

Chapter Two

Knowledge

How do I know the world?

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In this chapter I start with a rational and positivist approach to the concept of knowledge. The interruption of this by inserting the body-at-the-scene-of-writing challenges my assumptions about how to think about knowledge. This leads me to examine the ways in which how we define and categorize knowledge serves to privilege certain knowledges over others and reveals the mechanisms whereby expert global knowledge colonises the individual diabetic body. In response to the problems encountered through this chapter I propose a framework for conceptualising the relationship between global and local knowledges in which embodiment is central.

Throughout the chapter I move in an iterative fashion between academic texts and personal understandings, between knowledge and knowing, between representation and materiality; between local and global; I link abstract metaphysical concerns to the grounded concerns of daily living and body learning.



This is an age of information overload, globalisation, and colonisation of local knowledges by global mechanisms of control, through, and as a result of, the development of modern technologies. There is an urgent need to establish points of reference for people negotiating their way both through the overwhelming amounts of information, and the conflicting but twin positions of the “professionalised expert” and the autonomous responsible individual.

Diabetes education can be thought of as the process(es) by which knowledge of diabetes is constructed, acquired, produced and represented. Consequently it is intimately concerned with questions of knowledge. For the person living with diabetes the consequences of not “knowing” or of applying inappropriate knowledge may result in intense personal suffering. The difference between the constructed reality and the lived reality, or the divide between systems of knowledge, inscribes itself on the body.

In this chapter I want to explore the construction and the production of knowledge. The function of this is to establish the underpinning theoretical perspective from which the other chapters flow. Throughout this thesis I am looking at how to transfer and adapt knowledge, in ways that recognise different knowledges and allow them to coexist without one invalidating the other. This chapter is looking at how we think about knowledge, define it and represent it and how this then affects what counts as knowledge.

How do I know the world? I step outside thoughts circling in ever widening ripples inside my head, the autumn wind tugs at my clothes pulls against my flesh. Cold and sharp. I step closer to a sheltered brick wall. The bricks pink and warmed by the sun. Looking out I see the wide blue skies the deep greens of the leaves high in the sky tossed on elegantly slim ghost white branches – the fury of the wind hidden by the glorious contrasts of colours and the dance. Sun seeping into my bones. This is how I know the world. The words tumbling about in my brain the papers written and held in library vaults are just attempts to capture the knowing that exists here, in my body, my self in my connection in this instant with the world that means that I know that this is autumn and I am alive in it.

There are a multiplicity of definitions of knowledge. As Foucault says “it is true that Western Philosophy, since Descartes at least, has always been involved with the problem of knowledge. This is not something one can escape. If someone wanted to be a philosopher but didn't ask himself [sic] the question, 'What is knowledge', or, 'What is truth', in what sense could one say he [sic] was a philosopher?” (Foucault 1980:57) I must confess here that while intrigued with the idea of becoming immersed in the discipline of philosophy it is neither appropriate nor useful for the exploration of the ideas in my thesis. It is not my intention here, then, to argue a specific definition of knowledge, rather to establish a starting point for my discussion on the construction of knowledge and the production of knowledge.

Even though the provision of a working definition of knowledge gives the reader a clear entry point into my discussion of construction of knowledge, it also runs a risk of foregrounding certain knowledges and hiding others because of my positioning.

For example “Justified true belief” is one definition of knowledge. Even within the school of thought (Steup 2001) that uses this definition, questions arise as to what is truth and what is justified. This leads on to the problem of measurement and the tools used for measurement – how do you measure whether a belief is justified, or that it is indeed true? The measure itself will only highlight certain aspects of that knowledge. I therefore include my positioning and try to leave the traces of my knowing so that this can act as clues for others from different perspectives and lead them to discover the distortions of my constructions.

When I first started to think about knowledge and its relationship to learning in diabetes education I became aware that I felt confused about the term/word knowledge. This was important because it is in the gaps and the difficulties and incongruencies that I wish to focus my inquiry. The confusion lay in the duality of the concept of knowledge. Knowledge as a collective repository of knowledge and knowledge as an individual knowing. The questions that arose were: Is knowledge about knowing the world or is it about understanding the world? Is there an underlying conflict between these two ideas or are they able to coexist? To understand seems to involve a movement – an interpretative paradigm – whereas to know is a state of connection. Following this line of thinking it can be argued that knowledge is that understanding that arises out of connectiveness, as well as the forming of connections. The relationship of this to understandings of how we construct knowledge or new knowledge is discussed later in this chapter.

While we all have knowledge of the world that has been acquired in many ways, the way we interpret that, think about it, categorise and systemise that into a collective repository, is filtered through the views of the world that are a particular expression of our historical and socio-cultural positioning. (Foucault 1980; Weedon 1987; Caine, Grosz et al, 1988) The definition of knowledge and the linguistic signing of it – that is the using of language to categorise and give meaning to the concept by using a particular form – creates certain limits that pertain to language (Grosz 1988:100-101) rather than the extent of knowledge.

The starting position, then, that I take, is that knowledge is about connection and connectivity, our knowing of the world and the ways in which we know the world.

We cannot claim to be all-knowing because knowledge is not finite. We cannot characterize knowledge finitely because knowledge is a process that follows a non static world that is itself always changing. The representation and communication of that knowing of the world is an aspect of the *production* of knowledge. This starting position enables the recognition of different types of knowing or knowledges.

This chapter will deal with different aspects of knowledge. Each contributes to the exploration of the idea that knowledge is constructed, that knowledge is produced, that knowledge is acquired, experienced and communicated in multivariate ways. Although the constraints of the format of this thesis present the ideas sequentially and linearly, each section of this is designed to sit as a layer/movement within a three-dimensional space, and each section can be revisited in any order. The first section looks at the use of categorisation as a means to define knowledge. Some examples of the underpinning organisation of these categories are then explored. For example *Division and separateness* looks at the use of binaries to create categories. The second section of the chapter looks at the representation and communication of knowledge and the effects of this on what is commonly held to be knowledge.

Definition by categorisation

My brother needed to find water on his property so that they could have access to bore water. Brother Clem, who lived at a monastery in the district was known as the local water diviner. So Brother Clem was invited over, armed with wire and various water divining accoutrements to determine where water could be found and if the water was soft or hard. Together they all set off and after walking some distance, and with quivering divining rod he located the spot. Another relative, hearing of this, was quite sceptical. He is an internationally renowned hydrologist – used to find water sources around the world. He bet that by looking at the terrain he would be able to locate the spot that Brother Clem had marked out as “the” spot. He would be able to identify this by examining the terrain, and felt that that was what was informing Brother Clem. What I found intriguing was that Brother Clem relied on the movement of the divining equipment to let him know how to identify the spot. It may well be that he also is relying on his knowledge of the land, however,

this knowledge does not take the same form as my relative's knowledge which relies on scientific concepts of measurement and mapping. Both ways of knowing the world will still find the same water source. However Brother Clem's knowledge may be a knowing that is based on the relationship between him as a living body and the land. He may know where to walk because of a certain "feel" to the land, his feet follow a certain terrain, his eyes follow the shapes and colours, his sense of smell, the vegetation and so on.

The right to claim authenticity of knowledge is contested at many levels and in many places. A brief examination of the history of western philosophy reveals traces of the way in which knowledge is contested and the effect of categorisation in this process. Categorisation is akin to mapping, which helps to make clear a pattern within the whole while leaving out the 'messy bits'. (Somerville, 2002b) However this also prevents the possibility of bringing other patterns into focus.

The problematic question as to whether something can be closer to the truth than something else has been constructed by, and has constructed. a hierarchical view of the world. This, in combination with categorisation, has enabled the pitting of one 'type' (or category) of knowledge against another, with the stakes being a greater claim to authenticity/validity/veracity. An everyday example of this is the contest between "alternative" medicine and "western" or scientific medicine. The battles to determine the legitimacy of one over the other act as a deterrent to the likelihood of the different contributions of each perspective and resulting discoveries from informing each other. Furthermore the assumption is that the knowledge (in this example knowledge pertaining to medicine) and the means by which it is acquired, must fall into one or other category, and that which does not, not only becomes invisible but also is valueless, as by default it lies outside any mechanisms of evaluation.

In the light of the argument above it is helpful to make more explicit the links between definition and categorisation, while making visible the hegemonic views that have informed the construction of the categories, and from there to consider how the prominent categorisations of knowledge have been used.

As mentioned earlier, defining knowledge is problematic. There have been numerous attempts over the ages to define knowledge by creating categories of various types of knowledge. These categories are derived using vastly different organising principles. For example, in the categories derived by Aristotle, knowledge is defined by its product as opposed to categories that are derived from the method by which that knowledge is acquired – as in the work of Bacon [1561–1626]. Other organising principles are those of inclusion, as in the range of categories of knowledge in Brier's (2000) development of a trans scientific framework, or, that of exclusion, as in the work of Descartes [1596–1650].

Aristotle's categories reflect an interplay of various ways of knowing and different ways of using knowledge as a means of negotiating one's way in and through the world. The Aristotelian categories derived from Socrates and Plato are Episteme, Techne and Pronesis. Episteme, being the ways of knowing used to produce theory, inductive and deductive knowledge about the universe, is associated with scientific knowledge. Techne, being ways of knowing and producing objects, including creative and tacit knowledge involved in the production of art or craft, is the knowledge of technicians and technical knowledge. Pronesis being the ways of knowing which produce Conduct; which Brier (2000) explains as, and expands to, is the "pragmatic communicative social knowledge" used by teachers, leaders etc. (448)

There are various organising principles used to create categories and to assign knowledge to these categories. Highlighting these underpinning organising principles reveals the aspects that are foregrounded. Some of these are: the 'type' of knowledge; the means of formalising and credentialing the knowledge; the means of learning the knowledge, as in Belenky's categories of received, procedural and silent knowledge (in Oakley 2000:4; Scheman 1993:174-176), or Kolb's (in Mackeracher 1996:182) abstract/concrete. Knowledge does not sit comfortably and uniformly within the categories that are created, but rather oozes, creating overlaps and spillages. Even within the organising principles there are different frameworks in operation. For example when the type of knowledge is used as an organising principle, type can refer to: the level of codification – tacit, body knowledge/pit sense (Sauer 1998), scientific, conceptual; or to spatial features – as in local or global.

The underlying organisation principles then tend to establish certain patterns of conceptualising knowledge and often erasing or making invisible the possibility of exploring knowledges that have been subjugated by the categorisation. The trace of earlier categorisation is found in current definitions of knowledge. For instance, the categories devised by Aristotle (Brier 2000:446-449) are reflected in some current categories of knowledge used in adult education literature with, for example, an alignment between episteme and scientific knowledge, and techne and tacit knowledge.

Episteme is closely related to the idea of Scientific knowledge which can be defined as knowledge that has been abstracted and codified as

a decontextualized rule that [is] “universally applicable” and “independent of the cultural foundations of knowledge.” (Collins in Sauer 1998:7)

The idea of scientific knowledge has been further molded by the ideas of philosophers such as Descartes and Bacon as has the privileging of their ideas over the past three hundred years.

Tacit knowledge on the other hand is more closely related to the concept of techne and is often described using examples of apprenticeships and craftsmanship. Collins (in Sauer 1998:7) defines tacit knowledge as cultural knowledge that is not made explicit in rules and procedures. In defining tacit knowledge, Planyi (in Sauer 1998:7) distinguishes between formal, scientific rules and procedural rules. As Sauer (1998) points out “[t]o the extent that experts can articulate explicit rules knowledge moves from the domain of the tacit into the realm of scientific expertise.”(7) This then serves as an example of the use of codification as the means of assignment. Pit sense (miners call the mine the pit) is a further extension of this and is defined by Sauer as physical sensory knowledge in the most literal of senses (7). It exists in the ability of the human body to feel changes in pressure and to hear differences in sounds. However pit sense is problematic in that it is not simply a sensory knowledge but as will be seen later is an embodied knowledge. This disrupts the categorisation as it moves knowledge out of the realm of object and into the realm of process, and touching on temporal, and spatial elements.

Similarly each of the Aristotelian descriptions involves the knower in the context of the world. And in light of the conceptualisation of embodied knowledge (Somerville 2004), explored later in this chapter, it could be argued that there is no specific Aristotelian category of knowledge that separates embodied knowledge from other categories of knowledge, but rather embodied knowledge is implied as an aspect of each of these three categories. However the binarisation of knowledge into form and matter also has its seeds in the work of Plato and Aristotle, and the categorisation of knowledge that is derived from this as an organising framework serves to dislodge embodied knowledge.

Divisions Separateness

Grosz (1994) traces and links the binarization of knowledge and the binarization of the sexes to the birth of Western philosophy and the work of Plato and Aristotle:

Aristotle, in continuing a tradition possibly initiated by Plato in his account of *chora* in *Timaeus* where maternity is regarded as mere housing, receptacle, or nurse of being rather than a co-producer, distinguished matter or body from form, and in the case of reproduction, he believed that the mother provided the formless, passive, shapeless matter which, through the father, was given form, shape, and contour, specific features and attributes it otherwise lacked. The binarization of the sexes, the dichotomization of the world and of knowledge has been effected already at the threshold of Western reason. (Grosz 1994:5)

Linked to the concept of definition by categorisation is the creation of categories that use the method of acquisition as their structuring mechanism. Implicit in this are value systems that are attached to different types of acquisition and which result in knowledges being compared to each other – resulting in positioning one (or more) knowledge(s) as “better” or “truer” than another knowledge(s). The most dominant of these is the concept of “scientific knowledge” that has been constructed from “empirical” and “objective” means, codified using highly formalised written text and often using mathematical methods of codification. That the development of knowledge in the sciences is not produced using this way of knowing the world in isolation to others, is hidden by the means of categorisation.

Feminist theorising of knowledge over the past twenty years has pinpointed the ascendancy of the concept that scientific knowledge is objective, rational and empirical which emerged from the scientific revolution during the enlightenment, and

in particular the work of Descartes and what has come to be known as the Cartesian split. Oakley (2000) argues that the “paradigm war” between quantitative and qualitative methodologies for establishing the truth, or rather for the production of knowledge, has its roots in the philosophical movements of the enlightenment which themselves arose out of and were embedded in particular social, cultural and economic shifts. While this split is often attributed to the effects of Cartesian philosophy, the development of an hierarchical binary which posits quantitative and qualitative methodologies in such a relationship, is far more complex. Of particular interest to this thesis are the mechanisms of that ascendancy and the implications of this in relation to rethinking diabetes education. Furthermore in order to see what is hidden by the adoption of the notions of knowledge that follow from this work it is necessary to look at other notions of how to theorise knowledge.

Spinoza, [1632–1677] insisted that mind and body are not two distinct substances but rather two ways in which the human understanding grasps that which exists. As Gattens (1996:100) points out Spinoza does not stand alone. At the time he was developing his views Margaret Cavendish [1623–1673] was expressing hers as a fundamental disagreement with Descartes and Bacon – who were publishing their philosophical constructs.

Her view was that all corporeal matter is both subject and agent, and that the natural and social worlds and mind and body are joined in a fundamental unity. She took issue with Descartes' notion of matter being moved by God, and disputed the idea of man acquiring power over nature since he was part of it (and a prejudiced part, moreover, since he ignored the views of other animals).(Oakley 2000:92)

These notions of knowledge are the starting point for systems that place the body as central to our ways of knowing the world and used as a starting point for the development of a critique which problematises the concept of objectivity. What needs to be looked at is what has been made invisible or hidden by the production of this knowledge. The effect of the separation of body and mind has been to privilege knowledge that is seen as being constructed by rational objective means as being “truer” or “better” knowledge. This has implications for concepts of knowledge that involve the centrality of the body in knowing.

What the scientific revolution [Copernicus, Bacon, Descartes, Galileo etc] dissolved was an organic cosmology in which the Earth was a living organism,

and human beings were conjoined seamlessly with it. In this cosmology, there was no necessary divide between the natural and the supernatural, and the Earth and Nature featured principally as a nurturing mother (Aries 1983; Merchant 1982). But when the men of science started questioning the scientific basis of received wisdom, the old image of a beneficent and wise female Nature was slowly but surely transformed into an altogether different image: that of 'a disorderly and chaotic realm to be subdued and controlled'. (Merchant in Oakley 2000:88)

The linking of nature, matter and the body by Aristotle means that at this point the body itself is cast off as a process and a site of knowledge and is transformed into an object that must “be controlled and subdued”. This is taken up and examined further in Chapter 4 *Bodies*.

Definition by value: Relationship between knowledges and value.

Two of the features that appear to be a part of the way in which one knowledge is privileged over another is the way in which it can be traded, or is itself a part of the accreditation of professionalism, and so is a part of the economic framework of our society. This concept is supported throughout Oakley’s (2000) work on the development of the ‘paradigm wars’ in which qualitative and quantitative knowledge are constructed as a hierarchical binary. The roots of the development of this Oakley argues lies in the complex intertwining of the development of the capitalist economic model; the development of the expert; trade; and the ideas of Descartes and Bacon, Hobbes [1588–1679] and Locke [1632–1704]. (see Oakley 2000 chapter 4 :75-101)

So, for example, tacit knowledge retains its currency as valid knowledge through its links with the production of goods in our society. While one might appreciate a text book of mechanics, the tacit knowledge of the experienced mechanic in changing a tyre is still respected at the local level. Tacit knowledge must always be local knowledge as it always involves the negotiation between skills and environment. The tacit knowledge of the doctor/surgeon is, for example, an essential component of their training. The arena in which they learn this involves working with patients/bodies.

However the advent of globalisation has challenged the value of tacit knowledge in comparison to knowledges that can be traded in a global marketplace. This has seen the growth of the concept of information as knowledge and the privileging of forms of

knowledge that are communicated in easily reproduced and standardised formats such as print and electronic format.

In order for a knowledge to acquire marketable value it needs to be able to be codified, and thus patentable or suitable for copyright, must be associated with the production of goods or must be essential as a means of accrediting and thus constructing the “expert” who in turn sells their services. There is a complex interplay between different elements often resulting in the privileging of one set of rights to claim knowledge over another. A current example of this is the rapid development of Competency Based Training (CBT) and in the adult education field in Australia the ascendancy of Certificate IV in Workplace Training & Assessment. Here the tacit knowledge of the workplace that has been taught/learnt through the apprenticeship system has been taken over by training experts whose expertise is demonstrated by the acquisition of a certificate that in turn demonstrates that they have learnt a particular system of training and assessment. This is a marketable qualification that ‘is recognised’ across the industry. The concept of the measure of a craftsperson’s reputation through word of mouth/storytelling, reference to the actual goods produced and/or the quality of apprentices under their supervision, is being eroded by the competition from, and the privileging of, abstract generalised codified standards. The mechanisms that foster this are further examined in Chapter 5 *Site/Self* which explores the interrelationship between subjectivity, sites and privilege.

The need to disrupt the binary

Putman (in Brier 2000:440) argues that ‘objects’ do not exist independently of conceptual schemes; that when we introduce one or another scheme of description we cut the world into objects. In the process of categorizing knowledge, knowledge becomes objectified and fixed. Foucault (1980:70;77) argued that even attempting to define knowledge as demarcated bounded fields is to take on board the power structures which act to subjugate certain knowledges.

Brier (2000:440) argues “it is important to acknowledge our still existing ignorance of what it is to know, that is how knowledge comes about.” The experience of someone in its contextualised richness may in fact alert us that an essential variable has not been considered which, when present, may negate the effects of the results of the

knowledge derived from a rationally/scientific constructed experiment. This does not mean that knowledge derived from rationally/scientifically constructed experiments is invalid but rather that we need a dialogue between the various ways of knowing. The problem is the fight for supremacy, the sense that one way of knowing the world is more exact, more true, more effective. The issue is the need to create dialogues that still allow the spaces to exist between the different speakers and allowing equality to exist. The disruption of this is at the heart of the problem.

As I am reading Oakley. I keep pulling away from the text:

So how do we know? hungry, mind coming in and out of focus. I want some macadamia nuts to chew. I catch the scent of my breath – heavy with the acidic smell of ketones, a by product of my current eating regime. I reach for some chewing gum. Half an hour later, as I move from my chair to the computer to add in an entry to Endnote, I realise that I have been able to concentrate. My attention goes from the sensations in my mouth as the words flow through my head, to the touching of the keypad as I write the thoughts down. Chewing, chewing the thoughts over, chewing the sharp tasting mint gum. Rolling it around in my mouth with my tongue and teeth. Rolling around thoughts in my head. Biting through the mixed ideas to single out the one that holds the key...

Only an hour later my colleague comes in and when I offer her some chewing gum, she tells me of a study that has found (whose findings are) that chewing aids thinking. I laugh and say: “So I’m not mad then!” And because there is confirmation that my findings are also found elsewhere there is a sense that my integrity has been validated, that my sense perceptions and my analytical knowing are, for this time, in harmony. But what happens when there is a disjunction between your own findings, say in the experiencing of diabetes and the data, the findings, “out there”?

Oakley (2000:25) asks: “How does one judge the sanity of different sorts of evidence? How do we analyse this personally, as individuals and how do we do this on a global scale?” And I ask what happens when we do this in relation to bodies, to our bodies,

to my body which is “always present but ... flickers in and out of focus, as it is constructed and re-constructed by different discourses, causing the conceptual boundaries to shift” (McConnell-Imbriotis 2001a)

The dilemmas that arise are that: there is a body of knowledge on how to judge knowledge which is itself conflicting; the body is both agent and subject of knowledge; the body inhabits and is inhabited in and by all spheres of knowledge. So what is needed is a[n] [a]way of looking at the problem that accepts the existence of difference in knowledge. It needs to enable a critique of knowledge(s) from outside the discipline(s) from where that knowledge arises and it needs to be able to keep the body visible and present rather than fixing it into one mould or set of boundaries that is a product of a certain form, or production of knowledge.

The most useful frameworks to analyse this seems to come out of the feminist theorising which, as Grosz (1988:101) outlines: “openly accepts that different subjects of knowledge may produce different forms of knowledge.” In order to critique the knowledge from outside a discipline, it is necessary to be able to locate what/where the knowledge has come out of. Irigaray's conception of the “production of knowledges” (Grosz & de Lepervanche 1988:25) is a starting point in unraveling this. Her premise that “all knowledge is produced from certain positions that have somewhere left their trace in what they produce” (Irigaray in Grosz & de Lepervanche 1988:25) creates a fruitful framework by which to analyse the discourses that are associated with conflicting views.

What is needed is a way of locating knowledge so that it neither tries to encompass all knowledge within one seamless and holistic framework erasing the contested nature of knowledge, nor uses one framework to subjugate and render other knowledges invisible. This needs to disrupt and problematise the assumptions of the underpinning frameworks that see knowledge as a fixed object that exists outside of individual contexts and which attempt to construct exact models [which] lead to the creation of non-knowledge or 'blindness'. (Heidegger in Brier, 2000:436)

Grosz (1994:19) proposes that: “If the mind is necessarily linked to, perhaps even a part of, the body and if bodies themselves are always sexually (and racially) distinct,

incapable of being incorporated into a singular universal model, that the very forms that subjectivity takes are not generalisable”. Following on from this she proposes the need to create a language that enables the body to be seen as “embodied subjectivity, of psychical corporeality”.

Embodied knowledge is a term that has been created by feminist theorists in relation to a conceptualisation of knowledge that places the body at its centre. When I first considered this I initially confused this with sensory knowledge, a body knowing that is ‘pit sense’ at its most superficial level – a knowing of the world through sensory signs and inputs. However Sauer (1998:4) also defines pit knowledge “as an embodied sensory knowledge derived from site-specific practice in a particular working environment” – which involves spatial and temporal categorisations. Based on this and the work of theorists such as Grosz, Somerville, Probyn, Davies, among others (Somerville, 2004) embodied knowledge emerges as a way of shifting knowledge from object to an ongoing process of a dialogue of difference. The body is a process of interaction with its environment in its temporal and spatial dimensions, and the world constitutes the body, inscribes itself on the body, and lodges within the body (Somerville 2003). However the body also constitutes the world and the world itself may be read through and on the body. In this way knowledge becomes and is embodied, its processes leaving traces and being traced, in textual ways that can be uncovered through and in ourselves as lived and living bodies.

Representation /Communication of Knowledge/Text

There is often confusion between the idea that there are different ways of knowing and different knowledges and the argument about whether there is reality or multiple realities. I do not wish to enter into the second argument, which I don’t believe is necessarily linked to the first. Rather I am working from the perspective that reality is experienced differently and represented differently and our understandings of it are constrained by the context in which we live. In other words this thesis is concerned with questions of epistemology rather than ontology in the classical sense. I am concerned with the representation and communication of knowledge. While we may have a personal and exclusive knowing of our world, how we construct and represent this as a commonly shared knowledge is constrained by the means of representation,

codification and certification that are available in different contexts. The most constraining is of course language.

The refusal of language as an active force in knowledge-production is necessary for knowledges to sustain their self-image as purely conceptual, enabling the processes of theory-production to remain undiscussed. (Grosz, 1988:98)

We tell our lives as stories, inhabit them, make meaning with them. If we write them we may fictionalise them, or write as autobiography, as poetry or as a conversation in a letter. If we are talking to someone then we use our body as well, accessing body text and song as a means of communicating our knowledge – the hand gesture, leaning away with our body, the break(s) in our voice – all give clues to our meaning, to the representation of our knowledge. The meanings are refined as we enter into the dialogue, the conversation moving backwards and forwards:

When I was in hospital for the last time, completing a 12 year cycle, as I was being asked what something felt like I spiralled down into a postmodern quagmire of trying to find the right word to describe the sensation, it seemed to be that the process was really about negotiating meaning. There was a space between the doctors and I and each of us was in a different world – the world that was constructed by our bodies, by our knowledges, by our experiences and families and histories, and even though we thought that we shared meanings we had to dance around exchanging words and stories until there was a confidence that the meanings that I attributed to the words I used to describe what I felt in my body matched the meaning that the doctor understood and so then connected to another body of knowledge that was constructed in an entirely different way.

There are various texts that can be used to communicate knowledge, music, dance, body, artmaking, performance, writing. There is also a hierarchy of representations of knowledge with words over body, spoken over sung, written over spoken, academic over fictional, formal over personal, quantitative over words. Articles submitted to academic journals for example must conform to the strict guidelines – down to the required referencing system. Both Sauer (1998) and Farrell (2001a; 2001b; 2002)

examine the mechanisms by which print based textual practices serve to make other knowledges invisible.

Sites of knowledge production

If we look at where knowledge production occurs there are differences that exist because of the site in from which it is produced.

I propose a model in that there are three concentric circles of knowledge production. This becomes more complex as the interconnections between the different circles is played out. So for the sake of clarity I will identify the elements of each circle and types of knowledge production possible in those circles.

I start with the body as the central point, and as the most local of local sites. (Somerville 2003). Within this circle is the first and most immediate site of knowledge and knowledge production. In this site the way of knowing the world, which *is* the body, is through the senses, through the self. Knowledge that arises and is produced in this site is able to encompass and receive the full range of methods of knowledge production and ways of knowing. This includes embodied knowledge, the pit sense that miners develop (see Sauer 1998; Somerville 2002a) the body/self knowledge of the actor, (Hodge 2000) the learning about the world through the relationship between the lived body and its environment described in my piece about my youngest son later in this chapter. It is also the site that is able to generate the widest array of ways of knowing. From this site it is also possible to generate abstracted knowledge, tacit knowledge, received, procedural and silent knowledge.

The next level/layer/ring of circle is the immediate world in which we live – still local and still where the body is contextualised. This next level is a wider circle and involves relationships and the mediation of knowledge between various local sites. At this level there is a need for codification of knowledge, however because of the bodily presence the range of codification is able to encompass bodily language, touch between people, as well as verbal. While embodied knowledge cannot be communicated so that it is experienced in the same way by both sites, it is more present through the agency of the body itself. This knowledge production occurs in dialogue between two or more people who are in the same site and the same time so

there is a sharing of the temporal and physical site eg workplace, doctor's surgery, educators rooms, a theatre/live music/ dance performance etc. Shared embodied knowledge cannot be generated within this site – however there can be a shared knowledge that is communicated through embodied means. This is very much the province of tacit knowledge, but also other knowledges can be generated within this space. This is the circle in which most adult educators, in fact most educators, work.

This second circle of sites then can be defined as that which involves presence and performance of self. The degree to which the knowledge is global or localised to this circle of sites may in fact be determined by the degree of performance. So while the degree of presence is difficult to establish with the intervention of technologies, perhaps it could be argued that the presence of performance is clearer. If I am in conversation over a telephone, my location and multiple texts are readable, through my tone of voice, singing, words, rhythm.

The widest circle is that of global knowledge. In this site/s bodies are decontextualised and objectified. In this circle the “outer world”, or “other” is foregrounded through the means of abstraction, mapping and quantification. This requires a high degree of both codification and certification. This is the site of textual material, of global data, the internet, of media, in particular print based material. It is the site in which data collected from abstracted knowledge is held. It is the repository of privileged knowledge. It is cyberspace and computer screens and library materials, where information hovers on the brink of knowledge. In this circle knowledge is fixed, and moves from a process to a structure.

It is the immediacy and degree of embodiment that marks the difference in the relationship(s) that can and do occur within each different circle. The first most local site, involves relationship with the immediate context. This includes the relationship with the world, the integration of the world into my body and my body into its immediate surroundings – falling over and learning to walk, the ingestion of food and so on. The second circle involves performance of self. Performance is defined as requiring an audience: performance of self can be similarly defined as requiring an audience, use of multiple texts in the audience actor exchange, temporal presence,

spatial presence, embodied presence. This is looked at in more detail in Chapter 6 *Playing the body*.

The third circle is that which deals with disembodied knowledge. From this site knowledge in its most generalised form is produced. The lack of embodiment means that in order for it to become useful it must be reintroduced to a local context. It is this repatriation of knowledge (Somerville 2002b) from the global to the local the bringing back of knowledge that has been taken, codified and/or standardised and returning it to the local site of the body that is essential in the process of relearning the body in diabetes education.

Construction of Knowledge

The construction of knowledge differs from the production of knowledge. When I refer to the production of knowledge I am referring to the way knowledge is used to generate further knowledge. Construction, on the other hand, is about how different knowledges and different ways of learning interact and build. There are many ways of learning about one thing, for example the body can be learnt through experiencing the body itself, through the medical construction of knowledge, through a holistic approach as in yoga and so on. This learning involves the bringing together of these knowledge(s) and representations into one site. However this bringing together is layered through time and privilege and the site is as Bakhtin argues simultaneously heteroglossic in the sense that it is 'awash' with competing local and global discourses (Farrell 2001) The privileging of the layering is a mirror of the dominant paradigms of knowledge in other sites reflecting their global cultural and historical positioning.

Meizerow's theory of transformational learning (Merriam & Brockett 1997:140-142) is important in considering ideas of construction of knowledge. It proposes that learning changes the learner, and that the acquisition of knowledge changes the boundaries of potential learning of the learner. An extension of this, often interlaced with Foucault's work and that of other poststructuralists (Foucault 19980; Davies 1997a) looks at how the learner, through their existing knowing of the world, constructs and is by constructed by knowledge. Aronson et al,(1995 chapter 6)

propose that in order for meaning to be extracted from new information the different elements of that information must be placed in a context. The way in which we link the different components is part of how we organise our knowledge. Changing our understanding of a particular subject may involve finding different ways of linking the information and then re-examining the relationship to an overall framework. The overall framework itself is subject to change and new knowledge can generate the challenge of the conceptualization of that context and then the re-ordering of the linking of the elements within that.

Birke, (1999) on the social and cultural construction of the biological body, traces the ways in which the medical body is constructed, bringing together the different imagery and analogies that are used to explore and explain the body, and that in turn redefine and reconstruct the medical understanding of the body.. Here, once again, text is important.

The material text creates a join between the local and the particular, and the generalising and generalised organisation of the ruling relation. It is the materiality of the text itself that connects the local setting at the moment of reading into the non-local relation that it bears. (Smith in Farrell 2001:206)

Diabetes educational material is primarily print based. Farrell (2001) argues that “Texts are a critical means of connecting the local with the global and, in particular, of inserting global ruling relations into local sites.”(206) It is at this point that various global discourses of management and expertise and medical constructs of the body fuse together, overwhelming the local knowledge and colonizing of the body through the privileging of codified scientific knowledge over embodied knowledge. “Material text ... is designed to fix meaning across time and space”, (210) while the body is unfixed, an ever-changing construct in constant dialogue with the various temporal and spatial sites it inhabits. The use of print base material and fixed linguistic and graphic texts not only interrupts the feed back of embodied knowledge but also acts to disrupt an embodied re-learning of the body.

My 12 year old son came home worried yesterday. He had a lump under one of his nipples. Despite earlier conversations about puberty, he still thought it was odd – did he have breast cancer? If it was not happening simultaneously to both nipples, perhaps that was a sign that it was not puberty at all. I

wondered whether I should send him to his doctor – as I had done with his older brother – the underlying agenda being to enable him and his doctor to establish a relationship where he could discuss and share the private sphere of his body.

The changes in his body were [un]known. He is having to relearn his body to learn it anew. At the moment these changes are outside the changes that are a constant rhythm of the adapting and adapted body. He is uncomfortable. Even, as he said, scared. What is the effect of sending him to a doctor? Does this tell the story that the doctor will know his body better than him? That a cognitive approach to learning the body works in tandem with his own experience? That he is right to notice when his body feels/acts differently? Does it help him to be aware of the process of learning the body – learning when it feels right and when it doesn't – or might it instead teach him that he should disregard changes, awareness of change, see change as illness and pathology? Does it remove the locus of learning the body to outside the body, objectifying it and creating a separated, Cartesian self? Until now he has probably integrated his experiential learning with learning other constructions of the body with the primary focus on the experiential. Although every day, with every cut, accident, illness, visit to casualty, and through the discourses embedded in the society in which he lives, he will be learning to construct his body in specific ways.

On the same day my four year old son discovered a book in his bookshelf, a legacy of his older brothers' childhoods – a book about skeletons. Written for the very young it constructed the body as an object but still linked this with the lived body – suggesting that children feel the end of their nose to identify cartilage, bend their fingers to see/experience and understand their joints. This book has become the favourite bedtime story. Facts of fascination are how many bones in the head, the skull is like a hard hat, the jaw moves like this. In fact he is fascinated by manually moving his jaw and my jaw.

He is using his fingers and the sensory information of his fingers to confirm the 'truth' of the book. He is learning to construct his body through a different knowledge – but still is linking this with his experiencing, still seems to locate his knowledge of his body, in the body itself.

Yesterday he hurt himself. There was simply the experience of pain discomfort and the terror of not knowing how it would resolve, not knowing that while it hurt now it would not hurt in five minutes time. There was the beginning of a belief that something external needed to be done to make it better – kissing it better would not make it better he yelled indignantly, so now in our household we use bandaids, others use magic creams or potions, the advertisements on television suggest antiseptics, food, bandages, pain killers. I remember the older children at the same age starting to express the same belief that something external needed to be done. Somehow by the age of four they had moved away from learning the body through the experience of pain, followed by the natural resolving of that pain, to a belief that there needed to be an external agent in order for the body to be healed.

This process of colonisation of the body by outside expert knowledge occurs in many places and in many bodies. So our understanding of the body becomes objectified and relies on the expert knowledge generated through the medical construction of the knowledge.

I have sat with both my mother and my father while they fought for life in intensive care units. My mother was there following a car accident. A sudden brutal assault on the body, by two hunks of metal travelling in opposite directions at high speed and the constriction and crushing of bones lungs and air by the seat belt. Years later, my father was in intensive care following a massive heart attack. Both times I was struck by the understanding that the real function of the complex equipment and sophisticated medication was to simulate the workings of the body – to take over the life support functions of the body (such as breathing) and so buy the time for the body to heal itself. The equipment and the medication might promote healing but did not actually mend the body.

Surrounded by beeping monitors, measuring heart oxygen and pulse I was gripped by the need to know what the messages on the machines meant. Before I went in to see my mother for the first time, my sister warned me to be

careful, as the family story was that I always caused my mother anxiety, I must be careful not to upset her. With further warnings that my siblings were all sure that I would be the death of my parents I was finally permitted to enter. My mother was at that stage in a coma and on large doses of intravenous pain relief. As I sat down the monitor above my mother's bed started beeping. Her heart, it said, was malfunctioning. My heart lurched – oh no, I had finally killed my mother. I didn't watch my mother's face, didn't feel the contact skin on skin with her hand in mine, breath in her breath, exhale with her – . Instead I looked at the wiggling line and flashing lights on the television screen above the bed.

Birke (1999) explores the interlinking of representations of the body and some of the ways doctors no longer 'read' the body of the patient; instead reading the output from various machines and electronic devices. What is remarkable in my story is that the medical construction of the body was so pervasive that through my desire for reassurance it was able to displace and subjugate the physical bond and embodied knowledge that I shared with my mother.

Knowledge as a colonising force

Diabetes education is a clear example of how the intersections and disjunctions that occur as the ways in which we produce, construct, represent and communicate knowledge jostle against each other. This often leaves the educator and the person with diabetes playing out the conflicts and incongruities. The constructed medical knowledge often serves to invalidate the embodied knowledge of the person with diabetes leaving the 'diabetic' dependant on the formalised knowledge with no means to integrate it into the local context.

In diabetes education there are many sites of knowledge production, however for the sake of clarity I will refer to three main sites. These are the lived body; the site of interaction with the medical world – educator GP and specialist consultation; and the third site the global and decontextualised world of the epidemiological study. This global knowledge is then introduced into the local and particular sites by way of textual material (Farrell 2001) and specifically through print based media such as journal articles, studies, educational materials and so forth. The way in which

knowledge is constructed and validated in medical training also mediates the global with the local so that the educational material, the shaping of the discourse by the educator, GP or specialist, all impacts on the interaction and contributes to the colonisation of the lived body by certain knowledge practices. These practices serve to subjugate other ways of knowing (Foucault 1980) and as a consequence, invalidate both different textual practices – such as body text – as well as different methods of codifying knowledge. This in turn prevents an interaction where the local knowledge can flow from the most local site to other local sites, preventing a fruitful dialogue between different ways of knowing, and different bodies of knowledge. Furthermore it also creates a resistance at some level from those with subjugated knowledge, the bearers of the effects of the colonised body.

The same underlying problems of colonisation face both the peace building process and the process of building health. Current diabetes education gives rise to the colonisation of the body by medical knowledge. The mechanism and scenario are the same as colonisation by expert knowledge that occurs in post conflict situations. Spence's work (2002) on the difference between the three phases in post conflict situations provides a useful analogy for the process of colonisation of the body that occurs in diabetes education. In the war and post conflict scenario, the immediate dealing with the conflict and violence is known as the peace making phase. This requires the intervention of 'the other'. The next phase, the peace keeping phase is the enforcement of peace by peace keeping forces. The final phase is that of peace building. The implementation of the peace making and peace building does not ensure the peace building phase and in fact the way in which the immediate post conflict situation is dealt with may undermine the peace building process (Spence 2002). The overriding and undermining of the local knowledge through the imposition of a codified de contextualised or re contextualised global knowledge, that is introduced in the first two phases by experts, erases and undermines the local knowledge.

Similarly, in the situation with diabetes, there is the diagnostic phase or the phase where urgent medical intervention is needed to stabilise the body. This might occur during infection, pregnancy, sudden onset or undiagnosed onset followed by escalating and damaging symptoms. It is often marked by hospitalisation or the initial medical diagnosis and introduction to medication. This is followed by the peace

keeping stage where the locus of control remains still with the medical and outside carriers of knowledge. This might be characterised by visits to dieticians, health educators and GPs. The next stage is the peace building stage and this can be translated as the health building phase or the wellbeing phase.

Spence defines local knowledges as ways of survival and knowing the world that evolved in situ during and prior to the conflict and found that local knowledges foster self-esteem, self governance, and sustainability. The degree to which the expert western knowledge had obliterated/colonised the local knowledges had significant effects on the ability of the community to build peace.

Health building, like the concept of peace building, needs to be seen as ongoing and progressive rather than as a static event (as is conceptualised with the idea of peace as an opposition to war). 'Well' contrasted to 'ill' intimates that health is a static state as opposed to an ongoing negotiation between the body and its context. This colonisation does not simply occur in diabetes education but occurs subtly at different stages of learning the body.

The colonised body in diabetes education

The ability for people to move into a situation looking for constructive change, be it health education, peace building, or workplace learning and development, requires that there be a genuine collaboration, an ability to create the spaces in which to allow different knowledges to coexist and to inform each other without diluting the other. This then enables a process of reflection which uses different knowledges, each able to examine the other in different ways in order to identify the constructive and destructive elements and to foster agency. There can be no ownership of the final outcome. It is tied always to the place and time of performance – a living interaction between performers audience and place (see Chapter 6).

In diabetes education the role of the educator (be that the GP, dietician, diabetes educator, or the educational literature) is complicit with the process of colonisation of the body. The role of educator performs the same function as that of workplace educator. Farrell (2001 b:72) takes up Fairclough's position that workplace educators act as discourse technologists and concludes that workplace educators are "implicated

in shifting legitimacy from the local to the global [which] involves shifting local textual practices and disrupting local hierarchies of power and authority” However as Farrell concludes educators can open up the space for negotiation of what counts as knowledge, and who gets to "know", in the contemporary [workplace] if they recognise the political nature of their work and the significant, although not unlimited, power they wield as they mediate local and global discourses. In order for this to occur it is necessary to uncover the hidden discourses and the means by which they are told or reinforced.



In this chapter I have looked at the problems of mapping knowledge, of which categorisation and definition are aspects. The map itself becomes the text, the representation then standing in for knowledge. Forces such as globalisation, technology, and economic frameworks co-opt this representation and the map eventually becomes accepted as being the thing for which it stood for. Consequently the ‘messy bits’, the actual context which is as much a part of the knowledge as the map of it, becomes invalidated and hidden.

I have argued that if knowledge is how we know the world then knowledge cannot be fixed as it must follow a world that is in a constant state of change. Any fixed knowledge must simultaneously represent the conditions in existence at the time in which that knowledge was fixed, and those conditions can never be exactly reproduced.

I have constructed a model of the relationship between local and global knowledges. In this model the body as the most local site is at the centre and the most global at the periphery. Overlapping and linking the centre and the periphery is the concept of sites. The concept of site links local and global knowledges because it locates the place of potential exchange of knowledge from local to global and repatriation from global to local. The concept of site involves relationship and performance and embodiment. The concept of site involves the possibility of exclusion as well as possible exchange.