REDRESSING DISADVANTAGE IN HIGH SCHOOL STUDENTS: FOUR CAPABILITIES TOWARD AGENCY AND EQUITY IN TEACHING AND LEARNING

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For Marissa and Wilbur,
for whom I am both glad and grateful.

Abstract

This work addresses two questions: how can we better characterize the disadvantages faced by marginalized youth? And once characterized, how do we attend to and redress those disadvantages? In attending to these questions, I draw on Nussbaum's (2011) capabilities approach as a broad, normative framework for characterizing individual well-being in the context of teaching and learning. Within this framework, I employ narrative inquiry into my own practice as a mathematics teacher at an alternative high school and explore the potential for hermeneutic pedagogy as a means to both interpret and cultivate capability. I set forth a tentative list of four capabilities – a disposition of expertise, autonomy, affiliation, and a hermeneutic imagination – each valuable in and of itself, but also as a means to cultivate and secure additional capabilities and redress disadvantage.

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Drop two notes now and then. Play the shadow of it.

--Paul Simon

Chapter 1: Introduction

Neil's Story

Neil is a grade twelve student at an alternative high school. His educational experience is one characterized by a lack of academic success. Before arriving at his current school, he bounced between mainstream high schools in the city, sometimes by his own volition, other times because he was forced to do so. His life at home is made stable by his mother, a single parent, who works full-time managing a nearby fast-food restaurant. She did not graduate from high school, and while competent and hard-working, is unable to find work that is meaningful to her. Her schedule involves shiftwork, so she is often absent in the afternoons and evenings, when Neil is out of school. Neil's mother left school in grade ten and never attended post-secondary, which she recognizes as a barrier to finding economic success. Because of this, she is adamant that Neil obtain a high school diploma.

But Neil is struggling to achieve the goal his mother has set for him. In primary school, he lagged academically, consistently testing below grade level in numeracy and literacy, and he was often subject to bullying and harassment by his peers. In entering high school in grade nine, Neil was able to connect with peers with similar interests and build a social network, but academic success continued to elude him. After falling behind

and being displaced from school to school, Neil became estranged from his peer group. His current school operates as a last chance for students deemed at-risk, and as such takes students from throughout the city and beyond. This policy is reflected in the transient student population. Neil enjoys certain aspects of his current school, in which he feels safe from bullying, benefits from smaller class sizes, and is often allowed to work at a pace more suitable to him. But he has been distanced from his friend group and consequently feels isolated. Intellectually, he continues to struggle to find meaning in his coursework, which he sees as incompatible with, or at least unrelatable to, his current life and future projections of it.

Background

Over the last four years, I taught mathematics in an alternative high school in Lethbridge, Alberta. "Alternative" in this context can take various forms. For example, it can be a storefront school catering to rural populations through distance learning; it can reflect a philosophical ideal, as in Montessori or Waldorf schools; or it can mean a second (or often last) chance for marginalized or at-risk students. In the case of my own practice, it was to some extent a combination of the three – and more. Because this school is unique, my level of involvement in school-level decision making, pedagogy, and curriculum was beyond the norm of a traditional teacher role. I was able to develop, for example, a mathematics class in which we cooperatively built 14-foot canoes. It was one of the richest and most rewarding experiences of my life. I was also able to work meaningfully with an atypical population of students, work that not only enriched my professional life, but my personal life, too.

But in writing down some of those terms – "alternative," "second chance," and "at-risk," for example – I am left confused and angry. I think of stories like Neil's, which is a fictional but archetypal account of an alternative school student, and I worry about how it ends for students with similar life narratives. The problem is I find myself at a loss to identify specifically just what I could do to alter the outcome for struggling students. A large part of my study involves deep inquiry into my own practice through autobiographical narrative. This section contains the broad strokes of my practice, which I develop in the contexts of hermeneutic pedagogy and the capabilities approach, a philosophical framework that I believe has the potential to both inform policy and pedagogy, and to help me make meaning out my own practice and experience. My inquiry includes my narration of an alternative school and its staff and students. Much of it is non-fiction and drawn from my experience – I strive to be candid in terms of my failures and successes; for ethical reasons, other parts are fictionalized accounts of the people I worked with, both students and staff. In particular, I return often to my experience designing and teaching Canoe Math, a mathematics class in which we worked together to build canoes. In the following section, I locate "Neil" in the context of an alternative school, and I return frequently throughout this study to build narratives around the institution, its staff and students, its role in the community and all of its stigmas, its demographics, and the personal and professional relationships that make it a community.

An Alternative to What?

Demographics make Neil's school alternative to mainstream education, not philosophical or ideological differences: the school runs the same classes in the same formats as other high schools in the province, albeit with smaller class sizes. The student

population, however, is one characterized by profound disadvantage, be it emotional, cognitive, physical, socioeconomic, or some combination of the above. It is not necessarily that their problems are unique – young people suffer from these difficulties everywhere – but rather the rate of incidence and the extent to which they occur and persist in individual students that distinguish them from students in traditional settings.

Although many of my students experienced some degree of success in their coursework, I continued to see many of the systemic reasons for their attending our school remain unaddressed. This is not a fault of the teaching staff, which is a small but diverse and caring group of dedicated professionals. Rather, it is that we do not understand the nature of their disadvantage well enough to address it properly. Nor does the institutional structure – a traditional model of schooling with a high teacher-to-student ratio – allow for us to address these disadvantages in a meaningful way.

At Neil's school, many appropriate and beneficial measures are taken to address individual needs. Students have greater access to wellness counsellors, more educational assistants in classrooms, and in most cases, a high teacher-to-student ratio. The latter is a definitive aspect of the school and is, of course, desirable (the apocryphal story of the overworked teacher in a class of forty rowdy students is all too familiar). But at the individual level, using this as a strategy to redress disadvantage can be problematic. Wolff and De-Shalit (2007) describe disadvantage as a diverse and complex phenomenon and note that the plurality of its solutions reflects the plurality of its forms. It is not enough to simply reallocate resources via a higher teacher-to-student ratio. In my own practice, and in a perverse twist, I have seen this further entrench individual disadvantage.

Alberta Education's High School Completion Strategic Framework provides considerable evidence to support this idea on a larger scale. Levin (1992) notes that in reducing early school exiting through alternative education, "most efforts replicate existing school structures and processes" (cited in Alberta Education's Removing Barriers to High School Completion – Final Report, 2001, p. 3). The same report suggests that what is required is not more of the same, but rather "more flexible approaches to organization, instruction and credentialing" and a "rethinking of longstanding ideas about what education is and how it should be delivered" (p. 3). Despite efforts in this vein to redesign high school education in Alberta over the intervening years, Indigenous students and students with emotional and behavioural disabilities, for example, are still twice as likely than an average student to take longer than three years to finish high school – if they are fortunate enough to finish at all (High School Completion Strategic Framework Progress, 2018).[1]

Neil's story is but one example of the resource-based approaches prevalent in education. I discuss this concept in more depth below, but it is worth using Neil's experience to connect the idea of how a resource-based approach works in an educational context, where resources can take on many forms. In Neil's school, access to one-on-one instruction is an important resource, and Neil certainly enjoys the smaller class-sizes. But recall Neil's situation: he is lonely, estranged from his few friends, and in a new building – perhaps he feels reduced social anxiety, which is, of course, a benefit. But Neil also feels estranged from the work he is given in class, regardless of the teacher-to-student

[1] While we should exercise caution in drawing a relationship between these two marginalized groups, it is worth noting that disability activists often draw analogs to their experience from racial discrimination (Wolff and De-Shalit, 2007, p. 32). In that case, Wolff and de-Shalit suggest, disadvantage is not only a lack of opportunity or resources, but "a loss, or even violation of, basic liberty" (p. 32).

ratio. If the reallocation is not accompanied with pedagogical and curricular change, that particular disadvantage will remain unattended to and persist.

Neil's case underlines the problem with a resource-based approach to education: it does not tell us enough about Neil, nor does it tell us anything about the complex relationship among all of Neil's distinct challenges. His social anxiety, feelings of isolation, academic struggles, and socioeconomic situation are singular. They can be neither quantified nor indexed – they are plural in nature. In a sense, by attempting to help Neil through smaller class sizes, we reduce his individual disadvantages to a single homogeneous disadvantage and do him an injustice. This does not reflect the complexity of human experience.

Purpose of Study

I suggest a capabilities approach, a normative theory of social justice principally developed by philosopher Martha Nussbaum and economist Amartya Sen, as a complementary framework for thinking about individual advantage and disadvantage. Rather than concerning itself with levels of resources across individuals, a capabilities approach takes the individual as an end unto themselves. It seeks to answer the question: *What is each person able to do and to be?* (Nussbaum, 2011, p. 18). My research is driven by two distinct questions: how can we better characterize disadvantage in education? And once characterized, how do we attend to and redress disadvantage? To these ends, I suggest the capabilities approach is not only a more appropriate framework for understanding the nature of disadvantage, but is one that befits human dignity and respects the individual as the centre of choice and action.

Philosophical Context

The idea of redressing inequality through a reallocation of resources has a long, respected tradition. One seminal text is John Rawls's *A Theory of Justice* (1971), in which he notes that "injustice (…) is simply inequalities that are not to the benefit of all" (p. 62). Rawls (1971) defines the elements of a just society as primary goods, which, he suggests, are "things every rational man (sic) is presumed to want," (p. 62) and include freedom of thought, capacities for justice and a conception of the good life, income and wealth, social bases of self-respect, and freedom of movement and choice of occupation (Rawls 1971, 2001). According to Rawls, these primary goods should be "distributed equally unless an unequal distribution of any, or all, of these values is to everyone's advantage" (Rawls, 1971, p. 62).

It is worth noting that education is not made explicit in Rawls's list, but clearly it is integral to all of its elements – in broad strokes, how could one, for example, conceive of the good life without some form of education? So then, is education itself a primary good? Brighouse and Unterhalter (2010) consider the argument. "Children," they note, citing Amy Gutmann's (1980) work, "need to be subject to some paternalistic authority in order for their developmental interests to be met" (Brighouse and Unterhalter, 2010, p. 195). Nussbaum would agree: in discussing capability, she notes that "children, of course, are different [from adults]; requiring some sorts of functioning of them (as in compulsory education) is defensible as a necessary prelude to adult capability" (Nussbaum, 2011, p. 26). It is thus the purview of society to provide an education that not only enriches the child in the present, but anticipates their future conceptions of the good life (Brighouse and Unterhalter, 2010, p. 195).

Of course, this approach has merit. Racial inequality is an illustrative case: it is clear that, say, affording the same advantage to Indigenous students living on reserve may require a different level of resources than developing the same advantage in a group of predominantly white, suburban students. The unique socioeconomic circumstances of each group demand the type of inequality that is a benefit to all. In her book *Creating Capabilities* (2011), Nussbaum provides the example of educating children with Down's Syndrome: an extra expense is necessary to ensure they live lives worthy of human dignity (p. 58). In these cases, a reallocation of resources is both a necessary condition for improving the lives of the least advantaged and a moral imperative. But a resource-based approach to education is insufficient as a barometer of intellectual, emotional, or physical well-being: it fails to tell us enough about the individual.

The resource-based approach to education is evident in Neil's narrative and others explored as part of my research. The ostensible argument is as follows: to redress disadvantage, we simply need to redistribute resources (in the form of class sizes, pedagogy, materials, et cetera), without attending to the disadvantage itself or the individual student. In her survey of the capability approach, Robeyns (2005) notes this shortfall in treating education as a primary good:

> if all persons were the same, then an index of primary goods would yield similar freedoms for all; but given human diversity, the comparisons in the space of social primary goods will fail to take note that different people need different amounts and different kinds of goods to reach the same levels of well-being or advantage. (Robeyns, 2005, p. 97)

Brighouse and Ulterhalter (2010) support this by suggesting two reasons why Rawls's conception of primary goods does not sufficiently address education individually or collectively, to which I add a third. First, primary goods do not attend to individual variation. The example in Brighouse and Ulterhalter (2010) is illustrative: consider the

effect on male and female students of attending a school with no running water. At certain times, the two groups would be similarly affected; at others, for example during menstruation, female students would be impacted to a greater degree (p. 19). This is generalizable to various educational settings. Consider two students with significantly different behavioral dispositions attending two very different classrooms throughout the day. In one classroom, the teacher emphasizes written worksheets to be completed independently in solving problems; in another, the teacher emphasizes dialogue and cooperation in finding problems. As is made salient in my narrative inquiry, pedagogical decisions such as these significantly affect not simply what students do, but what they are able to do now and in the future. In her argument above, Robeyns (2005) generalizes still further, beyond natural or acquired deficiencies: a primary good approach fails to account, in general, for the plurality of human flourishing.

The second argument put forth by Brighouse and Unterhalter (2010) is central to education itself: in treating education as a primary good, little reference is made to content. Robeyns (2005) alludes not only to a heterogeneity in levels, but in kinds of resources required. Education as a primary good then fails on two counts: it does not specify content, nor does it suggest how it might attend to the plurality of human existence.

A third shortcoming is that the theory does not reflect the temporal nature of being. A primary goods approach suggests that educational inputs produce educational outputs, and this is arguably the case in general for basic reading, writing, and arithmetic. The merit of such an approach is seen in the narrative of Vasanti, woven through Nussbaum's *Creating Capabilities* (2011). Nussbaum emphasizes the need to require

some functioning in the present – for example, Vasanti learns basic reading and writing – for future capability. Vasanti subsequently leads a life rich in political participation, to which basic literacy and numeracy (in part) allowed her access. The same can be seen in the student narratives discussed in my research. I argue, for example, that Neil requires unique functionings of him as a high school student, but that they beget a level of capability comparable to other students.

The difference here is not so much in the approach, as the resource-based view clearly supports an inequality of resources that befits us all. Rather, it is in the shifting of focus from what one has to what one can do. Surely, young children are more impressionable and vulnerable than adults, and great care must be taken in choosing which functionings are required of them, but at no point is the idea of freedom intrinsic to capability unconstrained. Choice is always constrained, but the degree to which a constraint is liberating evolves over time, throughout childhood and into adulthood. The capabilities approach addresses all of these issues: it is deeply concerned with the individual, and it is pragmatic in its approach to both content and time – the complexity of being. I suggest it as a complementary framework for characterizing and evaluating capability and disadvantage in an educational context.

The Capabilities Approach

Although the capabilities approach was originally developed in the context of human development on a macro-scale, it lends itself well to deepening our understanding of advantage and disadvantage in an educational setting. The capabilities approach is a normative theory of social justice primarily developed by Sen (1980, 1999, 2009) and Nussbaum (1988, 2000, 2006, 2011). It seeks to answer the following question: What is

each person able to do and to be? (Nussbaum, 2011, p. 18). As a supplement to other important approaches to well-being, such as Rawls's theory of justice, discussed above, the capabilities approach takes an individual as an end unto themselves - a novel and noble aim in the context of macroeconomic development, but an imperative aim in education. Because the capabilities approach acknowledges the primacy of the individual, the approach scales easily to the school, classroom, and student levels.

Nobel Laureate Amartya Sen initially developed the capabilities approach and has written of it in several books and articles. As Robeyns (2003) notes, his work should be studied chronologically and completely to gain a nuanced understanding of its conception and development (Robeyns, 2003, p. 4). In my research, I certainly draw on Sen's work with respect to developing the philosophical foundation of the capabilities approach, but defer more often to Nussbaum's work and her application of the capabilities approach. This is because, as Robeyns (2003) notes, Nussbaum's conception of the approach "engages more with the power of narratives and poetic texts to better understand people's hopes, desires, aspirations, motivations, and decisions" (Robeyns, 2003, p. 24). An adolescent high school student, particularly a marginalized one, often has little more than hopes, desires, and aspirations, which makes the capabilities approach such a fecund evaluative space. It also invites the use of narrative, which I discuss below as my chosen methodology. Nussbaum (2011) writes that narrative can allow for a "focus on a wider range of problems and issues, and also cultivate the imagination, producing an acknowledgement of the equal humanity of people" (p. 81).

In broad terms, Sen's model is a framework for evaluating individual capability and a heuristic for making welfare comparisons between individuals. Nussbaum's main

contribution has been to take Sen's paradigm and use it to develop a partial theory of social justice.[2] At the core of both conceptions are the ideas of freedom and human dignity. It is no surprise that the capabilities approach can trace its roots back to thinkers who were also deeply concerned with freedom and dignity: Marx, Mill, Aristotle, and the Stoics, among others. As Nussbaum (2011) notes, it is useful to think of the capabilities approach as the progeny of "one attractive and enduring marriage … between stoic ideas of equal worth of all human beings with Aristotelian ideas about human vulnerability" (p. 132).

It is useful to differentiate between Sen and Nussbaum if only to clarify terminology. In both cases, the capabilities approach makes a careful distinction between *capabilities* - what people are able to do and to be - and *functionings*, the actual beings and doings of an individual. To put this in an educational context, much of classroom assessment is oriented around observing and measuring functionings, not capabilities. This is not necessarily a fault of our assessment practices: capabilities are capacities for action and are thus not easily susceptible to measurement. But I contend that an exclusive focus on functioning can not only dull the mind and even impede capability development, but in fact can compromise an individual's dignity and agency. Coerced functionings are more easily quantified and generalized, but they ignore the individual's capacity for choice. These choices are the ends themselves, and Nussbaum (2011) notes that their "irreducible heterogeneity" means that they "all need to be secured and protected in distinctive ways" (p. 35).

[2] Robeyns (2003) notes that in order to be complete, a theory of social justice must consider both aggregative and distributive choices; Nussbaum is only concerned with the latter.

Sen speaks of capabilities as substantial freedoms, spaces in which an individual is able to do something and choose freely whether or not to put that ability into effect. That is, substantial freedoms are combinations of an individual's abilities with some external parameters - these can be social, political, economic, or educational. Nussbaum (2011) denotes these substantial freedoms as *combined capabilities* and doing so acknowledges the role of complexity in the approach (p. 20). This distinction is of import in an educational context because, as Nussbaum (2011) notes, a "society might do a quite well at producing internal capabilities but might cut off the avenues through which people actually have the opportunity to function in accordance with those capabilities" (p. 21). Conversely, a society might offer ample opportunity to put a capability into effect, but do little in the way of developing and nurturing capabilities.

Nussbaum differentiates *combined capabilities*, which she defines as a "totality of opportunities for … choice and action," from *internal capabilities* (Nussbaum, 2011, p. 21), which are "trained or developed traits and abilities, developed, in most cases, in interaction with the social, economic, familial, and political environment" (Nussbaum, 2011, p. 22). Consider the story of Jane, an Indigenous woman who also attends Neil's school. Jane is a mature student and single parent and has returned to school to meet the credentialing requirements for a nursing program at the local college. She originally left high school before obtaining her diploma, but she received enough credit to make it an option in her current programming now that she has returned. Like Neil, she struggled academically, but more out of boredom than cognitive disability. She has a strong network of friends and is motivated to achieve her goal. In addition to taking some core courses such as grade twelve English and Social Studies, she is enrolled in a class for

young mothers as part of the school's programming. Outside of school Jane encounters more difficulty. When she became pregnant, she moved back in with her mother and siblings, all of whom have drug and alcohol problems. In going to school and working part-time, Jane requires childcare, so it is helpful to live with her family, but it is often in an environment unsuitable for an infant. The baby's father was abusing both drugs and Jane, and she no longer sees him. While this is clearly a benefit, it also places additional stress on Jane due to a lack of support. At school, she continues to struggle with institutional expectations, such as attendance. As a mature student, she finds many of her peers to be immature and disruptive; she gets frustrated by how long it takes to get through the material; and while the instrumental value of her coursework – meeting her nursing program's requirements – is her priority, she finds herself bored by the material and yearns for something that speaks to her intellectually.

Given what we know about Jane, it is worth noting that she appears to have a rich set of internal capabilities – she is motivated, outgoing, and mature, for example. These are traits that she was predisposed towards and that were cultivated over the course of her life. To form combined capabilities – the spheres of choice and action that concern us here – she must apply her internal capabilities to the external circumstances around her. For example, the alternative school is a circumstance which allows Jane to convert her capability into a functioning. But there is a set of external circumstances that hinders her ability to combine her internal capabilities and external circumstances into spheres of freedom. Her living situation, for example, places additional stress on her, and her family's issues with drugs and alcohol influence her decisions about whether or not to stay at school and study or pick up more shifts at work. While Jane is thankful the school

is there, the inflexibility of the programming may mean she has to remain another semester and delay her entry to college by a year; and while she understands the instrumental value of her education, her dissatisfaction with her coursework hints to an intrinsic value of learning that remains unattended to.

Nussbaum (2011) notes that children, in particular, should be required to function in certain ways (p. 26). It is clear that education should not be wholly subservient to any individual whim. But this hints to the complex, symbiotic nature between capabilities and functionings: functioning begets capability. Nussbaum also notes that it is "important … not to confine the analysis of education and capabilities to those skills [basic literacy and numeracy]" (Nussbaum, 2011, p. 155). A real education, she writes, demands more, in particular, "critical thinking, the ability to imagine and to understand another person's situation from within," and others (Nussbaum, 2011, p. 155). The system's rigidity prevents it from addressing the individual student, from attending to her in a way that nurtures a dignified life. While the existence of an alternative program, for example, helps Jane in many respects, in some cases, such as in her capacities for imaginative and critical thought, her existing disadvantages may be further entrenched.

We need an evaluative and developmental framework in which we not only cultivate what Jane can do, but also her capacities for choice and action. In order to work with a student like Jane, it is simply not enough to focus exclusively on functionings. In the classroom, this means we must be open to possibility and not close ourselves off through presupposition. Nussbaum notes that her theory is not about human nature, but rather it is "evaluative and ethical from the start" in its pluralistic approach to human

being (Nussbaum, 2011, p. 28). In *Creating Capabilities* (2011), she identifies a list of ten capabilities that a just society must ensure for individual dignity, listed below:

Life: The ability to live a long, healthy life.

Bodily Health: The ability to have good physical health, nourishment, and shelter.

Bodily Integrity: Freedom of movement, from violence, and control over one's body.

Senses, Imagination, and Thought: This might include basic numeracy and literacy as well as imaginative and metaphoric capacity.

Emotions: The ability to connect emotionally with others; to love; to be the object of love; a freedom from fear and anxiety; good psychological health.

Practical Reason: A capacity for critical thinking and being able to make reasonable decisions for one's life.

Affiliation: A freedom to associate individually, politically, etc.

Other Species: An affinity for the natural world.

Play: A freedom to recreate.

Control over one's environment: This could be political, material, and emotional control over one's lived life.

All of these capabilities are important for individual well-being, but some are more applicable in an educational context and others not on the list might be pertinent to individuals at different times in their lives. Regardless of the specific capability, the essence of the approach's guiding questions - what is each person able to do and to be? - is freedom. Nussbaum writes that the capabilities approach focuses not on improving

aggregate measurements, whether it be a country's gross domestic product (GDP) or a student's diploma exam results, but rather on the opportunity and agency available to each person. "It is focused on choice or freedom, holding that the crucial good societies should be promoting for their people is a set of opportunities, or substantial freedoms, which people then may or may not exercise in action: the choice is theirs" (Nussbaum, 2011, p. 18).

In *Creating Capabilities* (2011), Nussbaum carefully delineates the capabilities approach from traditional perspectives on human development, such as the resource-based approaches, discussed above. Despite the obviously disparate contexts, her analysis of these macro theories of justice, development, and well-being, offers great insight into the problem of attending to individual disadvantage in an educational context. For Nussbaum, and for me, dignity is non-fungible and incommensurable, and it should be the goal of a society, both at the level of policy and the individual, to get each "above a certain threshold level of combined capability, in the sense not of coerced functioning but of substantial freedom to choose and act" (Nussbaum, 2011, p. 24).

Nussbaum notes that capabilities across people are "different in quality, not just quantity; that they cannot without distortion be reduced to a single numerical scale," and that a "fundamental part of understanding and producing them is understanding the specific nature of each" (Nussbaum, 2011, p.18). This idea of heterogeneity in capabilities is key to my research, and in their book, *Disadvantage*, Wolff and De-Shalit (2007) connect the absence of capabilities to disadvantage and its corresponding heterogeneity. Preiss (2012) notes that Wolff and De-Shalit characterize disadvantage as "irreducibly plural," much like individual capabilities, and demonstrate "that there are at

least some cases where a shortfall in one aspect of well-being cannot be adequately remedied by the provision of another good" (p. 42).

Methodology

> *It is the philosopher's search/ for an interior made exterior/ and the poet's search for the same exterior made interior*
>
> --Wallace Stevens, An Ordinary Evening in New Haven

While not totally invulnerable to analysis, capability, particularly at the individual level, can be problematic for the researcher. Keats's quip on the nebulous nature of Shakespeare's genius, which he characterized as "being in uncertainties, mysteries, doubts, without any irritable reaching after fact and reason," is an apt analogy for characterizing capability (cited in Unterhalter, 2017, p. 1). Capabilities reflect the nature of human experience and all of the mystery and complexity attendant to it. Of course, as Nussbaum (2011) notes, the "complexity of the question does not mean that it is not real and susceptible to study" (p. 62).

In order to develop a more robust characterization of capability and its absence, I employ a narrative research methodology using Fowler's (2006) method of narrative analysis and elements of hermeneutic inquiry. Both lend themselves well to cultivating and evaluating capability. Capability evades quantification, but "Narrative," writes Fowler (2006), "is a starting point for authentic research" (p. 8) and allows for a "way of making life texts visible for study" (p. 17). In evaluating capabilities, the educator and student must work together toward an interior made exterior, to paraphrase Stevens; narrative analysis then allows us to attend to the poetics of teaching, to grasp at an exterior made interior.

In fact, although from seemingly disparate fields of study, a commitment to pluralism and an inherent conception of the good life form a sinew between the capabilities approach and Fowler's (2006) narrative approach. With respect to her own narrative work, Fowler (2006) writes that it permits her a "sense of entitlement to all that any human may claim: a quiet celebration of living an extraordinary ordinary life with loving relationships, hard work, social and ethical responsibility, and creative problem-solving" (p. 15). All of these extraordinary ordinary aspects of a fulfilling life are reflected in Nussbaum's list of capabilities (Nussbaum, 2011, p. 33-34) and together constitute a life befitting of human dignity. In addition to complimenting the capabilities approach as an evaluative space in which to understand individual advantage, narrative analysis is an ideal methodology to tease out what makes the ordinary so extraordinary.

Fowler's (2006) model of narrative research consists of eight orbitals of inquiry. These orbitals are best imagined as rich, relational, and recursive exploratory spaces and include: naïve storytelling, psychological re/construction, psychotherapeutic ethics, narrative craft, hermeneutic philosophy, curriculum pedagogy, poetics of teaching, and restorative education. Working through and within these spaces is a process of interpretive inquiry in which the researcher first records raw experience (preconceptually) through narrative and then attends to its cognitive, emotional, ethical, structural aspects and implications.

My specific process consisted in "finding language and voice to (pre)consciously tell an experience, image, event, conflict, or puzzlement," what Fowler (2006) calls *naive storying*, her first orbital of narrative inquiry (p. 30). Although I made a concerted effort to reflect each day through journaling, I also began to intentionally notice the insights

arrived at through conversations with colleagues and friends about my work. Much of what I recorded through this process was mere sketch: fragments of stories, shadows of implication and meaning. To deepen my understanding, I questioned these fragments, asking why, for instance, they were both at once resonant and capable of making me feel vulnerable about my practice. This was a process of *psychological re/construction* and *psychotherapeutic ethics*, orbitals two and three, respectively of Fowler's (2006) process of narrative inquiry. In projecting these fragments of story into narrative form, Fowler's (2006) fourth orbital, I returned to them again and again, always asking the same questions, but always yielding new answers. In doing so I acknowledged the alethic nature of my recollection, reflection, and writing, that in revealing a particularly troubling aspect of my practice, I necessarily concealed others. *Hermeneutics*, Fowler's (2006) fifth orbital, is not only the foundation of my pedagogy, but an integral part of my writing process. Finally, I sought to capture the implications of my narratives for teaching and learning and to reorient them "toward beauty, truth, justice, wisdom, art, and meaning" in my practice (Fowler, 2006, p. 31).

Hermeneutic Inquiry and Pedagogy

> *The seasons are no longer what they once were, but it is in the nature of things to be seen only once, as they happen along...*
>
> --John Ashbery, Syringa
>
> *Don't do that again!*
>
> --Charles Mingus

In his book *How to Listen to Jazz* (2016), Ted Giola relates an apocryphal story of jazz great Charles Mingus. When one of his bandmates would play a crowd-pleasing solo, Mingus would turn around and yell, "Don't do that again!" The green musician

might have mistaken it for jealousy, but those who knew the nature of jazz understood completely: It was not that Mingus was jealous, but that he knew it could never happen again – he did not want his guys chasing what was not there. Hermeneutic philosophy is Fowler's (2006) fifth orbital and a significant analytical element of my narrative method. While the naturalist tradition is characterized by a quantitative and aggregative approach, with an objective of reaching generalizable conclusions, the interpretive traditions, of which hermeneutics is part, attend to the complexity of human experience. Essential to philosophical hermeneutics is the notion that meaning is fleeting, transient, mutable: the naturalist approach is one of direct observation, while the interpretive approach, to borrow a phrase from Barnes (2009), is "like being able to see something better in one's peripheral vision than by looking straight at it" (p. 425). This is why Mingus did not want his musicians to look too hard.

Meaningful work with disadvantaged students demands this sort of openness to indeterminacy and complexity. Moss (1996) notes that researchers in the interpretive traditions hold the "methods and goals of naturalist approaches" to be insufficient for wholly representing social phenomena (p. 21). To capture the nuance of human experience, researchers must pay careful attention to context and recognize the complexity of understanding. Moss does not suggest a whole substitution of interpretive for naturalistic approaches; rather, she acknowledges that a naturalist approach provides insight into those meanings that are "handed down from generation to generation" (Thompson, quoted in Moss, 1996, p. 22). Likewise, in *Creating Capabilities* (2011), Nussbaum acknowledges the necessary role of a quantitative, naturalistic approach to human development: "Of course any approach (...) must employ devices of aggregation,

but if aggregation is to deliver pertinent information, we must begin by asking carefully which items ought to be given prominence" (p. 14).

Philosophical hermeneutics plays a significant role in both my account of a capabilities approach in education and in my practice, in general. All hermeneutics demand an element of suspicion. But a hermeneutics of suspicion, as developed by Gadamer (1989), proposes an explicit opposition between fact and truth, and is characterized by a deep reservation about that act of interpretation itself. As Gadamer (1984) writes, Ricoeur's characterized hermeneutics as a "radical critique of and suspicion against understanding and interpreting" (p.73). His goal was to "unmask the pretensions behind so-called objectivity" (Gadamer, 1984, p. 77). It must be said, though, that philosophical hermeneutics does not preclude validity and logical proof. Rather, both the humanities and the natural sciences are paramount, two essential facets of human experience. Aggregating individual data can offer great insight into some aspects of human existence. Moss (1996) addresses the idea that products of naturalistic inquiry inform rather than undermine insights gleaned from the interpretive approaches. "[S]ocial and political practices exhibit regularities and correlations, and it is necessary to understand these in order to understand social and political life" (Bernstein (1976), quoted in Moss, 1996, p. 22). Bordieu (1992) reminds us that "social agents construct social reality" (cited in Moss, 1996, p. 22), to which Moss (1996) adds that an interpretive approach permits a "dialectic between the contextualised understanding of local meanings and the distancing analysis of regularities" (p. 22).

We can find a parallel in Nussbaum's capabilities approach. It seems not her intent to replace aggregative approaches wholly with an approach centred on the

individual. Rather, much like in Ricoeur, the two disparate approaches inform and attend to one another in a productive tension. Hermeneutics offers a way to mediate this tension. As Moss (1994) notes, hermeneutics is not a single approach to understanding, but its distinct traditions are characterized by an effort to "understand the whole in light of its parts, repeatedly testing interpretations against the available evidence until each of the parts can be accounted for in a coherent interpretation of the whole" (p. 7).

Language is a crucial element of a hermeneutic approach to capability. Schleiermacher, for example, conceived of a hermeneutic theory in which the interpreter could obtain a deeper understanding of a text than the author through discourse, which he defines as the "mediation of shareable thought" (cited in Ormiston and Achrift, 1990, p. 86). For Schleiermacher, discourse is also a "mediation of thought among individuals" which can be "complete only through interior discourse" (cited in Ormiston and Achrift, 1990, p. 86). This hints at the importance not only of the beings and doings of an individual, but of capability, of "knowledge unmediated by the employment of concepts, utterances of sentences, or intelligent use of words" (West, 1979, p. 71).

For Schleiermacher, objectivity was sought after and obtainable. Heidegger and other thinkers, including Gadamer, reoriented hermeneutics to acknowledge and emphasize the interpreter's own history and prejudices in understanding. For them, subjectivity was not something to overcome in the quest for truth, as in Schleiermacher; rather, it was a condition for truth. But Gadamer (1984) acknowledges the primacy of the individual in Schleiermacher and his "feeling for the individuality of persons, the realization that they cannot be classified and deduced according to general rules or laws" (p. 75). In effect, hermeneutics permits a "dialectic between two diverse approaches to

drawing and warranting interpretations of human products and performances" (Moss, 1994, p. 249).

In Neil's case, the benefit of a hermeneutic approach to fostering capability development is clear. The encumbrances of system accountability were still present - he, for example, still needed to write large-scale standardized tests if he wanted to obtain a high school diploma - but a hermeneutic approach enabled Neil to orient himself around what he could be as opposed to what he had to do. Upon transferring to our school, Neil was only vaguely aware of his dissatisfaction and its causes. Through dialogue and extra-curricular work, we focused on developing Neil's imaginative capabilities, fostering his ability to make connections between the curricular content that resonated with him and his artistic ability. Neil was able to shape a set of capabilities that spoke to him at that moment in his life, and to recognize how the more coercive elements of his education which previously frustrated him could begin to fit into his life. Building a capacity for metaphor, for example, was a key capability in Neil's case, as this allowed him to make significant connections to parts of his life that seemed foreign to his desires.

None of this is directly captured by the more traditional objectivist means of classroom assessment. In fact, in creating his own set of essential capabilities, the most significant developments in Neil's life were perceptible only to him. Further research is needed in terms of identifying, developing, and qualifying capabilities, but Ricoeur's (1977) work around metaphor is a good point of departure. It supplements one of the capabilities already on Nussbaum's list, *Senses, Imagination, and Thought* (Nussbaum, 2011, p. 33). She notes that the way in which "the imaginative capacities contribute to a human life is not merely instrumental but partly constitute a worthwhile human life"

(2011, p. 36). The capacity for metaphor is not only the crux of an active and vivid imagination, but also a necessary condition for understanding. For Gadamer and Ricoeur, language is fundamentally metaphoric, and is that which "awakens the largest view" and "makes the world appear in all things" (Heidegger, quoted in Ricoeur, 1977, p. 284). This is a facet of human life that cannot be captured in a metric or a rubric. To paraphrase Giola (2016), hermeneutic inquiry and pedagogy, like jazz, is for those who want to be there when the miracle happens.

Data and Substantive Writings

A series of fictional and autobiographical vignettes oriented around my own experience teaching in an alternative high school constitute the data for my narrative analysis. Woven throughout my theoretical analysis of capability, disadvantage, and hermeneutic pedagogy, I reflect on how individuals struggle for a conception of the good life in the face of profound, systemic disadvantage, and what teachers can do in practice to support them.

Often these vignettes draw on my own professional reflection and I will evaluate my own practice in the context of my fictionalized representative students. In *Creating Capabilities* (2011), Nussbaum also employs a narrative albeit non-fictional approach to tell the story of Vasanti, an Indian widow from the impoverished state of Gujarat, in northwestern India. She notes that the list of ten capabilities she lists are salient in Vasanti's story and she risks narrative circularity. I, too, felt the need to be vigilant for pedantry, for writing just what I was looking for. But I also acknowledge, as Nussbaum writes, that "we can't look at a life or listen to a story without having some preliminary

hunches about what is significant" (Nussbaum, 2011, p. 15). I have chosen to write these stories for a reason and I must trust that the process vindicates them.

Analysis and Implications

In her discussion of Aristotelian thought in the capabilities approach, Nussbaum (1988) underlines a significant practical and theoretical problem in its implementation. Aristotle would have the hypothetical educational minister "operate with a complete account of human functioning, so that he can assess the bearing of an allotment of commodities or resources on the *totality* of a person's ways of living and acting" (emphasis in original) (Nussbaum, 1988, p. 174). Nussbaum (1988) notes the infeasibility of this approach, since the "planner cannot simply aim at designing (…) a good system of education, but must consider the total picture at all times" (p.174).

Fertile functionings, as defined by Wolff and de-Shalit (2007), offer a feasible opportunity to consider capabilities on an individual basis. These are functionings that are very likely to secure other capabilities and functionings. In this study, I discuss one particular aspect of my professional experience and return to it often. I developed a mathematics course involving the construction of 14-foot Prospector canoes. We took only the most marginalized students, some of whom had attempted to meet their mathematics requirement upwards of four times already. Interestingly, our class was oriented around neither mathematics nor canoe building, but cooperation, or more broadly *affiliation*. In the context of poverty, Wolff and de-Shalit (2007) note that the causal relationship between poverty and affiliation, which is broadly the capability to unite with others in meaningful cooperative work, is unclear. My thesis in building the course was that cultivating this capability in students would indeed secure additional

capability development and functioning in other areas, such as mathematics. Over four semesters of using mathematics to build canoes through cooperative work, I was seldom proved wrong, but the mechanism was unclear.

The objective of my research is two-fold: first, I want to characterize disadvantage in terms of the notion of capability; second, I want to suggest ways in which we can attend to individual disadvantage in a meaningful way. Using fictional and autobiographical narrative rooted in my own practice, I employ the capabilities approach as both an evaluative framework for characterizing disadvantage in terms of capability and to inform teaching practice with the goal of redressing that disadvantage. While a great deal of work has been done in the area of capabilities over the last three decades, comparatively little has focused on its applications to and implications for education and children, in general. The intersection of adolescence and the capabilities approach is a particularly noticeable gap in the research. In this work, I characterize the nature of capability and disadvantage for this group specifically. The capabilities approach is an appropriate framework for capturing this because it is not only sensitive to variation across individuals, but to individual variation over time.

Biggeri (2014) writes that the capabilities approach "considers children not simply as recipients of freedom, but rather as active social actors and agents in their communities" (p. 45). Through my narrative analysis, I elicit and explore the types of capabilities that are most valuable, the types of functionings that are most beneficial to capability development, and the types of disadvantage that are the most detrimental and insidious. Wolff and de-Shalit (2007) denote the last two as *fertile functionings* and *corrosive disadvantages*, respectively (p. 122). On her own list of ten capabilities,

Nussbaum singles out two, *practical reason* and *affiliation*, that she characterizes as architectonic, as they are necessary elements of the other eight (Nussbaum, 2011, p. 39). These capabilities and possibly others could constitute a rich set from which to inform teacher practice and inform policy decisions in both curriculum and pedagogy. The endings to Neil's and Jane's stories depend on it.

In this work, I explore the potential for a capabilities approach and hermeneutic pedagogy to characterize and redress disadvantage in the context of my experience working with a group of marginalized adolescents in an alternative high school. In the next chapter, I investigate the connection between disadvantage and capability; in Chapter 3, I lay out the foundational core of the capabilities approach; in Chapter 4, I specify my own capabilities account of teaching and learning; in Chapter 5, I look at philosophical and ontological hermeneutics and its import for my practice; in Chapter 6, I offer a list of capabilities which I believe will help my students live rich lives that they have reason to value. My narrative work was recursive: I would give voice to an experience and then return to it over and over again, crafting a narrative, drawing out its implications for my practice, and then returning again to the first fragments to begin my search for meaning anew. The structure of what follows reflects this recursion: I return frequently to Nussbaum's list of ten capabilities to draw out their implications for teaching and learning, to connect them to hermeneutic pedagogy, and ultimately to support my own list of capabilities for achieving agency and equity in teaching and learning.

Narrative: Why a Canoe?

I lived in a small house quite close to my school. It had a small detached garage, and in some sense, it was here that the concept of Canoe Math began to take shape. As a hobby project, I had started building a 17' Prospector canoe with a friend, and once it outgrew my meager facilities, I asked to house and complete it in the school wood shop. It was a beautiful shop: natural light poured through large windows and it was well-appointed with General International machinery, a fleet of woodworking dreadnoughts in shades of sea foam and pea green. But given my teaching course load, my graduate work, and some moonlighting, my canoe was kept at bay.[3] It sat on a long bench in the back of the shop, near the skateboard deck press. Occasionally, a student would ask me about it or a teacher might pass by and be fleetingly curious, but it basically went unattended to for the remainder of the school year.

One day, while I was working on my own canoe in the shop after school, our principal happened by and asked about what I was doing. I had already thought about how nicely canoe building could lend itself to a mathematics class, so I immediately gave my pitch. I talked about all the proportional reasoning I had to do in interpreting the plans and the measurement I had to do in cutting the planks. Looking for a novel way to both engage students and generate credits, my principal readily agreed – Canoe Math had become a reality. Developing the course now became the first priority.

Our math department was quite small: there were two of us. I handled what was colloquially referred to as *academic* math and Brian, a veteran teacher, handled what was often called *workplace* math. In the streams I taught, students aspired to college or

[3] I should be upfront about this first canoe. It now sits halved across the centre line in my back yard and holds garden tools. I consider it evidence of Canoe Math's costly R&D phase.

university coursework or sought to satisfy the admission requirements to a professional program, such as nursing. In Brian's classes, students ostensibly sought training for careers in skilled labour, such as carpentry, but more often than not they simply sought a graduation requirement. As I described above, our school was an alternative to the more traditional schools in the city: no single trait or feature characterized our student body outside of the fact that they often faced multiple obstacles to finding success in the classroom and beyond. In the terminology set out in the preceding section, they were disadvantaged. Mathematics is much maligned by adolescents and adults alike, but at our school it brought gaps and issues in our students' educational histories into high relief. Our unofficial school policy was to keep class numbers low so that we could attend to the myriad exceptionalities our students possessed. It was not uncommon, for example, to attend to significant gaps in early grade mathematics, such as basic fractions, with our grade ten and eleven students. But despite our efforts we continued to see high attrition rates and a general lack of engagement in almost all of our students. This was true across all the streams, but it was particularly troubling in our workplace stream.

Brian immediately appreciated the applications of mathematics to canoe building and its implications for the students he worked with. We quickly realized that team teaching the course would offer us the opportunity to model not only mathematical dialogue, but how to work productively together, in general. We sequenced the course in terms of the canoe build rather than the learning objectives. Not only was this intuitive, but it helped to retain the authenticity of the problem: we were going to use math in service of something. Each week, we tackled a new aspect of the build and then linked it to a learning outcome in the program of studies. It was June when we were told the

course was a go, and by the following September, we were ready and excited for our first intake. We planned to spend some time going over the intricate plans as a group before moving on to procuring the wood, tools, and epoxy we needed. Then we would measure and cut the planks – in no time, we figured, we would have the canoes out on the water. But we were wrong.

In general, students were no more motivated to build a canoe than sit through a traditional math class. We recruited several students, for example, who aspired to carpentry as a profession, but they were unable to connect the concepts they covered in their math workbooks in previous classes to the application of those principles in woodworking. Others were directed to the class because they were told it would be fun. We certainly thought it would be, but to be told so was hardly inspiring for many students. By the end of the first week, we had begun to realize that we needed to slow down and refocus on why we wanted to do this in the first place.

That canoe building naturally lent itself to developing woodworking skills was a benefit to these students in particular, but this was not the goal. Nor was it a magic bullet with respect to motivation or developing mathematical skill. From a curricular perspective, we wanted the students to have a rich inner mathematical dialogue, to frame and attend to problems mathematically, and we began to structure our class to this end. We began each day standing around the plans or canoes, discussing what needed to be done and how we needed to do it. Many of these problems needed to be investigated through mathematics, and we made sure to verbalize our questions in mathematical terms. This process begot answers and additional questions from students, and in this manner we began to establish a rhythmic mathematical patter, the sort that Richard

Sennett evokes in *The Craftsman* (2008), which I discuss in more detail in a subsequent chapter. If another teacher or administrator wanted to know how the students were doing in math, they did not need to look at their test scores. They just needed to come into our classroom and listen.

Chapter 2: The Link Between Disadvantage and Capability

> *[A] society of equals is a society in which disadvantages do not cluster, a society where there is no clear answer to the question of who is the worst off.*
>
> --Wolff and de-Shalit, *Disadvantage*

In their book *Disadvantage* (2007), Wolff and de-Shalit make a meaningful contribution to the capabilities approach literature. Although their work is directly building on and has an affinity for, in particular, Nussbaum's conception of the capabilities approach, Wolff and de-Shalit (2007) opt to substitute the term capabilities out for what they call "(genuine) opportunities for (secure) functionings" (p. 37). As Nussbaum (2011) notes, it is not always clear whether Wolff and de-Shalit (2007) are talking about capabilities or functionings (Nussbaum, 2011, p. 44). It is not within the scope of this work to explore fully the nuance of their argument, but it is worth noting that their language is suggestive of the complexity at work between capabilities and functionings. Rather than being a drawback to the theory, this complexity is precisely that which makes the capabilities approach such a fitting framework for interpreting what people are able to do and to be.

Using their notion of *(genuine) opportunities for (secure) functionings*, which for my purposes I treat as roughly synonymous with Nussbaum's conception of combined capability, Wolff and de-Shalit (2007) proceed to characterize disadvantage as a state in which "one's functionings are or become insecure involuntarily, or when, in order to secure certain functionings, one is forced to make other functionings insecure, in a way that other people do not have to do" (Wolff and de-Shalit, 2007, p. 72). That is, disadvantage is not necessarily a functioning per se, but rather the absence or potential loss of a functioning. This conception broadens the notion of how one might experience

disadvantage with respect to a particular functioning. Consider how two individuals experience disadvantage in the context of *material control over one's environment*, one of the ten capabilities on Nussbaum's list (Nussbaum, 2011, p. 34). The first individual is homeless and living on the street; the second is in arrears on rent and living paycheque to paycheque, struggling daily with the prospect of homelessness. While it is clear both are disadvantaged in terms of that particular functioning, they experience that disadvantage in distinct ways. In each case, an intervention must address not only the lack of a functioning, but the way in which it manifests in lived experience. In the case of the former individual, an intervention might address one of the many systemic causes for homelessness, for example mental illness or addiction. In the case of the latter individual, the intervention might try to secure an existing capability, such as through a subsidized day care program, or offer a different capability that secures the existing one. As Nussbaum (2011) notes, in many cases the intervention "must not simply give people a capability, but give it to them in such a way that they can count on it for the future" (p. 43). This has important implications for how we can begin to redress disadvantage in the classroom, too, which I discuss below.

But first it is useful to continue to refine Wolff and de-Shalit's (2007) definition of disadvantage, not only in order to use consistent language, but to expand their notion of disadvantage to reflect the complexity of human experience. As mentioned above, it is useful to think of Wolff and de-Shalit's (2007) notion of *(genuine) opportunities for (secure) functionings* as roughly equivalent to capabilities. Further, using their definition, it is clear that the loss or insecurity of a valued functioning is a disadvantage. But what of the opportunity to achieve that functioning? Surely the freedom to convert a capability

into a functioning has some intrinsic value. It also reflects the degree to which one exercises *practical reason* and *control over one's life*, both capabilities (or functionings) identified as priorities, in both Nussbaum's list of central capabilities (Nussbaum, 2011, p. 34) and by those interviewed by Wolff and de-Shalit in their analysis (Wolff and de-Shalit, 2007, p. 126). This suggests that we might also want to incorporate the absence of a capability into our definition of disadvantage. By including both capabilities and functionings and considering the ideas of both their absence and insecurity, we arrive at a useful working definition of disadvantage: it is the *absence or potential loss of a capability or functioning*.

To characterize student experience in the context of capability and disadvantage, it is worth considering what Wolff and de-Shalit (2007) label the "intensity of dissatisfaction," or how much people care about achieving a functioning (p. 115). In Figure 1, I have used this idea to characterize four distinct states of capability and functioning along two axes: on the horizontal axis, the extent to which one values a functioning; on the vertical axis, the extent to which one achieves a functioning.

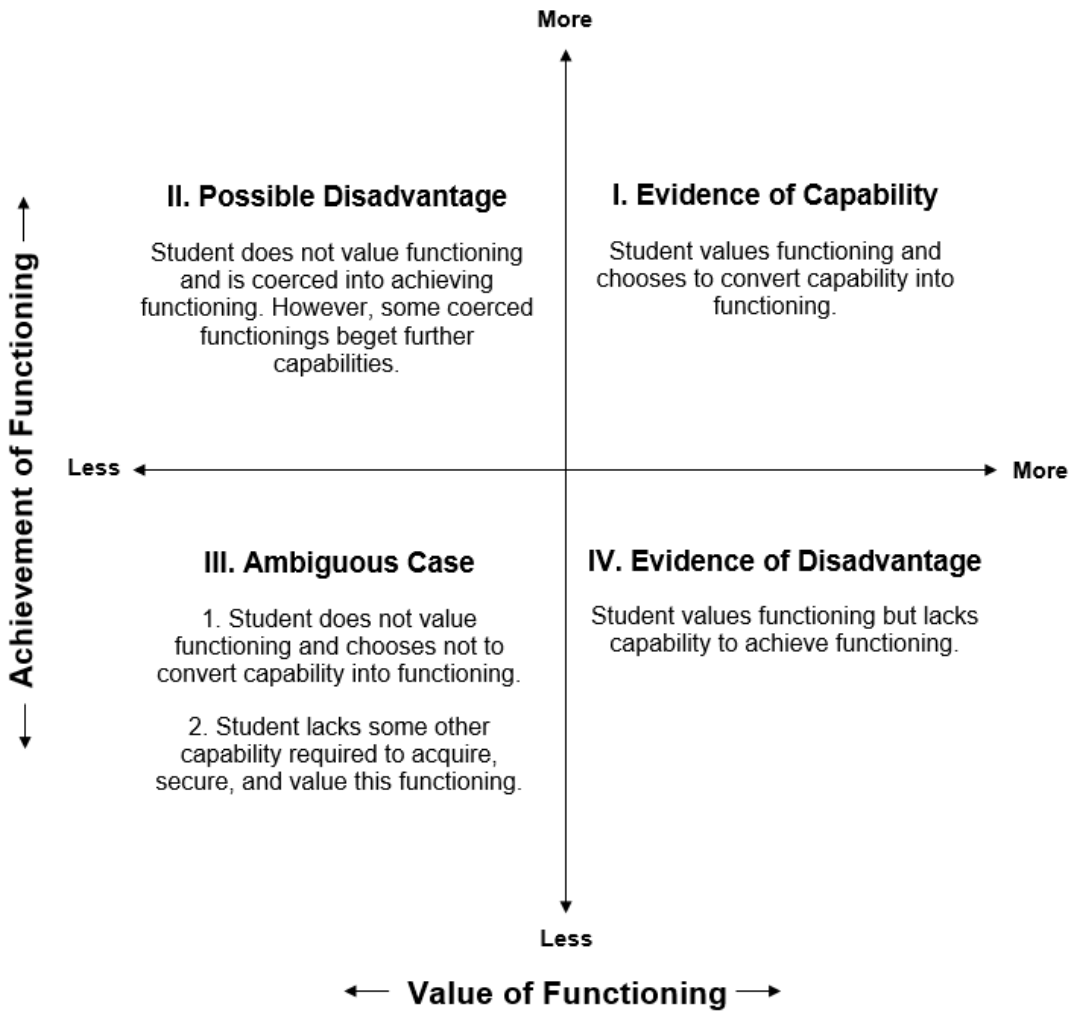

Figure 1. Value and achievement of a functioning

Of course, the concepts of capability and disadvantage are too complex to be reduced to a Cartesian plane, but doing so is an illustrative albeit simplified heuristic in characterizing different sorts of experience. It is worth considering the nature of each axis: the horizontal axis, or the extent to which an individual values a particular functioning, is a purely subjective measure. This introduces the issue of adaptive preferences, the idea that an individual's desires can be conditioned and possibly distorted by their experience. Surely our needs and wants are to some extent inextricable from our experience, but

adaptive preferences speak to a perverse rather than rational response to context. In real life, the result is often more destructive than the proverbial fox and sour grapes. The vertical axis describes the extent to which a functioning is realized. Many functionings are arguably binary and are not interpretable on a spectrum, such as feeling safe in your environment. But many other functionings in an educational setting, for example, academic achievement or social relations, can be captured on a spectrum. In each quadrant of Figure 1.1, I characterize how capability and disadvantage might manifest in distinct ways with reference to some fictionalized accounts of student experience in my Canoe Math class. The vignettes here are not meant to be exhaustive accounts of any one individual, but they do suggest the complexity of operationalizing the capabilities approach in teaching and learning and help to refine our notions of disadvantage and capability in the context of student experience.

Carl's Story

Quadrant I could represent the case of the ideal student. I experienced working with many of these students in my position as a high school mathematics teacher. Consider a fairly straightforward functioning from Alberta Education's *Mathematics Grades 10 to 12 Program of Studies* (2008): "Develop algebraic and graphical reasoning through the study of relations" (p. 15). In my experience, teachers are mostly comfortable with evaluating student experience along the vertical axis – much of our training in formative and summative assessment is oriented around whether or not a student meets a particular learning outcome. But the capabilities approach adds a layer of complexity: it is not enough to know whether or not an individual achieves a functioning, but also

whether or not the individual has reason to value that functioning and chooses to achieve it (Nussbaum, 2011, p. 28).

Of course, determining whether or not a high school math student values their achievement of this particular outcome – regardless of whether or not they say they do - is not easy. Consider two high-achieving mathematics students, both of whom self-identify as valuing a secondary mathematics education: one comes from a well-educated family of professionals, performs extremely well on tests, and sees the instrumental value of math class as a means to entering university; the other also performs well on tests, but thrives in an inquiry setting and her work suggests an intrinsic value of mathematics. This highlights how two distinct sets of capabilities can manifest themselves in an identical functioning. If we only capture a test mark in our assessment, we overlook valuable information, particularly with respect to how those students will translate the subject material in lives they have reason to value.

Carl was a student who typified two quadrants in the above figure. By all accounts, he was one of the most successful graduates of Canoe Math. He had experienced some academic success prior to coming to our school, too. He was skilled in woodworking, competent in mathematics, and intended to become a carpenter after high school. Even so, Carl had recently been withdrawn from a traditional math class in another high school. For many students, a roomful of thirty, a workbook, and a few quizzes and tests are tolerable obstacles to navigate in pursuit of a high school diploma. In Carl's case, he profoundly resented those obstacles. For him, school just seemed to take too long. He lived with his father, who was also a carpenter, and was more interested in continuing on at his summer job in the shop than in returning to school each

September. He did not see his life or his intentions for it reflected in the work he was being asked to do. When he came to our school, he intended to complete his remaining coursework through distance learning modules, coming to school only when he needed help. This, he thought, would expedite the process. Luckily for both Carl and our class, he chose to take a shop class for some grade twelve credits, and that is how he came to be in Canoe Math class. In Canoe Math, he was able to apply the subject material into a lived experience and imagine how it might meaningfully fit into his conception of the future.

In attending our Canoe Math program, Carl fit neatly into quadrant I. He easily realized the functionings required of him in the mathematics curriculum, but he was able to express some control over how he framed his work. It is important to note that we were not simply satisfying Carl's preferences for doing math in a shop class – Nussbaum (2011) is clear that a capabilities approach is not about preference satisfaction (p. 35). Rather, we attended to Carl's "substantial freedom to choose and act" (Nussbaum, 2011, p. 24). But from this brief vignette, it is clear that it was not always so for Carl. In his previous mathematics class, for example, he fit more into quadrant IV, in which the functioning is clearly valued, but there is no genuine opportunity for Carl to realize that functioning. In thinking back to Carl and students like him, I worry most about those students we missed, even those who continued on and were successful in attaining their required credits through distance learning. The lost opportunities for engaging in rich mathematical thinking, developing the imaginative senses, and learning to work with and toward one another, are capabilities that go beyond those conferred in attaining the

functionings so often coerced in education. Rather, it is exactly those capabilities that will *secure* an individual's conception and pursuit of a life they have reason to value.

Fatima's Story

I found a common, insidious thread binding those individuals I had worked with as I wrote through my experience: poverty. In the economics literature, poverty is often reduced to earning an arbitrarily low share of median income. But by looking at the poverty inherent in these narratives more broadly, I glean insight into how we can begin to characterize disadvantage. In a compelling analysis of the Poverty and Social Exclusion Survey of Britain, Bradshaw and Finch (2003) showed that the most impoverished were those who suffered from a clustering of disadvantages. In looking at multiple measures of poverty – a lack of social necessities, subjective poverty, and income – Bradshaw and Finch (2003) found that the cumulative poor, or those poor on all three indices, were more unlike the non-poor than those who were poor on only one or two measures. In particular, they found that this group of those with clustered disadvantages are "more likely to be women, lone parents, large families and to have no workers in the household" than the non-poor or any group characterized as poor in one or two dimensions (Bradshaw and Finch, 2003, p. 519). They conclude that "people who are defined as living in poverty by different measures of poverty are different. This inevitably means that the policy response to poverty will be different depending on which measure is employed" (Bradshaw and Finch, 2003, p. 513).

This has implications for how we might begin to identify disadvantage in a school setting. The school in which I worked had an admission policy that prevented students from simply walking in off of the street to attend class. The intent of the admission

process was to begin to compile a profile of the student. In the best case, the admission process could involve the student, parents, administrators, and social workers to demonstrate just cause for a particular student not attending her designated school. But in practice, admittance might be based on simpler premises: scheduling might work best for a parenting student at the alternative school; a student might be removed from a potentially harmful situation in another school; or it may be the case that the larger, traditional high schools simply will not admit the student. We very rarely turned away students, and this was something that engendered pride among our staff, but it also underlines a key point: an alternative school intended to redress disadvantage in our most vulnerable population of individuals used a poorly defined notion of disadvantage to admit its students. Of course, it is easy to infer a partial characterization of disadvantage for each of the students discussed herein: the student is a single parent and needs a flexible schedule, the student is being bullied, or the student has behavioural problems, for example. While this might be sufficient for admittance, it is an insufficient account of the complexity and plurality of individual lived experience.

Fatima was only briefly a student at our school. In a short period of just a few months, she moved cities, attended a new school, broke a yearlong stint of sobriety and began to use drugs again, moved out on her own with the help of a government program contingent on her attendance at school, and became pregnant. She also turned eighteen. Fatima's was a situation that captured Bradshaw and Finch's (2003) notion of poverty and Wolff and de-Shalit's (2007) of disadvantage. Given her pregnancy, her lack of support at home, and her drug problems, her attendance at school suffered. This not only had academic consequences but put at risk her single most valued functioning: her

apartment and financial resources depended on good attendance at school. When attending, Fatima had good days and bad. On the former, she clearly expressed her desire to improve her situation, and recognized education as one means by which to do so. On the latter, it was clear Fatima did not value the functionings we required of her. She could not see the instrumental value of mathematics in finding work or turn her learning of Shakespeare into a rich cultural life. Her own situation was too dire. In this sense, like Carl, it is not clear which quadrant she fit into. On some days, she valued the functionings required of her for their instrumental value but was mostly unable to attain them. On others, she expressed little desire to pursue any schooling, which left her teachers with significant doubts over her potential. Likely, as with Carl and everyone, her position on the plane was variable and fluid, contingent on the security of her existing capabilities and the opportunities offered to expand them and acquire new ones. This fluidity speaks to the complexity of lived experience and compels us to understand the individual. Hermeneutic pedagogy also speaks to this obligation and is one way of understanding capability and its absence.

In this chapter, I explored the notion of disadvantage, connected it to capability, and provided a cursory look at how it might manifest in situations recognizable to most educators. To be sure, to investigate the full scope of disadvantage and how it is experienced more broadly is too prodigious a task for this work. But as we can see in the experiences of Carl and Fatima, it is clear we must attend to how disadvantage manifests itself in the context of teaching and learning. I believe that characterizing it as an absence or potential loss of a capability or functioning is the most effective means of doing so.

Narrative: An Unlikely Poetics of Space

We never did get to set up in the woodshop. Instead, due to the sort of politics familiar to anybody who has worked in a school, our class of sixteen students, two teachers, and one educational assistant – and two 14-foot canoes – ended up in a small classroom adjacent to the shop. It was the old bike repair room, formerly run by my canoe building colleague, Brian, and it was littered with velocipedic detritus: dozens of old rims hung from the ceiling, boxes of greasy chains and old tire tubes were stacked against the wall, and the drawers were filled with every sort of spoke and sprocket one could imagine. Of course, we could still access the machinery in the shop proper as needed, but the message was clear: we were to stay in our space.

Our first task was to clean the room up and make it our own. Brian had decided not to run his bike repair program again, so we heaped piles of old bike parts behind the school. We tacked up our building plans and a few whiteboards on a section of bare wall, and we did not realize it at the time, but this was to become a hub for dialogue and community building. It was here that we typically planned what to do next and argue vehemently about the intricacies of both woodworking and mathematics. At the time, Brian and I were actually concerned about the space. It was too small, we thought: with two canoes on sawhorses, it was impossible to move around the room without bumping into others. There was also no place to sit. It was to become a running joke. When asked about how the class was going, we might facetiously respond with some variation of: "The canoes are great, but how are these kids supposed to learn anything if they don't have a desk to sit at?"

Our worries about the space turned out to be unfounded. In retrospect, we might not have broken down the social distance between our eclectic group of students so quickly if we had been in the larger woodshop. With each group of students, something began to happen within this space as we talked, worked, and lived so closely together, even if it was only for a couple of hours a day. In *The Poetics of Space* (2014), Gaston Bachelard uses the metaphor of the home to explore the human imagination. In this metaphor, he seeks out "felicitous spaces," those "space[s] we love" (Bachelard, 2014, p. 19). He writes that these spaces have both protective and imaginative value, but that the latter eventually comes to dominate: "Space that has been seized upon by the imagination," he writes, "cannot remain indifferent space subject to the measures and estimates of the surveyor" (Bachelard, 2014, p. 19). I feel I was part of this phenomenon in our classroom: through dialogue and work we came to inhabit the space with all the "partiality of the imagination" (Bachelard, 2014, p. 19).

Chapter 3: A Capabilities Account of Teaching and Learning

Introduction

In discussing my specific application of the capabilities approach and the approach more generally, I follow the taxonomy set out in Robeyns (2017). In using the more general *capabilities approach*, I refer to a broad conceptual, normative framework in which we can use functionings and capabilities as the evaluative space for interpreting individual well-being. Below, I elaborate on certain aspects of this framework that are essential to it; that is, all capabilitarian applications share these common features. In so doing, I also intend to contextualize these features, to make them concrete in an educational setting. I will also add some additional content to these necessary features, which provide the means to investigate my own experience in the classroom. This additional content includes considerations of the purpose of my inquiry, its scope, the specific evaluative space, and other theoretical and ontological commitments, such as the notion of hermeneutic understanding. These aspects constitute what Robeyns (2017) calls the "B-module" of her modular view of the capabilities approach (p. 37). These are properties of my specific account of the approach and are not inherent to the broader conceptual framework itself. In this specific application, I refer to a *capabilities account of teaching and learning*.

The Capabilities Approach: A Conceptual Framework

In her book *Wellbeing, Freedom and Social Justice* (2017), Ingrid Robeyns carefully distinguishes between the capabilities approach as a broad conceptual framework and what she denotes as specific capability theories, or the various accounts, analyses, and applications of the broader framework that exist in the literature (p. 37).

Interestingly, in Robeyns' taxonomy, Nussbaum's capabilities approach is interpreted as a specific theory of the broader conceptual framework (Robeyns, 2017, p. 80). However. the capabilities account of teaching and learning discussed herein not only takes theoretical and practical clarity from Nussbaum's approach, but inspiration as well. Her explicit commitment to political liberalism and human dignity are both commendable and necessary. But it is useful to adopt the taxonomic approach of Robeyns (2017) for several reasons. Firstly, by stripping away some of the significant and meaningful contributions made by Nussbaum (see, for example, 2000, 2011), we can reveal the core requirements of any capability theory. This is what Robeyns (2017) calls the A-Module of her modularized approach (p. 37). Secondly, viewing a capability theory in modular terms allows me to explicitly build in content necessary to making my capabilities account effective in the context of teaching and learning. This is particularly crucial to establishing the hermeneutic foundations to my approach and to establishing a dialogue between these two arguably disparate philosophical traditions. Thirdly, the modular account reflects the plurality of ways one can construct a capabilities account. For example, in the classroom experience I discuss throughout, many of the individuals I worked with were Indigenous. It is possible that a particular capability theory may not reflect the cultural values and ways of knowing of Indigenous peoples. The modular account allows the opportunity to be explicit in terms of human diversity, the chosen capability space, unique structural constraints, meta-theoretical considerations, and other aspects of lived experience. This not only reflects a plurality of value inherent in the capabilities approach, but of its possible applications, too.

Capabilities and Functionings

All capabilities theories share a common set of core elements. These elements are what distinguish a capabilities approach from some other approach to well-being, such as one rooted in human rights or the availability of resources.[4] As noted in the first chapter, a capabilities approach must orient itself around two fundamental concepts: functionings and capabilities. A *capability*, as Nussbaum (2011) notes, is a sphere of freedom and choice, a rich set of potentialities from which a person may choose to realize specific functionings. A *functioning* is a state of being or a doing. Functionings constitute lived experience: that we are always in a state of some being or doing is a defining characteristic of human existence.[5] In many cases, there is significant overlap in the nature of a functioning: one can both *be* numerate and *do* arithmetic, for example. In other cases, the state of being has no corollary in doing (e.g. the state of being relaxed).

It is a defining characteristic of the capabilities approach to value not just what people are and do (functionings), but what they are able to be and do, if they so choose (capabilities). The approach is thus explicitly pluralist in value and morally concerned. To paraphrase Nussbaum (2011), it is quite a different thing to require a particular functioning of a student to obtain a high school diploma (for example, applying the primary trigonometric ratios) than it is to develop in students the capability to be numerate. This is not to say that applying the trigonometric ratios is an undesirable end, only that it is different in quality from a broader numeracy capability in which individuals

[4] In describing these core elements, I will follow the list set forth in Robeyns (2017) – see p. 38.
[5] It may be helpful here to distinguish between *being* in a capabilities context from the Heideggerian notion, discussed below. In the capabilities approach, being refers to a state of being: for example, the state of being in good health, the state of being university educated, etc. Contrast this with Heidegger's notion of *dasein*, which describes the character of human existence, our state of being in the world. One could not denote this a functioning in the sense of a capabilities approach because there is no underlying capability, or choice.

must make choices in contextualizing, addressing, and communicating their problem solving. One might even argue that this is a case in which requiring certain functionings expands an individual's capabilities. This hints at two aspects of a capabilities approach that must be address in an account of teaching and learning: that some functionings might be fertile, in that they beget further functionings and capabilities; and that while the approach is explicitly concerned with an individual's agency, there must be some requirement of functioning in an educational context, and so some mix of capabilities and functionings must compose the evaluative space. I discuss both of these ideas in detail below.

Yet another quality of functionings and capabilities is that they are value-neutral. That is, the capabilities approach reflects two important aspects of lived experience. Firstly, it recognizes that not all functionings or capabilities are good. The capability to rape is one oft-cited example of a capability with negative value (Robeyns, 2017, p. 39-40). There have been several reported instances of so-called revenge rapes in recent years, in which the rape of a woman is socially or politically sanctioned to redress some perceived cultural imbalance (Khan, 2005). It is clear that a person, community, or government should never support the protection or expansion of such capabilities. While a capabilities approach is clearly oriented around agency, it is so only insofar as that agency is in service of human dignity. Nussbaum's explicit commitment to political liberalism and a plurality of values helps to make clear why we cannot simply exclude functionings and capabilities we think have negative value. Take, for example, a recent case in Alberta in which a provincial judge rejected the request of a consortium of community organizations and faith-based schools to suspend a law prohibiting schools

from informing the parents of students who join gay-straight alliances (Krugel, 2018). In this example, the courts uphold the protection of two distinct capabilities on behalf of the student – that of being able to join a peer-group and of being able to do so on one's own terms – over a capability of the parent (e.g. to be informed of a child's affiliations).

In establishing functionings and capabilities as value-neutral, the approach compels us to choose which functionings and capabilities we value. Robeyns (2017) notes that many capabilities theories collapse two normative moments into a single decision in defining functionings as "those beings and doings that one has reason to value" (p. 43). Instead, we must carefully delineate between the decision to use capabilities and functionings as the evaluative space (i.e. to agree on a capabilities approach) and the choice of which capabilities and functionings will fill that space. This is an especially important distinction for complex moral questions, such as those we find in education. Should children be able to determine the content of their learning and how they communicate their understanding? Should education orient itself around expanding capabilities in terms of collaboration and problem solving or compelling specific functionings (e.g. answering a multiple-choice question on the primary trigonometric ratios)? Should school equip students with the imaginative capacities to live a rich life or the skills required to be an economically productive citizen? Certainly, the dichotomous frame to these questions belie the complexity of the answers, but answer we must. Below, I elaborate on specific capabilities and functionings valued in my account. For now, it is enough to say that a group of educators could all endorse a capabilities account to teaching and learning but disagree entirely on which capabilities and functionings make up the evaluative space.

A capabilities approach also distinguishes itself from resource and rights-based approaches to well-being in its particular attention to the individual's ability to effectively realize a functioning. That is, capability theorists look to answer the question: to what extent is an individual able to convert resources into capabilities or realize a functioning from a given set of capabilities? This special attention to *conversion factors* highlights why a focus on capabilities is so crucial to understanding individual advantage and disadvantage. In his theory of justice, Rawls (1971, 2001) describes a primary goods or resource-based approach to well-being. Nussbaum draws significantly on the notion of political liberalism at the centre of Rawls's theory in her conception of the capabilities approach (Nussbaum, 2011, p. 89). One might also compare the respect for human dignity in Nussbaum's normative thresholds for well-being – not simply in physical terms of food and shelter, but emotional and psychological aspects of well-being, such as self-respect – with Rawls's notion of the difference principle, according to which social arrangements are such that the maximum is done for those who are least advantaged (Rawls, 2001, p. 62). A commitment to political liberalism is also explicit in each. In acknowledging that there can be no total and unqualified account of the good, Rawls writes that a pluralism of values must still account for those aspects of the good that are indispensable, such as the social bases of self-respect. We see this manifest in Nussbaum's list of ten central capabilities and the idea that each is irreducible and non-fungible. Social justice and human dignity clearly ground both theories.

But as noted above, a primary goods approach does not tell us enough about the individual. It is an ideal theory, in that justice and fairness are premised on "a political conception of the person as free and equal, endowed with the moral powers, and capable

of being a fully cooperating member of society" (Rawls, 2001, p. 58). Take as a specific example one of the five primary goods listed in Rawls's *Justice as Fairness* (2001), the *social bases for self-respect* (p. 59). Rawls is clear in defining the social bases as the primary good, not self-respect itself. In this, the primary goods have an "objective character" (p. 60). The social bases of self-respect consist in "the institutional fact that citizens have basic rights, and the public recognition of that fact," and that all members of society endorse the principle of a social arrangement that benefits the least advantaged (p. 60). But the primary goods approach tells us nothing about how actual people are able to make use of actual social arrangements and institutions. Surely, we must question whether Rawls's conception reflects the experience of Vasanti, the woman chronicled in Nussbaum's *Creating Capabilities* (2011).

In their book *Disadvantage* (2007), Wolff and De-Shalit suggest that capabilities are possibly too vague for practical policy making purposes, and instead focus on what they coin *genuine* opportunities for *secure* functionings (p. 37). In the context of conversion factors, it is worth investigating some of the features that jeopardize functioning security. That is, what are some of the impediments an individual might encounter in choosing which functionings to realize out of a given set of capabilities? Robeyns (2017) notes that cognitive, emotional, and psychological factors can constrain this choice (p. 83), and I argue that these factors also have a significant influence on how we can convert resources into sets of capabilities. This is echoed in Wolff and De-Shalit (2007) in their treatment of how functionings (and capabilities) can become insecure. Consider a familiar functioning: having shelter. Suppose an individual loses her job and thus her means of affording her home. That functioning has now become insecure. Wolff

and De-Shalit (2007) identify not only the potential loss of the functioning as a problem, but that the fear and anxiety associated with its loss "may become the most important aspect of insecurity of functioning" (p. 68). It is possible that through social and institutional support, the individual does not in fact end up losing her home, but the concomitant anxiety around losing it may pervade other aspects of her life. She may withdraw from her friends and family, possibly to avoid the stigmatism associated with unemployment and financial insecurity; she may choose work unfitting to her intellectual capacities or compensate with lower paying work by working longer hours, thus impacting her leisure; or she may delay pursuit of goals that may in fact help her get a job, such as additional education. As I discuss in the next chapter, these issues are not confined to adults seeking secure, well-paying careers and nice homes in which to live. Children, particularly adolescents, are arguably at an even greater risk in terms of capability and functioning insecurity, in particular with respect to some of the capabilities in Nussbaum's (2011) list, such as *practical reason* and *affiliation*.

Means and Ends

A capabilities approach takes each individual as an end unto themselves. This is one key reason why it lends itself so readily to teaching and learning contexts. In the human development literature, it is in stark contrast to other accounts of well-being. The most common metric for interpersonal comparison, for example, is GDP per capita. This is an average measure of a country's total wealth per person.[6] From a capabilities perspective, the most significant drawback of an aggregative approach is that it does not tell us enough about the individual. Nussbaum (2000) writes that this focus on individual

[6] It should be noted that even as a measure of wealth, GDP is problematic. It fails to take into account subjective well-being, ecological value, etc.

well-being is a product of two distinctive aspects of human existence: that each of us has only one life to live and that each of us is intrinsically valuable. Thus, she writes, "we must conclude that we should look not just to the total or the average, but to the functioning of each and every person" (Nussbaum, 2000, p. 56).

Robeyns (2017) is careful to delineate between the *ethical* individualism in a capabilities approach and *ontological* conceptions of individualism, which connote notions of the sort of rugged individualism in which people are imagined to thrive self-sufficiently. A capabilities approach makes no such claim. It is ethically individualistic in the sense that there is a moral imperative to care about the individual's well-being. This is not so say we should disregard total or average measures of a people's well-being, only that "individual persons are the units of *ultimate* moral concern" (Robeyns, 2017, p. 57, italics in original). This notion of the individual as an end should resonate for any educator. In my own practice, I could have the highest math diploma exam average in the school, but this tells me nothing about how each individual did on an exam, nor does it compensate for the one student who failed or withdrew due to a capability failure.

A capabilities approach must also make a clear distinction between means and ends in terms of capabilities and functionings. To build on the example above, should we value a math diploma mark as a means to some end or as an end in itself? As noted above, in many cases, it is arguable that we require certain functionings of people, particularly of adolescents, as it is clear some functionings beget further capabilities. But Robeyns (2017) states that we must be very clear in whether we value certain functionings as means or ends. Above, I noted that GDP per capita was a standard macroeconomic metric for interpersonal and intercountry comparison, but it is clear that

income is not an end in itself. Rather, it is a means to achieving a valued end, and a capabilities approach does not value income as an end. There is obviously a philosophical argument here, but the reason is much more pragmatic in the capabilities approach: the means to well-being, whether it be income or teachers or curricular resources, "can only work as fully reliable proxies of people's opportunities to achieve those ends [that people have reason to value] if all people have *the same* capacities or powers to convert those means into equal capability sets" (Robeyns, 2017, p. 48, italics in original). Still more – and of particular importance in the context of adolescents – means-based evaluations of well-being fail to capture many of the capabilities identified in Nussbaum's list, such as emotional and psychological health, practical reason, or imaginative capacities.

A Summary of the Core Elements

In this section, I summarized the core principles of any capabilities approach. A capabilities approach focuses on both functionings (beings and doings) and capabilities (spheres of freedom) as the evaluative space in which we can best understand individual well-being. At its core, it embraces value-pluralism in its strong commitments to political liberalism and human dignity. It takes each person as an end and the individual as the ultimate unit of value, but it does not do so at the expense of other aggregative approaches to well-being. Rather, it is a complement to other approaches. And perhaps most importantly for teaching and learning, a capabilities approach strives to tell us the most about the individual: how one can convert resources into capabilities, how one can realize states of being and doing from their capabilities, and about one's ultimate state of well-being. In the next section, I expand on some additional facets specific to my own capabilities account of teaching and learning.

Narrative: Celebrating Innovation

We had just snipped the stitches off our two canoes when my principal invited us to an event promoting innovation in the school district's high schools. We were very proud of our work and did not shy away from opportunities to discuss canoe building, so we of course agreed to attend. Two students, Neil and Leonard, volunteered to join me, and given that the event was designed to not only incentivize future innovation but celebrate current work in schools, we decided to lug in one of the canoes.

It was held in a conference room over breakfast in one of the city's nicer hotels. All of the students and school personnel had to be back in time for the morning bell, so it was an early start. Neil and Leonard still had sleep in their eyes. Standing near our canoe in the corner of the room, we had a good vantage point: students from all of the high schools lined the perimeter, while teachers, principals, and head office staff jostled between tables in the middle of room, drinking coffee and chatting, waiting for the guest speaker to start and breakfast to be served. The canoe stuck out. One of the other high schools was represented by their robotics class, the two tables in front of them strewn with wires, mechanical arms, and rubber treads. Another showcased their school band. The robotics kids tapped away at laptops, glancing furtively between screens and an unresponsive arm; the band kids fiddled with their instruments; the canoe kids tucked their hair behind their ears and waited patiently beside their work. Eventually, a few attendees trickled past and Neil and Leonard gave the elevator pitch: we built this canoe (and another) in our math class. They spoke eloquently and excitedly as they described how we built it, not in terms of steps or materials or mathematical applications, but in the

way our group approached each day's work, collaboratively and with a disposition toward problem finding.

I had not expected this. Of course, what I had begun to think was innovative about our work was this very thing: not what we were doing (canoe building), but how we were doing it. But I had not stopped to appreciate what the students thought of the class at this point. My assumption was that they were still beguiled by the canoe's novelty as a medium for mathematics, that the looks of wary curiosity on the faces of those they spoke to reflected how they themselves felt about the project. But it was clear from what they said that they had moved well beyond this superficial apprehension of what made our class special. It belied a great irony at the centre of our project, one that I found troubling: the reason we were invited to this event had nothing to do with what was innovative about our class. From an outsider's perspective, we were "using math" to build canoes, and there was enough mystery around this process and perhaps even imbued in the canoe as a cultural object to enchant people. But there was nothing unique about our mathematical techniques or applications of mathematics – the students in shop class did the same sort of work. What set us apart from another math class was in our collaborative and dialogic approach to attending to mathematical problems. My fear was that if the organizers had known this, we would not have been invited.

The attendees began to drift toward their tables. The keynote speaker had begun to load his PowerPoint slides and organize his cue cards, sure signs that breakfast would soon be served. Neil and Leonard were starved of both rest and sustenance. They had each received a complimentary breakfast upon arrival: a bottle of water and an orange in a brown paper bag. Talking with strangers about their work for an hour had left them

parched and hungry. When students from the other high schools began to sit down, it became clear we were the only school without a table reserved.

"Is there coffee available here?" Leonard asked. My principal suggested he wait, that coffee was for the attendees, and then left to talk with some other staff.

"Coffee's for closers," I said to the boys. They looked confused, so I pointed out the coffee station and nodded for them to help themselves.

Chapter 4: A Focus on Teaching and Learning

Which Capabilities and Functionings?

> *The best and deepest moral training is precisely that which one gets through having to enter into proper relations with others in a unity of work and thought.*
>
> --John Dewey

Over the course of my experience teaching mathematics, I found my attention shift away from testing my students' understanding of discrete learning outcomes in the program of study to cultivating in them a positive disposition toward learning. In my school in particular, I was deeply troubled by the absence of a capacity for learning in my students. I did not worry so much about whether or not they would pass my final exam – I was there to support them as needed throughout the course – as I did about their future prospects for living a rich life. In a previous section, I followed Wolff and De-Shalit (2007) in characterizing the absence of capability as a kind of disadvantage, and in this case what I perceived was a lack of capability to be educated. It was just this that I wanted to attend to in my practice. But at the time, I only sensed a problem; I had not yet identified its parameters.

The sociologist Richard Sennett was and continues to be a significant influence on my teaching and thinking. Before I had even decided to build a canoe in my math course, two of his books, *The Craftsman* (2008) and *Together* (2012), formed the premises for what I wanted to offer my students. Sennett is an accomplished cellist, and I believe this is intimately connected to his ideas around the development of skill. As he writes, there is an "intimate connection between hand and head," and I sought to provide this sort of opportunity to my students, the opportunity to connect thinking with their practical and bodily experience (Sennett, 2008, p. 9). Coupled with this was the idea that understanding

develops through the power of imagination. I wanted to develop in my students their imaginative senses, their capacities for metaphor, to spark, as Sennett might characterize it, a rhythmic patter between problem finding and solving. I had not yet framed my work in terms of capabilities, but it was clear to me that the meaningful development of skill and imagination were the only means by which my students would be able to manifest their coursework in lives they had reason to value. Sennett provided me an apt metaphor in the craftsman: "Every good craftsman conducts a dialogue between concrete practices and thinking," he writes, and "this dialogue evolves into sustaining habits, and these habits establish a rhythm between problem solving and problem finding" (Sennett, 2008, p. 9).

After establishing the skills and dispositions I wanted to focus on and cultivate in my math class, I had to determine how I would provide the opportunities for students to pursue them. Again, Sennett framed my thinking. He opens *Together* (2012) with one of my favourite photographs: Frances Johnston's "Making a Staircase" (p. 2). Johnston mostly photographed African and Native Americans early in the twentieth century, often children or young individuals in residential or vocational schools. "Making a Staircase" was taken at the Hampton Normal and Agricultural Institute, a vocational college established in the mid-nineteenth century to educate freed slaves. In the photograph, several young African American craftsmen work to build a beautiful staircase. It is clear they are working together, both from their proximity to one another and the job each has selected to do: one fits a carefully lathed baluster; another fastens a piece of wood paneling into place; yet another burnishes the curved handrail. But they also seem distant from one another, each addressed by and absorbed in a particular problem. Sennett might

describe this sort of harmony as a kind of dialogic capability, which is characterized by a long list of skills including but not limited to "listening well, behaving tactfully, finding points of agreement and managing disagreement, or avoiding frustration in a difficult discussion" (Sennett, 2012, p. 6). Although each individual attends to his own task, all remain bound by the work in "little dramas of deference and assertion" (Sennett, 2012, p. 15). A collaborative and dialogic working environment was one means by which I hoped to provide the opportunity for my students to attend and respond to the required curricular outcomes in a way that honoured their own lives and experience. This made for the third prong of my emerging math course: students would develop their mathematical thinking as a bodily skill, cultivate their imaginative senses, and work together in doing so.

These goals would find little disagreement among most educators. All three find common ground in curricular documents, such as Alberta Education's "Student Competencies", Nussbaum's (2011) list of central capabilities, and various applications of the capabilities approach in education. Aspects of working together play especially prominent roles, and in her discussion of the capabilities approach in education, Terzi (2007) notes that "much learning is promoted and sustained by social functionings such as cooperating, being part of a group, supporting, or being supported by others" (p. 38). But I also sought to attend to a more insidious aspect of life at our school. As I have written throughout this work, there was no one characterization of alternative or disadvantaged at our school; rather it was the pervasiveness, profusion, and persistence of disadvantage that bound the students. This manifested in a common symptom: our students were typically solitary, lacked social networks, and were unable to work productively together. Working together is a skill, and Sennett (2003) draws a careful

distinction between realizing a skill, or what the capabilities approach refers to as a functioning, and its potential.

Without agency, potential is not equivalent to capability. I thought it reasonable to assume that all of my students had the potential to cooperate in work and thought; I felt I had given them the appropriate opportunity in Canoe Math, for example. But a capabilities approach emphasizes an individual's capacity for converting that potential into a capability. And, as noted in Wolff and De-Shalit (2007), the absence of capability can be corrosive; that is, it can beget further inequalities and injustices. Sennett writes that potential talent is different from observable action in that "it is a much more personal assessment, entwined with questions of motivation and will as much as of facility" and that "this difference begets a profound inequality" (Sennett, 2003, p. 35). One way in which this inequality can manifest is in social distance and alienation.

Developing my Capabilities Account

The capabilities approach offers just the sort of framework required not only to expand capabilities in students, but to attend to and redress the inequalities that are borne of their absence. My Canoe Math program ran over four semesters and we built a total of five canoes. Over the course of this period, I began graduate work in education, and became interested in operationalizing a capabilities approach in my practice. In this section, I detail how my goals for the course evolved over that time and through this writing process. I consider my goals first in terms of Alberta Education's *Competencies* (2016a), then in the context of Nussbaum's (2011) central capabilities, and finally draw on the work of other capability theorists in education in crafting my own tentative list. Table 1.1 provides a cursory comparison of my original list to these other lists of

competencies and capabilities. This table provides a summary of each list, but more importantly, also offers a chronology of how I arrived at current list throughout this writing process. The first three rows identify how the elements of my first list manifest in each of the subsequent texts. The final row identifies key differences between my original list and each text, differences that resonated with me and that I wanted to attend to specifically in reimagining my approach.

Table 1. *A comparison of my original Canoe Math goals and other lists of competencies and capabilities*

Original List	Alberta Education's Student Competencies	Nussbaum's (2011) Central Capabilities	Terzi (2007)	Walker (2007)
Mathematical Thinking	Problem solving; Critical thinking; Managing information		Numeracy; Learning dispositions; Science and technology	Knowledge
Imagination	Creativity and innovation	Practical reason; Senses, imagination, and thought		Respect and recognition; Emotional integrity and emotions
Collaboration	Collaboration	Affiliation	Sociality and participation	Social relations
Key Differences	*Optimism and hope; Moral imagination; Embodiment of mathematical thinking*	*Emotional and psychological considerations; Moral imagination; Clear control over one's environment*	*Learning dispositions; Absence of imaginative senses*	*Voice; Emotional integrity*

In making these comparisons, I follow Vaughan's (2007) useful distinction between two sets of capabilities in education: that *to participate in* education and those *expanded through* education (p. 116). The capability to participate in education is a function of many factors external to the individual, such as institutional and socioeconomic constraints, but also of factors only partially external to the child, such as confidence in the ability to learn or the motivation to master a particular skill, for

example. The capabilities expanded through education are those attained through education that have an effect on an individual's ability to live a life they have reason to value. I like this distinction because it is a reminder of the complexity and richness of an individual's lived experience, but it is exactly this complexity that makes categorization so difficult. Consider *affiliation*, one of the central capabilities on Nussbaum's list, as an example of why this distinction might only be nominally useful. Recall that *affiliation* consists in being able to live with and toward people, empathy, and having the social bases of self-respect (Nussbaum, 2011, p. 34).

In Canoe Math, for example, we worked to break down inequalities manifested through social distance by focusing on these aspects of working together. It is clear that this capability (or its absence) has significant ramifications for life outside of and beyond school. It might manifest as the ability to form social networks, to find and sustain love, to have productive working relationships, and to have self-worth. But in the example of Canoe Math, *affiliation* was also a capability required to meaningfully participate in class. Many students required significant time and work to break down the barriers preventing them from converting the opportunities available to them into capabilities and functionings they had reason to value. It is clear from this case that the relationship between these two sets of capabilities is bi-directional and complex. But it is exactly this complexity on which I intended to focus: were my students able to capitalize on the opportunities available to them and create additional opportunities for realizing how their education might fit into rich, fulfilling lives?

Alberta Education's Competencies

I began designing the course with my three goals in mind: mathematical thinking, imagination, and collaboration. I intended to use the specific learner outcomes in the Alberta mathematics program of study and canoe building as means by which to achieve these goals. I turned to Alberta Education's list of *Competencies* (2016) to both develop them and place them into familiar language for my students and administration. The *Competencies* (2016) are comprised of eight competencies that students must develop through education in order to "achieve their full potential as lifelong learners and active citizens" (Alberta Education, 2016). They include: *critical thinking*, *problem solving*, *managing information*, *creativity and innovation*, *communication*, *collaboration*, *cultural and global citizenship*, and *personal growth and well-being* (Alberta Education, 2016). This list is derived from a ministerial order in which Alberta Education states that education in the province is to emphasize these competencies over subject-specific content (Alberta Education, 2013, p. 2). A significant overlap was clear between my three goals and the eight competencies. Collaboration, for example, was explicit in both lists. In Alberta Education's *Competencies*, collaboration is characterized as a process of mutuality, of supporting, valuing, and respecting others (Alberta Education, 2016, p. 7). This helped to frame my thinking around what collaboration might look like in my course and for the sorts of things I might look for as evidence of effective collaboration.

But my other two goals did not elide with the *Competencies* so easily. My goal of mathematical thinking, for example, contained elements of several of the competencies, including problem solving, critical thinking, and managing information. It also contained aspects of numeracy, which Alberta Education identifies as foundational to the

development of the competencies and is not included in the list. This notion of literacy and numeracy as antecedents for education is echoed in Vaughan (2007), who characterizes them as basic skills which are "non-subject specific and fundamental to the learning process," and more generally to the capability to participate in education (p. 117). The competencies also did not specifically address the sort of mathematical thinking that I intended to elicit in my students, in particular with respect to the notion that it could be embodied and developed as a sort of inner dialogue between head and hand and intimately connected to the imaginative senses. Nor did the *Competencies* capture the full spectrum of imaginative senses, as I envisioned them. In developing *creativity and innovation,* for example, the student seems oriented around physical means for innovation, which lends itself well to the entrepreneurial focus of the competencies (Alberta Education, 2013, p. 2). One indicator of student achievement is the ability to "combine materials or resources in unique ways to create something new" (Alberta Education, 2016, p. 5).

Canoe Math clearly lent itself well to this aspect of the imaginative senses, but I also wanted my students to imagine different ways of interacting with the subject matter and with each other. This is what Vandeboncouer and Vellos (2016) refer to as a kind of moral imagination, the idea that "teachers and students must engage in the joint imagining of new relationships, relationships that allow them to participate in the world in new and different ways" (p. 308). This characterization of moral imagination intimated an element of capability that emerged throughout my narrative process and as I began to frame the experience in terms of the capabilities approach: agency. This was an aspect that was underrepresented in my first iteration of goals, but it was implied. I wanted my

students to be able to "disclose a different state of things, to open the windows of consciousness to what might be, what ought to be" (Greene, quoted in Vadenboncouer and Vellos, 2016, p. 313). I wanted them to determine for themselves how our subject matter translated into lives they had reason to value, both presently and in the future.

The *Competencies* contained another element I had missed, one I came to believe was integral as I worked with my students. The document lists optimism as a key facet of *creativity and innovation*. This did not resonate with me until I worked with Suzie, a grade eleven student in my Canoe Math class. Prior to and during our time together, Suzie was regularly suspended from school, often due to her addictions to alcohol and drugs. Her addictions were serious. Over the preceding year, she had been in and out of treatment for meth addiction. An otherwise witty, healthy, and seemingly happy young woman, she often came to school still stoned from the night before, reduced to a shambling husk, her teeth yellowed and her eyes framed by dark circles. In this state, she was usually asked to leave school and return in a couple of days – this was a typical response from administrators given the school's zero tolerance policy for drugs and alcohol. Her performance in our class was erratic. During the periods she was using, she was unproductive with respect to doing math or building a canoe, but more typically absent entirely. Still, she would sometimes come to class, if just to talk or to sit and listen while we debated the best course of action in terms of the canoe's construction. It was a safe space. Suzie received a great deal of support from our school counsellor and had a long clean stint toward the end of the semester, during which she attended regularly and became more active in working with us on the project. Our conversations began to shift over the course of these weeks. Typically, they would be focused on life outside of

school: her troubles at home, her living situation, the myriad barriers to success to which she awoke each day. As she worked more closely with us, it became clear that she was able to do the necessary mathematics. Not only that, and possibly more surprising to her, she was able to deftly manifest those mathematics through woodwork. Our conversations shifted to potential careers in carpentry and at some point that shift was put into high relief for me by a defining quality: they were hopeful. Our talk was marked by optimism and aspiration – hope for a potential future. It was Suzie that made the importance of this clear to me.

My initial three goals of developing mathematical thinking, imaginative senses, and the capacity for cooperation and collaboration found much in common with Alberta Education's *Competencies* (2016). Mathematical thinking translated well into the Problem Solving, Critical Thinking, and Managing Information, but I wanted to emphasize thinking as bodily practice and the connection between thinking, working and the imaginative senses. In the latter, I also wanted provide an opportunity for moral imagination, to imagine different ways of working and living together. But I also found a crucial element lacking from my three goals: hope. I found means to incorporate and contextualize these aspects in Nussbaum's (2011) list of central capabilities.

Nussbaum's (2011) Central Capabilities

Martha Nussbaum has been very influential on my thinking and practice as an educator. Her conception of the capabilities approach explicitly endorses a plurality of values (political liberalism), lists ten central capabilities, each of which must be attained past a certain threshold for an individual to be considered flourishing, and is ultimately concerned with human dignity (Nussbaum, 2011, p. 19). At a more fundamental level, I

credit her works with changing my perspective of what should be valued in education. Of course, I will require certain functionings of my students, but I place a far greater emphasis on individual student agency and developing in my students the ability to imagine and pursue lives they have reason to value. I have attempted to make this case throughout this work. In this section, I limit myself to drawing out elements of Nussbaum's list of central capabilities that elide with my original three goals. More importantly, I elaborate on how her list and approach to human flourishing informed the expansion of my goals. All of the central capabilities on Nussbaum's list are necessary to a dignified life, but some lent themselves more readily to my specific application. Her writing around three capabilities, in particular, captured the essence of my goals and gave language to the gaps I encountered in translating them into the Student Competencies. These three include: *senses, imagination, and thought*; *practical reason*; and *affiliation.*

Nussbaum (2011) describes *senses, imagination, and thought* as the capability to "use imagination and thought in connection with experiencing and producing works and events of one's own choice" in a "way informed and cultivated by an adequate education" (p. 33). The expansion of the imaginative senses, she writes, does not just contribute to one's life instrumentally, but is "partly constructive of a worthwhile human life" (p. 36). This description moves beyond the instrumental conception of *Creativity and Innovation* in the Student Competencies, and together with *practical reason* and *affiliation,* captures this notion of moral imagination. Nussbaum (2011) describes *practical reason* as the capability to form a conception of the good life, a life one has reason to value and is worthy of human dignity. In *affiliation,* Nussbaum (2011) draws attention to the imaginative capacities required to "live with and toward others,"

specifically the capacity to "imagine the situation of another" (p. 34). It is not surprising that *practical reason* and *affiliation* are so prominent in her discussion of the imaginative senses. Nusbaum (2011) denotes these two capabilities as *architectonic*, in that they "organize and pervade the others [capabilities]" (p. 39).

In working with my students and writing through my experience, I began to question the primacy of the goal of mathematical thinking in my original conception of Canoe Math. Of course, it was important, particularly in the context of a high school math class. But Nussbaum's notion of *practical reason* and *affiliation*, two capabilities which elided with elements of my original goals, as architectonic, reminded me of Vaughan's (2007) distinction between the capability to participate in education and the capabilities expanded through education. Nussbaum (2011) notes that when the other capabilities are "present in a form commensurate with human dignity, they [*practical reason* and *affiliation*] are woven into them" (p. 39). But the converse is also true: all other capabilities are contingent on a conception of the good life and the social bases of self-respect. In considering this, another element of Nussbaum's list began to resonate with me. In our work together in the shop, we would often discuss particular aspects of the canoe building process as a whole group before breaking away to work on specific tasks. Students would proffer strategies, weigh the costs and benefits of them, reflect on the work we had already completed and how it affected our path forward, usually reach a consensus on how to proceed. This took time, of course, but I noticed that these little dramas of deference and assertion, to paraphrase Sennett, became richer and more complex over the course of the semester, even as the novelty of the canoe itself wore off. In subsequent semesters of the course, we noticed the depth of these conversations

increase, even as we became more adept in canoe building as teachers. Our more knowledgeable and nuanced approach to the work did not stifle or make stale the conversation, which had concerned us; rather, through our own little dramas of deference and assertion, we it enriched the possibility for conversation with our students. It became clear that it was not so much an authentic task – building the canoe – motivating the students in their work, but an authentic opportunity to exercise their practical reason, to work with each other and us, what Nussbaum (2011) calls *control over one's environment* (p. 34). In writing through my experience, I also began to identify the ways in which our assessment practices evolved, and it was directly related to relinquishing some teacherly control over our students' environment. We began to see assessment less as a sequence of discrete instances and more as a fluid, recursive conversation. Sheppard (2003) notes that this is the type of assessment that is inextricable from pedagogy and instruction, a kind that "instantiate(s) what it means to know and learn" in a learning community and is not simply a means of accountability (p. 8). In hindsight, it is clear to me that I valued the capability of *control over one's environment* implicitly. The capabilities approach provided me the language and theoretical context to formulate it as I continued to develop my own list. It also provided a framework for reimagining my own assessment practices, from being a distinct entity in my teaching to imbuing all aspects of our working together.

Other Conceptions of the Capabilities Approach in Education

In this section, I highlight three additional capabilities accounts of teaching and learning, all of which influenced the development of my own account. Each takes a slightly different approach and arrives at a different conception. This points to both the

complex nature of teaching and learning and notions of political liberalism at the centre of the capabilities approach. Terzi (2007) focuses on the capability to be educated and crafts a list of basic capabilities required to participate meaningfully in the learning process. In her work, she devises an ideal list of capabilities "aimed at avoiding harm and disadvantage to the individual," but notes that her list "could be devised at a more empirical level, taking into account the specificity of a certain situation" (p. 35). Walker (2007) moves towards such specificity in developing her list of capabilities for gender equality in education. Although focused on a specific disadvantage, Walker's (2007) work lends itself well to thinking about marginalization in general. Finally, Wood and Deprez (2012) consider the capability approach in terms of curriculum and in broad comparison with other pedagogies influential in their own careers as educators. While they do not necessarily develop a complete list, they evaluate their educational obligations in light of four aspects of Nussbaum's (2011) list of central capabilities. Their process and results were significant influences as I developed my own list. Of course, this is not an exhaustive account of those working within a capabilities approach framework with respect to curriculum and pedagogy, but each has contributed significantly to my own practice and conception of a capabilities account in teaching and learning.

Terzi (2007) invokes Sen's notion of basic capability in devising her list (p. 28). In this sense, a basic capability is one which meets a basic need. Compare, for example, two capabilities: that to sustain nourishment and that to travel freely. One might argue that both are constitutive of a life worthy of dignity, but they differ with respect to the body's basic needs. An absence of the latter might result in inconvenience; an absence of the former in illness or death. Terzi (2007) characterizes the capability to be educated as

just such a basic requirement, one that begets further capabilities constitutive of a life worthy of human dignity. She writes that this basic capability to be educated seems "essential in order to avoid disadvantage to the individual" and "implies considerations about the design of social arrangements," which I argue not only includes political and institutional considerations, but curricular and pedagogical ones, too (Terzi, 2007, p. 30).

With an eye toward education specifically, Terzi (2007) captures some of the basic elements I had intended in my goal of developing mathematical thinking. She includes in her list *numeracy*, for example, in which she specifies the capabilities to "solve mathematical questions" and "use logical reasoning functionings" (Terzi, 2007, p. 37). She also includes *science and technology* in her list, an element of which consists in "being able to understand natural phenomena" (Terzi, 2007, p. 37). Both are aspects of what I intended, but in identifying those basic capabilities one requires to be educated, Terzi (2007) eschews robustness for a thinner description. In her specific context, this is a defendable position. In comparing her criteria for *practical reason*, for example, with Nussbaum's, she writes that the latter's is a "substantial notion, whose promotion through education would entail complex and high levels of capabilities" (Terzi, 2007, p. 39). She opts instead to select only the "basic constituents of education" in order to "comply more with the task, while still retaining its crucial importance for enhancing freedom" (Terzi, 2007, p. 39). In Terzi's context, this is a justifiable position. Clearly certain groups who are marginalized based on gender, class, or race need to be equipped with some basic capabilities to participate in education. But this interpretation is restrictive in my context. Indeed, some basic elements of numeracy, literacy, and practical reason – the capability to meaningfully relate means and ends, for example – are necessary conditions for being

able to participate in the education process, but those capabilities should also be expanded through education, and their criteria should reflect of the complexity of the individuals developing them. The marginalized adolescents and young adults that I work with have been granted access to education, but have not been given the right opportunities for imaginative and critical thought about how their educational experience might translate into a meaningful life.

I think Terzi (2007) partially captures this by including *learning dispositions* in her list (p. 37). This, she writes, includes "being able to concentrate, to pursue interests, to accomplish tasks, to enquire," but I argue it also includes the way an individual might approach a problem, situation, or person, and in that sense it connects directly to both mathematical thinking and the imaginative capacities (Terzi, 2007, p. 37). Shepard (2000) talks of the way expertise "develops in a field of study as a principled and coherent way of thinking and representing problems, not just an accumulation of information," and it was exactly this disposition of expertise I wanted my students to develop, not just in mathematics, but in working and living together (p. 6).

I appreciated the way in which Terzi (2007) focused on the capability to be educated so as to avoid disadvantaging the individual, despite the thinness of some of her criteria. As Walker and Unterhalter (2007) note, the "process of identifying educational capabilities appears to entail some form of participatory and inclusive dialogue," and interpreting Terzi (2007) in this light and against my own experience enabled me to further specify my own list of capabilities (p. 15). As noted above, Walker (2007) heightens the specificity of her capabilities account, focusing on gender equality in education. In approaching Walker (2007), I had already considerably revised my own

list. Broadly, I had shifted away from coercing specific functionings to providing opportunities for the expansion of capabilities. More specifically, I had begun to incorporate notions of moral imagination, emotional and psychological well-being, and hope into my objectives for math class. What this looked like in practice depended entirely on individual circumstance. I recall one conversation, in particular, that began to change my thinking around what we were doing in our Canoe Math class. It was with a girl named Deborah, a long-time student at our school. Deborah had not found success in traditional high school – she had been to two others before joining ours. Her time in our class marked her fourth attempt at completing her grade eleven math requirement. Our conversation turned to this fact and I began to probe her as to why she was not only sticking it out in our class, but finding success in math, too. At this point, although it was the second iteration of the class, I was still enamored with the idea of the canoe.

"Oh, I don't really care about the canoe," she said. "It's cool, I guess, but I don't really like canoeing."

Another student, sanding some planks before stitching them together, was listening in.

"Yeah, I don't really like canoes either."

"Well, why would you do this?" I asked. I was incredulous. These two students, in particular, had put a lot of extra work into the canoe build. It would have been far easier to take our more traditional class-based offering.

"I don't know," Deborah shrugged. "I just like arguing about it."

Walker (2007) gives some language to what I was learning in this conversation, and to many of the implicit intentions I had in my practice. I realized I had not fully attended to what my students valued in the class. I had chosen my objectives for the class

prior to ever working with my students, and in interpreting them through the capabilities approach, I had neglected to provide an opportunity for dialogue and participation in identifying the capabilities my students had reason to value. Biggeri and Libanora (2011) write that the "participation of stakeholders [in generating a list of valued capabilities] is essential to the process and implies the reflection of subjects about their own condition, opportunities and constraints in their cultural, social, economical and political environments" (p. 80). Walker's (2007) inclusion of voice in her list, which she characterizes as the "capacity to debate, contest, inquire, and participate critically," with the potential to "find expression in confident participation in learning and in dispositions to learn," compelled me to make hermeneutic pedagogy explicit in my capabilities account of teaching and learning (p. 184). It was just what Deborah had been saying. Yes, the canoe was a novelty, but the enduring allure was this opportunity to realize her capability of voice. As a mathematics teacher, I was struck. Teaching mathematics is a field, as Brent Davis might say, that is hard of hearing.

> Notions of harmony and attunement have been pushed into the realms of the quaint and the romantic in a quest for monotonic truth. In terms of mathematics teaching, a principle consequence of this loss of hearing is that learners – those we are to teach – have been reduced to silence; they are objects to be *seen and not heard*. (Davis, 1996, p. xxiii, italics in original)

I argue that this silencing extends well beyond the mathematics classroom and pervades many aspects of adolescent life, a condition only compounded by marginalization and disadvantage. A hermeneutic pedagogy furnishes the space for voice.

Chapter 5: Elements of a Hermeneutic Experience

I saw eternity the other night,
Like a great ring of pure and endless light,
All calm, as it was bright;
And round beneath it, Time in hours, days, years,
Driv'n by the spheres
Like a vast shadow moved; in which the world
And all her train were hurl'd.

--Henry Vaughan, "The World"

Gadamer (1989) captures the import of hermeneutics succinctly: "it is enough to say we understand a *different way, if we understand at all*" (p. 296, italics in original). Certainly, this complicates a conventional notion of understanding. In this section, I hope to draw out several important aspects of the hermeneutic experience in order to build them into a capabilities account of teaching and learning. Putting these elements into high relief is best done by exploring the play between two distinct but related conceptualizations of interpretation in hermeneutics. In the most colloquial sense, hermeneutics is the art and practice of interpretation. In this respect, we can see manifestations of hermeneutics in the everyday practice of many artists and professionals. Consider the role of a courtroom judge, who must apply an interpretation of the law to a specific case. Taken as the practice of interpretation, clearly hermeneutics has a long, varied, and venerated history, arguably including the exegetic work of theologians, the allegoric interpretation of myth and literature, and the legal and moral philosophy of Greek antiquity. All of these instances attend to the most human of impulses and experiences – justice, story, goodness – but with the rise of the Enlightenment and the positivist tradition came the push to make the interpretation of such human experiences more akin to that found in the natural sciences. In the nineteenth century, Schleiermacher

sought to formalize hermeneutics as method. Influenced by the German philologist Friedrich Ast, Schleiermacher characterized hermeneutic interpretation as a dialectic between part and whole, interpreter and author, subject and object.

In another sense, developed by Heidegger and Gadamer, among others, hermeneutics is the study of the conditions under which all interpretation takes place. In this sense, hermeneutic interpretation is ontological in nature. It is not a method to be applied at will, but an inescapable aspect of existence, and the rightness of an interpretation demands of the interpreter a particular awareness of what factors condition understanding. For Heidegger, we are already always interpreting. His concept of existence (*dasein* – literally, "being there") and its concomitant notion of thrownness (*Geworfenheit*) suggest the arbitrary and ineluctable conditions of understanding. Dasein, or being-there, does not simply mean to be; rather, it is a particular way of being in the world, one in which we find ourselves already in the throes of interpretation. We do not live in our bodies, but through them; language does not contain meaning, but discloses it. In this sense, as Gadamer writes, all "understanding is self-understanding," and that it is "true in every case that a person who understands, understands himself (*sich versteht*), projecting himself upon his possibilities" (Gadamer, 1989, p. 251). In his book *The Master and his Emissary* (2009), the psychiatrist Ian McGilchrist puts it yet another way. "For us to be able to understand anything," he writes, "we have already to be in possession of enough understanding of it to be able to approach it, and (…) understand it in some sense before we can 'understand' it" (McGilchrist, 2009, p. 155, quotations in original).

In this chapter, I want to show that each of the conceptions discussed above offers something important to thinking about the theoretical role of hermeneutics in my capabilities account of teaching and learning. The methodological approach of Schleiermacher, which I refer to herein as Romantic or traditional hermeneutics, fails to provide, for example, the same rigour in the humanities as is found in the natural sciences, but many aspects of its approach to interpretation – reasoning between part to whole, the emphasis on empathy in understanding – seem like natural features of what we might call *critical thinking* in modern educational parlance and are certainly fundamental to any sound attempt at understanding one another. But interpretation is more than the application of method; in this, hermeneutics offers us insight into the very nature of understanding itself, the being of being. This is the ontological approach of Heidegger, Gadamer, and others, which I refer to herein as philosophical hermeneutics. As McGilchrist notes, we must understand in order to understand – that is, we must attend to the nature of understanding itself. Below, I begin in discussing the point at which understanding takes place and some of the aspects of what sort of disposition is required to understand. This leads into a discussion of some of the key features of hermeneutic inquiry, including the notion of a hermeneutic circle, Heidegger's fore-structure of understanding and the fusion of horizons, and Gadamer's notion of historically-effected consciousness.

Cracking the Case (The Address of the Topic)

When in need of both relaxation and inspiration, I turn to whom I think is fiction's great hermeneut: George Simenon's Chief Inspector Maigret. The protagonist in Simenon's slim novels of detection bears little resemblance to others in the genre, say

Conan Doyle's Sherlock Holmes or Chandler's Philip Marlowe. Surely, they share a certain mise-en-scene: the streets are gritty, knifed with shadow, full of sideway glances and hushed talk. It matters little whether the puddles they splash through as they walk their beats are in Paris or London or Los Angeles. But Maigret is different. "I don't go in for deductions," Maigret barks at an underling in *The Yellow Dog*, as if taking a shot at his esteemed colleague across fictional space and time (p. 69). When a counterpart questions his method in *Maigret*, the Chief Inspector asks what he means. "You know better than I do," the man replies. "Usually you get involved in people's lives; you try to understand their thinking and you take as much interest in things that happened to them twenty years earlier as you do in concrete clues" (p. 103). Rather than abstract experience into formal logic, like Holmes might have done, or punch and stumble his way through high society's seedy underbelly, as Marlowe was wont to do, Maigret, as a superior notes in *Maigret and the Toy Village*, "settles into a case as if it were a pair of comfortable old slippers" (p. 22).

Moules et. al. (2015) invoke the insufficiency of the "Raymond Chandler method" of inquiry (p. 62). "Hermeneutic practice," they note, "is a lot like detective work in that one proceeds on the basis of attuned perception, concrete discovery, and the imagining (…) of possible meanings and courses of action" (Moules, 2015, p. 62). We typically associate interpretation – or, in the profession's parlance, cracking the case – with the accumulation and analysis of data, or clues, but this sort of concrete discovery is only part of a complex process. Maigret's colleagues mistook his attuned perception, his interest in the particular, as a lack of method. Heidegger, as Moules et. al. (2015) note, suggested that when "something addresses us in the particular, it does so as a case of something that

is already significant" (p. 63). Moules et. al. (2015) is careful to distance the term *case* from its typical sense: it is not a body of hard facts to be acted upon, but rather "something that has befallen one" (p. 63). Caputo writes that the word *case* is derived from "cadere, casum, to fall, as in a casualty, for which we buy insurance" (cited in Moules, 2015, p. x). But in hermeneutics, and arguably for my friend Maigret, the case is not merely a particular instance of some universal. For teachers as for detectives, it is the individual that is of most importance; universals are simply abstractions. We do not presume to crack a case – it cracks us! As Caputo argues, a case does not fall in one's lap, rather one rises to the case: "We have everything we can do to rise to the occasion of the individual, to ascend to the thick, dense, rich, complexity of the individual situation, instead of lolling lazily amidst the thin transparencies of universals" (cited in Moules, 2015, p. x).

A Relationship Between Part and Whole

Hermeneutics consists in tension. Of central importance in any hermeneutic account is an element of recursion, which has invoked metaphors of a circle or spiral of understanding. But it is also true that hermeneutics is concerned with the conditions under which understanding takes place. Between these conceptions is a productive tension. In the Romantic hermeneutics of Scheiermacher and Dilthey, the hermeneutic circle is a recursive process of interpretation between the parts and whole of a text. As Gallagher (1992) notes, the "meaning of the part is only understood within the context of the whole; but the whole is never given unless through an understanding of the parts" (p. 59). Gallagher's choice of verb, *given*, is suggestive of the kind of understanding one deals with through hermeneutic inquiry. We should compare this to Heidegger's use of

the term *disclosure*, which I discuss in greater detail below, and its characterization of the way the whole is given in light of the parts: the whole is given in parts, some concealed, some unconcealed. But we must put the concept of the *whole* into context.

Consider biblical hermeneutics, in which the whole is given completely, as in the case of scripture, to be interpreted and reinterpreted in light of its parts. In this sense, it seems logical to recursively reevaluate the text's *gestalt*. But suppose the object of interpretation is not a self-contained book, but another person's struggle with chronic pain, for example, in which we must endeavor to understand through other means, such as dialogue. If we more robustly define what qualifies as a text, we find that the whole cannot always or ever be given. Gadamer identifies the circularity at work in this argument: how can we recur between part and whole if the whole is not given? But Schleiermacher, as Gadamer notes, acknowledged this as a "relative limitation," and writes that the circle formed in recurring between part and whole is "constantly expanding, since the concept of the whole is relative, and being integrated in ever larger contexts always affects the understanding of the individual part" (Gadamer, 1989, p. 189). I suggest that this part/whole relationship is crucial to a hermeneutic account of the capabilities approach, but it is insufficient for understanding. Simply, I argue that it does not fully reflect the complexity of the object of interpretation or the process of interpretation itself. In the case of a capabilities approach, this would occur in understanding an individual's capability set. To investigate the conditions necessary for an interpretation that allows for complexity, it is worth considering how Heidegger and Gadamer altered the metaphor of the hermeneutic circle to reflect their conception of the structure of understanding.

In traditional or Romantic hermeneutics, the whole of a text could be known – that is, the hermeneutic circle could be closed. But, as we see in the brief discussion of Schleiermacher, above, it is clear that there are various characterizations of that closure. It did not necessarily mean closure in the sense of a judge declaring a case closed with the finality of a gavel's thud. Gallagher (1992) compares, for example, the Enlightenment hermeneutics of the German philosopher and theologian Chladenius to the Romantic hermeneutics of Schleiermacher and Dilthey. Scheiermachher seems to make his motivations clear: "The task [understanding] is to be formulated as follows: 'To understand the text at first as well as and then even better than its author'" (Schleiermacher, cited in West, 1979, p. 73). In this we clearly hear the echo of Chladenius, who saw closure as a process of "properly grasping the intention of the author and learning 'the concepts and lessons which can and should be extrapolated'" (Gallagher, 1992, p. 65 – 66). West (1979) also points to Schleiermacher's implicit assumption of a "fundamental identity between interpreter and author," such that the interpreter grasps the fixed meaning of a text and effectively closes the circle of understanding, functioning merely as a switch does in closing a circuit (p. 73). In Schleiermacher and Dilthey, the "author's subjective intentions or subjective uses of language" are to be settled through interpretation (Gallagher, 1992, p. 60).

But in both Scheiermacher and Dilthey is an ambiguity not present in the hermeneutics of Chladenius. Gallagher (1992) notes that Enlightenment hermeneutics bears great resemblance to the methods of the natural sciences in its "almost mechanical explication of concepts, the elimination of contradictions, and a calculus of viewpoints" (p.67). Scheiermacher, he writes, knew that "not only do we never understand an

individual view (*Anschauung*) exhaustively, but what we do understand is always subject to correction" (Schleiermacher, cited in Gallagher, 1992, p. 66). Dilthey, too, acknowledged differences in the kinds of understanding one can have in the natural sciences and humanities: in the former, one can find objectivity through *logos*, but understanding in the latter requires empathy. Gadamer (1984) suggests that this is a defining aspect of Romantic hermeneutics, one which persists in his own philosophical hermeneutics as the idea that the beginning of interpretation consists in the notion that the other person might be right (Moules, 2002, p. 11). "Hermeneutics," he writes, is an "attempt to overcome this distance in areas where empathy [is] hard and agreement not easily reached" (Gadamer, 1984, p. 315).

There is an empathic leap latent in Schleiermacher's hermeneutics, which he decomposes into types, the grammatical and the psychological (West, 1979, p. 73). Investigating how Schleiermacher sought to close the distance between interpreter and text can tell us something about the concept of understanding in philosophical hermeneutics. Schleiermacher employed these different types and procedures of interpretation concurrently in order to yield a whole in light of the parts. In the grammatical interpretation, the interpreter seeks to reconstruct the milieu of the author, to understand how language was used between author and audience. For Schleiermacher, this was a necessary but insufficient condition for understanding. To obtain complete understanding – that is, to close the hermeneutic circle – one needed to subsume oneself with the author, to make an empathic leap. This was achieved by employing a psychological interpretation, which allowed the "interpreter to participate in the creative process initiated by the author" (West, 1979, p. 73). Schleiermacher decomposed this into

two distinct types of interpretation, the technical and the psychological proper; the latter was further decomposed into two procedures, the comparative and the divinatory. In the technical interpretation, the interpreter sought to extend the grammatical interpretation: having grasped the context in which the text was produced, the interpreter now tries to glean why the author made the decisions she did – why this particular word and not that one. As noted above, this was a recursive process, reasoning between part and whole, and between interpretations. But in order to not simply study the text, but participate in the creative process, Schleiermacher harnessed the "fundamental identity and commonality between interpreter and author" (West, 1979, p. 73) in order to "transform himself (…) into the author" (Schleiermacher, cited in West, 1979, p. 73).

It is here we can appreciate an almost mystic quality in Schleiermacher's hermeneutics. Gadamer writes that the psychological interpretation was "ultimately a divinatory process, a placing of oneself within the whole framework of the author, an apprehension of the 'inner origin' of the composition of the work, a re-creation of the creative act" (Gadamer, 1989, p. 186, quotations in original). Schleiermacher saw the psychological interpretation as both a necessary and sufficient condition for complete understanding, for closing the hermeneutic circle. But he also acknowledged that understanding was always both contingent and provisional. It was contingent because in understanding one another, we are not given parts in light of the whole – we are not open books. Rather, the whole is presented to us in fragments, shadows. It is provisional because Schleiermacher discussed complete understanding in the context of a limit: the moment at which "all the individual elements at last suddenly seem to receive full illumination" (Schleiermacher, quoted in Gadamer, 1989, p. 190). Gadamer suggests that

we do not interpret this as a naturalistic process in which we accumulate an object of understanding on which we can all agree, but rather in the sense of completing a work of art. In this sense, interpretation reveals a barrier to understanding that must be overcome not by scientific method, but "by feeling, by an immediate, sympathetic, and con-genial understanding" (Gadamer, 1989, p. 190). If, as Gadamer writes, "we are no longer convinced and sure that there is an identity between the subjective approach and the fact," as in Schleiermacher, then this notion of the potential *rightness* of the other is surely his legacy in philosophical hermeneutics (Gadamer, 1984, p. 316). This is the element of Schleiermacher's thinking that we can find in Gadamer's philosophical hermeneutics. It is this idea of empathy – of congeniality and conviviality – that I bring forward into and seek to feature prominently in a capabilities account of teaching and learning.

The Ontological Turn

Another conception of the hermeneutic circle arises from the phenomenological perspectives of Husserl and Heidegger. In the phenomenological tradition, subjectivity is not something to be resolved through interpretation, but rather an inherent and integral aspect of understanding. In acknowledging the indispensability of the subjective in understanding, Husserl evokes another metaphor of understanding: a horizon (Gadamer, 1989, p. 237). In the Romantic hermeneutic circle, interpretation is a process of recursion between parts and whole oriented around a fixed meaning. In the phenomenological circle, Husserl suggests an aspect of understanding that is both mutable and contingent, that "everything comes to be known within a context and never in isolation" (Gallagher, 1992, p. 60). Gadamer notes that in Husserl's phenomenology, subjectivity itself becomes a phenomenon, which "can be explored in its various modes of givenness" (Gallagher,

1992, p. 60). The experiences that result from the interpretation of the "givenness of intentional experience" have "implicit horizons of before and after," which fuse to "form a unified flow of experience" (Gallagher, 1992, p. 60).

Here we have an interesting metaphor: the horizon. The notion of a horizon clearly resonated with Heidegger, who continued to shift the locus of interpretation away from the part/whole relationship and what Gadamer might have called the "arbitrary fancies" of the interpreter (Gadamer, 1989, p. 269). Heidegger was not so much interested in the method of understanding as with the ontological nature of understanding itself. If Schleiermacher's first task of understanding was to know a text better than its author, then Heidegger's

> first, last, and constant task in interpreting is never to allow our fore-having , fore-sight, and fore-conception to be presented to us by fancies and popular conceptions, but rather to make the scientific theme secure by working out these fore-structures in terms of the things themselves (Heidegger, cited in Gadamer, 1989, p. 269)

What Heidegger means here is that any attempt at interpretation demands a projection of the interpreter, and this projection must be accounted for. Gadamer (1989) notes that Heidegger gave the "general hermeneutical problem a concrete form in the question of being" (p. 272). It is here a horizon metaphor proves fruitful: imagine a sunrise in which the darkness of land is slowly bathed in the pale light of dawn. These two horizons touch in a way that is knowable but ephemeral. No sooner have you marked the edge of darkness on the horizon has light permeated it. It is this movement that confers such depth to the horizon metaphor: understanding is not fixed and stable, but protean. Interpretation is the chiaroscuro at play between land and light.

The interpreter's projection is laden with fore-havings, or as Gamader writes, the "constant distractions that originate in the interpreter himself" (Gadamer, 1989, p. 269). These fore-projections contain the assumptions and traditions of the interpreter, what Gadamer approbatively denotes as prejudices, and it is the first, last, and constant task of the interpreter to "keep one's gaze fixed on the thing" of interpretation (Gadamer, 1989, p. 269). The part-whole relationship is intact here but has moved beyond the text itself to include the subjectivity of the interpreter. The interpreter must constantly revise her fore-havings as new meanings emerge. This process is not methodological, but ontological in nature, and this "constant process of new projection constitutes the movement of understanding and interpretation" (Gadamer, 1989, p. 269).

A Vast Shadow Moved

In discussing the notion of the horizon, Gadamer touches on something elemental in the capabilities approach and its distinction between a functioning and a capability. Our historical condition, what Gadamer calls our historically effected consciousness, invokes this notion that we open up onto history as it opens up within us. These historical conditions determine "in advance both what seems to us worth inquiring about and what will appear as an object of investigation" (Gadamer, 1989, p. 300). In understanding, we must not only attend to what is presented to us, but, perhaps more importantly, what is not presented to us, lest we "more or less forget half of what is really there" (Gadamer, 1989, p. 300). This suggests a tension between what is shown and not shown, and the task of hermeneutics is to cleave to this tension, as if feeling our way along a wall in a dark room. In the context of a capabilities approach in teaching and learning, we are presented with functionings, the beings and doings of life, but we only glimpse in what is shown

what is not shown, namely the underlying capability. In this section, I discuss the concept of the fusion of horizons and Heidegger's characterization of truth (*alethia*) as unhiddenness. I suggest these as integral pieces of a capabilities approach to teaching and learning.

As Heidegger says, we are thrown into the world. That is, we are immediately and ineluctably concerned: with the past, the present, the being of being, and, as Gadamer notes, the future possibilities of being (Gadamer, 1989, p. 252). This characterizes the situation in which we are already and always interpreting, and in so doing, we project ourselves onto the object of interpretation. Gadamer characterizes the situation in which we find ourselves thrown as a "standpoint that limits the possibility of vision," and that what we can see from this standpoint constitutes a horizon. We hear echoes of this in the cliché "to broaden one's horizons," as in to enrich oneself through experience.

But the hermeneutic situation is not simply a trip to Paris. It demands of the interpreter an openness to "acquiring the right horizon of inquiry" (Gadamer, 1989, p. 302) and in so doing we must train ourselves to "look beyond what is close at hand – not in order to look away from it but to see it better" (Gadamer, 1989, p. 304). Gadamer's discussion of Heidegger's fore-structure of understanding outlines how one might acquire this horizon. The interpreter's fore-having, fore-sight, and fore-conception constitute her fore-structure of understanding (Gadamer, 1989, p. 272). As noted above, the interpreter is thrown, and as such she is already and always concerned. In her immediate concern she brings with her some prejudice, the ongoing process of tradition as it affects her and she it. Fore-having is Heidegger's term for what is understood in the immediate context of tradition, what we bring immediately to the object of interpretation. Hence thrown, we

approach the object of interpretation in a particular way, from a particular line of sight, a particular limitation of vision. In this Heidegger means we have fore-sight of the object. Our fore-conception uses these anticipations to bring the object of interpretation ready-to-hand, to frame it "within the understanding of tradition and so [put] it (…) at risk" (Gadamer, 1989, p. 272).

It is worth revisiting the Romantic conception of the hermeneutic circle, discussed above, if only to fully appreciate Heidegger's reorientation of the hermeneutic problem from the object of understanding to understanding itself. Schleiermacher, for example, conceptualized the circle as a process by which we recur continuously between part and whole, each part casting the whole in a "dim morning light":

> It is like starting all over, except that as we push ahead the new material illumines everything we have already treated, until suddenly at the end every part is clear and the whole work is visible in sharp and definite contours. (Schleiermacher, quoted in Gallagher, 1992, p. 59).

Gadamer contrasts this with Heidegger's reorienting of the circle around the fore-structure of understanding, writing that the "understanding of the text remains permanently determined by the anticipatory movement of fore-understanding" (Gadamer, 1989, p.293). The hermeneutic circle, then, can never be closed, since the interpreter is always simultaneously interpreting and being interpreted. We can see here that the hermeneutic circle is less a metaphor for the methodical recursion between part and whole, but "describes an element of the ontological structure of understanding" (Gadamer, 1989, p. 294).

This ontological description of the hermeneutic circle means that we are no longer simply on the outside looking in, resolving the subjectivity of the author of a text, as in Schleiermacher, but are also elements of the circle itself. Understanding, then, consists in

the "interplay of the movement of tradition and the movement of the interpreter," and thus our horizons are in a state of constant movement. The hermeneutical situation demands on us to see beyond a "horizon of a particular present," to "project a historical horizon that is different from the horizon of the present" (Gadamer, 1989, p. 305). This process embodies the first, last, and constant task of interpretation, and is what Gadamer means by a fusing of horizons as we interpret a text: no sooner have we projected a particular horizon than another has emerged from within to replace it. Through this practice we achieve what Gadamer calls an historically effected consciousness, and it is in this that we can come to understand. Understanding is not based on some "mysterious communion of souls," as in Schleiermacher, but an openness to the sharing of a common truth (Gadamer, 1989, p. 292).

But which truth? The ancient Greeks' notion of truth suggests that we can find it through avoiding misunderstanding. This suggests that we can reveal a stable truth (in Greek, *alethia*) through a careful peeling of obfuscating layers of misinterpretation. Heidegger, as Gadamer notes, characterized *aletheia* as unhiddenness, but not in the sense that truth could be unshrouded to reveal some stable meaning (Gadamer, 1977, p. 224). Rather, Heidegger suggested that unhiddenness is ontological in nature, an aspect of being, and that its hiddenness is not to be resolved through scientific observation, but rather is an essential facet of interpretation itself (Gadamer, 1977, p. 225). In describing the ways in which this process of concealment and unconcealment is an aspect of being, Gadamer suggests that truth is "not only the emergence into light but just as much the hiding of itself in the dark. It is not only the unfolding of the blossom in the sun, but just as much its rooting of itself in the depths of the earth" (Gadamer, 1977, p. 225). For

Gadamer and Heidegger, truth is not simply a stable underlying meaning, but is a product of the "tension between the emergence and hiddenness that constitute" the object of interpretation (Gadamer, 1977, p. 226). Truth in this sense is akin to possibility, the "undetermined but determinable horizon of … experiential actuality at [a] particular time" (Husserl, quoted in Caputo, 1987, p.44).

It is in this way that capability is *alethic*. In the context of a functioning, something is disclosed, but both hermeneutics and a capabilities approach insist that we value and understand the undisclosed capability, the set of possible realizations of freedom underlying each action. To do so, we must adopt a standpoint from which to achieve the best horizonal view and an openness to movement, to the projection of a new horizon each time a vast shadow is moved.

The Hermeneutic Experience

A first principal of hermeneutic inquiry is that "understanding begins…when something addresses us" (Gadamer, 1989, p. 333). Not all topics address in such a way as to make good hermeneutic research questions, and it is, of course, possible that a good research question does not address a topic hermeneutically. But Moules (2015) echoes Gadamer in suggesting that hermeneutic inquiry can only begin "around the experience of being addressed personally about something at work in one's life" (p.1). It involves being struck, not by the solution to a puzzle or the answer to a question, but by a question itself, a question that exposes one's prejudices to put them at risk. Gadamer (1989) writes that this brings our prejudice "into play" (p. 299), and only in doing so can we uncover it to the "ring of horizons which provides it with an inherently contextual meaning" (Caputo, 1987, p. 40). This struckness can come about all at once as a revelation or, as it

was in my case of working with my Canoe Math students, which I discuss in a subsequent section, "it may have lingered for years and nagged in maybe not quite noticeable ways" (Moules, 2015, p. 2). The address does not ask that "we speak or do something immediately, but rather that we stop and listen" (Moules, 2015, p. 1). I offer the elements of the hermeneutic experience discussed above – being addressed by a topic, the hermeneutic circle as both a process of methodical recursion between part and whole and an ontological description of understanding, the empathic leap at play in both Romantic and philosophical hermeneutics, the notion of a fusing of horizons, and the idea of truth as process of concealment and unconcealment – as integral elements of a capabilities account of teaching and learning. A capabilities account is necessarily concerned not only with what an individual can do, but with what an individual is able to do. An individual's capabilities necessarily withholds itself in order to be perceived at all. In this sense, understanding capability is alethic in character. In drawing on a hermeneutic foundation, we can hope to bring forth the connections between the actual (functioning) and the potential (capability). Nussbaum's characterization of capabilities as spheres of freedom echoes Kierkegaard, who writes that in the "sphere of freedom … possibility remains and actuality emerges as a transcendence" (Kierkegaard, quoted in Caputo, 1987, p. 16). It is this inversion of the particular and the universal at the centre of both hermeneutics and a capabilities approach: it is the individual's concatenations of experience, to paraphrase Caputo (1987), that concern us (p. 44).

Hermeneutic Pedagogy in a Capabilities Account of Teaching and Learning

> *The hermeneutic imagination works from a commitment to the generativity and rejuvenation and to the question of how we can go on together in the midst of constraints and difficulties that constantly threaten to foreclose on the future. The aim of interpretation, it could be said, is not just another interpretation but human freedom, which finds its light, identity and dignity in those few brief moments when one's lived burdens can be shown to have their source in too limited a view of things.*
>
> David Smith (1991)

A capabilities approach is inherently concerned with an individual's agency, and Smith's (1991) quote elegantly captures a significant connection between it and the interpretive tradition. I began working with my Canoe Math students with the goal of having them work productively together to learn mathematics, and in many cases, we were successful in meeting this goal. But throughout each semester, and increasingly with each iteration of the program, I feel I lost sight of what was important, what had compelled me in the first place. I worked diligently to listen to my students, to hear them, to interpret what I heard in curricular and pedagogical contexts, but I became distracted by institutional constraints, often in the form of questions around accountability of student learning, and practical considerations, such as making sure we finished the canoes on time. I forgot what I was listening for. I forgot that the goal of interpretation is human freedom. I needed to evoke my friend Maigret. I found the pendulum of my own teaching practice swinging frequently between the two extremes of reductive abstraction and a kind of teacherly punch-and-stumble, as if specters of Holmes and Marlowe had alighted on my shoulders. In the same lesson, I might as easily deduce ideas about a student's ability from a test score as I induce them from a conversation in which I am forced to rely mostly on intuition. In fact, at some points in my career I have been proud of my ability

to punch and stumble, to trust my gut: it might not have been pretty, but I got the job done. But the same questions always confronted me in the end: What did we accomplish? What job have we done? Have we come to an understanding? In working with my Canoe Math students, the point was to stop the pendulum, to remain vigilant of both extremes. I had gone so far as to structure the course in order to remove the familiar concatenation of teach and test. But I was failing. Through this narrative process, I have realized that despite my best intentions, in many cases I simply was not listening.

I was struck by an experience I had recently of observing a student teacher, an experience that might help convey why hermeneutic pedagogy is so essential to my own capabilities account of teaching and learning. This took place in a grade-three classroom during the student teacher's first practicum in the Education program at the University of Lethbridge. His lesson was simple but engaging: they were to brainstorm as a class the general characteristics of rocks, then work through stations characterizing specific pieces. In the first part of the lesson, students raised their hands to suggest the general characteristics of rocks, and the student teacher would write them on the whiteboard.

"Hard," a little girl called out after raising her hand.

"Yes, rocks are definitely hard," the student teacher agreed, writing the word "hard" on the whiteboard.

"Rough," suggested a boy, to which the student teacher again agreed, writing the word "rough" on the whiteboard. All was going as planned.

In our conference prior to the lesson, the student teacher had mentioned one boy in particular. He had taken out every book in the library on rocks and minerals; he spent his recesses "mining" in the schoolyard; he insisted his father take him out looking for

rocks on the weekends. He was obsessed with rocks, and the student teacher was excited to present her lesson to this boy. Consequently, I watched this boy throughout the lesson, and as students continued to suggest adjectives – round, sharp, grey, and so forth – this student looked increasingly pensive. Finally, he put his hand up, and the student teacher smiled broadly when he addressed the child.

"Mysterious," said the boy.

There was a slight pause and the student teacher furrowed his brow.

"Well, I don't know," said the student teacher. "I don't know if rocks are mysterious."

To which the boy relayed a story of finding a rock with his father. The rock they found, said the boy, was hard, rough, and grey, but when his dad hit the rock with a hammer, it was filled with crystals.

"It was mysterious," he said.

The student teacher was intransigent. "Mysterious" would not end up on the whiteboard.

"That is really interesting, that must have been pretty neat," said the student teacher, "but is mystery a characteristic of a rock?"

The boy scrunched his face up.

"Like, when I say 'mysterious'," the student teacher continued, "does it make you think of a rock?" Yes, I screamed from within. The boy said nothing.

"Are there any other ways we could describe a rock?" the student teacher said as he turned to the other students.

Something of the story above gnawed at me. It was not simply pedagogical. Rather, I felt I had watched a scene unfold in which two impulses wrestled and wrangled

for dominance. Gadamer (1989) writes that the principles of both Romanticism and the Enlightenment secure their validity through "the presupposition of the progressive retreat of magic in the world," and in a sense I felt I had watched it recede before my very eyes (p. 275). My own impulse was to lament the lost opportunity to sustain a young child's curiosity, but when I reflected on the lesson, I did not feel comfortable with the obvious alternative – writing mysterious on the board and moving on – either. At some point, I realized it was not these two impulses, but rather the ontological vacuum in which they consisted that required my attention. This manifested itself in the student teacher attempting to strip away the boy's experience from the characteristics of a rock. The student teacher discounted "mysterious" as a characteristic of a rock because it did not fit into a methodical basis for characterizing one, namely the senses. Rocks are rough or smooth to the touch, can be shiny or grey, feel light or heavy – but with which sense can I determine a rock to be mysterious? For the student teacher, the "absence of such a basis [did] not mean that there might be other kinds of certainty, but rather that the judgment [had] no foundation in the things themselves" (Gadamer, 1989, p. 273).

An aspect emerged as I wrote through the experience: what I lamented was the lost opportunity for conversation, one in which each member is subsumed and led by the topic. What might the topic have been in this case? It was clear the impulse of the student teacher would have been to move the student from unknown to known, from mysterious to hard, heavy, and grey. A dichotomy of subject and object and the ostensible assurance of method are two defining characteristics of rationalism and the Enlightenment. In its drive for objectivity, Gadamer (1989) argues that one prejudice "defines its essence: the fundamental prejudice (…) is against prejudice itself" (p. 273). It was this impulse that

made the student teacher reluctant to accept mysterious as an answer, but with some justification, too. In discussing Romanticism's rebuttal to the enlightenment, Gadamer (1989) writes that notions of objectivity were supplanted by the "world of myth, unreflective life, not yet analyzed away by consciousness" and that Romanticism conferred on these a "romantic magic, even a priority over truth" (Gadamer, 1989, p. 275). In doing so, Romanticism situated itself in opposition to the Enlightenment, perpetuating "the abstract contrast between myth and reason" (Gadamer, 1989, p. 275). It would do the child an injustice to simply accept "mysterious" as an answer. Rather, it demands a conversation – but which one?

Wood and Deprez (2012) note that the answer is complex, a complexity which is acknowledged and honoured in both hermeneutics and a capabilities approach, but not always in the practicalities of education. "Particular students, from particular backgrounds, living particular lives," they write, "become the major focus, making it far less supportable to excuse away any student's disengagement and/or failure" (Wood and Deprez, 2012, p. 476). A hermeneutic pedagogy allows one to gain a different understanding of what each individual student requires. This goes beyond curricular expertise out of which the expert teacher is able to make reasoned judgments regarding resource allocation at a *meso* level, the level of the classroom. In my own practice, I made exactly this sort of judgment in designing my Canoe Math program. But despite being an authentic and interesting medium in which to engage in mathematics, it was still not enough at the micro level, the level of an individual student. To make judgements there, I needed a more granular understanding, to actually listen to my students. A hermeneutic disposition was the most appropriate means. It allowed me to focus especially on how my

students crafted capabilities from the resources I offered and provided insight into the relationship between their demonstrated functionings and the underlying sets of capabilities. As Robeyns (2017) notes, "we need to analyse the full picture of their [individuals] resources, and the various conversion factors, or else analyse the functionings and capabilities directly" (p. 47). Doing so, she writes, gives us insight into where and when we can intervene to expand an individual's set of capabilities.

In philosophical hermeneutics, which orients my capabilities account ontologically, the full picture is never shown. The alethic nature of understanding in hermeneutics – that in disclosing something, something is undisclosed – is reflected in the complex relationship between functionings and capabilities. As educators, concerned not only with the child's immediate well-being, but with their potential for well-being and agency in the future, we must require certain functionings and evaluate them. But capabilities are pluripotent: a particular functioning discloses only something about the underlying capability, not everything. Ricoeur writes of this connection between action and potential:

> We could say that a meaningful action is an action the *importance* of which goes "beyond" its *relevance* to its initial situation… An important action, we could say, develops meanings that can be actualized or fulfilled in situations other than the one in which this action occurred. To say the same thing in different words, the meaning of an important event exceeds, overcomes, transcends, the social conditions of its production and may be reenacted in new social contexts. (quoted in Arthos, 2000, quotations and italics in original).

A prosaic example from Canoe Math may help to explain. In class, we carried tape measures at all times – building canoes was a measurement-intensive process. A typical interaction with a student might include my observation of their work and a conversation with them about their goals and processes. In the ideal case, I was able to

observe students engage in productive (and sometimes heated) dialogue, in which they framed the problem and made suggestions for attending to it. In many cases, I reduced all of this rich conversation, all of this meaningful engagement in problem finding and solving, to one cursory task: I checked their measurements against my own tape and went to the next group of students. Part of this was pragmatic: I had a dozen students operating power tools, calculating measurements, making bad cuts through expensive wood. But I did a disservice to my students in only attending to the immediate act. In my haste, I failed to consider the pluripotency of the underlying capability. Caputo (1987) writes eloquently of this intimate connection between what is realized and what is possible, noting that the "real world is the world which, motivated by actual concatenations of experience, has actually taken shape in experience. And corresponding in this are the real and more or less likely 'possibilities' opened up by the actual course which experience takes" (p. 44). This idea of the opening up of possibilities is echoed by Sen in his discussion of the role of education in a capabilities approach and its capacity to make "the horizon of vision wider" (Sen, 1999, p. 199). The actual beings and doings of a life are clearly important, but they cast long shadows of potential on the "undetermined but determinable horizon of … experiential actuality at [a] particular time" (Husserl, quoted in Caputo, 1987, p. 45). Capabilities represent this undetermined but determinable horizon, and the best means by which to explore these horizons is hermeneutic dialogue, a conversation – but which one?

This kind of pedagogy insists that, "as late arrivers to a conversation, we both let what is at play move us forward, and that we join in moving it forward" (Caputo, 1987, p. 2). This process is not easy and requires a trained ear, one attuned to the syncopated

rhythms of lived experience. It must be sensitive and responsive to the particular: the particular functioning, the particular capability, the particular student, and the particular experience. A hermeneutic pedagogy provides a capabilities account to teaching and learning with the necessary ear training.

Narrative: My Friend Maigret

When I was young and in one of my long stints out of high school, I worked as a helper on a roofing crew. I was only sixteen, so most of my day was spent humping bundles of shingles up a ladder, and just generally ensuring that those I was there to assist had the means to complete their task. It was not the most intellectually stimulating work. But in the morning, we would all gather around the trucks and talk about the work at hand. Of course, I was fairly green, and did not have much if anything to contribute to the conversation. But it was here, during this part of the day, drinking coffee and staring up at the work to be done, talking about how this particular roof was like a previous one, but not exactly, analyzing all of the idiosyncrasies of this particular roof – it was here I felt that we were all equals. It was here that I learned the most about the work we were doing, and most importantly, that all work could be artful.

I hoped Canoe Math would afford this opportunity to both students and teachers alike, and in many instances, it did. Each morning, we gathered around the work at hand and simply talked. Learning and doing was guided by the immediacies of the day's work that emerged in our conversation: were we using trigonometry to install the seats or analyze the shape of the hull? Were we using measurement to cut and fit the gunwales? Often, our mathematical conversations took us well beyond the programs of study; sometimes our conversations were not mathematical in the least. Moules et. al. (2015) write that a genuine conversation is one in which the topic leads the participants, one in which they "find themselves subordinated to the flow of the conversation itself" (p. 41). In effect, much like my friend Maigret, I wanted to settle into my class like it was a comfortable pair of old slippers. I wanted my students to do the same.

That may sound like a gesture of resignation, but far from it. In his book *Teaching Mathematics* (1996), Brent Davis speaks of hermeneutics as a "philosophy of the middle way" (p. 18). This should not suggest hermeneutics as sort of philosophical compromise, but rather a "recognition that we are always thrown into the middle of things" (p. 18). A hermeneutic approach not only recognizes but avails itself to the inextricable relationship between subject and object, observer and observed. It seeks not an alternative to the binaries at play in our lives, but rather it "acknowledges the inevitability of thinking in dichotomous terms" and "seeks the richer understanding that comes through problematizing the boundaries and distinctions that tend to be drawn" (Davis, 1996, p. 18). I think Chief Inspector Maigret would agree. It was not that he eschewed deduction or hamfistedness for some other method, but rather he recognized a need to move from the methodological to the ontological. The "circle of understanding," Gadamer (1989) writes, "is not a methodological circle, but describes an element of the ontological structure of understanding" (p. 294). I wanted my own work to be hermeneutic in this sense. The bi-polarity of my practice, the incessant oscillation between reduction and intuition, was subtractive, not generative. It was superficial. I wanted to engage in real hermeneutic work, a work:

> based on a polarity of familiarity and strangeness; but this polarity is not to be regarded psychologically (…) as the range that covers the mystery of individuality – i.e., in regard to what has been said: the language in which the text addresses us, the story that it tells us. Here too there is a tension. It is in the play between the traditionary text's strangeness and familiarity to us, between being a historically intended, distanced object and belonging to a tradition. The locus of hermeneutics is this in between. (Gadamer, 1989, p. 295)

This in-between is a primary focus of my work, particular in the context of adolescence and classroom experience. A recent experience brought this idea into high relief. We

recently moved into a new home, and I quickly found a comfortable spot before a large window from which I can read and write. This spot affords me a view of our yard and the neighbourhood beyond our alley. I had sit to write and think about what consists in this locus, and as I wrote, as I reflected on what Gadamer meant by a polarity of familiarity and strangeness, the bucket of a backhoe tore through the wall of the house directly behind my own. The bucket disappeared as quickly as it had come and left a patch of blue sky, framed from below by the remaining portion of wall, toothy and ragged, hanging like the jawbone on a skeleton. I was shaken, not in the sense that I now trembled in fear, but in the sense that I had been struck – in what did this experience (*erlebnis*) consist? In the first instance I had experienced the bucket of the backhoe tear through the house, a house that was familiar to me in the colloquial sense, but that also possessed some quality of strangeness in that it had been there before me. I sat before the window and it was there, a fact foregrounded by the thrust of the backhoe bucket. In the next instance I experienced the experience; that is, the backhoe and the house made a "special impression that gives it [the experience] lasting importance" (Gadamer, 1989, p. 53)

By all accounts, Canoe Math was a success: we were featured prominently in school district media, including a video feature of our class at work and interviews with our students; we presented at the local Teachers' Convention, and even supported the development of similar programs in other schools; and our administration regularly toured visitors through our workshop. In retrospect, that a group of students engaged in working through an authentic problem drew such attention is somewhat disconcerting. But at the time I was too plagued with uncertainty in what we were doing to attend to that thought. I slept fitfully, my dreams phantasmagoric variations of a single question that

would soon wake me in the middle of the night: Why were we doing this? Building a canoe was a nice perk, but surely it was not the whole point. I saw success in the conversations we were having, the in-between of problem finding and solving, but each time I sat down to reflect on the specifics of those aspects of our work, general understandings eluded me. Instead, I was struck by two sets of questions that I could not definitively answer, the specific elements of which were ill-defined but their boundaries clear: Did I understand what I was trying to do? Was I actually listening to my students, to the in-betweens?

Chapter 6: A Tentative List

The title of this chapter suggests a critical aspect of this list: it is tentative, open to argument, and highly contingent on context. Walker (2007) interviewed forty adolescent girls in Cape Town, South Africa, in generating her list of capabilities (p. 188). Nussbaum (2011) takes a broader approach from the perspective of human dignity in devising her list. Terzi (2007) focuses on younger children and their capability to be educated. As Walker (2007) notes, none of the lists she investigates make a claim to universality, and I argue that this applies to any list founded in a capabilities approach (p. 191). "Rather," Walker writes, "they make claims for the capability approach in education where the focus on capability outcomes is seen as contributing to social justice" (Walker, 2007, p. 191). Below, I outline a list of capabilities that I developed in working with a group of marginalized and disadvantaged individuals. Through my master's research, reading, and a process of narrative inquiry, I developed and refined pedagogic implications of a capabilities approach to teaching and learning. This writing and thinking constitutes a tentative, partial answer to the two questions that prompted this research thesis: How can we characterize disadvantage? And once we can characterize it, how do we redress it?

In developing her list, Terzi (2007) follows the method of Robeyns (2003), which includes: "explicit formulation, methodological justification, sensitivity to context, level of generality, as well as exhaustion and non-reduction" (p. 34). I have followed this method throughout this work. In my narrative inquiry, I drew heavily from my pedagogic experiences in one particular course, a math class I designed in which we built canoes. While I also drew on many other experiences I had in working at my school, those I had

in Canoe Math resonated most. I believe this is because we had the opportunity to sustain meaningful dialogue in that class. We came to know one another; we came to understand differently. I began teaching the course with three objectives in mind: mathematical thinking, developing the imaginative senses, and collaboration. But throughout the processes of teaching, learning, and writing, I found this list to be insufficient.

Firstly, it did not value the individual student in two significant ways: it did not explicitly value capability as a sphere of freedom and choice and it did not involve student voice in determining which functionings and capabilities they have reason to value. It did not attend to securing capability, nor did it account for the benefits to individual well-being conferred in having control over one's environment. Below I set forth a list of generalized capabilities borne out of my experience and of my narrative inquiry. The list includes four capabilities: a *disposition of expertise*, *autonomy*, *affiliation*, and *a hermeneutic imagination*. Following Terzi (2007), each capability is irreducible to another on the list. My list intentionally leaves off some capabilities necessary for living a dignified life, such as those pertaining to bodily integrity and health. Instead, I offer it as a complement to Nussbaum's (2011) central capabilities, one focused on both the richness of teaching and learning and redressing some of the disadvantage I saw pervading the lives of my students. The list (more thoroughly described below) should be interpreted as a dynamic system, each entry pervading and supporting the others.

Disposition of Expertise

having practical reason, conceiving of the good, connecting problem finding and solving, using logical reasoning and emotion to think critically, finding both instrumental and intrinsic value in subject material, reflecting meaningfully on one's work, making connections between subject matter and lived experience, using voice to participate in teaching and learning, engaging in respectful and productive debate

In including a *disposition of expertise*, I have broadened my ideas around mathematical thinking to include interdisciplinary knowledge, for example, and to reflect the opportunities for individuals to choose in what way they learn and how they manifest those understandings in their lives. One particular aspect of working with many of my students troubled me: in class, we were able to work together to pass a test or complete an assignment, but those functionings rarely if ever translated into other aspects of their life. They did not confer through some capacity for mathematical metaphor; they did not enrich their lives or alleviate the disadvantages they faced. One way we sought to overcome this systemic disadvantage was through what Moss (2008) calls discursive assessment (p. 226). In contrast to assessment tools oriented around accountability, such as standardized tests, discursive assessment is oriented around discussing "the ongoing activity in an evaluative way" (Moss, 2008, p. 226). Citing Jordan and Putz (2004), Moss notes that this sort evaluative discourse can also function as a means by which individuals can "demonstrate their proficiency and gain acceptance" (Jordan and Putz, cited in Moss, 2008, p. 227). This capability captures elements of Nussbaum's (2011) *practical reason* and the more curricular considerations in Walker's (2007) *knowledge*, but also

emphasizes a broader capacity for metaphor and imagination, an ability to see how skills and knowledge can manifest in students' lives in ways they have reasons to value.

Autonomy

recognizing and respecting others, having the social bases of self-respect; playing a role in furnishing the autonomy of others, having a genuine choice in terms of dependence and independence, using voice to empower oneself and others, having control over one's emotions and environment, choosing what to learn and how to show that learning, choosing which capabilities and functionings are of value, empathy

As noted above, I lacked an explicit formulation of agency in my original list, a quality foundational to any capabilities approach. In *autonomy*, I capture elements of the capabilities accounts in Nussbaum (2011), Walker (2007) and Wood and Deprez (2012), but also from sources outside of the capabilities approach, such as Rawls (2001) and Sennett (2003). In discussing the relationship between respect and inequality, Sennett (2003) writes of the psychologist D. W. Winnicott, who characterized autonomy in terms of recognizing, respecting, and valuing difference (p. 120). Sennett writes that this "rhythm of identification and differentiation" serves to develop a "relationship between people, rather than an isolating difference" (Sennett, 2003, p. 121). For this reason, I expanded my original notion of agency beyond strictly individual control and empowerment. Of course, it is crucial that individuals have the opportunity to find work that is meaningful to them and to convey their understandings in a manner that serves them best. Agency captures these ideas, but it does necessarily capture this capability for valuing difference and acting on it in such a way as to empower one's self and those around them. My characterization of *autonomy* is explicit in specifying the importance of

developing not simply one's own agency, but in furnishing the agency of others, an act that requires an empathic leap. As I discuss in the previous chapter, empathy is a key aspect of living and working together hermeneutically.

Affiliation

living and working with and toward each other, being a friend, having empathy and respect for others, forming good social networks, attending and responding to those around you, working to empower one's community

The capability of *autonomy* is essential in forming the social bases of self-respect necessary for living and working with others. In designing Canoe Math, I knew that I wanted my students to collaborate to find and solve problems, but in specifying it in the way I did, I ignored the richness and complexity at play in forming and sustaining relationships. Some notion of working and living together was present in each of the capabilities accounts I interpreted, but I chose Nussbaum's (2011) term of *affiliation* as that which best captures my emerging understanding. As noted above, autonomy is distinctly related to difference, and I argue this is true for working together as well. I saw firsthand that the sort of opportunities we offered students to work together in the classroom were ineffective, in part because they lacked genuine opportunities for imagination, empathy, and respect. These were sterilized practices, ones "bent on reducing anxieties which differences can inspire" (Sennett, 2012, p. 8). We might ask them to work together on a particular math problem or orchestrate a series of steps through which they might explain a concept to each other, but both of these contrived means begot only a pantomime of cooperation. Instead, as Sennett (2012) writes, we should focus on the capability of "choosing the kind of cooperation we want, what its

terms of exchange are, how we will cooperate" (p. 13). In this, he writes, "freedom enters the experience of cooperation as a consequence" (Sennett, 2012, p. 13).

Hermeneutic Imagination

having an openness and a commitment to broaden one's horizon, conceiving of new ways of living and working together, developing and nurturing a capacity for metaphor, seeing how one's learning and social interaction can translate into a richer life, engaging in rich dialogue with texts, subjects, and people, the capacities for play and hope

Nurturing and sustaining the imaginative capacities was important to me in my original conception of Canoe Math and is explicit in Nussbaum (2011), Walker (2007) and Alberta Education's *Competencies* (2016). Each of those three has aspects that I used to further develop my conceptualization of the imaginative senses. From Nussbaum (2011), in particular, I took this notion of the role of imagination in living a rich life with and toward one another. I saw elements of this in the idea of *moral imagination* set out in Vandeboncouer and Vellos (2016). I wanted my students to work innovatively with the materials at hand, to find rewarding problems and attend to them in clever ways, but I also wanted them to reach beyond these notions of creativity and innovation to conceptualize and realize new ways of working and living together.

I qualify this capability as *hermeneutic* because philosophical hermeneutics captures not only what this looks like, but a means by which one might achieve it. In his book *Teaching Mathematics* (1996), Brent Davis writes of *hermeneutic listening* (p. 53). He writes that this is not an *evaluative* listening, in which we take in information external to us, or an *interpretive* listening, in which we project our own horizon onto that data, but a listening that entails "an imaginative participation in the formation and transformation

of experience through an on-going interrogation of the taken-for-granted and the prejudices that frame perceptions and actions" (Davis, 1996, p. 53). Even more succinctly, it is "the *participation in* the unfolding of possibilities *through collective action*" (Davis, 1996, p. 53, italics in original).

Through my narrative work, I became aware of the role of play in this understanding of participation. Gadamer (1989) writes of play not as something purely subjective and experienced by the player, but as a mode of being. The player knows that in playing he must set aside what is serious,

> But he does not know this in such a way that, as a player, he actually *intends* this relation to seriousness. Play fulfills its purpose only if the player loses himself in play. Seriousness is not merely something that calls us away from play; rather, seriousness in playing is necessary to make the play wholly play. (Gadamer, 1989, p. 103, italics in original)

This *play*, the kind not only experienced subjectively, but manifested as an object itself through the playing, is the sort of participation in unfolding possibility that I was part of in Canoe Math. In the beginning, we did not sit down with the explicit goal of conceiving new ways of being toward each other, but in giving ourselves over to play, we had done so. "The structure of play," Gadamer writes, "absorbs the player into itself, and thus frees him from the burden of taking the initiative, which constitutes the actual strain of existence" (Gadamer, 1989, p. 105). We had alleviated this strain by finding solace in our work together.

Epilogue: Neil's Story

Many of the disadvantages my students faced stem from just those capabilities I omit from my list. For example, in the case of Fatima, whom I wrote of above, her drug addiction certainly compromised her bodily health, integrity, and ability to conceive of a good life. These capabilities must be addressed. But in my writing and work, I was struck by the need to situate my list in my experience with students. My tentative list reflects capabilities in curriculum and pedagogy and goes a long way toward my stated goal: to redress disadvantage. Wolff and de-Shalit (2007) identified not just the loss or absence of capability in marginalized communities but the potential for loss. The capabilities on this list all aim at securing other capabilities and functionings, while still retaining value as capabilities in and of themselves.

Neil's story is one that I return to often in my thoughts and writing. He joined our first Canoe Math class, and while the canoes piqued the curiosity of most teachers and students, they did not seem to do so for Neil. He spent the first several weeks bouncing between his typical jadedness with school and a sort of argumentative disbelief. We interpreted the latter as fissures in his tough façade. It cracked completely in one class in particular. We had spent weeks measuring and cutting the twenty canoe planks required for each canoe, and we had just finished stitching them together with mechanics wire, hundreds of joins that left our fingers blackened and sore. Despite all of that work, the planks still lay flat on the ground – it did not look like a canoe in the least. But in this class, our job was to join the stems of the canoe at both bow and stern. In doing so, our two-dimensional planks, laying on the ground, would become a three-dimensional canoe. It took a group of us to lift the planks and begin to bend them toward one another.

"This isn't going to work," Neil said, after a couple of false starts. Some of the wires joining the planks were tied too tightly. Neil's eyes said it all: he did not think we knew what we were doing. To be fair, his intuition was good.

But at some point, Neil began to work alongside us. He was still vocal in his disbelief, but he seemed almost resigned to help.

"Well if this is ever going to work, we need to bend these planks from the centre line out," he said. Again, his intuition proved to be good. After a few minutes of jarring, massaging, willing, and begging the planks to settle into a canoe shape, they did. We were all shocked.

From that day on, Neil was increasingly active in our class. Though he had been for the most part solitary that year, he began to form relationships with other students, both inside and outside of class. We were often fortunate enough to sit back and observe Neil and his colleagues engage in productive conversations around mathematics and woodworking. They debated sawhorse designs, how best to use trigonometry to install the canoe's seats, and vehemently argued over the merits of the metric and Imperial systems of measurement.

In the context of the four capabilities set forth above, Neil began to approach his coursework with an openness to finding rewarding problems, to contextualizing them, and to articulating them to his peers. Not only did he use his voice to cultivate meaning in his work, his commitment to respectful argument began to empower others. Neil's work with other students led us to invite him back to complete his grade eleven math requirement in Canoe Math. He received additional credits in Leadership and helped many other students to find meaning in their own work. He forged lasting and meaningful

relationships with staff and students and was the first person we would ask if invited to an event outside of the school. And he began to realize how the material he was learning and the way he was working could translate into a life he had reason to value. Neil became interested in the art of glassblowing. He began working with other glassblowers on founding a cooperative shop and was developing new colours for other glassblowers by repurposing materials reclaimed from old television sets. In Neil's last year at our school, he was awarded a scholarship for innovation by the school district and local entrepreneurs.

It was not perfect. Neil continued to deal with many of the issues he had in joining our school. But in developing his capabilities to work meaningfully and productively, to have voice, to live and work well with others, and to imagine new ways of living and working, Neil was able to secure other important functionings and capabilities, such as finding rewarding work in his art, building a social network that benefited him, and later attending art school. The list I set forth above reflects the contingencies and complexities of teaching and learning. It was disclosed through our living with and toward one another. Through a capabilities approach, we were granted participation in an unfolding possibility, and it is this opening that our students need to live and work creatively, to exercise voice and reason, and to lead lives they have reason to value. Their stories depend on it.

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