

**AN EPISTEMOLOGICAL ASSESSMENT OF POSITIVISTIC KNOWLEDGE AND
HUMANISTIC KNOWING IN MEDICAL CARE**

by © Hillary Ferguson

A Thesis submitted

to the School of Graduate Studies in partial fulfillment of the
requirements for the degree of

**Master of Health Ethics, Division of Community Health and Humanities/
Memorial University/Faculty of Medicine**

Memorial University of Newfoundland

October 2018

St. John's, Newfoundland and Labrador

Abstract

This thesis investigates how medical knowledge is developed, implemented and applied. Two types of knowledge are discussed: (1) the positivist stance, regarding observation and evidence as the highest epistemic virtues; (2) humanistic ways of knowing, which consider subjectivity and nuance in medicine. I will discuss three forms of humanistic knowledge categorized as *personalized*, *aesthetic* and *moral* ways of knowing. These forms of knowledge embrace the humanistic goals of medicine and address the individual nature of healing. They seek to empower original thought, intuitive understanding, and ethical sensitivities in healthcare professionals. In contrast to the overarching mission of positivistic medicine to produce general knowledge about patient groups, humanism looks to particular patients and their unique caregivers. Positivistic knowledge and humanistic ways of knowing are viewed as essential to the clinical decision making process and are deemed to be complementary approaches, not rival theories. Used in combination, both strategies for seeking knowledge strengthen the overarching goals of medicine.

Acknowledgements

I would like to express sincere gratitude to my Master's supervisor Dr. Christopher Kaposy, and my committee members Dr. Fern Brunger and Dr. Daryl Pullman, for their unwavering support and guidance throughout all stages of this thesis project. I would like to thank my family and partner for supporting me. I dedicate this thesis to my late mother, Wendy Banting, whose own musings inspired this line of questioning.

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List of Abbreviations

AMA	American Medical Association
CanMEDS	Canadian Medical Education Directions for Specialists
CMA	Canadian Medical Association
EBM	Evidence-Based Medicine
ED	Emergency Department
FCC	Family-Centered Care
GRADE	Grading of Recommendations, Assessment, Development, and Evaluation
ICU	Intensive Care Unit
IOM	Institute of Medicine
PCC	Patient-Centered Care
RCPSC	Royal College of Physicians and Surgeons of Canada
RCT	Randomized Controlled Trials
RNPDC	Registered Nurses Professional Development Centre
RRT	Rapid Response Team
SDM	Shared Decision Making

Chapter 1 – Introduction

This thesis is about how medical knowledge is developed and implemented. Two types of knowledge are discussed in this thesis. Each type relates to how we approach and understand medical knowledge, and how we apply it. At one end of the spectrum is the positivist stance, regarding observation and evidence as the highest epistemic virtues. Humanistic ways of knowing rest at the other end of the spectrum. These ways of knowing involve subjectivity and nuance, which are unavoidable in the medical sphere. I will discuss three forms of humanistic knowledge. These include *personalized*, *aesthetic* and *moral* ways of knowing in medicine. These forms of knowledge embrace the humanistic goals of medicine and address the individual nature of healing. They seek to empower original thought, intuitive understanding, and ethical sensitivities in healthcare professionals. In contrast to the overarching mission of positivistic medicine to produce general knowledge about patient groups, humanism looks to particular patients and their unique caregivers. Positivistic knowledge and humanistic ways of knowing are both essential in clinical decision making. They are viewed as complementary approaches, not rival theories. With current advancements in healthcare and the use of evidence-based and precision medicines it is easy to lose sight of the benefits that may be derived from humanistic practices.

1.1 Letter to a Physician

“Each physician would ask the other:
What did I know then, that I have forgotten since?
And of what really matters about life and healing,
What have I learned?”

-Arthur W. Frank, on imagining a physician’s retreat, where practitioners would take the time to reflect upon their prior years of service in the healthcare industry, upon the quality and type of knowledge they possessed, and what they have since learned from the voices of others (Clarke & Nisker, 13).

Imagine reading a letter addressed from your former self, one that would reveal to you all of the glaring inadequacies that you had possessed at the time of your initiation to the medical world. This letter would be a time capsule, a personal story, outlining those physical details that are often so easy to forget (Clarke & Nisker, 2007, p. 12). Perhaps it would be more useful to hear these words from a more seasoned physician, one who has invested many years of service, earning the right to impart such wisdom and forewarning. Dr. Suzanne Koven had a similar vision in her publication in the *New England Journal of Medicine* entitled *Letter to a Young Female Physician*, 2017. As she watched a group of new medical interns sit down to write their own letters addressed to themselves, letters they would read six months later, Dr. Koven wanted “so much to tell them” what she wished she’d known (Koven, 2017, p. 1907). She writes “I know you are excited and also apprehensive. These feelings are not unwarranted. The hours you will work, the body of knowledge you must master, and the responsibility you will bear for people’s lives and well-being are daunting. I’d be worried if you weren’t at least a little worried” (Koven, 2017, p. 1907).

The practice of writing down or verbalizing our experiences produces a particularly relevant type of personal literature in medicine that is referred to as “narrative”. Patient or physician narratives

are often comprised of true stories that represent the unique experiences of those individuals involved in illness, care and healing. When diagnosed with severe or debilitating illness a person's understanding of their own identity, their perceptions, and the path forward are abruptly altered and redefined. In *The Wounded Storyteller*, 1995, sociologist Arthur Frank provides a postmodern conception of how illness is conceived of through narrative. Stories reclaim one's own power over the self as experience is told through the wounded body, as "disease disrupts the old stories" (Frank, 2013, p. 2). The importance of narrative is then that "the effective practice of medicine requires narrative competence, that is, the ability to acknowledge, absorb, interpret, and act on the stories and plights of others" (Charon, 2001, p. 1897).

The opening quotation from Arthur Frank has been selected from: *In Our Hands, on Becoming a Doctor*, a collection of short stories and narratives that have been written by physicians across Canada. Each entry depicts a single story, reflective of a physician-patient encounter. Each story is unlike the next, although they share a common feature, that of *physician* narrative. These stories are not comprised of lists, diagnoses or patient facts; they are lyrical illustrations of their "longing and apprehension" and of "their insider and outsider perspectives" (Clarke & Nisker, 2007, p. 13). There is something evidently therapeutic about storytelling, a process that very much relates to the type of clinical interaction that will be depicted and discussed in this thesis project. Beyond the reading of and connection with a story, physicians and patients are expected to go beyond narrative in the clinical sphere. In face-to-face interactions that require a more engaged demeanor, we discover that "every clinician has her or his own personal armamentarium, as therapeutic as any drug" (Koven, 2017, p. 1909). These interactions require a

personalization of medical care, an aesthetic appreciation for each encounter and most importantly, the consideration of the moral components embedded within medicine.

1.2 Argumentative Position

The current ethos of conventional and modern medical practice mirrors sentiments held by the nineteenth century positivists; an empirical epistemological stance that has made a substantial return in the twenty-first century under the guise of technological advancement, randomized control trials, evidence based practices and precision medicines. Positivism holds, in principle, that genuine knowledge of the external world must be grounded in tangible experience and observation. For this reason, positivistic belief has instilled a shared distrust in the potential success of metaphysics and faith, and is informally premised on the notion that we should keep imagination subordinate to observation (Audi, 2003, p. 260). I argue that this philosophical doctrine has resected far too much of our humanity from the investigative arts of science and medicine. I will show how modern medicine embodies both the principles inherent to positivism and humanism, and why these complimentary methods are required to effectively advance medical knowledge, improving how practitioners provide medical care in general. Objective or subjective methods alone cannot accurately reflect all of the ways in which we might attain knowledge or apply it.

The hegemonic ideal of positivism extends its reach to govern both the freedoms and imaginations of physicians and patients. As medical practice and healing are not strictly comprised of empirical facts and objective treatments alone, there exists a gap within the epistemology of care. I argue that physicians should assimilate standard forms of empirical knowledge in medicine with their own personalized interpretive knowledge, moral knowledge,

and aesthetic forms of practice, all of which are forms of humanistic knowledge. These three categories (personal knowledge, moral knowledge, and aesthetic knowledge) represent subjective aspects of providing care, and I will use these alternative epistemologies to make my case.

1.3 Humanism

Humanistic ways of understanding the conscious perspective of others requires empathy, or the ability to share the emotional experience of another, as one attempts to see through the eyes of the other. Humanistic medicine presumes a desire to embrace holism, or to know what is required to heal the entire patient, as opposed to a limited focus upon diagnostic data and outward symptoms. As the name suggests, humanistic medicine wants to encourage more humane forms of medical care, practice, and thought. One way to achieve this goal is through the empowerment of both patients and their caregivers. Physicians are thought to traditionally base their medical claims upon either the biomedical or biopsychosocial models of health and illness, which are based upon facts related to biological factors (genetics, pathology, biochemistry) psychological factors (personality, moods etc.) or social influences (historical, cultural etc.) (Weiner, 2007, p. 477). In contrast, humanism seeks to understand particulars of the individual patient and attributes that are special to a particular physician.

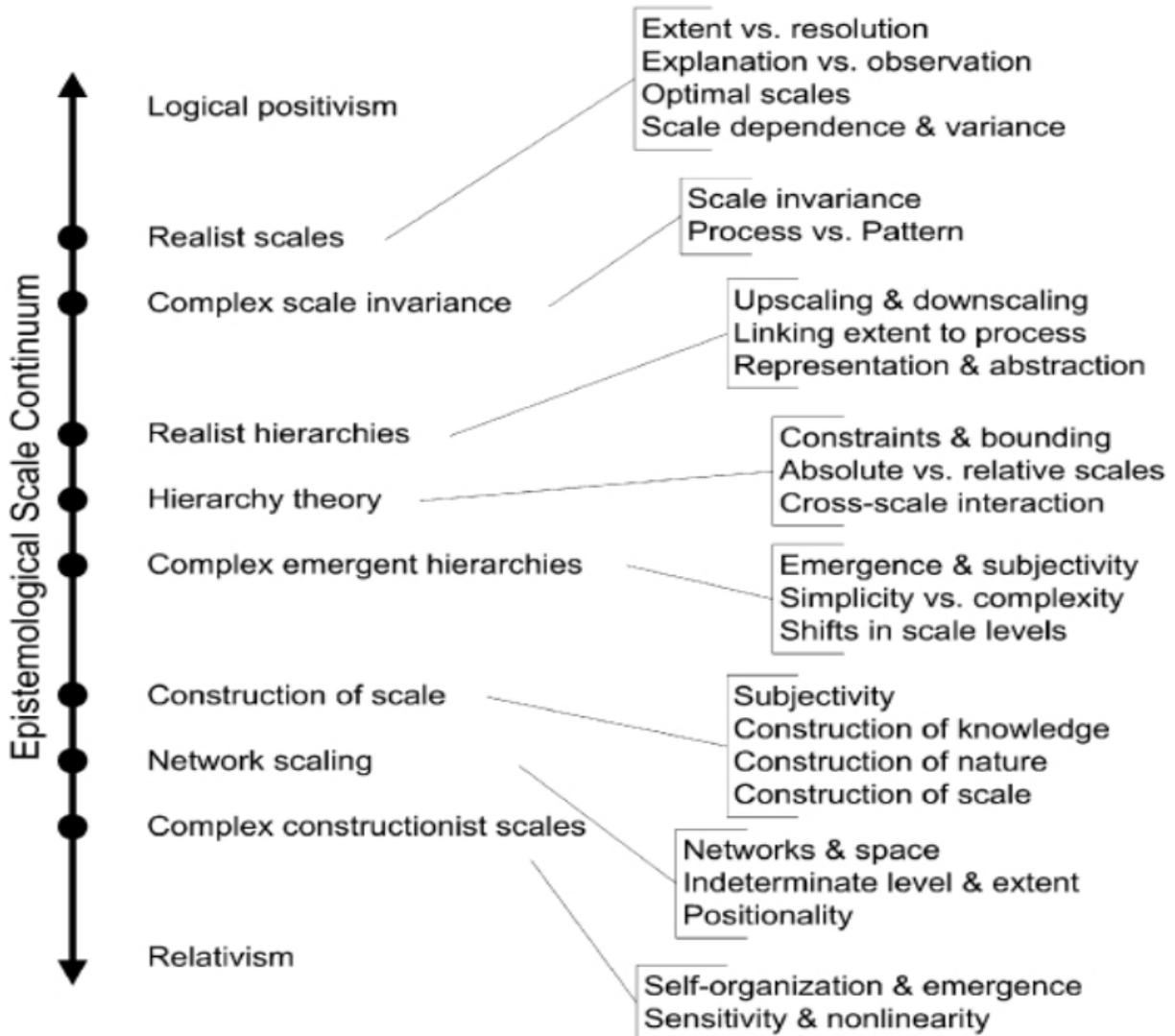
Humanistic medicine seeks to uncover meaning within unique interactions and within the shared envisioning of a medical care plan. In order to maximize the authenticity and success of a patient-physician interaction, both parties must feel that they are heard, respected, and understood. Mutual understanding is a prerequisite for appropriate action. However, the

humanistic approach should be well balanced with empirical standards and goals. Alan Bleakley cautions proponents of medical humanities research to engage more critically with the content of this literature, to be cognisant of the different approaches taken, and to avoid further skepticism or dismissal of humanistic projects. Theories relating to humanism in medicine should also be specific and technical (like empirical projects) to mitigate the perception of common fallacies surrounding medicine as an “art” to mean *playful* or *fun*. When considering “narrative” methods we should be aware that stories can also be viewed as exclusive or inaccessible, and lastly, misconceptions may exist around “personal perception” and the constant need to assess and interpret in clinical care (Bleakley, 2017, p. 126-127). Still, the patient-physician relationship is reliant upon the techniques and successes special to both biomedicine and compassionate, holistic care (Ferry-Danini, 2018, p. 57).

1.4 Fundamental Ways of Knowing

It might be helpful to imagine medical epistemology as a spectrum, or a continuum of “ways of knowing”. In figure 1.0 Steven Manson (2008) shows an epistemic linear scale - a visual representation of the progression from relativism towards logical positivism. This figure depicts the flow from one epistemic system to the next. We can see how empirical practices rest closest to the top of the continuum, where logical positivism lies, and how humanistic practices are considered to be more relative, pluralistic and subjective, and sit towards the bottom. Yet both ends of the spectrum share common features of their opposing categories. For example, relativistic or humanistic ways of knowing can be achieved using empirical methods (e.g. qualitative research). Conversely, positivism may espouse clear objectivity in practice, however, as I will discuss later, observation is inherently subjective despite our efforts to maintain rigor.

Figure 1.0 Epistemological Scale Continuum (Manson, 2008).



To create positive clinical encounters for all patients, modern healthcare policy is both conscious of and supportive of the ethical principles that comprise patient-centered care (PCC), family-centered care (FCC), as well as having an emphasis upon shared decision making (SDM). SDM is “an approach where clinicians and patients share the best available evidence when faced with the task of making decisions, and where patients are supported to consider options, to achieve

informed preferences” (Elwyn et al., 2012, p. 1361). The SDM model supports the basic concept that patients should have the right to govern their own care, as autonomous individuals who are able to make decisions free from the influence of others. The importance of autonomy is to explore and support “what matters most” to patients (Elwyn et al., 2012, p. 1361) while still providing them the best possible care through the use of informed consent, which is deliverable through expert knowledge and opinion.

The first step towards ensuring positive interactions between patients and physicians is to recognize the important role of patient engagement. Patients who are brought into the circle of care and are thought of as a contributing and valuable member of their own healthcare team can fully participate in the decision making process. This process of engagement is often complex. Patients and practitioners must navigate the specific context special to each encounter. Patients have essential knowledge of their own family history, about how they feel from one day to the next, and about their own personal values. Competent patients also have decision making power regarding healthcare choices. For this reason, it is ethically important for us to accept alternative forms of knowing within the clinical sphere as necessary for the shared decision making process. Accepting these forms of knowing enables physicians and patients to manage each unique context of care.

In 1978, Barbara Carper described what she called “fundamental ways of knowing” that are both natural and essential for uncovering meaning and directed purpose within the ambiguous realm of patient engagement. Not all patients respond to the same method of clinical care, and not all practitioners or caregivers will have the same repertoire of healing practices and values to draw upon. Humanistic care is derived from the unfolding of two or more personalities, individual

value systems, and unique ways of being. Carper suggests that medical practice assuredly has an empirical way of knowing. There are also three more categories of knowledge fully present in the medical sphere: these include personalized knowledge, moral knowledge, and aesthetic knowledge (Carper, 1978, p. 14). I will briefly outline these three distinctions here, and more fully discuss their roles in *Chapter Four*.

Personalized knowledge is comprised of insight and self-understanding, as one attempts to embrace one's own thoughts and feelings. A personalization of medical care relies on the initiative of the practitioner to recognize the power of the self, and to attempt to actualize that recognition in relationship to another individual; a so called "therapeutic use of self" that is shared with another individual for the purpose of healing (Carper, 1978, p. 18). The concept of the *self* is fluid and not restricted to empirical categorizations of human entities, rather, it assumes that *beings* are vague and ever changing entities that cannot easily be summarized by particularly shared behaviors or expectations (Carper, 1978, p. 19). It is important to consider how "all human relationships develop within contexts that shape and to some extent determine the dynamics of those relationships" (Pullman & James-Abra, 2001 p. 38). The relational experience that is shared between clients and healthcare workers is one that is always unfolding and is unable to advance in the absence of either party. A commitment is made to one another whereby personal knowledge is then attained through a "passionate participation in the act of knowing" (Carper, 1978, p. 19). Each participant gives to the other something that is uniquely theirs to give, which can produce knowledge of oneself, the situation, and of another.

The second category that Carper defines is that of moral knowledge. This form of knowledge requires an awareness of ethical choices, as well as an awareness of ethical frameworks. An entire category of philosophical literature is dedicated to the existence and operation of moral facts, their metaphysical existence as well as their epistemic coherence (Wilburn, 2008, p. 69). Patients and practitioners have ethical preferences or considerations which influence and direct care plans. According to Carper, a willingness to uncover what is best for your patient, while having an attuned sense of what is *right* or *wrong* comes with practice. Moral uncertainty and the resulting distress that goes along with *not knowing* in medical situations is prominent for healthcare professionals who are tasked with making complex decisions for vulnerable individuals. This phenomenon points to a need for not only moral awareness and practice within medicine, but also the need for moral social support.

The third category of humanistic knowing concerns aesthetic knowledge. This type of understanding deals with one's relationship to the immediate moment, where there is little distance between the knower and the known. The practice of healing often involves perceptive ability in which a caregiver is able to intuit, in an instant, what needs to be done. This perceptive insight is derived from experiential knowledge that has been catalogued over time and is drawn on instinctively. Akin to what might be referred to as *wisdom* or even Aristotle's *phronesis* (or practical wisdom) (Dottori, 2009, p. 301) caretakers can project this intuitive sense outwardly, to find meaning in any one instance. Action is derived from knowing how to relate the knowledge at hand to any one particular illness experience. Individual experiences of illness are vague and complex, requiring the ability of a caregiver to accept such uncertainty and to then strive to create a deep understanding of a patient's position (Carper, 1978, p. 17).

Young physicians may not have had time to accumulate experiences in the clinical environment, and may not feel comfortable with new situations involving illness and injury. As Melincavage points out in relation to nursing, “Students from all levels of nursing education feel they lack clinical knowledge and question their ability to perform nursing procedures...students use the words ‘stressful,’ ‘scary,’ and causing ‘butterflies and flutters’ when relaying their thoughts about performing” (Melincavage, 2011, p. 786). Carper states how “the art of nursing was closely associated with an imitative learning style and the acquisition of knowledge by accumulation of unrationalized experiences” (Carper, 1978, p. 16). The apprenticeship model of learning is akin to the mentoring process that still exists today, for example in residency programs.

1.5 Why Embrace Alternative Ways of Knowing?

Healthcare workers have a moral obligation to embrace alternative ways of knowing. Personalized, moral, and aesthetic knowledge about patient identities and patient bodies is paramount to the success of humane medical care. This process of knowing is not only beneficial to, or purely related to the patient alone. These modes of knowing, outlined by Carper as inherent to practitioner deliberation, may be therapeutic techniques for practitioners to release the stress surrounding uncertainty, as they embrace their own thoughts, feelings and values, creating an overall atmosphere that is ripe for interconnectivity and mutual recovery.

It is necessary to consider the emotional needs of caregivers, because the professional duty of healthcare workers to observe and treat illness throughout an extended period of time takes a toll. It is natural for humans to mirror and sympathize with the fear and pain of others, as well as to

commiserate with feelings of grief, loss, depression and disillusion. A professional attitude that attempts to detach from the emotions of patients may only defer engagement with these emotions, or harmfully suppress engagement. One can imagine the difficulty of having to suppress one's own emotional needs while simultaneously attempting to fill another with hope. The success of clinical decision making is not solely reliant upon the emotional balance or intelligence of practitioners, although these tools are required during family and patient discussions. Many clinical encounters are built upon relational dynamics that extend beyond a baseline ability to detect and diagnose illness, relay information and provide treatment. We should try to understand how to nurture the tendency of healthcare workers to release emotional burdens and their feelings of responsibility, while supplying outlets for their grief and work related stress. Ultimately, "it stands to reason...that properly cared for caregivers will provide better care for" patients (Pullman & James-Abra, 2001, p. 38).

The above outlined humanistic ways of knowing are not traditional epistemic strategies. They are methods which are more closely associated with social interpretations of healing, often referred to as subjective accounts of medical reasoning, and would more likely be categorized under social epistemology. This epistemic category asks clinicians to pay attention to the knowledge that can be derived from culture, personal histories, and experiences in real time. This may include new styles of reasoning that may involve more critical engagement with others (Fuller, 1988, pp. xii-xiii). Ways of knowing within the humanities are unlike the analytic process that is special to scientific investigation where objects are studied in clear demarcation from other objects of consideration, and categories of knowing are reasonably codifiable, not tacit. "The separation between subject and object is a student's distinction, and when the period of study is

past, the practicing humanist knows that the analytical barriers must be lowered and the real dialectic of human use be explored” (Rabkin, 1978, p. 105). Humanists refer to *texts* which may be comprised of academic readings of materials in disciplines such as philosophy and anthropology, novels, photographs, plays, statues and historiographies. Understanding these texts requires taking on a different perspective than when one studies the data points of a graph. The focus is upon less overt features, features that will help to illuminate human attitudes, cultural understandings, and self-reflection. Patient narratives are a form of text that can be read with an analytical purpose, to collect an overall understanding of the events that took place within a patient’s illness. Illness narratives can also be read through a humanities lens to provide further insight into the beliefs and values of the patient, how they have changed throughout their experience, as well as some insight into the autonomous motives supporting each decision made by the patient (Rabkin, 1978, p. 107).

In *Letter to a Young Female Physician*, Dr. Koven confides in her reader. She reveals how pervasive self-doubt is in her profession. This self-doubt is often referred to as “imposter syndrome”, whereby individuals feel that they are not true experts, and therefore do not feel empowered to embrace their own knowledge base, or the meaning behind their personal experiences. At the end of her narrative, she arrives at the conclusion that she must further appreciate the knowledge she possesses that is medically “obscure” or not strictly diagnostic. She prides herself on her strength and uniqueness of character. In combination with her medical training she believes these traits can enable her to serve her patients *even* better (Koven, 2017, p. 1909). The social aspects of medical care can be difficult to articulate, and may even be charged with failing to account for those skills that are necessary for clinical reasoning and general

decision making within medicine. Despite this difficulty, the simple acknowledgement of the mysterious nature of relational healthcare does nothing to clarify how physicians should proceed in the clinical atmosphere, a process that is inextricably linked to persons and personal relationships.

1.6 Summary of Chapters

In *Chapter Two* I will review the general positivistic influence over medical practice and theory. This chapter will illuminate positivism and its strong relation to science and medicine. Despite extensive literature surrounding the positivist approach within the clinical sphere, we continue to remain hypnotized by the prospects of empirical investigation, where the expectation is that practitioners' attitudes and beliefs should remain as objective as the facts they are based upon. However, the positivistic attitude is not a complete reflection of how physicians make decisions, as practitioners will utilize a multitude of sources and methods to arrive at conclusions within clinical care.

Evidence-based knowledge is taken from any source that derives its results from the scientific method, i.e. clinical trials, research initiatives, and journal articles recounting the results of research. A "standard of care" for patients is then produced from having the best medical evidence available, which is later combined with professional opinion. In accordance with humanistic forms of knowledge, many would advocate for a less positivistic doctrine of care, that is, they would recommend that physicians pay slightly less attention to the generalized evidence generated by empirical research and give a bit more credence to the patient in front of them. Humanistic practices give priority to meaningful interactions during patient and family encounters (Milstein, 2012, p. 313). This perspective should be viewed as complementary to

evidence, and should be used in cooperation with the current use of scientific and empirical forms of knowledge. The collection and dissemination of empirical data is the main vector with which we currently understand bodies, illness, and patient pathology. It is an epistemological approach that has proven to be superior to the metaphysical approaches to healing in past centuries.

Chapter Three will be dedicated to laying out the perceived problems associated with positivistic medicine, and why I consider it to be a narrow epistemology (i.e. a strict use of empiricism) on its own. I will characterize the *positivist physician* to show how a paradigm of strong positivism is limited in its application to the medical sciences. As well, I will map the clinical needs of both physicians and patients through an assessment of what is missing in the positivist structure of medical engagement. My argument is that empirical methods do not approximate the ways in which we currently conduct some modes of scientific reasoning and practice. The process of gaining knowledge within the humanities differs from that of scientific investigation in some important ways, most notably at the outset it can be less focused on adhering to a prescribed methodology, although this is not always the case. The concept of *truth* in the humanities may be less straightforward as it is derived from sources that are not rooted in claims that scientists would recognize as clear facts, rather they are often contextual or relational (Sherwin, 1992). Knowledge of human nature is what concerns the study of humanities, as it acknowledges that we are all humans sharing many similar yet unique experiences. “Persons are inherently socially, politically, and economically-situated beings” (Kenny, Sherwin & Baylis, 2010, p. 10). In order to understand what is relevant to these experiences, we must observe, discuss and critically analyze or engage with phenomena, individual human beings, and texts. We must attempt to

refrain from repressing “the epistemological subject” themselves, that is, the patient, and strive to “enhance the intellectual status of the patient” (Wiltshire, 2007, p. 370).

I will outline the subjectivity involved in medical encounters using the example of a common medical tool (the pain scale). This example shows the complexity involved in the clinical environment. Patients must develop their own interpretation of their disease, where physicians are tasked with the duty of demystifying a patient’s claims and lay understandings. I argue against a purely empiricist model of research and practice in theory, questioning our collective focus on, or sole use of RCT evidence, evidence based medicine (EBM), and precision medicine, with which to access epistemological truth. I begin by outlining why medicine is both a scientific practice as well as a humanistic endeavor for clinicians and researchers alike. This section seeks to expose those mechanisms that appear to be essential to the practice of medical science, as well as the professional and cultural aims that are embedded within what we call pure science.

Secondly, I propose that a personalization of medicine is required in order for physicians to create more authentic connections with the patients and family members that they care for. This is a project that must not be undertaken by practicing physicians alone, rather it is a philosophy that must be adopted equally by medical institutions, medical schools and universities alike. To personalize medicine is to rethink the ways in which knowledge is collected, categorized, utilized, and later imparted.

In *Chapter Four* I argue that healthcare professionals use three subjective forms of epistemic practice, for the purpose of attaining knowledge about themselves and of their patients. As previously stated, Barbara Carper highlights some of the fundamental ways in which

practitioners (specifically nurses) gain knowledge in their field, and I wish to extend this use to include all healthcare providers, and to more fully describe the physician-patient relationship. I use Carper's three categories of knowledge to argue in favor of *humanistic medicine* which acts in cooperation with empiricist goals within the *positivist paradigm*. Medicine practiced with humanistic competence encompasses personalized, moral, and aesthetic competencies. These three forms of knowledge function "as a model for humane and effective medical practice" (Charon, 2001, p. 1897). Personalized, moral, and aesthetic knowledge combined with the empirical method of fact gathering and assessment concerning a patient's case, comprise four epistemologies of care. The personalization of medicine, an understanding of the moral complexity involving patient care, and the aesthetic aspects of clinical interactivity, are all fragmented aspects which contribute to the whole of patient care. Other aspects will include the caring for families alongside patients, and the physician's duty of care which exceeds the physician's own ends. All parties involved should have a role in decision-making.

Chapter 2 – The Positivistic Influence over Medicine

In this chapter I review the general influence of positivistic thought over modern medical practice. I begin with a section that underlines the philosophies behind the formation of scientific and medical knowledge, as science and medicine share common features. The epistemic agendas behind these two doctrines are highly focused upon the use of observational data. I outline a brief history of positivism, and the influences that positivism has had, many of which continue to exist today. In the following section I discuss the use of randomized controlled trials (RCTs) in scientific investigation, and the resulting effects this practice has upon medical research. The hierarchy of evidence-based practice, which puts the use of RCTs at the top of the pyramid, implies their ultimate authority in generating knowledge. Despite confidence in the capability of RCTs to produce knowledge, their use is not universally applicable to all research questions. As Sackett et al. (1996) write “without clinical expertise, practice risks becoming tyrannised by evidence, for even excellent external evidence may be inapplicable to or inappropriate for an individual patient” (Sackett et al., 1996, p. 71).

2.1 A Brief Dissection of Medical Thought

The acquisition or possession of knowledge is important in any pursuit. Our five senses give us information about the external world around us, but as Rene Descartes famously argued: the senses can be deceiving (Descartes, [1641] 1961). The senses may not even be required for some forms of knowledge. For example, it is through mathematical methods that astrophysicists are able to determine the nature and behavior of objects in the cosmos, without any direct contact or use of the senses. There are different forms of knowledge, as well as different levels of certitude in knowing, depending upon the type of knowledge and the process of its production. Regardless

of how we think we know something to be true, we are often confronted with the question “how do you know?”

One way to know if something is true is to use science, as many agree that science “provides us with a ‘true’ description of the world” (Edwards, 1999, p. 565). In Latin the term “knowledge” is *scientia*, from which the English word “science” was derived. Scientific knowledge is currently among the most reputable forms of knowledge today (Lakatos, 1978, p. 1). Its practice is highly skeptical, vetting knowledge claims in a methodical and predictably repeatable way. There are many other ways to produce knowledge, although these other methods may not be considered strictly scientific. For instance, anthropologists gather knowledge in ways that are quite different from that of physicists, i.e. the use of ethnographic means to uncover meaning that is relevant to everyday experience and gathered through participant observation. The social relations of groups are engaged in and revealed through this method, whereby it represents a form of knowledge production that is realized through being and action” (Shah, 2017, p. 46). Insight into other forms of knowledge may utilize alternative tools such as surveys, demographic data, the analysis of texts or written documents, and the use of photographs, verbal testimonials, open ended interviews, or an overall immersion into social and cultural environments.

Medicine was not always as scientific as it is today. It struggled to find legitimacy throughout the 19th century during a transitory period that rapidly changed healing from a form of “natural philosophy” to what we now call clinical medicine (Stahuljak, 2013, p. 141). Medical knowledge is dynamic in that it is comprised of different types of knowledge, scientific or empirical knowledge as well as experiential qualitative knowledge. Experiential knowledge is “rooted in

clinical experience and worked out in the everyday clinical encounter” while scientific knowledge in medicine is “derived from population studies, randomized controlled trials and meta-analyses” (May et al. 2006, p. 1022). Medical epistemology concerns itself with ways of knowing in healthcare, and with practices associated with knowledge production concerning health and illness (Khushf, 2013, p. 462). When looking at the epistemic interactions and practices of healthcare professionals “we need to recognize that...clinicians usually work not with explicit codified knowledge (such as guidelines) but with ‘knowledge in practice’” (Gabbay, 2004, p. 4).

Today, part of the whole of physician knowledge is thought to include subjective learning and role modelling. This would include professional attributes that may not be easily subsumed under the category of scientific knowledge. Instead, they are referred to as *competencies* which relate to personal values, attitudes, interpersonal skills, and subtle levels of artistic expertise in the clinic, all of which will be difficult to gauge using standardized forms of measurement or other positivistic methods of examination or proof. The development of nonscientific competencies requires individualized assessments of practice and an acknowledgement from experts in the field of the value they present; requiring more nuanced and careful levels of study (RNPDC, 2016).

The development and improvement of medical thought has always been closely tied to advances in empirical science. Consequently, contemporary medicine invites comparisons to the positivist philosophies of the past and present which promote empirical science. Medicine has been “propelled by the dominant positivist hierarchy of sciences” (Stahuljak, 2013, p. 140). Currently

“science is the paradigm of a knowledge-seeking enterprise” (Goldman, 2015), which includes medical investigation. The *scientific method* is the present paradigm for the production of empirical knowledge, through the use of careful observational study and critical analysis. Beyond the utilization of the scientific method, medicine has relied upon the integration of knowledge or mixed-methods, synthesizing facts derived from research evidence, clinical expertise, and from public and patient preferences, in order to create a solid evidence-based foundation for what we consider to be *medical truth* (Rowe & Oltmann, 2016, p. 6).

It is no novel claim to state that medicine is too far removed from the humanities in its study and practice. The positivist orientation of biomedicine is often deficient in capturing the entire scope of medical care, (Bennett, 2004, p. 2686) as the knowledge seeking industry of medicine vets medical knowledge using a process that may differ from how individual practitioners understand and apply medical knowledge.

Orthodox medicine works in a scientific framework which often discounts knowledge arising outside biomedical models and the statistical means by which these are tested. Alternative medicine cannot meet these standards because it is holistic and individual in its orientations toward the understanding and treatment of human illness. But in fact the dominant model also has problems with surgery and other areas such as family practice as sub-disciplines where individualized caring solutions are important (Gillett, 2004, p. 727).

Patient care is highly dynamic and often individual. Physicians and other healthcare practitioners typically apply general statistics and the best evidence available to individual patients on a unique basis, although this type of interpretation is not straightforward and the outcomes will not present a standard approach. Findings derived from empirical research methods “result in data about the average patient”, knowledge that is not always directly translational to individual patients (Rolfe, 1999, p. 435). There is a “therapeutic value of interactional work through which

the patient's subjectivity may be both understood and engaged" (May et al. 2006, p. 1024) that may not be found in the scientific knowledge of medicine. Physicians require multiple different avenues for knowledge production that must later be synthesized to obtain the best results. As David Sackett argues in many of his articles, good doctors will use a combination of the best available evidence of the day alongside individual clinical expertise, and that "neither alone is enough" (Sackett, 1998, p. 1086).

2.2 Positivism

Modern medical practice is thought of as scientific and evidence-based, through its use of empirical evidence which is essential to this form of knowledge production. "Positivism", which is similar to empiricism, denotes many theoretical movements throughout the 19th and 20th century within science, and the philosophy of science. Positivist theories esteem "scientific" and "logical" forms of knowledge, and have been credited with shaping the political and economic history of Europe and North America (Gillett, 2004; Bennett; 2005; Djulbegovic; 2017). The term "positivism" represents a general united quest for greater certainty within epistemology and academic disciplines. There exist different branches or subcategories of positivist thought, including Comtean positivism, logical positivism, logical empiricism, and scientism to name a few. All advance similar epistemic agendas and objective attitudes which were prominent throughout the 20th century, eventually being succeeded by reinterpreted forms of positivist thought, such as neopositivism. Each category is nuanced in its approach, although the most basic of these shared attitudes would be that positivists "ascribe a particular value to science and a special epistemological status to scientific knowledge" (Romizi, 2012, p. 213).

Auguste Comte was one of the first to advocate for an extreme form of epistemological empiricism (Audi, 2011, p. 169). He believed that it was not possible to know anything about “unobservables”, and argued that “the primary object, then, of positivism is twofold: to generalize our scientific conceptions, and to systematize the art of social life” (Comte, 2003, p. 45). Similarly, the logical positivists of the Vienna Circle (1920/30’s Europe) believed that the enterprise of scientific investigation was of the highest epistemological virtue, and that it had the power to change the landscape of the philosophy of science (Romizi, 2012, p. 214). Contrasted against earlier forms of idealism and speculative philosophy, logical positivists believed to have found the true undertaking of philosophy, “which was to analyze knowledge statements with the aim of making such propositions clear and unambiguous” (Caldwell, 1994, p. 13). They argued that there could exist only two fundamental sources of knowledge: analytic *a priori* truths (i.e. logical reasoning) and synthetic *a posteriori* truths (i.e. empirical experiences) (Carnap, 1929/1973). Overall, the positivist approach has been a systematic shift towards using reductionism to study the external world through observation, careful measurement, and reason (Bourdeau, 2014).

Though positivism esteems science, it would be a mistake to believe that proponents of positivist theory find science infallible. In a post-positivist paradigm, researchers, scientists and philosophers all realize that theory is fallible and revisable (Caldwell, 1994). It is this process of consistent revision that continues to improve our theoretical positions and our understanding of scientific “fact”. According to Popper, “The demand for scientific objectivity makes it inevitable that every statement must remain tentative forever” (Popper, 1959, p. 280). As this position is difficult to maintain, pure positivism is not an effective means to our research ends. Instead,

positivism is designed as a prescriptive regime, whereby it “tells scientists what to do, and just in case the scientists cannot figure it out, logical positivism tells them why they should do it that way...and as facts change, theories must change to cohere with them” (Bennett, 2004, p. 2687-2688).

Positivism has deep roots in the history of scientific knowledge. Towards the end of the sixteenth century “a new modern consciousness, centered on the concept of individual autonomy” emerged with the “belief in the possibility of exercising full control over natural phenomena” (Adinolfi, 2014, p. 231). During this era, the use of observation, data recording and manipulation were fundamental to scientific practice, a system that was given form through Bacon’s introduction of the controlled experiment and Boyles’ “necessary repeatability” of a result to determine its validity. The concepts of peer review, randomized design, the placebo-controlled experiment, and Popper’s notion of “falsifiability” were further developed into the 20th century, along with double-blind experiments and the meta-analysis of data (Kelly, 2010, p. 30). The ultimate goal or end of science has always been to find truth using such analytic methods (Edwards, 1999, p. 565).

Scientific knowledge very clearly contributes to human progress, and there is a self-awareness of this contribution among scientists and the public. As Gillett notes, “the scientific community sees itself as the very paradigm of institutionalized rationality. It is taken to be in the possession of something, the scientific method, which generates a logic of justification. That is, it provides a technique for the objective appraisal of scientific theories” (Gillett, 2004, p. 727). According to the positivist mindset, scientific research has liberated humans from many uncertainties,

unreliable methods, biased judgments and unpredictable or simply incorrect theories about the nature of medicine and healing. In general, positivism upholds the thesis that the cognitive significance of statements or phenomenon relies upon observational evidence and the testability of that evidence.

The positivist way of thinking that supports empiricism or logic as the main methods for knowledge creation stands in contrast or potential opposition to the humanistic ways of knowing described in this project. Humanistic methods move beyond or outside of the empirical framework, and the observable realm. But this is not to discredit the progress brought about by the empirical sciences, or the contribution of positivistic ways of thinking that have demarcated the scientific method from other subjective methods of study. (Djulgovic, 2017, p. 415).

Despite the fact that empirical ways of knowing have been favored, since the inception of evidence-based medicine in the 1980's endless critiques, inquiries, and debates regarding what should count as evidence or rationale have emerged (Worrall, 2010, p. 356).

2.3 The Gold Standard

When attempting to provide clinical evidence, two epistemic questions exist for researchers and medical personnel: “when is proof sufficient?” and “what type of proof is required?”. “The so called gold standard of clinical evidence is the properly controlled and appropriately powered randomized controlled clinical trial, with appropriate blinding” (Ashcroft, 2004, p. 134).

Medicine's inherent reliance upon empirical knowledge in the twenty-first century is aptly summarized by the use of randomized controlled trials (RCTs), which have subsequently supported the emergence of evidence-based medicine (EBM) and precision medicine (Wilson,

2000). The RCT process involves randomizing large numbers of patients to different arms of a study in order to provide varied treatment regimens for scientific comparison. The RCTs “power lies in the selection tactic of randomly assigning individuals to either the experimental group (the group that receives the targeted drug) or the control group (the group that receives another drug, or a placebo)” (Keenan, 2011, p. 1). There are four types of comparison used in RCT design: superiority trials (statistical and clinical), equivalence trials and non-inferiority trials. The superiority trials compare a new treatment to what is already known as the standard treatment for a given condition. Equivalence trials try to determine if new and standard treatments are equally effective. Lastly, non-inferiority trials seek to determine if new treatments are at least as effective as the standard drug that might be used (Zhong, 2009, p. 52).

The general methodology and intention of any RCT design is to compare two hypotheses – i.e. that “there is a difference”, or that “there is no difference” when using a new treatment. The results of which will depend upon the level of statistical significance that is shown. One way to help improve the significance of the outcome is to control through sample size. Small sample sizes may yield results that are less significant, therefore, researchers must balance large sampling with overall research costs (Zhong, 2009, p. 51). In parallel to large sampling, the participants must be randomized. “The basic benefits of randomization are that... it eliminates the selection bias, balances the groups with respect to many known and unknown confounding or prognostic variables, and forms the basis for statistical tests, a basis for an assumption of free statistical test of the equality of treatments” (Suresh, 2011, p. 8). RCTs control the risk of bias, or the biased interpretation of data, which may “over or underestimate what the true treatment effect is”, skewing the results (Petrisor & Bhandari, 2007, p. 11). Because of their design RCTs

are then thought to provide the best clinical evidence available to researchers, and most would agree (Al-Ghimias, 2013) that RCTs are indeed the gold standard for the production of medical knowledge.

RCT research and the meta-analysis of RCT evidence traditionally rest at the top of any hierarchy of evidence, and are favored as the most optimal source for informing clinical practice guidelines (Petrisor & Bhandari, 2007, p. 11-12). “A cornerstone of EBM [evidence-based medicine] is the hierarchical system of classifying evidence. This hierarchy is known as the levels of evidence. Physicians are encouraged to find the highest level of evidence to answer clinical questions” (Burns et al., 2011, p. 305) (See Figure 2.0). The use of these levels for recommendation in practice are adjusted accordingly, depending upon the research questions being asked. RCT evidence may not always be the most appropriate level of assessment regarding specific clinical questions that do not require the comparison of treatments, e.g. inquiry into disease prognosis, or many surgical questions (Burns et al., 2011, 306). Below the RCT there are lower levels of evidence, including non-randomized trials, cohort studies, expert opinion, case reports, and patient testimony. This structure is designed to cultivate good quality evidence to support the basis of effective medical guidelines (Jean-Jacques, 2013, p. 324-325). The RCT is valued because it is unemotional and unbiased, and the results are unknown until the completion of the study. This system is modelled after a commonly accepted societal value, the belief that we should gauge scientific progress in the world by the extent of our ability to be rational and objective; a process that is positivistic and inherent to the invention of, and subsequent reverence of, the RCT (Tiquia, 2012, p. 1).

Figure 2.0 Hierarchy of Evidence: traditional EBM versus GRADE (Djulbegovic & Guyatt, 2017, p. 417).

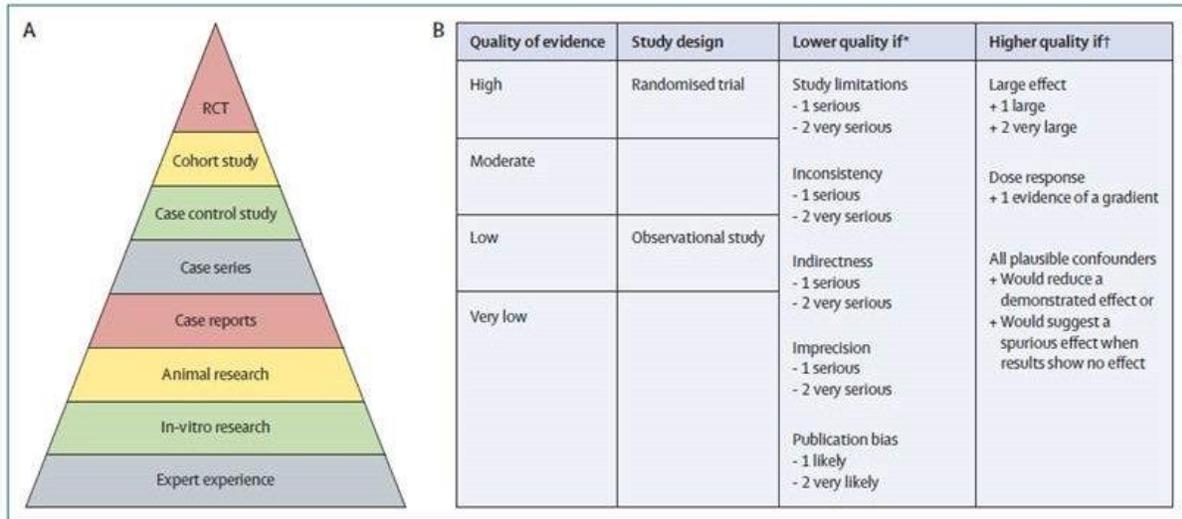


Figure 1: Hierarchy of evidence: traditional EBM versus GRADE
Comparison of traditional EBM hierarchy of evidence (1991–2004)²⁶ with GRADE classification of the quality of evidence (confidence, certainty; 2004 to present).²⁷
(A) Traditional EBM hierarchy of evidence. (B) GRADE classification of the quality of evidence. EBM=evidence-based medicine. GRADE=Grading of Recommendations Assessment, Development, and Evaluation. RCT=randomised controlled trial. *Quality of study moves down one or two grades. †Quality of study moves up one or two grades.

The conception of the RCT as the dominant form of knowledge production in scientific research and medicine is positivistic, as its sole use in many circumstances produces a type of knowledge that purports to be objective and factual. This continual effort, to strive for objectivity in a pure sense through rigorous methodology, eliminates error and bias while simultaneously removing all subjectivity. Modern medicine embodies a positivistic ethos, one that is actualized by the pervasive use of the RCT. The structure of this vetting process disallows other studies from attaining the validity and credibility that they might deserve. Not all questions can be sufficiently answered using RCT design. Carol Gordon makes this point in her editorial *The Trouble with the Gold Standard – Is educational research tougher than medical research?* in showing how the gold standard is not “the *only* way to determine what works” (Gordon, 2007, p. 55). Studies that do not use RCT design are criticized “because they’re not seen as controlling for variables”,

despite using other forms of statistical control (Gordon, 2007, p. 55). There exist ontological and epistemic limitations when it comes to certain research areas, including educational research and medical research as it relates to individual beings. Contrary to the philosophy of EBM, experts with alternative perspectives might argue that "...what practitioners require is specific knowledge about individual patients rather than general knowledge about trends and populations" (Rolfe, 1999, p. 436).

2.4 Limits of the RCT

Despite the overarching confidence in the success of RCT knowledge production, the tip of the pyramid is not infallibly superior to other methods of inquiry. An expanding literature now suggests that (a) RCT evidence may not be as empirical as we had hoped, and (b) that the RCT structure and its selective application may fail to produce relevant knowledge in certain circumstances (Bensing, 2000; Cartwright, 2007; Worrall, 2010; Ekeland, 2017). EBM should begin to consider both the hierarchy of evidence as well as "the art of clinical decision-making" (Al-Ghimias, 2013, p. 131). Individual RCTs are often criticized for exhibiting a lack of proper blinding (possibly compromising the trial's integrity), for issues surrounding proper randomization and heterogeneity in sampling, and for faulty inclusion and exclusion criteria. RCTs are often thought to be subject to bias by sponsorship interest, by poor design and ultimate execution (i.e. limited sample sizes), and by unreported results. Although as Wahlberg and McGoey point out, "allegations of fraud or undue influence" do not point to a weakness in the RCT design, but to questions about our oversight mechanisms (Wahlberg & McGoey, 2007, p. 6). Furthermore, there are questions about the applicability of RCT results in clinical practice.

The results and success of the RCT studies may differ from what is achievable in clinical practice (Jean-Jacques, 2013, p. 325).

Many confuse the relationship that holds between the clinical significance of a trial and its overall statistical significance. The two cannot always be conflated when looking at the results. Take the example below from Philip Sedgwick, 2014, looking at the topical application of an antibiotic for minor surgical (sutured) incisions:

“The proportion of participants with an infection in the topical chloramphenicol group was statistically significantly lower than for placebo (6.6% v 11.0%; difference -4.4%, 95% confidence interval -7.9% to -0.8%; $P=0.010$)” (Sedgwick, 2014, p. 1).

However, the results of this study were not considered to be clinically significant. The researchers “conclusion was justified because the reduction in incidence of infection was less than the smallest effect of clinical interest (5%)” (Sedgwick, 2014, p. 1). The significance of treatment would not be the same when applied at the population level (Sedgwick, 2014, p. 2). Interestingly, some studies now include degrees of “patient significance”, which adds a further layer of consideration. This changes RCT dynamics to include three areas where we may see significance within a trial – statistical, clinical (based upon clinical expertise and experience) and lastly, patient significance which takes into account the burden and effort required, as well as the overall experience by the patient (Sedgwick, 2014, p. 2).

RCTs were traditionally used to test “the efficacy of pharmacological interventions under experimental conditions” (Mustafa, 2016, p. 186). As a positivist, disease-oriented, biomedical model, RCTs have failed to detail an overall account of the results, one that takes into consideration the variability of patient presentation in the disease process, and often exclude

nuances and patient characteristics which are “considered a nuisance that might disturb the results of the study, instead of providing valuable extra information” (Bensing, 2000, p. 19). As we begin to include (within the significance of RCT study) the patients experience (of those enrolled in the trial), and further explore the levels of clinical significance for practitioners, a more humanistic understanding of outcomes is determined.

The ultimate success of applying RCT results lies with those interpreting the data in practice (Mustafa, 2016). Physicians must be able to reasonably assimilate RCT knowledge effectively and in a timely manner. Thousands of journal articles and research publications claiming the newest and most effective cures, or ways of practice, are released daily, inundating practitioners. Ultimately, physicians need time to digest what new research suggests, and how it is to be worked into their care plans. The expectation that best evidence will be derived almost exclusively from empirical research is proving to be an unrealistic expectation, as well as a suboptimal model in the absence of clinical decision making. When utilizing results from both RCTs and alternative levels of evidence, “a healthcare professional should always keep in mind their patient’s values and preferences when making a clinical decision” (Al-Ghimlas, 2013, p. 131).

EBM is designed to “de-emphasize intuition, unsystematic clinical experience” and to offer a “pathophysiologic rationale as sufficient grounds for clinical decision-making” (Naudet et al., 2015, p. 632). The subjective realm of patient culture, experience, testimony and narrative, as well as physician opinion and critical engagement, is often diverse, and perhaps considered to be unobservable and unscientific in many respects. These aspects of medical care are different from

EBM in that they cannot be easily assessed for safety, efficacy or efficiency (Ashcroft, 2004, p. 131). Jozien Bensing states that the difference between evidence-based medicine and patient-centered care is that one “fills the doctor’s agenda with knowledge that is tapped from scientific research on populations”, whereas the other gives credit and attention to the “patient’s unique knowledge and experience...individual needs and preferences” (2000, p. 19). EBM also fails to recognize the knowledge “that stems from the doctor’s intuition and experience” (Bensing 2000, p. 19).

Nuance is involved when it comes to rating professionals on their ability to be kind, sympathetic, and aware of patients or patient family needs in upsetting circumstances. Similarly, because of the influence of positivist ways of thinking, naturopathy, acupuncture, or massage might “irritate many healthcare professionals”, as they are viewed as pseudoscientific methods of healing, although they sometimes work (Naudet et al., 2015, p. 631). EBM reformed the medical community’s entire outlook regarding the search for knowledge, and stands in firm opposition to alternative medicine movements that may not be based upon scientific truth. A main contention is that evidence-based medicine and patient-centered care are incompatible on paper, yet both are presented to medical students and practitioners as ideals for which to strive. The current medical paradigm may, at times, frown upon a reliance on subjective forms of clinical interaction, and other knowledge claims that do not produce what we consider to be “hard” evidence (e.g. numerical values, P-values and levels of statistical significance) (Naudet et al., 2015, p. 631). But today, there is a stronger acknowledgement that non-positivistic methods must exist in parallel to scientific data, as medicine cannot operate in a vacuum of pure evidence. Medical humanism can

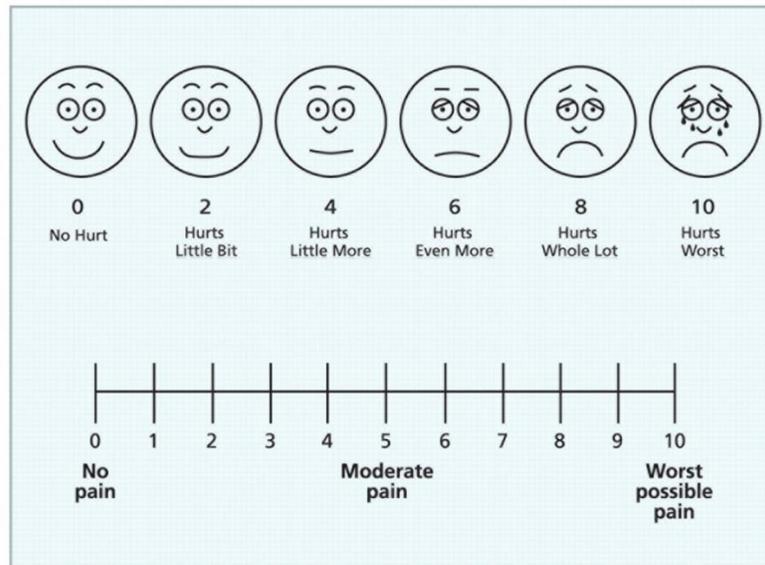
contribute to clinical practice. However, RCTs and positivistic thinking still comprise the main undercurrent of medical thinking about how knowledge is produced.

2.5 An Illustration: The Pain Scale – from Zero to Ten

“There is no evidence of pain on my body. No marks. No swelling. No terrible tumor. The X-Rays revealed nothing. Two MRIs of my brain and spine revealed nothing. Nothing was infected and festering, as I had suspected and feared. There was no ghastly huge white cloud on the film. There was nothing to illustrate my pain except a number, which I was told to choose from between zero and ten. My proof.” - Eula Biss, *The Pain Scale* (2005, p. 14)

The use of the pain scale in medicine illustrates the positivistic impulse of medical practice, as well as the challenges of being positivistic in the medical sphere. The pain scale indicates how pain can be quantified using an objective tool that can be administered to all patients (of any age, gender and disease type). The scale is meant to gauge the severity of pain and suffering, the degree and intensity with which patients are experiencing discomfort, as well as physical or emotional distress. There are two general forms of the scale, numeric and visual analogue, both of which are designed to be easy to administer and interpret (See Figure 3.0). The numeric pain rating scale (physical or verbal) is a one-dimensional measurement tool, illustrated by a horizontal scale of numbers from zero to ten, from which the respondent can select the number that best reflects how they are feeling. A visual analogue scale portrays faces that range from happy and smiling all the way to sad and tearful (Ismail et al. 2015, p. 287-288). There even exist specially designed pain scales for non-verbal patients in vulnerable settings such as long term care.

Figure 3.0 Visual Analogue (Wong-Baker) & Numeric Pain Rating Scales (Rasor & Harris, JAOA 2005).



Pain scales are used in various settings, including pre-hospital visits by emergency responders or paramedics, by anesthesiologists in recovery rooms following surgery, and by acute pain specialists. They are intended to be universally applicable and reliant upon patient self-reporting, “applicable irrespective of the patient’s age, psychological or emotional state, and cultural background” (Ismail, 2015, p. 288). In a 2015 publication in the *Journal of Emergency Medicine* it was determined that verbal scales are simpler to use as they do not require any equipment (such as the diagram of facial expressions), and they are less confusing for elderly and very young patients who may be limited in their cognitive and visual abilities. Patients also tended to score higher on the verbal numeric rating scale, meaning that the two scales should perhaps be used in mutual exclusion so as to preserve consistency and relative clinical significance of the reported data (Ismail et al. 2015, p. 290-291). These tools nonetheless are thought to reliably measure perceived levels of pain for patients in most circumstances.

Pain is intimately felt, yet it is overtly expressed in many shared ways. The pain scale illustrates, very literally with faces and numbers, how a subjective and difficult-to-measure phenomenon can be drawn out in objective terms (Hicks, 2001). Although pain is potentially understood differently by all patients, it seems that scientifically pain must share *some* common features, for we all share the same design of our nervous system and its associated nociceptors (McGrath, 1994). However, pain perception is multidimensional and quite complex as it can be intensified not only by stimuli, but also by situational and emotional contexts. “Pain experiences can range from an inability to perceive pain, regardless of the strength of stimulation, to the actual perception of pain in a limb that has been amputated” (McGrath, 1994). As Priscilla Alderson points out, “pain is a paradox: an intense personal sensation, it provides no direct, reliable evidence for the observer” (Alderson, 1998, p. 1008). Some pain is phantom pain, unreal or even psychosomatic. Medical assessments that share positivist assumptions may be limited when it comes to understanding pain. There may be no way of objectively measuring some patient experiences of purported discomfort.

The pain scale is representative of the positivistic nature and impulse of medical thinking, because medicine has found it necessary to create an empirical tool to measure pain, thereby translating the subjective experience of pain into something *objective*. Giordano et al. ask “can currently available evaluative tools, questionnaires, and scales actually provide adequately objective information about the experiential dimensions of pain?” (2010, p. 305). As Eula Biss asks, “Where does pain worth measuring begin? With poison ivy? With a hangnail? With a stubbed toe? A sore throat? A needle prick? A razor cut?” (Biss, 2005, p. 7). The individual experiencing this internal pain is the only one truly qualified to determine the extent of their

discomfort and the extremity of the sensation they are feeling. Yet they must somehow impart this objectively and consistently to an external party. A concern is that physicians might be more willing to dismiss reports of subjective sensation that are less quantifiable, and instead focus upon those symptoms that are clinically recognizable and numerically pre-assigned. The desire to be measurable through the use of the pain scale is for the purpose of finding success in treatment, which is an admirable goal, although this focus seems to leave the nuances of individual patients and testimonies unheard or unseen.

As pain is invisible and cannot be located in the body physically, “effective communication requires both someone who signals and someone who understands” (Giordano et al., 2010, p. 307).

“Positivism’s strength in precise observation can be a limitation when pain is being assessed... [as] clinicians have also to think partly in non-positivist ways: to accept patient’s subjective views and see pain as more than physical, involving the mind as well as the body” (Alderson, 1998, p. 1008).

Personal pain thresholds differ, as do patient interpretations of pains. One difficulty of using any pain scale is that a patient's understanding of the scale may be too vague for a physician to properly gauge their state. Many patients will ask themselves: what is a true “10” on the scale or a true “5”? What sensation might patients relate to these numbers? (Biss, 2005, p. 15). Patients will vary in their respective responses, and physicians will always remain unable to access the feelings and sensations a patient is experiencing other than by asking them. “The sensations of my own body may be the only subject on which I am qualified to claim expertise”, says Eula Biss (Biss, 2005, p. 9). This fact necessitates a physician-patient dialogue that requires interpretive action by both parties, and a greater acceptance of vagueness inherent to the clinical experience. Ultimately, this process is most effective when viewed as having both objective and

subjective elements. Pain assessment, like many other medical assessments, should be seen as “an on-going practice that strives to ‘see into’ the intersection of pain as an objective, neurological event, and its impact upon the subjective experience, existence, and expectations of the person in pain” (Giordano et al., 2010, p. 313).

Chapter 3 – Humanistic Properties of Medical Practice

In this Chapter I present two considerations that cast into doubt the possibility of a purely positivist model of medical practice. Each argument questions our collective focus on, or sole use of RCT evidence, and evidence-based medicine, in the production and utilization of medical knowledge. I argue that the positivist model of medical knowledge, as exemplified by the RCT standard of evidence, is insufficient on its own as a depiction of medical knowledge.

Philosophers of science and medicine should consider that (1) medicine is both a rigid scientific process and a humanistic endeavor, whereby the social elements of medicine are not well captured by a positivist model of knowledge. It should also be considered that (2) medical knowledge includes knowing how to incorporate the uniqueness of individuals into the process of clinical decision-making. I will give examples of how patients, clinicians, and healthcare teams are involved in the social and humanistic aspects of clinical care. The positivist philosophy that is foundational to the biomedical model of evidence-based medicine may be appropriate in its application to the purely scientific aspects of healthcare, however, it does not effectively approximate how physicians truly practice day to day (Miles, 2008, p. 622).

Physicians must feel empowered to accept their own intuitions and thoughts about patient care, similar to how they should feel empowered to respect a patient's autonomous wishes, while still understanding the power imbalance that is special to the provider-patient relationship. What is importantly gained from this freedom of cooperation is relief from "the data-dumping format" (Milstein, 2012, p. 312) whereby facts are relayed about a case in a mechanistic manner.

Positivist medicine teaches physicians and residents to refer to cases in strictly clinical, alienating terms, which can be dehumanizing for families. Instead, such objective anonymity is

removed in the clinical sphere, whereby patients must be considered as part of the factual equation. A compassionate and open discussion, one that connects with the language and symbolism that is meaningful to the patient, can be therapeutic as well as a way of serving knowledge through communication (Milstein, 2012, p. 312).

3.1 Positivistic Structures Remain

Positivism continues to influence medicine and clinical practice (Kincheloe & Tobin, 2009, p. 514). The achievements of positivism and its resulting success have been apparent in the modern day clinical setting, where a focus on evidence-based results derived from objective research designs has given way to far superior treatment options (Schmaus, 2006, p. 135). The positivist mandate underlies the evidence-based medicine movement, whereby empirical discovery is the paramount form of knowledge production, which has strengthened the general prowess of scientific and medical investigation. For this reason positivist ideas have a place in the sphere of clinical decision making and it is clear that good evidence is indisputably required in medical practice. The overarching agenda of positivism has been ethical and beneficial, stressing the importance of “avoiding unnecessary harms to patients, and improving health care in the interests of the general good” (Ashcroft, 2003, p. 131). Nonetheless it is simply insufficient by itself as a fundamental orientation of medicine.

In *The Two Cultures of Medicine*, (referring to Karl Popper’s approach to science and the humanities) Henrik Wulff argues there exist different “worlds” when it comes to understanding the clinical environment (Wulff 1999). World one emphasizes “technical interest”, where objective facts are concerned. World two is “the subjective world”, where emotions (i.e.

suffering), thoughts and intangible phenomena are concerned. Lastly, world three is a product of cultural influence, things created by humans, which may be physical (e.g. art) or theoretical and implied, such as language or “systems of moral norms and values” (Wulff, 1999, p. 549-550).

For the purpose of clinical practice, these three worlds collide in predictable and unpredictable ways. Physicians and patients must navigate their roles as participants in a positivistic system at the clinical level, while also attempting to uncover meaning in their relationship with each other. Medicine brings together teams of people, experts and professionals, lay and otherwise, to determine a solution to a multifaceted problem: illness. There are subjective sides to this problem, from the patient’s own thoughts and feelings, the physician's own understanding of those thoughts and feelings, as well as the collectively understood action plan that may well be perceived differently by each participant. These subjective elements tend not to be captured by positivistic practices, such as RCTs, although they are essential to implementing RCT evidence. Nancy Cartwright recommends that the *gold standard* should be “whatever methods will provide (a) the information you need, (b) reliably, (c) from what you can do and from what you can know on the occasion” (2007, p. 11). Evidence does not always translate seamlessly, in which case, experts are required to both interpret and assess the effects of the data being used.

The idea that objective facts exist in nature, separate from our thoughts about them, requires that the truth of their nature is simply waiting to be uncovered. But as Karl Popper illuminated, “there is no such thing as a theory-free observation”; in other words, “all observation is selective” and is meaningful only in relation to an attached theoretical perspective or explanation (Thornton, 2016, para. 11). The value-laden nature of observation then requires us to account for worlds two

and three described by Wulff – the subjective world and the world of cultural influence (Wulff, 1999, p. 550). This is where the art of clinical practice lives, within worlds two and three, whereby “humanistic” properties are embraced and utilized alongside world one (the empirical project of medicine and science).

The distinction between science and non-science is evident in medicine. Those who fail to engage in following the normalized expectations that surround scientific practice are often thought of as doing “bad science” or even “quackery”. Through the knowledge seeking process we pass normalizing judgment upon those who do not subscribe to the western doctrine of RCTs, empiricism, rationality and exclusive bodies of knowledge and power (Foucault, 1984). These beliefs have shaped how evidence is understood in medicine in the 21st century, bringing into question the concepts of lay versus expert knowledge. A system that promotes the idea that knowledge and truth can only come from scientific processes will make it difficult for physicians to embrace their own thoughts, experiences, and intuitions. Similarly, patients are disempowered in a positivist medical system, as it inherently devalues their lay contributions (Popay, et al., 1998). By addressing alternative epistemologies of medical practice, and by learning how we can balance the success of positivism with compassionate and humanistic healing, we begin to balance physician- versus patient-driven models of care.

3.2 Consideration # 1 – Medicine is both a rigorous scientific practice and a humanistic endeavor.

In this section I will explore the ways in which the practice of medicine has social elements not captured by positivist depictions of medical knowledge. The goal will be to expose the “humanistic” sides of medicine as forms of knowledge in their own right. This goal will be pursued into the next chapter as well.

3.2.1 The Practice of Medicine has Social Elements

Physicians do not simply stick to their role as a vendor for empiricist data, nor do patients remain within the static confines of the “sick role” (Parsons, 1951). Of course, “most physicians in clinical practice readily recognize the social nature of their profession” (Wasserman, 2014, p. 2). Nonetheless, of the two cultures of medicine, the positivistic culture is more likely to be recognized as producing knowledge. The dominant positivist tradition “based on Karl Popper’s hypothetico-deductive model” of falsifiability governs the empirical exercise of truth gathering (Henry, 2010, p. 294).

Evidence-based practices often suggest that the physician is to be a detached and neutral observer whose effectiveness is independent of bias or belief, and that the patient is simply a passive recipient of care (Wilson, 2000). In this context, patients may not be considered influential agents; their influence may be seen as a negative form of bias, or as inappropriate involvement considering their lay knowledge base. This attitude mimics the general perception held by practitioners under paternalistic models of medicine, whereby patients were seen as an object of care, not a subject. However, today “promoting patient participation in care is an international priority identified by the World Health Organization and various national bodies

around the world” and is considered to be “an important aspect of person-centered care” (Oxelmark, et al., 2017).

3.2.2 The Contribution of Patients

The patient-centered approach to medicine (or patient-centered care) requires clinicians to involve patients in the decision making process relating to their treatment. The Institute of Medicine (IOM) in the United States defines patient-centered care as “providing care that is respectful of, and responsive to, individual patient preferences, needs and values, and ensuring that patient values guide all clinical decisions” (Frampton, Guastello & Lepore, 2013, p. 443). However, patient-centered care is not limited only to the principle of autonomy and respect for patient choice.

Consider the example of patients with chronic conditions. Patients with chronic disease are thought to occupy the largest percentage of hospital beds, require the highest percentage of resources, and spend overall the greatest amount of time in hospital. In the United States “chronic conditions account for 3 of every 4 dollars spent on healthcare...people with chronic illness accounting for 83% of all healthcare spending and are heavy users of the healthcare system” (Gee, et al., 2015, p. 229). These patients are a primary target for self-care management and eHealth solutions. The concept of “e-patients” describes engaged, experienced and educated persons who use personal health records and available research and information to “support productive patient-provider interactions” (Gee, et al., 2015, p. 229). Quite often in the care of those with chronic diseases, patients are expected to access their information online, check

results and to bring this information to clinical consults to further explicate what might be required in their care (Silver, 2015, para. 6).

The care of patients with chronic disease requires the deep involvement of patients themselves, and clear communication between providers and patients. Discussions between providers and patients are collaborative, and require interpretation by both parties, a meeting of minds. When patients are engaged in the clinical discussion they are empowered to ask questions, to provide information, and to relay any thoughts, values and preferences. These discussions are necessary, and may have additional benefits. For example, patient engagement may prevent medical errors, as “patients are in a prime position to intercept errors”, such as surgical site marking or knowledge about current medications (Walters, et al., 2017, p. 716).

3.2.3 The Contribution of Clinical Teams

Clinical teams and individual practitioners experience the social dynamics of healthcare everyday by necessity, during almost every step of the process. Individuals must coordinate with nursing teams, administrative teams, and other physicians and specialists. In end-of-life care contexts, healthcare workers must discuss whether such care must occur in the intensive care unit, the palliative care unit, at home, or in another environment. In such situations, clinicians contemplate whether surgery should be involved, and whether emergency readmission should be an option. The involvement of all of these clinical groups illustrates the team-based provision of care that occurs in hospitals today. Teams must operate within a system governed by human resources, health services managers, clinical leads and portfolio agendas. The social aspects of care will direct the ways in which providers respond to each other, as well as to patient needs.

Interprofessional and interdisciplinary collaboration is the present and likely the future of patient care.

The Institute of Medicine advocates for cooperative care being “an imperative in the redesign of healthcare delivery systems, and a cornerstone of safer healthcare organizations” (Meltzer et al., 2010, p. 1119). It has been shown that “a person’s location within a social network can affect the volume, quality, and timeliness of information to which he/she has access, and how connections within a group can affect group cohesion, coordination, trust, knowledge sharing, and problem solving/ innovation” (Meltzer et al., 2010, p. 1120). Take the example of group medical visits for patients in rural communities who often lack access to family physicians, and who suffer from a chronic condition such as diabetes. In group visits, patients are able to see a provider (physician or a nurse practitioner) as well as partake in group sessions where many experts may also attend (e.g. mental health or physiotherapy). In this setting patients and practitioners are able to work together, giving patient’s access to “help with individual medical needs, group problem solving, teaching about management strategies... [and] participant-generated discussion topics” (Thompson et al., 2014, p. 200). The benefits to this group-based care are that primary care physicians and clinics can decrease their wait times and waitlists of patients, while decreasing costs, decreasing gaps in care in the community, as well as gaining interdisciplinary support and longer sessions with clients. Entire teams of individuals, including other patients, come together and learn from one another in a setting that would not be possible during a one-on-one patient visit.

Thompson et al. highlight some of the benefits of peer and group support in the clinical environment. This process increases “access to knowledge through the generation of discussion topics” (2014, p. 201). It also contributes to group problem solving and enables patients to act “as positive role models; providing emotional/moral support; encouraging accountability; providing credible information (i.e. based on lived experience); fostering a sense of positive competition; and motivating change through social comparison” (Thompson et al., 2014, p. 201). From a provider's perspective, physicians and nurses are allotted more time with patients to educate them on their disease, something that is difficult to do during a brief assessment period. They are also further supported by experts attending the group session who are better able to speak to certain difficulties faced by patients, such as physical or mobility issues that must be addressed by a physiotherapist:

The healthcare provider plays an important role in fostering supportive and helpful relationships among group members by orienting patients to their roles in the group, monitoring and encouraging supportive interactions among group members, and modelling warmth, empathy, acceptance and positive regard (Thompson et al., 2014, p. 202).

The phenomenon of “huddling” in different team-based care environments, such as the ICU, provides a more common example of the contribution of clinical teams. Huddling allows providers to plan patient care cooperatively, verbalize concerns, outline goals, and access other expert opinions on the spot. This practice has been shown to improve overall efficiency and communication between staff (Tseng, 2017, p. 584).

As the social provision of care between team members can be more nuanced than utilizing purely expert knowledge, “non-technical skills” are useful in critical care or perioperative environments. Non-technical skills are defined as “the cognitive, social, and personal resource

skills that compliment technical skills, and contribute to safe and efficient task performance” (Flin et al., 2010, p. 38). Specialists may have technical training in their field, but they must also call upon and optimize their social skills, or their ability to perceive risk and potential error, and to understand relationships with other team members (Flin & Maran, 2004, p. i80).

Since so much of current health-care delivery is team-based, effective social interaction between team members is essential. This consideration extends beyond the ability for teams to communicate and collaborate well in the social environment of healthcare day to day. However, humanistic measures are not always acknowledged as vital or even consciously present. These examples, taken from different healthcare settings, are illustrative of the overall social dimension of medical care. They illustrate features such as huddling, good communication and multidisciplinary teamwork. Without acknowledging and teaching these tools, medical professionals may not use them to their full potential, or they might become absent in areas that could be better supported by their adoption and use.

3.2.4 The Practice of Medicine has Humanistic Elements

Humanism is an attitude that focuses upon the human realm of experience, and is therefore important to the practice of medicine. A humanistic approach is dedicated to emphasizing the social needs of individuals, and “describes the respectful and compassionate relationship between doctors and their patients” (Ramnarayan, 2013, p.103). Some commentators note that humanistic behaviours in medicine are not well described in the literature, and are less well established in the medical learning environment and the professional sphere than more scientific aspects of care (Dotters-Katz et al., 2018, p. 3). Yet “patients who perceive their physicians as

humanistic have better health outcomes and are more satisfied” (Dotters-Katz, et al., 2018, p. 1). Maintaining a humanistic outlook can be difficult in a positivist system. Yet when students enter the clinical environment it becomes undoubtedly clear that medicine is not a pure natural science, it is placed “in the context of the entire human experience” (Cooper & Tauber, 2005, p. 1086).

Consider an example of humanism in medicine. Carmelle Tsai draws our attention to this aspect of the practice of medicine in her winning essay entitled *Yellow Hospital Socks* – from the 2012 Humanism in Medicine Essay Contest. In her essay, she exclaims that “there is nothing normal about being a physician” (Tsai, 2012, p. 1744). In all of the “horrendous, grotesque - plain weird” moments that medical students, residents, and physicians are faced with on a daily basis, the attempt to preserve a patient’s dignity and maintain a humanistic outlook may seem out of place. Tsai tells the story of adjusting the sock of a female patient, as it “had gotten twisted around in the pre-surgery shuffle”. At the time, her action seemed relatively pointless, as the patient was about to have her chest cracked open to replace her aortic valve. In such a circumstance, the position of the patient’s sock, in comparison to the surgical intervention, seemed to be of little importance (Tsai, 2012, p. 1744).

At moments like these, small gestures of compassion and courtesy are overshadowed by the magnitude of certain diagnoses, procedures, and facts of illness that patients must face. In her mind, Tsai determines that fixing the sock was an attempt to remain human in the midst of the enormity of the patient’s surgery. She reflects that her consistent attempts to remain human within her practice, for example by fixing the patient’s yellow sock, are not only for the sake of

her patients, but for her own sake. She pointedly remarks: “I understand now that my humanity is why I do these things. . . . It is for me. And because it matters to me, in some roundabout way, it matters to Mrs. N, and to all my patients. Because in medicine I am meant not only to heal, but also to be healed” (Tsai, 2012, p. 1745). Recognizing the humanity of the patient in her gesture helps her to preserve her own humanity. Preserving her own humanity will help her keep the patient’s humanity at the forefront.

3.3 Consideration # 2 – Medical knowledge includes knowing how to incorporate the uniqueness of individuals into clinical decision-making.

In clinical settings, practitioners need to use their knowledge of patient bodies, disease, and trauma to act quickly. These decisions require practitioners to effectively combine evidence from research data and evidence taken from lived experience, gained over time from exposure to many medical cases and patient scenarios. The goal is “that physicians should use the best sources science has to offer to their patients, but never in any way that neglects important psychosocial issues or the uniqueness of each patient as a person” (Bensing, 2000, p. 20). In this section I outline some facets of the individuality of clinical decision-making, drawing primarily on examples from studies of clinical judgment in emergency medicine.

3.3.1 The Use of Research Evidence Requires Interpretation

The application of medical knowledge is “an essentially interpretive process” (De Raeve & Wainwright, 2001, p. 95). Medical science “is the study and treatment of disease...it is not a pure science like physics and mathematics” (Tavakol, 2004, p. 77). Despite the availability of RCT

evidence for many conditions, this evidence must be analyzed for its applicability for the individual patient who is sitting in front of the clinician before it is applied. The interpretive part of this process is more humanistic than scientific, akin to the humanistic skills of interpreting and deciphering complicated texts. Medicine proclaims to be a hypothesis-driven, reductionist and applied, however, discovering how physicians actually *know* something is not as straightforward as this model would suggest (Henry, 2010, p. 292).

3.3.2 An Example: The Use of Medical Knowledge in an Emergency Department (ED)

In a 2008 study by Lisa Calder et al. researchers conducted a survey to determine how emergency physicians make decisions for acute-care patients in discharge settings in order to determine the prevalence of preventable adverse events related to decision making. The researchers carried out “real-time qualitative interviews of ED physicians at the time of discharge decision” at The Ottawa Hospital, a university-affiliated teaching hospital in Ottawa, Ontario (Calder et al., 2015, p. 9). Interview questions were open ended and targeted towards gaining insight into three outcome measures: a) discharge decision making, b) rationale for discharge decisions and lastly, c) the incidence of adverse events. The study grouped “decision rationale” into two divisions, “clinical judgment (including specific clinical criteria) and evidence-based (including specific guidelines or consulting the literature)” (Calder et al., 2015, p. 10). In a previous study at The Ottawa Hospital (Calder et al. 2012) clinical decision making was separated into “experiential” versus “rational” methods. Calder et al. defined experiential decision-making as involving “intuitive decisions and the use of heuristics or rules of thumb”, where rational decision making “incorporates critical evaluation of evidence and a structured process that requires more time and conscious effort” (Calder et al., 2012, p. 811).

In the Emergency Department survey “... physicians perceived that the majority of their discharge decisions were made using primarily clinical judgment, and that explicit consideration of published evidence when making these decisions was rare” (Calder, et al., 2015, p. 11).

Emergency clinical scenarios may be perplexing or foreign. The clinician must draw on previous experience as a reference point. In an emergency room setting, it is not always convenient or possible to consult the literature or best available evidence to provide care. The decision-making process in emergency medicine is not purely based upon evidence, or technical knowledge.

Expert practice in this area appears to be linked to prolonged exposure and acclimatization to a patient population, drawing upon a body of accumulated tacit knowledge.

Emergency physicians are under time pressure and are expected to make critical decisions to treat patients or to discharge them home. There are often many reasonable treatment options available to patients and physicians, and the nuance in choice may rest upon individual perceptions of risk and benefit (Verma, et al., 2014, p. 571). In acute care, time constraints often restrict practitioners from having access to evidence or the ability to reflect upon decisions: they have to decide what to do quickly. Rapid response teams (RRT) or emergency medicine physicians have to weigh patient options against presenting signs of illness using their knowledge of the situation at hand, while using information that may not be immediately evident to the senses. “The experienced decision maker often uses rules of thumb or short cuts termed *heuristics*” (Kovacs, 1999, p. 948) which help increase efficiency as physicians separate their knowledge into meaningful parts. Take for example a patient who presents in the ED with a migraine, vomiting and normal vital signs. It would be reasonable to rule out disease pathology,

such as a cancerous tumor, in a case where the patient has a history of migraine experience. The physician must be able to distinguish between a patient's self-proclaimed "worst ever headache" and "a possible subarachnoid hemorrhage" (Kovacs, 1999, p. 948). This information must be pieced together quickly, a process that is not easy to articulate, as understanding and judging happen at different paces with various forms of knowledge input (Engebretsen et al., 2016, p. 598-599).

In a separate study in 2015, Pelaccia and colleagues carried out a qualitative assessment of emergency physician decision making using an ethnographic approach. "Physicians were equipped with a micro camera to record their clinical activity from their 'own-point-of-view perspective'" (Pelaccia et al., 2016, p. 747). This study revealed that almost all physicians (of the fifteen interviewed) used knowledge derived from the environment in which they worked, a type of experiential knowledge or "know-who" (as the study referred to it) as opposed to "know-how". That is, most physicians made judgments about the care of patients based on their degree of trust about previous judgments made by other healthcare professionals. They "reported using their knowledge of other healthcare professionals" to assess the degree of patient needs in the ED. These fellow healthcare professionals were the "who" of "know-who". In other words, practitioners relied upon the perceived knowledge base of other professionals in the health care team, such as veteran nursing staff who were well known to be good at patient assessment. One physician stated: "the nursing auxiliaries are really old-timers, and even if they don't know how to interpret the clinical signs, they can tell if someone is doing well or not. So in fact there is really a sense of trust in their judgment" (Pelaccia et al., 2016, p. 749).

In other reported instances in the study it was clear that the reputations of other health care providers, including assumptions about their emotional reactions, and their personalities, played a role in the clinical decision-making process. The knowledge of other healthcare providers, and their skill-sets proved useful for efficiency and judgment in care. Staff could predict what might happen to patients depending upon the choices made by others, the discharge location of patients, or the care they had access to outside and inside the hospital. One physician explained that “if the anesthesiologists from this private hospital decided to place a central venous line, well that could just be them being cowboys, but still, it could be because they suspect that the patient might deteriorate quickly” (Pelaccia et al., 2016, p. 749). Another stated that “we really have a major problem with the pediatric department” (in an anonymized town location) for children requiring trauma surgery, because “either the anesthesiologist won’t put the child under or the surgeon will say ‘I can’t operate’” (Pelaccia et al., 2016, p. 749). Pelaccia and colleagues drew the conclusion that context and experience are very important for physicians working in emergency medicine (Pelaccia et al., 2016, p. 750).

It is evident that “experience is an important factor in clinical decision making”, as careful deliberation takes into account the experience of clinicians, their experience with other healthcare providers, and their general exposure to certain care environments over time (Pelaccia et al., 2016, p. 750). These examples illustrate the inherent ambiguity of medical practice and the need for practitioners to embrace uncertainty in the face of social and humanistic elements of care, as they are present alongside the empirical perception of what constitutes valid evidence. The goal is to avoid the possibility that evidence-based practice will impede the goals of patient-centered care, and act as a force that obstructs “process, human care, and professional

accountability” (Fawcett et al., 2001, p. 118). Being a physician necessarily requires that one knows how to incorporate the uniqueness of individuals into the care model, and when exercising clinical judgment.

Chapter 4 – Broadening the Scope of Medical Epistemology

Theories of knowledge in medicine are heavily focused upon evidence-based practice and empirical knowledge. This phenomenon has been outlined in this thesis project. This chapter will be dedicated to outlining alternative epistemologies, or ways of knowing, in medical practice that are humanistic and in support of patient-centered care. I argue that healthcare practitioners use three subjective forms of epistemology for the purpose of attaining knowledge in their practice and about their patients. The epistemic credibility of these subjective states of knowing is less well defined than EBM. Nevertheless, I will argue that they are valid strategies for attaining knowledge.

Barbara Carper delineated four *Fundamental Patterns of Knowing in Nursing* in 1978, which included *empirics* (or empirical knowledge), *esthetics*, *personal* and *moral* knowledge (Carper, 1978, p. 14). Subsequent to Carper's contribution to this literature, further categories have been devised. According to Carper, these patterns of thought are part of nursing knowledge. I extend these insights to physicians and other decision makers in healthcare, as these fundamental patterns are important for clinical judgment and for managing the relationships between providers and clients.

4.1 Theories of Knowledge

The scientific method is commonly regarded as the epitome of knowledge production. However, this domain is not infallible. Scientific belief and the justifications that lie behind scientific fact are subject to mistake and disconfirmation by counter-evidence. Scientific knowledge is always open to revision (Audi, 2011, p. 303). Robert Audi argues that there is possibly no such thing as

scientific *knowledge* at all, only scientific belief. Instead of succumbing to the position that we cannot use the term knowledge in regards to science, he takes the position that rather than rejecting the idea that we have any scientific knowledge at all, we might agree that there exists a methodology (i.e., the scientific method) that “tends to yield the same results when properly applied by different competent investigators to the same problem”, and provides us with our best approximation of the truth (Audi, 2011, p. 303). We are then able to agree that we have approximate knowledge of the world and well-grounded belief that something is true when using our best available evidence. Similarly, for the purposes of my argument, I assume that approximate knowledge, using our best evidence, is sufficient.

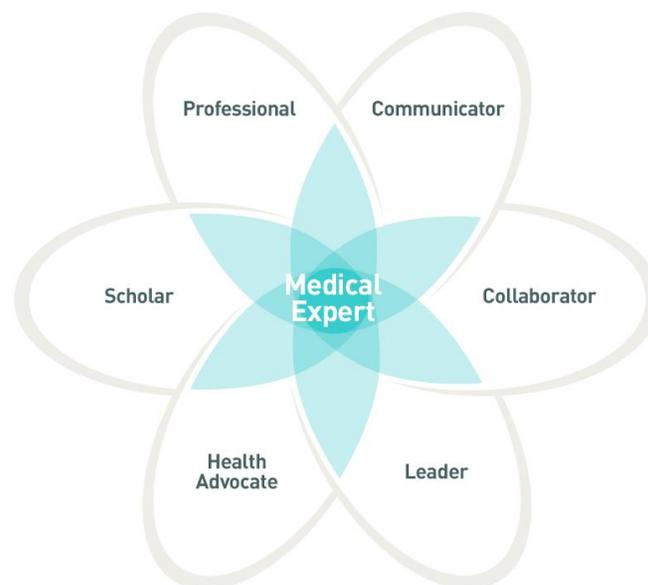
Medicine is a field in which social scientific evidence is relevant. In the sub-field of social epistemology, scholars have been able to study knowledge formation beyond the individual alone, as it seeks to understand the knowledge developed by groups, and the doxastic and cultural influences that shape knowledge within a social system (Fuller, 2013, p. 902). The three categories laid out by Carper are often constituted by knowledge obtained by groups and shared in a social context.

4.2 Clinical Reasoning

Clinical reasoning involves many epistemic activities. Practicing evidence-based medicine is only one such activity, though a dominant one. Take the example of the CanMEDS framework, a model outlining physician competencies. This framework “identifies and describes the abilities physicians require to effectively meet the health care needs of the people they serve. These abilities are grouped thematically under seven roles, the domains of which extend beyond

academia to fully constitute what we might call a *medical expert*. A competent physician seamlessly integrates the competencies of all seven CanMEDS Roles” (RCPSC, 2015) (See Figure 4.0). We expect medical experts to simultaneously embody the traits of a professional, communicator, collaborator, leader, health advocate, and scholar.

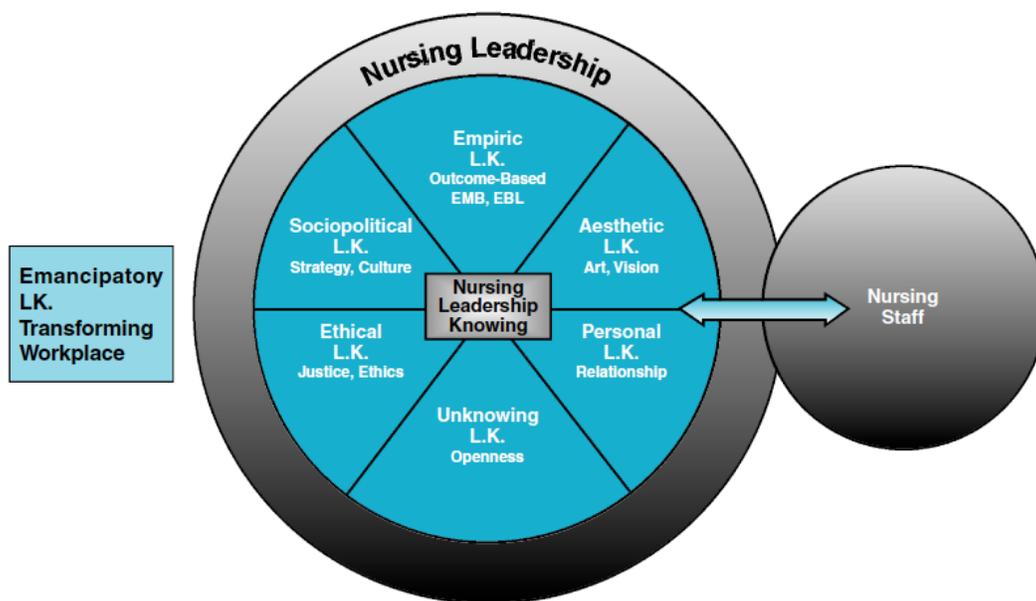
Figure 4.0 CanMEDS Framework, from the Royal College of Physicians and Surgeons of Canada (RCPSC, 2015).



Within these seven domains physicians acquire and utilize different forms of knowledge. The skills presumed to be held by a scholar will require different processes, from developing effective leadership skills within team environments, learning how to best communicate with patient families in a time of crisis, or even learning how to effectively collaborate with members of a dynamic healthcare team. In this way, CanMEDS captures both the empirical and humanistic aspects that are required of medical practitioners. Similarly, Jackson et al. (2009) provide a template for nursing leadership skills (see Figure 5.0) using the seven patterns of knowing identified by Carper (1978), Munhall (1993), White (1995), Chinn and Kramer (2008).

The additional distinctions made by these contributing authors were to address those gaps left by Carper’s four original conceptions of knowledge categories, and were thought to put the “phenomenon of knowing...into the contexts of care” (Jackson et al., 150). These new divisions included *sociopolitical knowing*, *unknowing*, and *emancipatory knowing* (Jackson et al., 150). I will not directly address the fifth, sixth and seventh patterns of knowing in this text, as I believed that Carper’s original categories had not yet been sufficiently engaged with, nor expanded upon within the context of clinical care. Importantly, the later additions to Carper’s “patterns of knowing” must always be considered, as political and social influences cannot be disentangled from care decisions. We should remain open to new sources of knowledge in the case of unknowing, and lastly, the equity of care and simply put “justice for all” within healthcare is a consideration of the utmost importance, i.e. emancipatory knowing (Jackson et al., 150). These dimensions should be further explored by anyone interested in their effects and related theory.

Figure 5.0 Nursing Leadership Knowing Model (Jackson et al., 2009, p. 151).



4.3 Personalized Knowledge

Healthcare involves many interpersonal interactions and relationships, most importantly, the one between practitioner and client. Professionals must also maintain relationships with other healthcare providers, support staff and even family. A caregiver is entrusted with a high degree of responsibility for the patient. They also require private access to the life and body of that individual. There is a degree of intimacy between a provider and their patient, which must be accepted by virtue of consent. The patient allows a stranger access to their body in return for medical services, advocacy, and attempted curative treatment. This is a tenuous relationship in some respects; trust must be built, and most patients will need to feel comfortable to engage in the healing process. Physicians must often look more deeply into the person behind the illness, and be willing to open up to vagueness in the face of disease, accounting for the multifaceted shift that takes place when one becomes ill. Here we will consider that “the quality of interpersonal contacts has an influence on a person’s becoming ill, coping with illness and becoming well” (Carper, 1978, p. 18).

Consider the example of cardiac care. Sturmberg (2009) states that “having a heart attack shifts the immediate balance markedly towards the biological domain” resulting in the need for sudden, even emergent intervention. This need creates a strong focus upon empirical and more practical forms of knowledge, those that show tangible and immediate results. Yet, “healing of the patient is not solely an issue of stabilizing cardiac function, as the acute event also means loss of social interactions, depressed mood and a loss of self-understanding” (Sturmberg, 2009, p. 766).

A health care provider must find a patient's *personal meaning*, a sort of coherence that is found behind the patient experience. Understanding this meaning is fundamental to understanding how a patient will take action and make sense of their situation. People often define their own state of health in relation to the wholeness of their experience in life, which can be understood through constructs like relational well-being (McCubbin et al., 2013, p. 354). In other words, good health, as many will now argue, is not reliant upon body related indices alone such as good nutrition or personal hygiene. Good health is also tied to social qualities, such as having harmonious relationships, feeling that your children are in good health, identifying with one's heritage and land, even "having someone to laugh with - and one to love" (Sturmberg, 2009, p. 767). As the whole of personal health extends beyond physical health alone, the personal nature of health must be accessed, in the same way that we draw blood to reveal the inner state of unbalance in the body. Disease can be viewed as a sign of dysfunction and disruption not only in the physical self but in one's values, in the connection to one's society and culture, and with others around oneself (Sturmberg, 2009, p. 767).

The dimensions of *relational well-being* and *personal meaning* touch upon the category of personal knowledge which is the most philosophically complex of Carper's categories. This form of knowledge includes knowledge of the self, the relational self, and one's ability to embrace ambiguity and vagueness in regards to oneself and others. Rather than seeing a patient as an object with a predefined illness, caregivers instead strive "to actualize an authentic personal relationship between two persons", both of whom are constantly in a state of becoming (Carper, 1978, 19). A physician's self-understanding is an essential component of personal knowledge. When attempting to relate to the patient and their unique experience, a provider must respond not

merely through empirical design or artful practice, but through a reciprocal type of personal engagement with another individual.

In considering both the self and the relational self, one must also consider the concept of *authenticity*. Authenticity is related to the personal experience in how we connect with others and how we attempt to prove the existence of things that are not visibly accessible, e.g. “real pain” or “real feelings” (Chandler, 2016, p. 187-188). Pain may be thought to be visibly clear, such as with patients who are grimacing, or audible through screams and cries, however, one’s introspective knowledge of their own sensation of pain is privileged. In the clinical encounter a healthcare provider must tap into the patient’s introspection, through an ability to listen. The clinician may therefore *know* what the situation means for the patient, and what it means for the practitioner in the therapeutic relationship (Carper, 1978, p. 18). The exchange that takes place between patients and practitioners is riddled with particular knowledge, and necessarily so. “If medicine somehow eliminated the particular knowledge of the individual patient and the tacit knowledge of the experienced doctor, it would be unable to achieve its purpose” (McHugh, 2015, p. 580).

The therapeutic use of the self, and access to one’s own personal knowledge base, is required to relieve suffering. In *Role Modeling at the Bedside*, 2012, Jay Milstein describes what letting in the personal aspects of medicine might look like. Milstein gives the example of a medical intern having to deal with a family whose infant has “unexpectedly deteriorated... [and] succumbed to his disease process” (Milstein, 2012, p. 312). The intern is asked to “take the lead” with the family in sharing the news and helping them process these difficult emotions. However, she is

unsure of her ability to talk to them without “losing it”. Milstein agrees to take the lead in her stead, although acknowledges that he “may lose it” himself, but “would not consider that detrimental to the doctor-family relationship” (Milstein, 2012, p. 312). He discovers that a stronger focus upon authentic thoughts, feelings and connections with patients creates a warm and supportive environment, one that is built upon trust, respect and sharing. This approach allows families and patients to air their distress openly, and gives medical trainees a chance to equally share in their desire to participate and be supportive (Milstein, 2012, p. 312).

By “taking into account the patient's voice and vision” we then see a marked improvement in “the technical, personal and social competencies of professionals” (Flores et al., 2016). Learning from sick patients through teaching medicine at the bedside “supplements the theoretical and abstract knowledge of textbooks” (Cassell, 1991, p. 209). Human suffering is full of personal meaning, and can be accessed by all participants of a patient's journey. In order to make sense of human suffering we must form supportive personal relationships “that can last through adversity” (Sturmberg, 2009, p. 767). This is particularly important between practitioners and clients who must form closer relationships by virtue of extended exposure and the nature of intimacy involved in caregiving. Knowledge derived from this process is gained through the relation “to another human being and confronting that human being as a person” (Carper, 1978, p. 18). Patients and practitioners must “sacrifice form”, as Abraham Maslow has described this process (Maslow, 1956). That is, they must abandon conceptions of a predetermined reality, or structured concepts of what either participant should be, such as a patient categorized exclusively by a diagnosis. Both parties embrace the unknown and the intangible aspects of the *self*, as no category “can ever encompass or express the uniqueness of the individual encountered as a

person, as a self” (Carper, 1978, p. 19). As we gain personal knowledge of ourselves and others “it is a process that is filled with mystery that may be enriching to all participants” (Milstein, 2012, p. 312).

4.4 Aesthetic Knowledge

Use of the word “aesthetic” comes from the Greek term *aisthitikos* meaning “perceptive by feeling...or sense impression” (Bleakley et al., 2006, p. 199). Aesthetic knowledge is what a practitioner will indirectly call upon to translate a patient’s direct behavior – including the display of symptoms, cultural stories and immediate narratives – into meaningful and appropriate action that is healing. Although empirical knowledge aims to be universally applicable, most experiences within healthcare are subject to unique and unpredictable circumstances. Aesthetic forms of practice are unlike empiricist forms in that they do not seek to understand an exemplary or ideal class, rather, they seek to find meaning derived from “scattered particulars” and specific details unique to medical discourse (Carper, 1978, p. 17). In other words, the artful form of medical practice is most relevant in the immediate moment, as one derives meaning from one’s surroundings. Aesthetic knowledge is then instrumental in directing this meaning towards the most appropriate end based upon one’s own perception of what is required (Bruce, 2013, p. 543). John Dewey once noted that aesthetic practice requires “the difference between recognition and perception” (Dewey, 1958). To recognize a phenomenon, one is content with simply giving it a name or a category. However, to perceive is to go beyond mere identification and to form a picture of the whole that is built by a collection of its parts (Carper, 1978, p. 17). A complete picture of reality is never fully exhausted, whether we perceive the patient’s body mechanisms, or the ways in which that patient lives (Hick, 1999, p. 136). The ability to perceive *need* requires

empathy, or the ability to project into another's state of experience. Over time, the function of empathetic care provides a practitioner with greater knowledge and expertise, due to continued exposure and practice with such perception. This process of gaining experience with perception is similar to an apprenticeship method of acquiring knowledge: an imitative process of watching and relating to others in order to acquire knowledge and skill (Carper, 1978, p. 17). However, aesthetic practice becomes one's own, as through apprenticeship individuals become familiar with the basic principles of care and begin to form their own sense of practice, relying upon skills such as sensitivity and sensibility with patients. Bleakley et al. (2006) argue that this practice forms into a type of *practice artistry* that is foundational to clinical judgment.

Aesthetic practice, according to Bleakley et al., relates to one's identity and requires "fine or discriminatory use of the senses" and what they refer to as "close noticing" regarding diagnosis, prognosis, and clinical judgment. Aesthetic medicine is practiced with a "sensitivity towards both patients and colleagues" using certain *sensibilities* (Bleakley et al., 2006, p. 199).

Sensibilities are what allow practitioners to appreciate and tune into the complexity that is involved in perceiving others (i.e. their body, or emotions). They argue that aesthetic practice will include both ethical awareness (sensitivity) and adaptive sensibilities, such as a narrative sensibility "that a doctor uses when listening to patients' stories and when coding stories into formal clinical presentations" (Bleakley et al., 2006, p. 199). It takes an aesthetic sense to understand how the elements of a patient's story fit together into a coherent narrative. In 2017 Bleakley revisited the concept of artistic sensibilities in medical practice noting that "the fire of imagination" burning within students, and the strong ability for medical humanities research to invigorate medical education, risks being continually extinguished by skepticism. He notes that

specific fallacies surround the concept that “art produces health”, or that artistic healing can be creative and therefore “fun”, stating that “art is often unrewarding toil: failed experiments, misguided thinking, dead-end labour or perspiration with occasional inspiration” (Bleakley, 2017, p. 126). In order to take the aesthetic form of medical practice seriously we must re-envision the concept of artful practice as more practical, and “resist the civilizing of art” (p. 127). The artistic approach often characteristically disrupts and creates discomfort, hoping to stimulate change and greater internal awareness of the healthcare inequities and injustice that we face.

Narrative forms of medicine have also been subjected to Bleakley’s analysis. He argues that the mediated interpretation of stories risks losing the original intention set by the authors own voice, and risks hegemony (Bleakley, 2017, p. 127). Although I would argue that the concept of ‘plot’ in one’s narrative is not the main feature of their adaptive use in medicine, rather, the total experience of another - set in the form of narrative - is what is emotionally provocative for the listener, and one’s own re-interpretation and relational use of this external meaning is what is key to its further use within clinical practice. Pullman, Bethune & Duke (2005) in *Narrative Means to Humanistic Ends* show how narrative can greatly influence and structure the experiences of young medical students who are faced with the nuances of their profession for the first time. Through the utilization of stories and literary narratives in medicine they illuminate the voices of others, and hope to provoke students to open their minds to questioning issues such as technology in medicine, discomfort during the patient examination, and even décor in the clinical waiting room. “They serve...as a means by which to impress on our students and teaching faculty alike that all of our lives are similarly complex stories” (Pullman et al., 2005, p. 280-281) which requires an aesthetic eye for examination, careful thought and appreciation.

Knowledge in the aesthetic realm is gained by subjective acquaintance with individuals and the world. Artistic expression requires us to abstract from our traditional method of discourse, which may not be organized into an understandable narrative. Physicians and other healthcare providers must become agents of their learning – to not only show their knowledge but to manifest and apply it. Knowledge of another is made apparent through transformational action, for example, one may observe patient behaviour, and through the act of perceiving, see significance in it (Carper, 1978, p. 16-17). Beyond an individual's ability to demonstrate their competencies, professionals must gain access to the private realm of the patient. This ability is introduced through empathy, where “knowledge of another person's singular, particular, felt experience” is known through empathetic connection (Carper, 1978, p. 17). In some ways knowledge of what is required is given to the practitioner through the silent request of the patient, through their state of being, directed by our empathic desire to put an end to the emotional and physical suffering of others. Aesthetic knowledge is not generalizable. Instead its goal is particular knowledge, important for often only one individual. The importance and lessons that can be gained from this class of knowledge, however, do not necessarily require mutual exclusion, as different patients may echo the same aesthetic class, like the impressionist works of both Monet and Degas. Their subjects are different, but there is a recognizable aesthetic category of which one can have general knowledge.

4.5 Moral Knowledge

The last category of knowing that Carper outlines relates to morality and ethics. Moral knowledge concerns decisions about what is right or wrong, and the related complexity

surrounding this type of decision making. Both nurses and physicians are guided by codes of ethics in their practice, set out by professional regulating bodies and medical associations such as the CMA (Canadian Medical Association) or AMA (American Medical Association) *Code of Medical Ethics*. In bioethics, there are many academic and professional associations such as the *Canadian Bioethics Society* or the *American Society for Bioethics and Humanities*, and journals such as the *Journal of Bioethical Inquiry* and *Bioethics* dedicated to research in this area. Beauchamp and Childress' *Principles of Biomedical Ethics* is a canonical text for this discipline, and a fundamental resource for any bioethicist. Their position is typically understood to encompass four fundamental principles of biomedical ethics. These include the principle of respect for autonomy (the obligation to respect self-governed choices of patients), the principle of beneficence (the obligation to help others and contribute to their wellbeing), the principle of nonmaleficence (the obligation to abstain from causing harm) and the principle of justice (the obligation to be fair and respect equality) (Beauchamp & Childress, 2013).

Despite the existence of ethical codes and the presence of bioethical guidance in clinical settings some believe that “the abstract knowledge of textbook ethics makes professionals feel alienated from their own moral experiences, expertise and insights” (Molewijk et al., 2008, p. 120). Carper argues that moral codes offer confusion and contradiction, leaving providers unsure of the exactness required in moral judgment when values such as the respect for human life and the obligation to alleviate suffering conflict (Carper, 1978, p. 20). Not everyone subscribes to the same code of ethics on an informal basis. Personal, cultural and collective beliefs shape choices and values. Several philosophical positions recognize this fact, such as the divisions of *moral pluralism* and *moral relativism*, which hold that moral beliefs vary between individuals and

groups. The values held by patients and practitioners can be in conflict with each other, and these conflicts may be reflected by overall goals of care. For example, a patient who is being treated in an ICU setting may value their freedom, wishing to be discharged from the institution that is attempting to treat them. In this case, the goals of care of keeping the patient in an ICU bed until their general recovery may be in conflict with the obligation to uphold patient autonomy, and with the patient's desire to leave the hospital. Even in a simple scenario like this, the dilemma requires a discussion about ethical priority, in hopes to gain an understanding of which values outweigh the others. Medical care requires that providers and patients take direct action *and* make voluntary decisions. The success of medical care is based upon empirical standards *and* individual judgment and character, which are all directed towards a shared goal. Decisions with respect to medical care are not made by appealing to scientific facts alone.

Moral knowledge is not exclusively constituted by reasoning about ethical principles. For instance, psychologist Carol Gilligan and others have articulated an "ethic of care" documenting the "voice of care". Gilligan noticed that women describe their ethical duties differently than their male counterparts, as she says that there can be "difficulty in hearing what they say when they speak" referring to how women's voices have been silenced and unheard, and therefore, may be misunderstood in contrast to men's (Gilligan, 1982, p. 173). She stresses how this difference is where the truth lies in an ethic of care, as women speak of empathetic connections with others rather than making reference to individual rights, justice and principles. This characteristic form of moral knowledge involves a sense of responsibility for patients that goes beyond objective duties encapsulated by moral principles (Gilligan, 1982). Carper similarly argues that the more involved healthcare workers are in their surrounding environments and

circumstances, the more sensitive they will become to ethical concerns, learning how to better intuit what their patients need and want. In ethics education, moral case deliberation, or group analysis and discussion allow practitioners to become sensitive to the nature of moral dilemmas, and to become attuned to the various types of moral skills which must be applied to dissolve the vagueness of cases and manage moral dilemmas (Molewijk et al., 2008, p. 123).

As Carper claims, “knowledge of morality goes beyond simply knowing the norms or ethical codes of the discipline” (Carper, 1978, p. 20). Solutions to ethical quandaries are never easy: “the knowledge of ethical codes will not provide answers to [our] moral questions” (Carper, 1978, p. 21). Indeed, Beauchamp and Childress as well as care ethicists such as Gilligan and other critics of the principlist position in medical ethics will all agree on this point. What is considered to be good, right, and of value will often vary, and ethical codes may provide insufficient guidance. Moral knowledge is required to function as a physician.

Beyond codes, rules, principles and laws, moral knowledge is based upon moral judgment. Patients and health care providers may hold varying moral values, despite there being general codes of ethics that apply to medical professionals. An important quality of moral claims is that they are generalizations often not supported by facts. Rather moral claims rest upon sentiments, values, and judgments made by individuals and groups. Moral claims often lack epistemic grounding in empirical experience or in deductive forms of reasoning, which may call their title of *knowledge* into question (Audi, 2011, p. 313). Nonetheless, it can be argued that moral knowledge arises through inductive processes, whereby clinicians know moral truths through observational data used to confirm them. When we observe moral reasoning, this kind of

inductive process seems to take place. Similar to using scientific observation which involves gathering premises and facts, moral knowledge is obtained through normative judgments, which are justified based upon what is thought to constitute right action in that moment. In the case where individuals are unable to point to sufficient or further justification for their position, “it would not follow that the judgment does not express knowledge or justified belief”. In some cases, further moral structures of justification can be offered, such as the “categorical imperative”, or moral intuitionism (Audi, 2011, p. 314).

Health care providers certainly proceed in their work as though they have moral knowledge. The satisfactory resolution of moral dilemmas seems to require moral knowledge that goes beyond knowledge of codes of ethics. Carper herself does not advocate for any one philosophical position on morality or moral knowledge. Rather she states that providers will require knowledge of “different ethical frameworks devised for dealing with the complexities of moral judgments” (Carper, 1978, p. 21). Similarly, Beauchamp and Childress do not treat the principles of biomedical ethics as moral absolutes. Instead they allow for compromise and flexibility within these standards (Beauchamp & Childress, 2013, p. 15). They recognize that decisions made in situations of conflict between principles will require moral judgment and reflection. This is realistic. Many of us (in society at large) agree upon the *prima facie* rightness of principles in the common morality, for example those relating to cases of killing, or to the protection of the rights of others. We also recognize these instances can be argued in reverse using strong justification in some cases. Healthcare practitioners should have an acute awareness of different moral norms, moral standards and moral beliefs in order to strengthen ethical patterns of knowing. Currently there is no consensus on claims that purport to be universal moral facts, nor is there a universal

moral language that can be appealed to beyond general principles and guidelines. However, knowledge of the moral preferences of patients and individual moral beliefs can be known to healthcare staff, and with greater moral sympathy and an understanding of differing moral values they can better accommodate patient needs and resolve moral dilemmas.

In light of Carper's assessment of the above identified patterns of knowing, she makes it clear that "none of them alone should be considered sufficient" sources of knowledge, nor should these patterns be considered in mutual exclusion to one another. She believes that "caring for another" will always require the knowledge and achievements that are derived from empirical facts, personal influence, aesthetic action and moral choices. In her depiction, these skills are fundamental to the practice of nursing (Carper, 1978, p. 22). I argue that they are likewise fundamental to healthcare practice in general.

4.6 The Social and Humanistic Elements of Knowledge

These alternative *ways of knowing* should be recognized as knowledge. My first argument in favour of this position is that physicians and patients already use these forms of knowledge on a daily basis in medicine, so it is not a significant epistemic deviation: it is simply an acknowledgement of what currently happens. Physicians use clinical judgment – this is clear. The basis of "good clinical judgement is as much about managing uncertainty as it is certainty" (Campbell, 2002, p. 691). This process necessarily involves personal, aesthetic, moral and political judgments throughout medical education and later in practice. Daily patient care involves both objective and subjective components. Overall patient outcomes rely upon resources and organization, but they are also contingent upon the quality of "communication, the

physician's ability to maintain the patient's trust, and the physician's ability to treat the patient with concern, empathy, honesty, tact and sensitivity" (Blumenthal, 1996, p. 892). Successful patient care is also reliant upon the ability of healthcare practitioners to access what is important *about* the patient as well as what is thought to be important *to* the patient. Outcomes are reliant upon moral conduct and the desire to do the right thing, and the capability to make correct decisions regarding care. Recent literature (for example Dzau et al. 2018) on professional burnout points to an increase in medical errors when practitioners struggle to maintain their faculties, motivation, desire, and relatability in the face of career dissatisfaction and depersonalization due to stress and emotional exhaustion (Dzau et al., 2018, p. 312). Therefore, the ability of practitioners to have emotional vigor and strength of character is just as important to good patient outcomes, and as appropriate as practicing in a way that is evidence-based.

A second reason to incorporate these alternative categories as knowledge relates to *empowerment*, in both a structural way (related to the entire social context of health care), and in an individual sense (related to the patient and practitioner themselves). Patients have historically struggled with gaining empowerment in the face of disease, and in the face of medical institutions. This struggle has brought about the much needed shift towards autonomous choice and self-rule and away from paternalistic practices (Beauchamp & Childress, 2013, p. 101). The common thinking during more paternalistic times was that physicians were in possession of expert knowledge, something patients could not easily access, and therefore, practitioners were thought to know what is best. This perspective has since been challenged by the concept that "what is best" is relative, and that patients are acutely aware of their own values and intentions, and are therefore in the best position to make decisions about their own care. In the first context

of what we might call *structural disempowerment*, the restriction and control of knowledge by an exclusive group (those who are thought to possess knowledge) disallow others from operating in and contributing to a field of inquiry. Such claims are evidenced throughout the many works of Michel Foucault (1961, 1963, and 1969). Structural gatekeepers stop or allow access, assessing independently those who are able to have this class of knowledge, and who is considered worthy of upholding it. I argue that dogmatic attitudes toward what counts as knowledge exclude important ways of knowing in research, in the clinic, and can exclude patients from being regarded as having knowledge. Positivistic attitudes in medicine can function in this way. This is an ethical reason for regarding the alternative forms of knowing as bestowing knowledge.

In the second context, a type of *personal disempowerment* occurs. If only the evidence generated by the most esteemed research practices in the evidence-based hierarchy (such as RCTs) are counted as knowledge, patients and practitioners will be committed to an inflexible system of knowledge. Trummer suggests that a high quality of communication and strong relational development between caregiver and patient in fact improve patient satisfaction, compliance, and clinical outcomes (Trummer et al., 2006, p. 304). Yet, in order for patients and practitioners to take seriously the importance of these relational behaviours in the clinical atmosphere, effective practice must be regarded as knowledge. Alternative epistemologies, such as those I have defended, uphold what patients need from their healthcare providers such as human interaction and genuine connection in the face of illness and trauma. “The importance of empowering patients to act more co-productive in treatment processes” requires that patients participate in recuperation and healing (Trummer et al., 2006, p. 300). This process cannot be completed by practitioners alone: it is a cooperative initiative. By defining how individuals gain knowledge

from personal relationships, aesthetic processes, and moral sensitivities, we empower both clinicians and patients to trust their own abilities, and their own unique contributions to care, that are not well illustrated in the empirical domain.

The last argument that I will provide in favour of why these forms of knowledge should be understood as knowledge is that doing so enables us to care for the caregiver. Rowland & Kuper, 2018, explore the dual role that individuals may undertake as both patient and provider, giving these practitioners a new vantage point, one that intimately teaches valuable lessons relating to loneliness, compassion and person-centered care (Rowland and Kuper, 2018, p. 116). The professional burnout literature also alerts us as to the high rates of exhaustion, depersonalization, and depression that exist as serious problems for physicians, nurses, and other healthcare and non-health related professionals. American and Canadian institutions, alongside many others (e.g. the *Canadian Medical Association* and the *Institute of Medicine*) have published calls for action to address these issues (Dzau et al., 2018). Alongside the issue of burnout, a major susceptibility is towards compassion fatigue. Despite educational efforts to implement professional and ethical training regarding patient interactions into the curricula, physicians still tend to lose their ability to feel the same degree of empathy felt early on in their practice (Milstein, 2012, p. 311). In addition to the needs of caregivers themselves, it is also important for patient outcomes that we “care for the caregiver” as Pullman & James-Abra (2001) write. Practitioners provide better care for their patients if they feel well supported and are able to do their job well (Pullman & James-Abra, 2001, p. 38). By incorporating and instilling the legitimacy of personal, aesthetic, and moral ways of knowing alongside empirical, forms of knowledge – we convey that these skills that may be lost through burnout are important. The use

of these essential forms of knowledge may dwindle alongside the decline of practitioner well-being, therefore, there is good reason to extend care to all care providers. Individuals who feel self-actualized, able to make change, and who are uplifted by strong and healthy relationships every day are more able to perform their jobs successfully in hospital settings.

It is not disputed that new evidence, better practice, and improved technology will continue to propel science and medicine forward. Alongside this progress comes increased health and well-being of patients and families. The twenty-first century brings forward many humanities movements related to the overall improvement of health, medical knowledge and medical education. These include books (e.g. Danielle Ofri's *What Doctors Feel*, 2013), blogs, journal articles (CMAJ and BMJ) that call for reflections (on emotion and work experiences) from both physicians and students, poetry, films, and personal narratives (*Encounters: Selected CMAJ Narratives*, 2018), all of which contribute to the body of literature and the ever expanding sense of duty we have towards greater compassion and empathy in medicine. This thesis aims to provide the reader an openness to alternative ways of knowing in a world that is highly driven by empirical positivistic knowledge, and should serve as a reminder that diverse ways of knowing can improve health care outcomes. In accepting vagueness, uncertainty and ambiguity within the social aspects of medicine we begin to elucidate the complexities involved in humanistic ways of caring, and empower others to see the value in their own personal choices, their own aesthetic ways of being, and in their moral values.

4.7 Conclusion

The spectrum of epistemic strategies discussed in this thesis provides a general overview of the variability of medical knowledge. The spectrum includes forms of knowledge that range from

empirical to relativistic. It is not a simple matter of choosing one form of knowledge over another, as there exist simultaneous necessary ways of thinking about patient bodies and patient care. “Evidence-based medicine and patient-centered medicine are two prevailing paradigms that both deserve our full attention” (Bensing, 2000, p. 24). On the face of it, these paradigms are completely different from each other, but their common goal is to promote the experience and success of patient care. Nonetheless, the differences between empirical evidence and pluralistic relativistic modes of knowledge remain. Alternative methods of knowing allow for practitioners and patients to embrace their own individual healing power, and to draw upon the social influences over clinical care. Simultaneously, caregiving that is sensitive to these social dimensions is supported by the empires of empirical scientific research.

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