learner and patient centredness but also support Discourses that give a superior position to those with knowledge – the medical profession and supervising seniors – suggesting that holding knowledge is a result of personal effort.

The 'Becoming a clinician' research identified Discourses that framed and enacted the cultural world of GP training(ch.6). There was a Discourse of trainee and patient enablement. There was a Discourse that defined trainee competency. There were also hierarchical Discourses: one that gave a special position of the clinician in relation to the patient; another that privileged the supervisor in relation to the trainee; and, another that positioned the general practitioner in relation to other health professionals(6.4.1). These Discourses could be both constructive and constraining. When these discourses were hegemonic, they impeded the development of the trainee, diminished patients, or diminished one healthcare group in relation to another. These social Discourses all framed the supervisory relationship.

The use of power is framed and justified by ideological theory through social Discourses. Identifying and describing this is important from a critical perspective as this is the first step in countering hegemonic use of power and enabling its use for equitable outcomes. Having identified the ideological theory and social Discourses that position privilege and power as deserved social assets that those in power are entitled to own and use for their own ends; we can then, individually and collectively, choose and create other theories and Discourses that position power and privilege as responsibilities and assets for the good of the collective. In particular, these can be used to

normatively direct action for the purpose of better supporting and enabling the trainee within the supervisory relationship and for the purpose of ensuring that the supervisory relationship fosters a Discourse of patient enablement. While identifying these things is the first step, having a receptive audience is the next challenge. In workshops I run with supervisors exploring the dynamics of power within their supervisor-trainee relationships, despite abundant evidence, there is significant resistance by supervisors to recognise that power dynamics exist at all, let alone recognising that they may use their power to maintain their position.

8.2.2. The social construction of general practice training

The social construction of GP training is important for the trainee-supervisor relationship because GP training provides the organisational frame and context within which trainee supervision occurs(chs.4 & 7). In terms of conceptual strata, the social stratum of GP training has structures and mechanisms (properties) that have outcomes which are manifested in the relational stratum of the supervisory relationship.

In the chapter 'Australian GP vocational training'(ch.4), I identified properties of the organisation of GP training in Australia that operate to have significant outcomes in the stratum of the supervisory relationship. Some of these are constraining for the supervisory relationship:

1. Limited support given to supervisory practice and the act of supervision
2. Lack of status for supervisors
3. Limited supervisor professional development requirements
4. Geographic compulsion for trainees
5. Lack of trainee preparedness of community-based practice
6. Employment structures for trainees

As discussed in chapter 4, the outcomes of these constraining structures in the stratum of the supervisory relationship are: compromised supervisory skills and supervisor engagement; compromised trainee commitment, trainee confidence and trainee engagement; and, exacerbation of the power differential between the trainee and the supervisor with the employee/employer arrangement.

There are also structures in the organisation of GP training that are enabling of the supervisory relationship:

1. Longitudinal placements that span at least six months
2. Support for one-on-one trainee-supervisor educational time
3. Accreditation and contractual requirements for supervisory activity

Longitudinal placements and one-on-one educational time provide the means of regular contact over an extended period that enables relationship building. Accreditation and contractual requirements provide a formal status for the relationship.

Accredited, contracted and resourced supervision is not provided to all GP trainees progressing to fellowship in Australia. ACRRM's independent pathway provides off-site medical education support but no formal on-site supervision(98). RACGP's General Practice Experience pathway has no formal on-site supervision(99). The Remote Vocational Training Scheme provides for mentorship but no formal on-site supervision(100). In these settings, any supervisory relationship that develops is independent of the training program resources and structures.

The structure of GP training is impacted by broader political and organisational structures and agendas. Funding for GP vocational training comes largely from the Federal Government whose stated primary agenda is to address workforce distribution(57). This workforce focus is the basis of the geographic compulsion for trainees.

ACRRM and RACGP are about to take over management of the funding and contracts for GP training (4.1). The espoused motivation of the two colleges to manage training is for the good of training and the Australian community, however membership agendas are almost certainly at play. The existence of each of the colleges depends on their current and future membership. Training for fellowship is a key instrument for gaining members. The hope is that quality training will align with college agendas of membership recruitment. The training organisations, who are currently contracted to deliver training, are incorporated companies run by Boards whose primary missions are to preserve the interests of the company. These interests do not necessarily align with the interests of training. The structure and organisation of training are not owned by the trainees and supervisors, rather they are owned by government, the two colleges and by the training organisations. The degree to which trainees and supervisors have a voice in decisions about the structure of training depends on the voice they are granted by these organisations. They need a voice if the interests of the supervisory relationship are to be served.

The findings from 'The clinical supervisory encounter'(ch.5) and 'Becoming a GP'(ch.6) research point to the need for training organisations to provide educational support for supervisors and trainees to enable them to better understand the dynamics of the supervisory encounter and the supervisory relationship so that they can engage in these more effectively. Without investment in enabling supervisor and trainees to acquire this knowledge, their capacity to be purposefully agentic in this space is limited. Training organisations also have a role to ensure that the trainee has

acquired the necessary knowledge for them to be able to engage with the clinical activity they will be expected to undertake within supervised practice.

I have articulated features within the structure of GP training that need to be examined to enhance support of the GP supervisory relationship. I have positioned these in a critical realist frame where the properties of the stratum of the organisation of training have outcomes in the stratum of the supervisory relationship. From an emancipatory perspective, the current properties of GP training support the status quo of the current distribution of power. This needs to be addressed to enable supervisors and trainees to be more agentic in their relationship. As with the stratum of cultural worlds, identifying and articulating the way power is manifested in social structures in the organisation of GP training is the first step to emancipation and empowerment for trainees and supervisors. The challenge is the degree to which the organisations that control GP training are willing to recognise the way that they use power and the impact of this use of power.

8.2.3. The psychology of the trainee and the supervisor

Psychological properties identified in this thesis that have outcomes in the supervisory relationship are inherent individual psychological needs, the mechanism of internalising the social, trainee readiness to accept a social position offered, and supervisor willingness to relinquish social space to the trainee(6.4).

8.2.3.1. Inherent psychological needs

Inherent psychological needs drive individual behaviour to assuage these needs(8). These behaviours, as outcomes of the psychological stratum, become properties of the relational stratum.

Each of the conceptual models of the theorists I drew on identify inherent individual psychological needs that drive individual behaviour. Common to all these theorists is the need for relationship with others. Relationship is both a fundamental need in itself, and a means of meeting other needs. For Bhaskar, the two basic human needs are to overcome alienation through relationship and to achieve self-determination(38). For Object Relations theorists the fundamental human needs are for relationship and, through relationship, a sense of self(4, 34). For Sullivan, individuals need others to gain a clear sense of who they are and for affirmation(8). For Wenger, humans have inherent needs of belonging and making their own meaning(3). For Gee, humans need the meaning making of others for making their own meaning making. They also need to 'win' when there are limited desired social goods at stake(83). For Bourdieu, humans need social assets that are gained from others including social connections(101). For Miller, humans need to address danger, ignorance and separateness which is achieved through social engagement(7, 20).

The research in this thesis also demonstrated psychological needs that impacted on the supervisory relationship. The research on 'the clinical supervisory encounter' (ch.5) identified the psychological needs of: safety; gaining affirmation; securing credibility; being in control; and relinquishing the burden of responsibility. The research on 'becoming a clinician' (ch.6) identified the needs of: belonging; self-determination; meaning making; acquiring the cultural capital of knowledge, skills and social position; and, securing the social capital of social networks within the work environment. These empirically identified needs align with the above theoretical needs.

The theoretical and empirical needs I have identified above can be summarised into five basic needs. These are the needs for: 1) relationship; 2) securing social goods; 3) making and owning meaning; 4) safety; and, 5) self-determination. The need for relationship is primary as the other needs are all addressed through relationship. These psychological needs have outcomes in the supervisory relationship because they drive behaviour to address these needs through relationship.

The need for relationship was manifested in relationship building initiatives by the trainee and the supervisor. The trainee aligned their meaning making narratives with the supervisor's narrative and they actively sought the supervisor's approval. The supervisor built relationship through supporting the trainee in meeting their needs(6.2). They also used shared humour for relationship building(5.2).

There were, however, instances where meeting a need could be in conflict with the need for relationship. This was evident when trainee and supervisor were competing for the social goods of authority in clinical care(6.4.1.6) and authority in meaning making(6.4.2.1). The outcome of this conflict could be a breakdown in relationship but was more usually a compromise of the trainee's need in favour of the supervisor's need reflecting the more powerful position that the supervisor held(6.4.2.1).

8.2.3.2. The mechanism of internalising the social

The psychological mechanism of internalising the social was a common theoretical concept to the theorists I drew on and evident in my research data. From a cultural perspective this is embodiment and habituation(6.4.1.4); from an Object Relations perspective this is the internalisation of relationships for building internal self-objects(6.4.2). The supervisory relationship is a key source of social material that the trainee internalises in making meaning and in becoming a GP.

8.2.3.3. Trainee readiness and supervisor willingness

The supervisor relationship as a trajectory of paired identities depended on the trainee readiness to progress and supervisor willingness to make the social space available for the trainee's progression(6.2).

Trainee readiness was in part to do with having acquired the necessary social goods, and in part to do with the trainee's attitude and approach. This is theorised by Billett as a trainee's 'personal epistemology' (6.4.3.1). The trainee's personal epistemology determines how the trainee engages with what is offered by the workplace and the supervisory relationship(5). This is an important property of the individual that has implications in the relational.

Supervisor willingness to relinquish the position of expert and lead clinician was necessary for the relationship to progress from an identity pairing of 'junior learner/expert clinician' to 'lead clinician/advisor'(6.2). This willingness depended on the supervisor's 'personal epistemology'. When the supervisors authored themselves as enablers, they could vacate the social space of expert and lead clinician and be invitational to the trainee into this space.

8.3. The supervisory relationship: more than the sum of its parts

From a critical realist perspective, the properties of a phenomenon are both derived from underlying strata and are emergent within the phenomenon itself – '*the whole has powers that its parts do not possess'*(42). In this section I explore the supervisory relationship as a whole by drawing on three perspectives: 1) the outcomes from three other strata that contribute to properties of the supervisory relationship; 2) emergent properties within the supervisory relationship identified by the research in this thesis; and, 3) my own conceptualising of the supervisory relationship from my experiences as supervisor.

8.3.1. Outcomes from three strata as properties in the supervisory relationship

The outcomes from the cultural world of GP training that contribute to properties of the supervisor relationship are:

- The social motives of developing a plan for the patient and the continuity of the GP Community of Practice. These provide direction and a common purpose for the supervisory relationship.
- Ideological educational theory with a Discourse of individual value and reward through effort and merit. These frame the cultural values within which the supervisory relationship operates.
- Social Discourses that position supervisors, trainees, general practitioners and patients. These Discourses can be both constraining and enabling for the supervisory relationship and its development. Hierarchical Discourses have a greater propensity to be constraining.

The outcomes from the social construction of GP training that contribute to properties of the supervisor relationship are:

- Limited resourcing of supervision, lack of status for supervisors and low supervisor professional development requirements leading to compromised supervisor engagement and skills.
- Workforce imperatives, and lack of preparation for community-based practice, that lead to compromised trainee engagement and confidence.
- Employment arrangements that exacerbate the trainee/supervisor power differential.
- The lack of voice for supervisors and trainees leading to decisions that impact on the supervisory relationship that are not owned by the supervisor and the trainee leading to their disempowerment.
- Longitudinal placements, formalised one-on-one education and contractual arrangements that support the supervisory relationship and its development.

The outcomes from the psychology of the trainee and the supervisor that contribute to properties of the supervisor relationship are:

- The inherent need for belonging through relationship, the needs for social goods and for making meaning, and the needs for safety and for self-determination. These needs drive and direct the engagement of the trainee and supervisor in the supervisory relationship.
- The need for internalising the relationship to develop the trainee's identity.
- The trainee's personal epistemology determining their readiness and desire to engage with what the supervisory relationship offers.
- The supervisor's personal epistemology determining their willingness to give the trainee access to the potentially contested social position of expert and lead clinician.

These supervisory relationship properties arise from strata external to the relationship then work to contribute to emergent properties that arise from within the relationship.

8.3.2. Emergent properties of the supervisory relationship

The two research activities – 'The supervisory encounter'(ch.5) and 'Becoming a clinician'(ch.6) – identified relational configurations between the trainee and the supervisor as emergent properties of the supervisory relationship that had important outcomes in themselves. The way that these relational configurations emerged was contingent on the way the above externally derived properties interacted, the situational context and the choices that each of the trainee and the supervisor made.

The different relational configurations between the trainee and the supervisor identified were: junior learner/expert; apprentice assistant/master coach; co-clinicians; and, lead clinician/advisor.

These configurations were enacted through different hierarchical positioning of the supervisor in relation to the trainee identified as 'managing for', 'managing through' and 'managing with'. These each causally led to different educational outcomes and different social identities for the trainee in relation to the supervisor and the patient. Essentially the relational configuration between the trainee and supervisor defined the social space in which the trainee could author themselves.

The presence or absence of the patient impacted on the way the supervisory relationship was enacted. In the absence of the patient, 'othering' the patient as an outsider was more prevalent as was the use of the hierarchical doctor/patient Discourse. Othering the patient and engaging in a Discourse that elevated the doctor and diminished the patient were both used to strengthen the supervisory relationship through emphasising the insider status of the doctors. The presence of the patient mitigated against Discourses that diminished the patient.

The 'Becoming a clinician' work indicates that the degree to which the respective motives and needs of trainee and supervisor align, determines how effective the relationship is in meeting these respective needs. When there is a discordance, particularly in the areas of meaning making, self-determination and owning the social good of lead clinician, the capacity for the relationship to serve the purpose of trainee progression is compromised.

The distribution of power in the supervisory relationship is important. The supervisor is in a position of significantly greater power within the supervisory relationship. The supervisor's needs are already largely met in terms of safety, belonging and self-determination, meaning that they have less at stake in the relationship. The supervisor also holds a position of power in that they already own the key social goods of credability, the position of clinician and workplace social networks giving them greater agency(83, 101). This power differential means that the trainee usually defers to the supervisor's authoring of the supervisory encounters, the supervisory relationship, and the work of GP; even if these conflict with the trainee's own authorship and narratives. If the trainee is to become an expert and lead clinician in their own right within the supervisory relationship, the supervisor needs to both empower the trainee and relinquish some of their own power. Intentionality by the supervisor in this was evident in some of the data from both the 'Supervisory encounter' (ch.5) work and the 'Becoming a clinician' (ch.6) work.

Current theorising(3), current literature(13, 102, 103), this research(23), and my experience all support the contention that strong supervisory relationships have the outcome of fostering effective work-based trainee education and development as a clinician.

Knowledge informs choice but is not necessarily enough to change outcomes. My knowledge of the supervisory relationship has informed the way I engage with the trainees I supervise. My intent is to enable my trainees to develop their identity as a general practitioner and my actions often, but don't always, align with this intent. Despite my knowledge and intent, I can still be reluctant to engage, usually because of concurrent demands. I can undermine the trainee's position with their patient, often because of impatience, sometimes to protect my own position. And the occasional supervisory relationship does not work well, either from lack of engagement by the trainee or, because our meaning making does not align.

8.4. Becoming a clinician: trainee identity development

Enabling trainees to becoming general practitioners is a primary purpose of GP training. Monrouxe likens identity to a multilayered onion which is derived from the psychological, the relational, the social and the cultural(10, 96). Using a critical realist perspective, I have conceptualised these onion layers as strata of the real world each with causal outcomes that contribute to the trainee's identity development (Figure 1). My particular focus is on the stratum of the relational as it is manifested in the supervisory relationship. I have also considered the strata of the cultural world of GP, the social construction of GP training, and the psychology of the trainee and supervisor, as important other contexts.

8.4.1. Trainee identity development within the supervisory relationship, two-way causality

Wenger theorises that the relationship between the 'newcomer' and the 'old-timer' is a key medium for the newcomer's developing identity(3). The supervisory relationship is such a relationship.

Identity is both personal and social. The supervisory relationship sits as a key interface between these. I introduced this idea in section 6.4.2.. For the trainee, the supervisory relationship is a conduit into the social and cultural strata of being a general practitioner(89). Likewise, the supervisory relationship is a conduit between the cultural structures and the social needs of the GP workplace into the development of the trainee as a future member of the GP profession(3).

The research of this thesis identified significant dynamics within the supervisory relationship that impacted on the trainee's identity development. The way that the trainee was positioned in terms of the relational configuration with their supervisor defined the boundary of possibility for authoring their identity(1, 3, 23). Support from the supervisor was an important causal mechanism for enabling the trainee to progress in their identity development(23, 103). Congruence in the way that the trainee and the supervisor authored their relationship, and each other, also enabled the supervisory relationship to support the trainee in their claimed identity (23). The capacity of the supervisor to

vacate the social space of lead clinician predicated the capacity of the trainee to adopt that identity. This was a process of the supervisor relinquishing power in order to enable the trainee to assume power.

In 'Supervision in general practice'(ch.7), I explored the place of mentorship and role modelling(24). Mentorship is largely about supporting the trainee to develop cognitive schemas which are essentially internalised social structures. Role modelling is a relational process which has the outcome of an internalised identity object derived from the supervisory relationship.

The supervisory relationship itself was also impacted on by the identity development of the trainee. Just as change in the supervisory relationship was necessary for change in the trainee's identity, so also, a change in the configuration of the supervisory relationship depended on the trainee grasping the identity that was made possible for them. In section 6.4.3.1., I introduced Billett's workplace pedagogy as a theoretical frame for conceptualising this two-way dynamic. The interaction between the trainee and the supervisory relationship depends on the engagement of the trainee which depends on the trainee's personal epistemology and on what the relationship invites them into(5, 52).

8.4.2. The cultural world of GP training and trainee identity development

As discussed in section 6.4., cultural theories of identity emphasise the cultural structures that define the identities its members can adopt akin to a bottle into which the individual is poured(1). The cultural world of GP defines the role that the GP trainee might adopt (89), provides the language the trainee can use, and the Discourses that position them(104).

My discussion above, on the outcomes of the cultural stratum becoming outcomes in the relational stratum, applies similarly to cultural outcomes in the trainee's identity. The social Discourses on clinical responsibility, trainee competency, the doctor patient relationship and the general practitioner in relation to other health professionals provide the bounds of the identity offered to the trainee. As discussed, while these Discourses can be hegemonic serving to sustain traditional power differentials, there were non-hierarchical versions of these Discourses that could be and were deliberately adopted. Whether a trainee adopts a hierarchical identity or an egalitarian one will depend on the nature of the Discourses used to define their identity and its social position.

8.4.3. The social construction of general practice training and trainee identity development

The social construction of GP training has been discussed for its impact on the supervisory relationship. It is also a conduit between the cultural stratum and the identity development of the

trainee providing important social framing for in-practice and out-of-practice learning. The GP professional colleges provide reifications(3) of what it is to be a general practitioner through college profiles of a general practitioner, training curricula, policies, and standards. These frame the training programs which in turn are part of the social environment that tells the trainee what it is to be a general practitioner. The colleges and training programs are also institutions that propagate Discourses that frame GP and the social position of general practitioners. These Discourses may or may not be hegemonic.

In the context of impending changes in the construction of GP training, there is an opportunity to build training structures that more specifically address the identity development of the trainee(10, 103). With the recognition of relationship as a key medium for identity development, this requires particular attention to relationship-based education.

8.4.4. The psychology of the trainee and their identity development

Object Relations theory(27, 34, 91), as my psychological conceptual frame, views identity development as a fundamental psychological process. As previously discussed, identity development occurs by the internalisation of relationships(6.4.2.). While the pre-verbal years are where core identity development occurs, identity development is life long and involves ongoing internalisation of the external. This is the process that cultural theorists identify as embodiment and internalised talk. The essential idea is that identity is derived from internalising external relationships, cultural Discourses and cultural capital. This means that the experience of training relationships is important as this becomes the material for internalised self-objects.

The psychological need and capacity for meaning making is fundamental to identity development. While the material for meaning making is culturally and socially derived, the individual makes choices about how this comes together and what meaning they will make for themselves. We thus have agency in the meaning we make and therefore the identity we take on.

Sullivan theorising offers the concept of 'complex subjectivity' as a means of conceiving identity as both personal and social. In his words, the subjective self is an outcome of 'individual intentions and desires…enmeshed and tangled up in social structures and discourses'(8).

8.4.5. In summary: causality and trainee identity development

I have endeavoured to conceptualise trainee identity as a complex multi-layered construction whose properties are the product of outcomes from multiple strata as well as emerging from the interaction of these precedents, the context and individual choice. I have positioned the supervisory

relationship as key to the trainee's identity development both in itself and as a conduit between the psychological, the social and the cultural.

This process of theorising is the creation of knowledge. Knowledge can be used to change the world through informed action(41). My intention is to inform action to change the world of GP training so that it supports trainee identity development in a way that enables the trainee to become the general practitioner that the community needs and the trainee chooses. The conception I propose is complex and suggests that there are many things to consider if we are to be purposefully agentic in enabling the trainee to become that general practitioner.

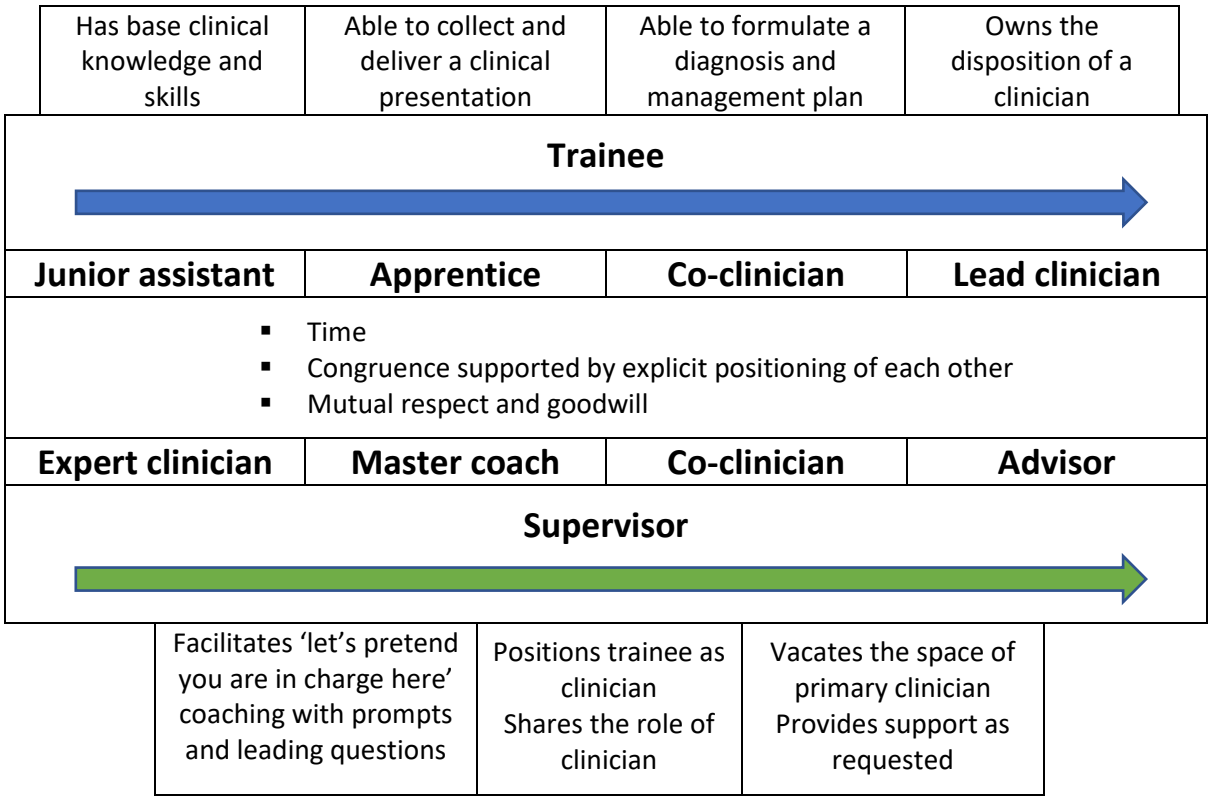
8.5. Informed actions

There has been an increasing call for identity development to be a core part of medical curricula(10, 103). I believe that this should be the case for the curriculum of GP vocational education. How then are we to intentionally act if we are to build a curriculum to support trainees becoming general practitioners recognising that the supervisory relationship is a key context(103)?

Firstly, we need conceptual frameworks that reflect the reality of becoming a clinician in the context of the supervisory relationship, and a language to go with these conceptual frameworks. These conceptual frameworks need to provide explanations for how trainee identity develops within the supervisory relationship. This was the aim of the conceptualising undertaken in chapter 6 - 'Becoming a clinician'. Figure 2 is a representation of this conceptualisation. Conceptual frameworks also need to identify key causal mechanisms from each of the other three strata of the cultural, social organisation and psychological so that these can be purposefully addressed. I have gone some way in doing this with this integrative discussion. Conceptualising the identity development within the supervisory relationship needs to include a conceptualisation of how power works. This thesis gives a model for supervisors to understand their position of power so that they can be purposeful in using it for empowering their trainees. Doing this requires them to relinquish some of their power. This is necessary if the supervisory relationship is to be a medium for the trainee to become a general practitioner. An explicit model with shared language will support trainee and supervisor to achieve common ground in their understanding and expectations of their supervisory relationship and facilitate them in achieving the common purpose of the trainee's development.

Figure 2

The trajectory of trainee development within the supervisory relationship with associated actions and facilitators(23).



At the level of the cultural, we need to be clear about the key Discourses that frame the supervisory relationship and its activities. We need to critique the hierarchical Discourses identifying those that disempower trainees and patients. We also need to take a critical stance towards the ideological assumptions of theoretical frameworks that have gained the status of a cultural truism. In this chapter I have challenged the assumption, taken by a humanistic approach, that success is attributable to individual merit and effort.

At the level of the social organisation of training, we need to act to ensure that the supervisory relationship is resourced sufficiently to enable it to have the capacity to invest effectively in the trainee's development. Supervision is resource intensive. The supervisory relationship needs to be given status by genuinely prioritising it as an educational context. We need a program of education for trainees and supervisors to equip them to be intentional in enabling the trainee's development. The trainees and supervisors need to be empowered and given a voice in the organisation of training as it relates to supervision so that they can determine the context of their supervisory relationship. It is also beholden on those with influence within the institutions of GP training to take responsibility

for ensuring the Discourses they propagate through their training curricula, policies, standards and programs are not hegemonic.

At the level of the psychological, we need to ensure that the core needs of both the trainee and supervisor are considered and addressed, particularly the needs of safety, belonging, and self-determination. When these are not met, anxiety and frustration is generated and the supervisory relationship can be overburdened. Addressing these needs requires adequate resourcing and scaffolding at key times of stress, particularly at the commencement of the first GP placement.

The supervisory relationship justifies this level of investment because it is positioned at the interface of so much that influences the development of the trainee's identity. In this position it has the means to having a highly significant impact on the doctor that the trainee becomes. This in turn determines the way general practitioners act and therefore the impact they have on the communities within which they work.

The fundamental issue is empowerment. In the words of one supervisor (6.4.1.1):

> *GPs really are empowerers of people… enabling them to make decisions about their own health… And similarly, with supervision, it's about empowering the learners. (Supervisor E interview 1)*

Correspondingly, the organisation of GP training must be about empowering the supervisory relationship.

9. Other research areas

The research contained within this thesis focused on the development of the GP trainee in the context of their relationship with a single supervisor. I used clinical supervisory encounters as a window into this relationship and development of the GP trainee. The work of this thesis invites other areas of investigation some of which were explored in my broader program of research and some of which would be fertile areas for future research.

The GP trainee isn't alone in experiencing development; the supervisor, the practice working community, and the patient community also develop. Supervisor identity development was explored with a project from our program of research that is not included in this thesis. We followed seven new supervisors during their first six months, using reflective diaries and interviews as data. A paper has already been published from this work(105) and there is further analysis to be undertaken. The organisational development of training practices was the subject of another project and published paper(106). This work however did not explore the relational and cultural changes that occur within training practices as the trainee and practice interact. The impact of work-based training events on the patient has been explored by others(87, 107). It would be valuable to extend this to exploring the longitudinal development of patients and their communities as they engage with trainees over time. Patients and patient communities are key contributors and stakeholders(108) in the development of GP trainees.

There is more to the supervisory relationship than clinical supervisory encounters and trainees have more than one supervisory relationship. In our research program, we explored feedback exchanges within supervisory relationships(109). Others have explored formal teaching as a context for the supervisory relationship(110). We also explored the trainee experience of multiple supervisory relationships across the whole of training through interviews of newly fellowed GPs; this work is yet to be published. It highlighted the importance of role modelling and mentorship, particularly in the trainee's judgements of 'good practice'(111).

My conceptual exploration has necessarily been limited. I have focussed on the development of the trainee as a GP and on the supervisory relationship. I have been limited in my exploration of the multi-faceted nature of identity. The fundamental issues of gender, race, age, social class and sexual preference (10, 28) have not been explored. Further exploration of these aspects of GP trainee identity development would be valuable. Although discussing power in the context of the supervisory relationship, I have not explored this complex construct itself. This would also be helpful.

10. Concluding reflections and comments

It has been a privilege to be able to do this PhD over the past six years. While it has come late in my working life, it has been an opportunity to draw together thinking from across much of my life in the context of an already well-established career as a clinician and educator. It has been an exciting and mind-expanding journey. In knocking on the door of medical education scholarship, the door has been opened with generous welcome. There has been a parallel in the content of the PhD and its journey in that both have been about identity development. In developing theory about 'Becoming a general practitioner' I have taken a journey in 'Becoming a scholar'. I would not have become a scholar without the generous welcome of the community of medical education scholarship and the relationships they have offered, some of whom I have acknowledged in the introduction to this thesis. The key relationship in my journey into scholarship has been my supervisory relationship with my principal supervisor, Prof Debra Nestel.

I have just commenced a new chapter of my working life in taking on the role of Principal Medical Educator at the RACGP. Completing this PhD is an important part of this. In this new position I have a leadership role in developing RACGP education. This involves leadership in redesigning the model of GP vocational training, building an educational framework to cover all of GP training from undergraduate to post fellowship, and revising RACGP educational standards and curricula. Building on the work of this thesis, my focus is education that is purposefully designed with the outcomes in mind and with an understanding of the structures and mechanisms that lead to these outcomes. The central outcome is general practitioners who have the knowledge, skills and aptitude necessary to address the needs of the Australian community in whatever context they live. Identity development and the causal mechanisms to this are fundamental to this outcome. Identity development requires relationships and so GP education needs to, at its core, enable relational learning. This means attending to structures across the spectrum of the personal to the cultural. My working life and this PhD have privileged me with abundant cultural and social resources to bring to this work. I hope that I can do this credit.

11. Appendices

List of appendices:

Appendix A: Methods used in each piece of research

Appendix B: Details of papers included in thesis

Appendix C: Interview guides for 'Remodelling General Practice Training' research

Appendix D: Interview guides and post-encounter reflection prompt sheets for 'The supervisory encounter' research

Appendix E: Academic outputs

11.1. Appendix A: Methods used in each piece of research

Study/ paper	**Theory a lost character?** (Ch.3)	**Remodelling GP training (**Ch.4)	**The clinical supervisory encounter** (Ch.5)	**Becoming a clinician** (Ch.6)
Aim	• To develop a frame for using theory in GP vocational education research papers to support theoretical connoisseurship in GP vocational education research.	• To inform the reconstruction of Australian GP training during the current period of change	• To understand what happens when GP trainees call on their supervisor for help with the care of patients and how learning can be enhanced when this occurs	• to develop a conceptualisation of trainee identity formation within the GP supervisory relationship to aid its support.
Questions	• What theories are being given an explicit role? • What tasks and roles are being assigned to *theory*? • What impact does the way *theory* is presented in the research story have on the reader?	• What are the tensions experienced by those delivering the Australian GP training program? • What solutions are they enacting in response to these tensions? • What are international solutions to these tensions?	• What happens when the senior trainee calls on their supervisor for help in their care of patients? • How can trainee learning be enhanced when this occurs?	• What shapes the clinical trainee's identity in the context of GP supervised practice? • How does the clinical trainee's identity change over time within GP supervised practice?
Data sources	• GP vocational educational research papers that explicitly use theory	• Key informants – senior educators and leaders within training organisations of interest • Publicly available documents pertaining to the training organisations	• Five cases each made up of a GP trainee with their supervisor in an established supervisory relationship and in a GP work-based learning setting	• Five cases each made up of a GP trainee with their supervisor in an established supervisory relationship and in a GP work-based learning setting

Data collection method	• Systematic literature search using terms that collected papers that explicitly referred to a theoretical framework ○ Purpose: to ensure that we collected a comprehensive range of uses of theory	• Purposeful sampling • Structured interviews framed by the research questions and informed by reading of publicly available documents	• Initial semi-structured interviews with each participant • Weekly real-time audio-recordings of clinical supervisory encounters over a ten-week period • Audio-recorded reflections by each of the trainee and supervisor separately recorded immediately after each encounter	• Sequential semi-structured interviews with each participant. • Weekly real-time audio-recordings of clinical supervisory encounters over a twelve-week period • Audio-recorded reflections by each of the trainee and supervisor separately recorded immediately after each encounter
Rationale	• To ensure that we collected uses of theory that were not confined to the way the that the research team preferred to use theory	• To access already well-informed data sources given the size of the field of interest and the complexity of the issues considered by our questions	• Insight into the beliefs and intentions about supervision • To focus on supervisory interactions within supervisory relationships • To gain a view on what actually happens in supervisory interactions • To gain a view on the meaning making by each of the trainee and their supervisor	• A view on meaning making and authoring on experiences of their supervision • To focus on the social dynamics of identity formation and enactment • Naturalistic data as a view on what actually happens in supervisory encounters • To gain a view on the internal dialogue that accompanies the enactment of identity

Analytic methods	• Content analysis
	  ○ Purpose: To detail what theories were used
	• Interpretative thematic analysis
	  ○ Purpose: To identify and categorise the way theory was being used
	• Heuristic analysis
		• Interpretative thematic analysis with inductive and deductive coding to create a framework of thematic categories which was reapplied to the data	• Within case and across case analysis of patterns of dialogue and social action
			• Interpretative thematic analysis with inductive and inductive coding to identify explanatory themes
				• Within cross-case analysis of the social 'doing' of the talk using Sullivan's dialogic methods.
				• Analytic framing with Holland et al's theorising
				• Initial analysis used to build an analytic framework which was applied back to the data

	○ Purpose: To identify the impact on the reader of the way theory was used			• Narrative summaries of each case created which was used for cross-case analysis • Deep analysis of one case to explore causal processes
Methods for analytic rigour	• Theoretical framing • Reflexivity • Team discussion • Multiple researchers analysing the same data and discussing the findings • Concurrent data collection and analysis • Constantly returning to the data during the analysis	• Theoretical framing • Reflexivity • Team discussion • Multiple researchers analysing the same data and discussing the findings • Concurrent data collection and analysis • Constantly returning to the data during the analysis • Input from an expert reference group • Testing findings for authenticity with groups of GP supervisors and medical educators.	• Theoretical framing • Reflexivity • Team discussion • Multiple researchers analysing the same data and discussing the findings • Constantly returning to the data during the analysis • Triangulation between the three data types • Analysis of discrepant data and consideration of alternative explanations • Use of memoing during analysis	• Use of an established dialogic methodology • Theoretical framing • Use of memoing and reflexivity during analysis • Team discussion • Multiple researchers with different perspectives analysing the same data • Constantly returning to the data during analysis • Triangulation between the three data types • Analysis of discrepant data and consideration of alternative explanations

11.2. Appendix B: Details of papers included in thesis

	Publication	**Publication type**	**Status**	**Journal**	**Altmetric Attention Score 28/03/21**
1	Theory, a lost character? As presented in general practice education research papers(18)	Research Paper	Published May 2019	Medical Education	40
2	Theories and myths in medical education: What is valued and who is served?(25)	Commentary	Published Jan 2020	Medical Education	8
3	Remodelling general practice training: Tension and innovation(19)	Research Paper	Published Nov 2019	Australian Journal of GP	N/A
4	The supervisory encounter and the senior GP trainee: managing for, through and with(20)	Research Paper	Published Feb 2018	Medical Education	16
5	Becoming a clinician: Trainee identity formation within the GP supervisory relationship(23)	Research paper	Published Oct 2020	Medical Education	23
6	Supervision in general practice settings; in Clinical Education for the Health Professions: Theory and Practice(24)	Book Chapter	Published July 2020	Springer Nature Major reference work	N/A

11.3. Appendix C: Interview guides for 'Remodelling General Practice Training' research

Australian Training Organisation Interview Schedule

Introduction:

Thank you for participating in this project and for meeting with me today. The research is a scoping project seeking to understand the models of GP vocational training in Australia and in selected international settings. In the Australian context, we are aiming to examine the ways in which GP training models are delivered and how each RTO grapples with the mandated requirements of training and education. A component of this project is to interview spokespeople from key stakeholders such as the RTO's, RACGP, ACRRM, LIME Network, GPSA & GPRA.

Can you please keep your responses relevant to within the time frame of 2016 onward after the RTO restructure occurred thank you.

Do you have any questions you would like to ask about the research or anything else at this point?

Section 1: Your Program / Why

Set up: We are very interested in how of how, at the practical level, you are delivering GP education within the constraints of the formal curriculum.

1.1 Can you tell me about the program at XX

1.2 Can you tell me what excites you about the learning program at XX and what you are proud of?

1.3 Can you tell me what you find challenging about the learning program at XX?

1.4 What drives innovation, creativity and change in your program?

1.5 Can you tell me about what you see as the priorities for what you want GP registrars' to learn?

Probe: How are registrars' professional identity development supported

1.6 What aspects of the program do you think have the most impact on registrars?

Probes: What makes you think that? What outcomes are you seeking?

1.7 Can you tell me what informs the decisions about how the RTO learning program is built? How much freedom do you have to modify the formal curriculum?

Probe: Does medical education theory and evidence based research have a role in this?

1.8 How much influence do you think the RTO has on in-practice teaching?

Probe: how do you engage supervisors? What is your program of feedback, reporting and evaluation? M.E. and Supervisor team reviews and assessment & regular visits to clinics.

Section 2: What

2 I am interested in three aspects of learning: the content, its application and then learning to be a professional. Can you reflect on how each of these is learnt?

Section 3: Where to

3.1 Within the current constraints, where is the RTO training program likely to go, or planning to change in the future?

3.2 What do you think is driving that change?

3.3 Where do you think the AGPT is likely to go in future?

Australian Colleges & Key Stakeholder Questions:

Can you please keep your responses relevant to within the time frame of 2016 onward after the RTO restructure occurred thank you.

Do you have any questions you would like to ask about the research or anything else at this point?

(Key stakeholders) Can you tell me how long you've been doing this role?

1) Can you discuss your organisations relationship with the RTO's and how you work with them to deliver GP education?

2) It's been 18 months since the restructure reforms have been bought in – what are your observations of what is working well and where you think the RTO's are in this process?

3) Do you have any observations about how the RTO's approach GP education?

4) What strengths do you see in the delivery of education through the RTO's?

5) What problems do you see in the delivery of education through the RTO's?

6) What would you say are the most important issues of training that need to be addressed? What gaps do you think need to be filled?

Probe: the support of registrar professional identity

7) Where do you think GP training and delivery in Australia needs to head into the future?

8) Given there are two colleges in this space how do you do this together?

Interview questions Canadian informant

(a similar format was used for informants from New Zealand, Ireland, UK and Netherlands with minor changes in the direction of questioning based a priori understanding of the context)

Introduction

Thank you for meeting with me. I am keen to hear about how family physician trainings works in Canada and to consider what Australia could learn from your experience.

Please can I check that you received the consent form and the question guide? The guide was drafted following a literature review but do let me know of important aspects that you think we should covert that I have missed. The questions start broadly but then we will get to more specific elements of the program.

Do you have any questions you would like to ask about the research or anything else at this point?

Section 1: Interviewee and role?

1. Please can you summarise your experience in family physician training and your current role

Section 2: What happens in training?

2. Please can you outline how family physician training works in Canada

I am interested to consider three aspects of learning, the content, its application and then learning to be a professional. Can you reflect on how are each of these learnt?

- Content
- Application
- Learning to be a family physician

3. What aspects of the program do you think have most impact on registrars/residents?

Section 3: Rationale for the program

4. Looking back, can you fill me in on why your program is set up as it is.

Possible cues:

- Educational theory
- How general practice is set up
- How training is financed

Section 4: Specific aspects of the program (if not already discussed)

- **GP registrars being based in GP, and then returning to hospital for specific terms**
- **Introduction of competency based education Assessment: Use of entrustable professional activities**
- **Influence of GP training run by Universities**
- Duration of training
- Compulsory hospital terms, hours of workshops, day release
- Generalism v subspecialisation with 'general practice'
- Approach to IMGs
- Innovations in practice teaching
- Innovations in workshops, day release
- Teaching rural practice
- Cultural safety
    - Are there specific elements that you think work well? Why?
    - Are there any elements that you think could be improved?

Section 5: Where to?

5. Where is the training program likely to go, or planning to change in the future? What is driving that change?

11.4. Appendix D: Interview guides and post-encounter reflection prompt sheets for 'The supervisory encounter' research

Topic Guide for Initial Interview with GP Supervisors

Time of interview:

Date:

Place:

Interviewer:

Interviewee:

Preamble

Thanks [name of supervisor] for agreeing to participate in our research. As you know, this is a project about ad hoc supervision which is said to be an important component of registrars' learning. By ***ad hoc*** supervision we mean learning and teaching encounters between the supervisor and the registrar which are ***not*** part of the formal - or protected - teaching time. (I will mostly refer to 'ad hoc encounters' in this interview.) An example is when a registrar calls for help from their supervisor when they are both consulting with their own patient. We are also interested in any follow up that occurs between you and [name of registrar] after an ad hoc encounter. An example may be where you later intentionally discuss one of [name of registrar's] patients that you were asked to help with earlier that day.

We want to find out what happens in ad hoc encounters, about which there has been little research. Through this, we hope to find what works well in order to share how ad hoc encounters can be effective.

You have been asked to participate in this project as you've been identified as an exemplary supervisor – so we want to learn as much as we can about your perceptions of these encounters as 'learning and teaching' opportunities, and about the context around them.

Before we start on the interview, I want to reiterate a couple of things regarding your consent to participate. Any information or data that we gather from your participation will be de-identified. This means that you, your input and the Practice will not be identifiable in reports, papers, education resources or any other outputs which arise from this research. The interview questions are loosely grouped around four categories which are: background about you as a GP and supervisor, questions regarding the context in which you are a supervisor, questions about the relationship between you and the registrar, and questions about ad hoc encounters themselves. So, if you're happy to continue….

BACKGROUND DETAILS

We'll start off talking about you as GP and supervisor…

1. As briefly as you can, tell me about your 'journey' to becoming a GP
   - ***Probe*** *… Did you study straight from school, or come to medicine by way of another profession, or study in a post graduate medical course?*
2. So that means you've been a GP for how long…..?

3. And how long have you been a supervisor?
4. What motivated you to take on the extra role of supervisor?
    - ***In order to probe further could ask:***
    - ***Is there anything inherent within medicine that encourages teaching as part of the profession?***
    - ***Could there be a pragmatic approach to supervision – ie need more GPs, so supervising is one way to get one into the Practice?***
    - ***Have your motives changed over time?***
5. Can you explain your approach to supervising?
    - ***What are the main elements and responsibilities?***
    - ***What might be the skills and qualities needed?***
    - ***Do you see teaching as one of the roles?***
6. Can you tell me about any supervisor workshops or other CPD that you've found useful in your role as supervisor?
7. Are there any skills you *would like* to develop which would help you in supervising registrars?
    - ***Probe – can you please expand on these? How would you acquire them? Have you identified a formal course? Could you work deliberately on developing your open-ended questioning skills, for example?***
8. You've mentioned that teaching is one of the main responsibilities of supervision**,** including the supervision of ad hoc encounters. Can you describe your approach to teaching?
    - ***Alternative… You didn't mention teaching as a key component of supervision. Do you think a supervisor does have a teaching role? If yes, can you explain your approach to teaching?***
9. Do you have any formal teaching qualifications? If yes, what are they?

CONTEXT

The context in which you work is of interest to us, so this next couple of questions will be quite broad…

10. Can you describe the culture that exists in your Practice?
    - ***Is it team oriented? Individualistic? Interdisciplinary? Supportive?***
11. You've explained your approach to supervising. How is supervision viewed more broadly within the Practice?
    - ***Is it encouraged? Ongoing? Is there any interdisciplinary supervision for the registrars- eg allied health, nurses? Other levels of medicine – eg med students?***

RELATIONSHIP

The next questions are about the relationship between the supervisor and registrar…

12. The Practice has a formal induction procedure which new registrars undertake. Are there other things which go beyond this that you like to do with a new registrar?
    - ***Probe – More personal things, for example, organising a meet and greet with colleagues, taking the new registrar for dinner, finding out about their interests, family etc. If they are new to the town, showing them points of interest.***

- ***Concept of the relationship between a new registrar (and colleague) and supervisor…***

13. The supervisory relationship is exactly that; a relationship. What do you think is important in the supervisor – registrar relationship?

- ***Do you think it is important? If so, how do you build and maintain the relationship in the work environment? How do you handle conflict or differences?***

AD HOC SUPERVISION ENCOUNTERS

Now we'll turn our attention specifically to ad hoc encounters, bearing in mind that these are learning and teaching encounters between the supervisor and the registrar which are not part of the formal - or protected - teaching time.…

14. What do you see as being important about ad hoc encounters?

- ***As a supervisor there is a tension between your role as a clinician - making sure that the patient is safe and getting the best possible care - and your role as teacher. How do you try and manage this tension?***
- ***As a profession, medicine appears to value doctor autonomy and independence. How does this impact on your supervision?***

15. Do you have any agreed process between you and [name of registrar] when it comes to requesting your immediate help?

16. You might be seeing patients when the registrar calls for support. Can you outline the range of other activities you might be doing when the registrar asks for help?

- ***Are you always seeing patients whilst [name of registrar] is consulting? If not, what other role do you have within the Practice?***

17. How do you try to facilitate ad hoc encounters?

- ***What happens in an ad hoc encounter?***
- ***Do you use any particular framework for supervising/teaching in these encounters? Do you view it as a teaching opportunity? Is it demonstration, talking them through it?***

18. What range of immediate reactions do you have on being called for assistance by [name of registrar]?

- ***Are they very irritating? Is it stressful changing from practice mode to teaching mode ie going from being with a patient to being with a registrar? A necessary evil?***
- ***Do you see it as rescuing the registrar? Role modelling what should be done? An opportunity for teaching? Supervising?***
- ***Do you have any back up to help the registrar in case you have a patient you cannot leave?***

19. Can you describe an ad hoc encounter that was 'exemplary', that you think worked really well?

- ***What made/why was it successful?***

20. Can you describe an encounter which you think was not a success?

- ***Why do you think it was not successful?***
- ***What factors contributed to it not working?***

21. If we turn our attention to the topic of feedback arising from a particular ad hoc encounter… How do you provide this feedback to [name of registrar]?

- ***In what setting? What is the impact of the presence of the patient on feedback?***
- ***What sort of feedback might be given? Do you tend to praise, use constructive criticism…? What happens to this feedback? Does it make its way back into a learning plan?***
- ***If not, why not? Time constraints?***

22. When the registrar calls you into the consulting room, what considerations do you have for the registrar's relationship with the patient?

- ***Is there any impact on the registrar/patient relationship? How do you balance the need to get things right, without undermining the registrar?***

23. It is likely that there are qualitative differences between formal teaching and ad hoc encounters which impact on what a supervisor can say or do. Do you agree with this? If so, what are the differences?

- ***What can't you say or do in an ad hoc encounter? What can you say and do in a formal teaching session that you can't do in an ad hoc encounter?***
- ***Are you able to keep the learning needs of the registrar in mind in ad hoc encounters?***
- ***Time constraints v patient safety…***
- ***How does feedback differ between the formal and the ad hoc time that you spend with the registrar?***

24. What impact do you think the ad hoc supervision of registrars has on the day-to-day running of the Practice?

LAST QUESTION

One last sensitive question….

25. Age?

- ***25-34***
- ***35-44***
- ***45-54***
- ***55-64***
- ***64+***

DO YOU HAVE ANY QUESTIONS?

Thank you

Topic Guide for Initial Interview with GP Registrars

Time of interview:

Date:

Place:

Interviewer:

Interviewee:

Preamble:

Thanks [name of registrar] for agreeing to participate in our research.

As you know, this is a project about ad hoc supervision which is said to be an important component of registrars' learning. By ***ad hoc*** supervision we mean learning and teaching encounters (or 'ad hoc encounters', as they will be referred to in this interview) between the supervisor and the registrar which are ***not*** part of the formal, or protected, teaching time. An example is when you call for help from [name of supervisor] when you are both consulting with your own patient.

We are also interested in any follow-up that occurs between you and [name of supervisor] after an ad hoc encounter. An example may be where you later discuss one of your patient consultations that you called [name of supervisor] into earlier that day. We want to find out what happens in these encounters, about which there has been little research. Through this, we hope to find what works well in order to share how ad hoc supervision can be effective.

We want to learn as much as we can about how you perceive the way you are supervised in these ad hoc encounters, what you learn from them and about the context around them. We are interested in your view and your perceptions of ad hoc supervision which will include your views of [name of supervisor] as supervisor.

Before we start on the interview I want to reiterate a couple of things regarding your consent to participate. Any information or data that we gather from your participation will be de-identified. This means that you, your input and the Practice will not be identifiable in reports, papers, education resources or any other outputs which arise from this research.

The interview questions are loosely grouped around several categories including: background about you as a GP and registrar, questions regarding the context in which you work and are supervised, your perceptions of supervision and learning, and questions about ad hoc encounters themselves. So, if you're happy to continue….

BACKGROUND DETAILS

We'll start off talking about you as GP and registrar…

2. Can you briefly tell me about your journey to becoming a GP?

- ***Did you study straight from school, or come to medicine by way of another profession?***
- ***Did you do your medical studies in a post graduate medical course?***
- ***How*** *long have you been in this practice?*

3. What motivated you to enter general practice training?

CONTEXT

The context in which you work is of interest to us, so these next few questions will reflect that…

3. Let's start with a broad question – you've been **here X weeks/months**. What are your impressions of the culture within this Practice?
    - ***Depending on how long they've been in the practice, may ask about initial impressions….***
    - ***Is it team oriented? Individualistic? Interdisciplinary? Supportive?***
4. Can you describe your induction to this practice?
    - ***What was covered? Was it helpful? Comprehensive enough?***
    - ***Did you discuss your learning plan during induction? Did you clarify your role, and that of your supervisor?***
    - ***Were there any informal elements to your induction? Social events? Familiarity with new town and facilities? Any effort by the new supervisor to establish a relationship?***
5. Reflecting back on your semester here (**or on the few weeks** in this practice), how's it going so far?
    - ***Are you comfortable working in this Practice? Are you happy with the consulting room, patient list, access to your GP supervisor, access to supervision from other disciplines?***

PERCEPTIONS OF SUPERVISION, TEACHING and LEARNING

I'd like to ask some questions about your thoughts on supervision and learning stemming from all your experience….

6. In your experience, what makes a good clinical supervisor?
    - ***Elements of supervision and responsibilities they undertake***
    - ***Specific personality or characteristics of a good supervisor or teacher that you've experienced?***
7. Can you talk about the relationship you have, or wish to build, with [name of supervisor] as your supervisor?
    - ***How important is it? How do you cultivate it together?***
8. Have you found that there are some ways of learning which are more effective for you?
    - ***In terms of retaining knowledge, feeling confidence in your new knowledge and practice, etc?***
    - ***Eg demonstration, learning by doing?***

AD HOC SUPERVISION ENCOUNTERS

Let's talk about ad hoc encounters…

9. What do you see as being important about ad hoc encounters?
    - ***What do you want to get out of them?***
    - ***Patient safety?***
    - ***Registrar safety?***

- ***Learning and teaching?***

10. Do you have an agreed process between you and [name of supervisor] when you need to request immediate help?
- ***If so, what is it? If not, how are the ad hoc encounters initiated?***
- ***Phone? Any other method?***

11. What guidance has [name of supervisor] given you regarding what to ask for help about?
- ***Any limitations? Are there any conditions which must be seen by him?***

12. In what circumstances have you actually called your supervisor for help?
- ***Could be a range of circumstances. Is it lack of specific knowledge? Lack of confidence with new knowledge/practice? Second opinion?***

13. What generally happens in one of these ad hoc encounters?
- ***Eg, demonstration, quick question and answer, what actually happens? Do you see it as a learning opportunity?***

14. How do you feel about ad hoc encounters?
- ***How does the supervisor respond? What is his/her demeanour like? Are you happy to have the supervisor so responsive? How do you handle being closely observed?***
- ***Has there been a time when you have wanted to call for help but haven't, or have been reluctant to? Can you explain the circumstances?***

15. Can you describe an ad hoc scenario that was 'exemplary', that you think worked really well?
- ***What made/why was it successful?***

16. Can you describe an encounter which you think was not a success?
- ***Why do you think it was not successful? What factors contributed to it not working?***

17. As opportunities for learning, how do ad hoc encounters differ from formal education sessions?
- ***What and how do you learn in each? Is time a factor? What type of feedback do you receive?***

18. In what circumstances might you follow-up what happened in the ad hoc encounter with [name of supervisor]?
- ***Or are they typically self-contained within that consultation?***

19. As a profession, medicine appears to value doctor autonomy and independence. How does this affect your work as a registrar and the way you are supervised?
- ***Expand on their answer...***

20. On the basis of what you've experienced so far in this Practice, and given that you have had previous supervisors in other settings, what is your sense of [name of supervisor] as a supervisor?
- ***[name of supervisor's] clinical skills, are you getting the supervision you need, is it in a style that works for you, are you learning from [name of supervisor]?***

21. If any, what sort of feedback do you want about your performance from [name of supervisor]?
- ***How often, in what setting, do you respond to praise or constructive criticism…?***

22. What sort of responsibility do you think you have for asking [name of supervisor] for feedback about your performance?

LAST QUESTION

One last sensitive question….

23. Can you please tell me your age, or indicate which band you fall in to?

- ***25-34***
- ***35-44***
- ***45-54***
- ***55-64***
- ***64+***

ANY QUESTIONS?

Thank you

Prompt sheet of supervisor reflections

Introduction

After each recorded ad hoc encounter, we would like you to make a short audio-recording as soon as possible. This should take just a couple of minutes.

There are two main aims in asking you to record some comments after each ad hoc encounter.

The first is to do with describing the **immediate context or situation that you were in at the time of the registrar's request for support and understanding the factors, as you perceived them, that impacted on the way you responded to the registrar's request**. For example, you may have been in the middle of a patient consultation and had to weigh up the priority of your patient's immediate need against the registrar's and their patient's immediate need. You may also be dealing with other issues such as the fact that you were running behind time with your own patients.

The second is to capture your reflections on the encounter itself. **Remember that the encounter has been recorded, so we do not need you to describe the encounter.** We are interested in how you decided on your response to the registrar's request and how you judge the outcome of the interaction.

After each ad hoc encounter please record your answers to the following

1. Your name

2. Date and approximate time of encounter

3. Please describe:

   a. What were you doing when the registrar requested your help? I.e. the immediate context or situation that you were in when the registrar requested support?

   b. The factors as you perceived them that impacted on the way you dealt with the registrar's request**.**

4. Record your reflections on the encounter itself. How did it go from your point of view?

5. Anything else you think important or significant?

Prompt sheet for registrar reflections

Introduction

As soon as possible after each recorded ad hoc encounter, we would like you to make a short audio-recording. This should take just a couple of minutes.

There are two main reasons for asking you to record some comments after each ad hoc encounter.

The first is to do with describing the circumstances that gave rise to you contacting your supervisor for support.

The second is to capture your reflections on the encounter itself.

The questions are followed by a number of prompts. **Remember that the encounter has been recorded, so we do not need you to describe the encounter.** We are interested in how you judge the outcome of the interaction with your supervisor.

Do not feel constrained by the prompts. Rather, please be as expansive as possible, given the constraints in which you are working.

After each ad hoc encounter please record your answers to the following:

1. Your name

2. Date and approximate time of encounter

3. Please describe why you thought you needed to call for your supervisor for support**.**

- ***a.*** *What was the dilemma or trigger?*
- ***b.*** *What were you hoping to get from your supervisor?*

4. Record your reflections on the encounter itself.

- ***a.*** *How did it go from your point of view?*
- ***b.*** *What was achieved?*
- ***c.*** *To what degree did the supervisor's response meet your original need?*
- ***d.*** *To what degree were you satisfied with the way the supervisor responded to your request?*

5. Anything else you think important or significant?

11.5. Appendix E : Academic outputs

Publications

Year	Publication	Journal	Authors
2014	Building on the evaluation of STARS: Using online repositories to support the general practice learning community(112)	Evaluation Journal of Australasia	Fan S, Cooling N, Radford J, Fabian D, **Brown J**
2014	Benefits and challenges of multi-level learner rural general practices--an interview study with learners, staff and patients(113)	BMC Medical Education	Morrison T, **Brown J**, Bryant M, Nestel D
2015	Australian GP registrars' use of e-resources(114)	Education for Primary Care.	Denny B, Chester A, Butler M, **Brown J**
2015	Leading the rebirth of the rural obstetrician(115)	The Medical journal of Australia	Campbell A, **Brown J**, Simon D, Young S, Kinsman L
2015	GP supervisors assessing GP registrars-theory and practice. Australian Family Physician(116)	Australian Family Physician	Wearne S, **Brown J**
2015	A framework for developing rural academic general practices: a qualitative case study in rural Victoria(106)	Rural and remote health.	**Brown J**, Morrison T, Bryant M, Kassell L, Nestel D
2015	Perceptions of ad hoc supervision encounters in general practice training: A qualitative interview-based study(21)	Australian Journal of General Practice	Morrison J, Clement T, Nestel D, **Brown J**
2016	Ad hoc supervision of general practice registrars as a 'community of practice': analysis, interpretation and re-presentation(22)	Advances in health science educations	Clement T, **Brown J**, Morrison J, Nestel D
2016	"Let's not reinvent the wheel": A qualitative investigation of collaboration in the Australian GP education and training sector(117)	Focus on Health Professional Education	Denny B, Chester A, **Brown J**
2016	Underdiscussed, underused and underreported": pilot work in team-based qualitative research(118)	Qualitative research journal	Morrison J, Clement T, Nestel D, **Brown J**
2016	Utility of learning plans in general practice vocational training: a mixed-methods national study of registrar, supervisor, and educator perspectives(119)	BMC medical education	Garth B, Kirby C, Silberberg P, **Brown J**

2018	The supervisory encounter and the senior GP trainee: managing for, through and with. Medical education(20)	Medical Education	**Brown J**, Nestel D, Clement T, Goldszmidt M
2019	Theory, a lost character? As presented in general practice education research papers(18)	Medical Education	**Brown J,** Bearman M, Kirby C, Molloy E, Colville D, Nestel D
2019	International medical graduates and general practice training: Facilitating the transition from new migrant to local family doctor(59)	Medical Teacher	Wearne S, **Brown J**, Kirby C, Snadden D
2019	'Your head can literally be spinning' A qualitative study of general practice supervisors' professional identity. Australian Journal of General Practice(105)	Australian Journal of General Practice	Garth B, Kirby C, Nestel D, **Brown J**
2019	'I'm never going to change unless someone tells me I need to': fostering feedback dialogue between general practice supervisors and registrars(109)	Australian journal of primary health	Denny B, **Brown J**, Kirby C, Garth B, Chesters J, Nestel D
2019	Remodelling general practice training: Tension and innovation(19)	Australian Journal of General Practice	**Brown J**, Kirby C, Wearne S, Snadden D
2020	Theories and myths in medical education: What is valued and who is served?(25)	Medical Education	**Brown J**, Nestel D
2020	General Practice Education: Context and Trends(120)	Clinical Education for the Health Professions: Theory and Practice.	Wearne S, **Brown J**
2020	Becoming a Clinician: Trainee Identity Formation Within the General Practice Supervisory Relationship(23)	Medical Education	**Brown J**, Reid H, Dornan T, Nestel D
2020	Supervision in general practice settings(24)	Clinical Education for the Health Professions: Theory and Practice.	**Brown J**, Wearne S
2020	Feedback That Helps Trainees Learn to Practice Without Supervision(121)	Academic Medicine	Bearman M, **Brown J**, Kirby C, Ajjawi R.

Research Projects led

Title	Funder	Budget	Date of completion
Enabling the rural academic practice	General Practice Education and Training (GPET)	$199,740	June 2012
Extending Supervisory and Educational Capacity: Web Based Supervision, Clinical Teaching Visits and Workshop Attendance.	GPET	$243,699	June 2012
Developing a community of learning: identifying and modelling the use of social media in General Practice education resources	GPET	$152,410	June 2012
Ad hoc supervisory encounters between GP-supervisors and GP-registrars: Enhancing quality and effectiveness.	GPET	$199,950	February 2014
Sharing online educational resources, platforms and practices for e-learning/m-learning in GP registrar education: A review and feasibility study	GPET	199,994	February 2014
Leading the Rebirth of the Rural GP Obstetrician (Co-Led)	Southern GP Training	$70,840	April 2014
Learning Planning in General Practice Vocational Training	GPET	$254,794	October 2015
Interns in rural general practice: Supervision and the development of independence and identity	GPET	$233,171	November 2015
From clinician to educator: GP supervisor professional identity formation and the implications for training.	Australian Govt. Department of Health	$150,000	February 2017
GP supervisors as clinicians and educators: Developing and maintaining multiple professional identities	Australian Govt. Department of Health	$106,827	February 2016
Review of models of GP vocational training and education in Australia and internationally.	Eastern Victoria GP Training	$225,000	August 2018
Feedback exchanges, supervisory relationships and the educational alliance: implications for GP registrar and supervisor training and support.	Education Research Grant RACGP	$150,000	August 2018

First presenter conference presentations and workshops since 2015

National Annual General Practice Education and Training Convention

2015

- The development of identity as Learning trajectory - academic paper
- Do registrars learn what they need to learn? - academic paper
- Are registrars ready to consult?
- Making the most of ad hoc supervisory encounters – workshop

2016

- Supporting new GP supervisors in their transition to educator

2017

- The supervisory encounter; managing multiple agendas.
- How is educational theory used in GP vocational training research?

2019

- Enhancing the quality of your qualitative research design – workshop
- Off to a good start. Managing the transition into GP training – workshop
- Who is in charge here? The supervisor and the trainee with the patient – academic paper

Rural Medicine Australia Conference

2015

- Development of independence and professional identity in rural general practice placements - academic Paper

2016

- Maximising the educational value of the supervisor encounter

2017

- "It always helps you to become a better supervisor": connecting with other supervisors for GP supervisor identity formation

Association of Medical Education in Europe- AMEE Conference

2018

- Research that challenges how we think about Clinical Supervision: How we supervise compromises, rather than supports, trainee identity formation
- A systematic review of theory in general practice vocational training research. What theory, in what way and to what purpose? – research paper

2020

- Student to clinician. Identity development within the supervisory relationship – research paper

Other Academic outputs

2018	YouTube presentation on the GP supervisory encounter: https://www.youtube.com/watch?v=XrvMix1kczo&feature=youtu.be
2019	Medical Education podcast: Theory, a lost character? As presented in General Practice education research papers - James Brown's Interview https://podcasts.apple.com/gb/podcast/theory-lost-character-as-presented-in-general-practice/id784455563?i=1000435500200
2015-2020	Multiple presentations to groups of trainees, supervisors and medical educators in my work with Eastern Victoria GP training

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