

THE CONTEXT OF MOVEMENT AND ITS SOCIAL ECOLOGY

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Abstract

The role of the subjective, intrinsic notions of the body as it primarily relates to movement discourses within educational settings, such as schools, community sporting clubs, the neighbourhood or the home is not well understood. The need to develop such understandings within the moving and bodily related learning areas such as physical/outdoor/dance/environmental education is warranted, as a revitalized notion of movement, and the various contexts in which movement occurs enables deeper consideration of sentient, feeling and kinaesthetic responses of the human body 'in' movement.

To consolidate and pursue the importance of the concept(s) of movement and its social ecology (Brown and Payne, 2008) such qualities, characteristics and dimensions of the movement concept must now be explored through contextualisation in these various movement related settings. As movement and moving related activities take place in various contexts, we gesture towards colleagues work in papers/presentations on environment (E) and community (C) and how such concepts individually and holistically form the trans-disciplinary potential of 'social ecology of education.'

Movement is basic to bodily practices but this 'primacy of practice/movement' is not well appreciated in the current education literature. A reconceptualised notion of movement in physical, outdoor, environmental, health and experiential education does not appear to yet get at the 'heart' of context. Where meaning-making, kinesthesia, bodily consciousness and somaesthetic understanding is offered in a positive manner, to intelligent responses to the otherwise deficit-discourses and negative rhetoric about anthropocentric and/or ecocentric 'risks' such as global warming, ozone layers, or lifestyle diseases such as the obesity, diabetes, physical inactivity, sedentary behaviours and disengagement in schools, the context of the moving body are yet to comprehensively reach these same contextual levels.

Our task as we see it is to move beyond practices of conceptualising, theorising and philosophising to a more pragmatic approach where the moving, feeling, sentient body is better understood in the differing contexts of physical education, dance, outdoor education, sport, coaching, fitness/personal training. Such contextualising, for the purposes of this paper, draws primarily on the phenomenology of movement and the body as it pertains to the physical education discourses in explaining human, social, cultural, more-than-human and environmental concerns that influence the ethico-political and intergenerational dimensions of the movement concept.

Therefore, in this paper we focus on differing cases where the intrinsic qualities and intricacies of movement are acknowledged as part of the movement concept, but that contextual issues for the practitioner, be it physical/outdoor education teacher, recreation planner or health promotion professional are examined. In presenting these cases in 'context' we gesture towards deeper layers where traditional cultural concepts of social class, gender, ethnicity may be reinterpreted through and within the 'concept and context of movement and its social ecology' in an effort to inform curriculum theory, development and pedagogy as it pertains to movement and related pedagogies.

Introduction

The importance of meaning and meaning-making to human beings should not be underestimated. As Shusterman (2008) has highlighted ‘People want their lives to be meaningful’ (p. ix) and perhaps this is why some individuals will go to extraordinary lengths to discover such meaning(s) and how this contributes to their personal self-understanding. Over the past decade philosophy, cognitive science, phenomenology and social theory have all examined, via differing lenses, the importance of such meaning-making to human life (Archer, 2000; Lakoff & Johnson, 1999; Sheets-Johnstone, 1999; Shusterman, 2008). Given the varied theoretical discussions occurring in these disciplines, it is interesting that within the broader discourses of education there appears ‘silence’ on the sentient, haptic and felt ‘ways of knowing’ and how such informed discussions may influence curriculum theorizing, epistemological development, pedagogical change in the classrooms and ultimately ‘learning’ ‘in’, about and through movement (Arnold, 1979). Our interest lies beyond the dominant ‘rational’ Petersian/Hirstian philosophies of education (English, maths, science, history etc), towards marginalized content/discipline areas namely: physical education, dance education and sports participation.

Physical education, dance education and sport share many common traits and it is the moving body which integrally represents common philosophical, theoretical and practical understandings of personal intrinsic meanings of movement. As Shusterman (2008) has written ‘...meaning grows from our visceral connections to life and the *bodily* [our italics] conditions of like’ (p. ix). We concur with Shusterman who calls for a ‘...deeper exploration into the qualities, feelings, emotions and bodily processes that make meaning possible’ (p.x) which directly contrasts the dominant and widespread way of knowing about the body, that understanding being primarily through the physical sciences (anatomy, physiology and biomechanics). Whilst the dualistic hegemony of mind-body in physical education, exercise science and kinesiology have been acknowledged and critiqued (Johns, 2005; Rintala, 1991) primarily via the critical-realist social sciences (Tinning, Kirk, Kenway, Payne) there still exists a marginalization of ‘personal’ human understanding related to the bodily sentient, haptic and kinesthetic ways of knowing, doing and becoming, particularly in the contexts of physical education, dance and sport. As an example Archer (2000) has argued that concepts such as self-consciousness, thought, emotionality and personal identity are prior to and more basic than the acquisition of our social identity. Such work directly contradicts much of the previous work on the social construction(s) of the body(ies) and acknowledges that critical realism has neglected the causal powers of subjectivism.

Given that these understandings of the moving body are integral to an individual’s agency and personal ontology, these concepts must be provided alongside those established ‘practices’ in the biophysical and socio-cultural sciences and practices of physical education, dance education and sport participation. As educational researchers we also subscribe to a research agenda which acknowledges the importance of the ‘sensuous’ where questions about how the researcher(s) and participants might be best represented as they search for the importance of meaning as derived from movement participation need to continually explored (Sparkes, 2009). We offer a positive view of such contributions contradicting the often media-driven, media-hyped functionalist purpose of participation in physical activity. Our task for this article as we see it is to move beyond philosophizing towards a more practical pedagogical approach where the moving, feeling, sentient body is better understood in the differing contexts of physical education, dance, and sport. Such contextualising, for the purposes of this paper, draws primarily on the phenomenology of movement and the body, within the frame of a social ecology of education (Payne & Philpott, 2008) acknowledging work conducted on figurational sociology (Green, 2002) (Ward, 2009) and carnal knowing (Mellor and Schilling, 1997) as it pertains to the broad discourses in explaining human, social, cultural, more-than-human and environmental concerns that influence the ethico-political and intergenerational dimensions of the movement concept. This paper will be presented in several sections, first a brief re-cap on the concept

of movement will be presented, followed by a succinct summary of current sympathetic literature on haptic, sentient etc ways of knowing. The article will then present 4 case studies: physical education, dance education, outdoor education and sport, before an analysis will be written. The final section of the paper will be a summary of the contextual concepts, and practical pedagogical implications engaging with the contextualisations of environment and community.

Conceptualising a social ecology of movement, briefly!

During the 2008 Australian Association for Research in Education (AARE) symposium titled *The social ecology of movement, environment and community*¹⁺², collectively four papers were presented that outlined the ‘concept’ of a social ecology of education (Brown et al., 2008). For the purposes of this article it is important to briefly return to some conceptual understanding of the social ecology of movement.

Conceptually a social ecology of movement (re)emphasizes the importance of a ‘lived experience’ (van Manen, 1997) via distinctive notions of ‘geographies’ of physical activity’ and ‘spatializations of movement’. ‘Lived experience’ is a highly personal and subjective. To more fully understand how participants in moving related disciplines come to understand such ‘experiences’ the concept of movement and its social ecology draws on such existential ‘qualities’ as spatiality (lived space), corporeality (lived body), temporality (lived time), and relationality (lived other) (Connolly, 1995), primordial/primitive and ‘wild’ elements other’ qualities, such as somatics (Hanna, 1995)⁶, haptic experiences (Hockey & Allen Collinson, 2007), and the sentient body (Crossley, 1995).

According to Metheny in Kretchmar (2000a) not all connotations are personal or distinctive, in fact they may be common to a particular time and culture, in other words socio-culturally constructed. As Roberts (2008) and Ryan and Rossi (2008) have cautioned:

meaning-making that is regarded as exclusively socially constructed does not account for the varied and often contradictory perspectives that an individual simultaneously takes up and rejects, yet theories that consider meaning-making to be based only on individual psychology neglect to explain the influence of the social milieu on any verbal or non verbal interaction.
(p. 40)

Whilst a tension between the individual and social appears to exist, for Metheny this was not a problem for it created opportunity for researchers and practitioners to address the complex meanings of movement between the personal and the cultural. Such tension led Norbert Elias to a rejection of the traditional notion of agency and structure, focusing instead on the webs of interdependency between people or, the ‘figuration’. As such the authors of this paper acknowledge ‘that the development of human knowledge takes place within human figurations, and is one important aspect of their overall development’ (Goudsblom, 1977). In other words the meaning-making that an individual ascribes/describes of their movement experience cannot be divorced from the social processes that exist. For as Denzin (1989) has clarified of personal meaning-making ethnographic narrative ‘...it is dependent on the ‘private’ folklore of the person or the group, although it may draw on broader cultural and ideological themes’ (p. 186).

Our purpose for the development of the concept of a social ecology of movement and movement education is to develop and contribute in a positive manner a series of intelligent responses to the current dominant deficit discourses of obesity, diabetes and cardiovascular diseases. Moreover it requires a response to important epistemological questions in physical education, outdoor education, health, environmental education and community physical activity participation: why do students derive little meaning from physical activity during PE (Tinning & Fitzclarence, 1992)? What do we understand by the humanistic and philosophical interest of the ‘lived experiences’ of movement (Kleinman, 1979)? How can an individual examine their education ‘in’ movement (Arnold, 1979)? What socio-ecological ‘drivers’ impact healthy living of communities (O’Connor & Ward, 2009)?

Such complex questions require a research (and pedagogical) focus on the qualities and intricacies of movement that have traditionally escaped mention in the dominant discourses of physical education, outdoor education, dance education (to a lesser degree) and sport.

Such deep subjective, intrinsic ways of knowing contribute meaningfully to our understanding of self, but have often been historically marginalized within the literature. Yet there exists an important undercurrent in diverse disciplines such as philosophy (Lakoff & Johnson, 1999; Shusterman, 1997, 2008), physical education (Brown & Payne, 2009); Brown, 2008 #79; Hawkins, 2008 #199; Booth, 2009 #217}, sociology (Archer, 2000; Sheets-Johnstone, 1999) and cognitive science (Varela, Thompson, & Rosch, 1991) which endeavours to uncover the richness and primacy of the body. Philosophically speaking such recognition of the primacy of the body within educational discourses has suffered from the overt academic and hence 'mind' focus generally in line with Peter's notion of rationality (in education). Somewhat affiliated with this has been the rise of postmodernist thinking which has sought to diminish the importance of human properties and powers (Archer, 2000). Our position is more in keeping with liberal approaches where development of meaning and meaning-making is the rationale for such educational importance (Phenix, 1964; Pring, 2004). Hence, in line with such educational conceptions understanding of self requires both reflective and reflexive practices, not only of the mind but also of the body and how in turn this leads towards the development of meaning-making experiences. The purposes of this paper, as we see it therefore is to move beyond practices of conceptualising, theorising and philosophizing (see symposium in 2008) to a more pragmatic approach where the moving, feeling, sentient body and in response meaning and meaning-making is better understood in the differing contexts of physical education, dance, outdoor education, sport, coaching, fitness/personal training.

The importance of meaning and meaning-making in the human(s) movement/moving³ literature has existed for over 40 years, yet it has failed to move from a position of marginalized status during this time. Proponents sympathetic to its importance within the field of physical education have included: Kleinman (1979), Arnold (1979), Metheny (1965, 1968), Loland (1992, 2006) and Kretchmar (2000a, 2000b, 2005, 2007, 2008), Hawkins (2008) and Booth (2009). More recently there are others such as Kentel and Dobson (2007), Quennerstedt (2008) and Brown (2008) who have also contributed to the phenomenological work and importance of meaning-making within the domain of physical education. Meaning making as it relates to literature in the field of dance in education has evolved parallel to the emergence of naturalistic inquiry into dance and movement as an embodied art form (Bartenieff, 1980; Hawkins, 1992; McFee, 1992). More recent work by researchers such as Stinson (2007) and Warburton (2008) further extends the phenomenological approach to investigation and illumination of dance in education, and relates to the recent popular acceptance of mind-body exercise regimes in western society. Additionally the influence of concomitant research areas, such as qualitative research in sport and exercise (Hockey & Allen Collinson, 2007, 2009; Sparkes, 2009), as well as cognitive science (Varela et al., 1991), philosophy (Johnson, 2008; Shusterman, 2008) provides cautious optimism.

Sentience, meaning and meaning-making

In line with Dewey, Arnold and Kleinman development of understanding of self and meaning-making from lived educative moving 'experiences' is and of itself fundamentally important to us as humans. For Johnson (2008) '...what is now needed is a far deeper exploration into the qualities, feelings, emotions, and bodily processes that make *meaning* [our italics] possible' (p. x). So it is this exploration related to the aesthetics of the body as it relates to movement that is now required. Within the discourse of physical education we can turn to either philosophy or qualitative sociology to seek answers to these 'wild' dimensions and ways of knowing. Briefly I will describe some philosophical work in physical education before turning to some qualitative research/phenomenology of sport to further explicate this understanding.

Hawkins (2008) has challenged physical educators and the profession to stop relying on health and wellness for its legitimation and proposed that ‘philosophical pragmatism and cultural materialism’ (p. 345) conspire to rob the profession of its soul. He proposed that the establishment of *meaning* for our profession is in fact crucial to its survival. Drawing on Michael Polanyi’s theory of meaning⁴ (personal knowledge) Hawkins describes terms such as subsidiaries and focal attention within a framework towards a deeper understanding of a tacit way of knowing. In this way ‘subsidiaries have meaning only as they bear the object of focal attention. To make subsidiaries themselves the object of focal attention is to destroy meaning’ (p. 351). As an example Hawkins draws on his love for basketball and demonstration of how subsidiaries and focal attention within the sport can be described:

The author loves basketball. He has played it since he was 7 years old. He was a reasonably successful high school player and even dabbled in intercollegiate basketball for a year. He has never tired of the delight of the game, and now, in his post-fifty years, he continues to play several days a week (with much younger players!). When he is ‘out-of-shape,’ when he doesn’t have the cardiovascular endurance needed to sprint repeatedly up and down the 94-ft court, it is a problem. What is the problem? It is that he can’t *play*. The problem is that the game loses its *meaning*. Only when his fitness levels return to a more appropriate capacity does meaningful game play return. He is not delighted in his fitness levels per se (as worthy a goal as that might be); he is delighted in the playing of the game. Health and fitness have their meaning as subsidiaries as they bear on the object of his focal attention—the playing of the game of basketball.

Although the literature in physical education has not been abundant, that which has been available for four decades is conceptually rich and has provided untapped intellectual resources for theoretical development of a phenomenology of movement. There are others within the physical education discourse that more concretely have illustrated the meaning(s) of movement and meaning-*making* in physical education and sport. For example, Metheny’s (Metheny, 1965, 1968) denotations and connotations of movement; Arnold’s (1979) concept of education ‘in’ movement (Arnold, 1979); and c) Kretchmar’s (2000a) description of meaning-making.

Mark Johnson (2008) stated the obvious when he conceded meaning is a big, messy multidimensional concept. A variety of ‘slow’ movements and physical pursuits in the garden are interspersed with strenuous activity. Is the ‘meaning of meaning’ important in contexts other than physical education and sport? David Cooper (2006) has responded to that challenge, reiterating in our conceptual work notions like, for example, the spatialization of the body, geographies of physical activity and the social ecology of movement, environment, community.

Cooper’s (2006) very relevant ‘eco’ study of the philosophy and phenomenology of gardening and its meanings (i.e. as an everyday version of access to ‘nature’ for many but not all) identified the different but overlapping modes in which meaning typically occurs, namely mereological, instrumental, depictive, allusive, expressive, symptomatic and associative. Messy and complex as the meaning of meaning is, therefore, here we are broadly concerned with the absence of mention about the role of meaning and its making in the lives of those whom our pedagogies, curricula and research purport to serve. Embodied meaning and its making, or somatic understanding, or intercorporeality and other somaesthetic aspects of body consciousness (2008) dimensions of the human condition might well be an invisible or ignored ‘prerequisite’ for a broadened, less epistemologically constrained notion of formal and mind as cognitively-driven learning.

Sheets-Johnstone’s (1999) phenomenological account of the ontology of movement, in particular, the experience of self-movement, locates it in our primal animateness and makes the case for its ‘in the beginning’ profound epistemological significance. Toadvine’s (2009) ecophenomenological account of the ‘nature of experience’ and ‘experience of nature,’ as with Cooper’s meaning of ‘gardening’ addresses our ‘animality’ in his quest to articulate a philosophy of human-nature relations, embodied

through experience. For Sheets-Johnstone, movement creates the qualities it embodies and that we experience.

Movement—be it in gardening or surfing a wave, therefore, is ‘meaning in the making’ and it is only through the meaning-making of movement and its experience that we might begin to better somatically reflect upon, following Shusterman’s Dewey, some of those moral dimensions of our felt sense of being in the world. This ‘learning’ is invaluable as is the conceptualization of the spatialized body as a geography.

We believe that it has become evident that within and to some extent outside of the profession, there exists support for the revitalized concept of movement and movement education that draws on distinctive, personal, subjective and pleasurable experiences of human movement. Booth (2009) revisits a philosophy for physical education and proposed ‘...pleasure as a potential pillar of disciplinary coherence for physical education’ (p. 133). His fourfold rationale for its importance lies in: a) physical education is a discipline that spans biology and social sciences and both are necessary to advance our knowledge and understanding of the concept; b) pleasure is surely at the heart of why students seek to engage with PE, sports science and kinesiology as careers; c) may provide physical educators with matter to distinguish themselves from traditional fields of deficit (e. g. Medicine), and d) introduces opportunities to discuss moral and ethical issues pertinent to the good and bad pleasures of movement participation. But what is pleasure according to Booth? Booth’s description of pleasure, the history and de-pleasuring of physical activity and work on the prejudicing of pleasure by the academy or state is elaborate and complex. We must therefore confine ourselves to succinctly describe his work. Booth’s argument is underpinned by French sociologist Callois (1961/2001) conception of *ilinx*, and that is his focus on the article. Additionally and importantly for this paper, Booth also employs the complexity of the pleasure concept as described by Pringle (in press). Pleasure according to Pringle is a concept which encompasses the senses—sight, smell, touch, hearing, equilibrioception, and kinesthesia. Such work appears to transcend the epistemological and methodological boundaries of phenomenology and qualitative research. We are cautious, like Sparkes (2009) that whilst a growing literature base has occurred within the sociology of sport regarding the body, it appears at a rather abstract level ‘...ignoring the carnal realities of the sporting body’ (p. 27). In line with Hockey and Allen Collinson (2007), we believe that the phenomenology of the body provides for an appropriate ‘embodied’ analysis of the body within sport. Yet empirical research on such embodied perspectives, particularly the sensing and sensuous sporting body using phenomenological lenses are rare, some exceptions are Hockey and Allen Collinson’s work (Hockey & Allen Collinson, 2007, 2009), (Downey, 2005; Wacquant, 2005). Hockey and Allen Collinson’s work on the phenomenology of the sporting body (re)emphasised the importance of movement and rhythm, inner timing, aural and respiration, the visual, the olfactory and touch/haptic to the sporting body. It appears that this body of work could clearly be defined as *carnal knowing*, information that is ‘thoroughly embodied and connected to people’s senses and sensualities. It is tied to specific locations, highlights the fusion that exists between experience and awareness, and reminds us of the mind’s location within a fleshy body which is itself affected by material conditions and social relationships’ (Mellor & Shilling, 1997, p. 56).

Meaning-making, figurational sociology

As Dunning (1999) has highlighted ‘...figurational sociology is concerned with exploring links between the biology, psychology, sociology, (*we might add phenomenology*, [our italics]) and history of human beings’ (p. 13). We accept in line with Maguire (1993) that sociology is critical of the approach of phenomenology because its ‘...writers overlook how historical and social structural elements enable and constrain the making of human life’ (p. 35). As researchers and practitioners engaged with physical education, outdoor education, dance education and sport, primarily through discipline study but also with interest in teacher education, pedagogy and curriculum development, we accept that the body is theorized as a cultural construct and this affects identity formation and particular forms of embodiment (Brandt, 2004) . In this way through acknowledgement and

acceptance we might be ‘crossing’ a chasm between phenomenology and sociology. Whilst we are cautious about such ‘journeys’, we believe that the partially marginalized work of Sparkes (1991, 2008, 2009), Denzin and Markula (2003) in the study of sport, physical activity and the moving body provide researchers, such as ourselves, with ‘signposts’ that demonstrate this chasm between sociology and phenomenology may, if we accept and acknowledge the possible deficiencies of historic phenomenological approaches, not be that far removed from each other. As an example we specifically highlight the very recent work of Sparkes (2009), in which he examines how the senses are engaged in sport and exercise sciences, the implications and challenges for researchers and practitioners and inevitably how we as humans come to ‘understand’ the social world.

We now present some case studies/vignettes of our experiences as teachers, dancers, movers, players, leaders in the context of physical education, outdoor education, dance education and sport. Each vignette provides, we believe, examples of how the subjective, ‘intrinsic’ nature of knowing the moving body can be represented.

Physical education case study⁵

I down my cup of coffee in the ‘science’ staffroom as the first bell sounds to end recess. I have five minutes before the second bell to quickly journey from the northernmost part of the school to the gymnasium at the southern entrance, where students meet to get changed and where the equipment is located for physical education. I feel half a world away from where I should be psychologically or physically. I have just taught a ‘double’ Year 9 boys European handball where most of them wanted to engage with classroom discipline and management instead of learning ‘in’ physical education. My mind is racing as I also need to prepare my application for my own job in the only spare I have today during last period of the day. Oh the life of a government school physical education teacher on a contract position! As I skull the dregs of the coffee I spill some across my face and another teacher notices ‘Trent, you seem a little stressed today!’ ‘Thanks for noticing’ I sneer sarcastically under my breath. I look quickly at my planner and notice that in a couple of minutes time I will be teaching a group of Year 8 girls cricket.

I start the ‘long march’ down, which quickly becomes a jog as I hear the second bell, from the top of the school to the bottom and open up the equipment shed before moving around to unlock the changerooms, already dealing with notes from students that are sick or have forgotten their school PE uniform. Right, what am I going to teach today I rhetorically ask myself? Normally as it was the first week of a four week block we would probably be doing some batting drills, some catching drills, some bowling drills followed by a small game. Pretty much a traditional lesson; warm-up, skill-drills and minor game. I told myself that I was going to think and reconceptualise my teaching as soon as a new unit started...but did I have to make today of all days the day that there was going to be a change?

It was only a couple of weeks ago that I went to a professional development day where I went to a session where the importance of meaning in school physical education was discussed. The presenter was an academic who did the same undergraduate degree from the same university as I and he posed some really interesting questions about the meaningfulness and philosophical importance of physical education in education. This triggered an interest because I was having some interesting personal discussions about PE’s value and what it should be all about. The presenter was enthralling. He presented concepts such as meaning-making, lived experience, sensory data, representation and a thing called phenomenology. He used practical examples that made sense. At the end of the session I thanked him for such an informative and important session and grabbed his business card and said that I would make contact with him later.

So back to reality and here I was determined to introduce the students to some meaningful learning. So I grabbed a couple of cricket bats (plastic ones as well as ones made of willow), some tennis balls, some incrediballs (these are made of rubber and are used in junior cricket) and some cricket balls. There were also several sets of the green junior cricket stumps for some of the activities and perhaps a minor game later... So the class all went across the 'bottom' hardcourt and ventured towards the oval. I remember the day well because the feeling of the sun on my 'white' legs reminded me how wonderful it was to be a physical education teacher on a new warm spring day.

[Mr Brown sets up the class. Technically it is very efficient, the students all know the routines, where the distribution of the equipment occurs from and where they need to sit. So the class begins with little disruption. Mr Brown starts...]

Introductory activity

'OK class, we are going to do a lesson on cricket—so grab yourself a ball from the bucket and every time I blow the whistle change the ball to one that you haven't used before. So using the space that I have marked out throw and catch while moving around it'.

'When throwing and catching what does the ball feel like when you catch it?' 'What happens to this feeling when you throw it low versus throwing it high?'

[CHIRPPPPPPPP—the whistle sounds].

'Change balls, remember to think about what the ball feels like on your hands. Can you compare between the first ball and the second?'

[CHIRPPPPPPPP—the whistle sounds].

'Stop come in. Now find a space and in your notebooks write down your thoughts on what it felt like to throw and catch the different balls. Spend a couple of minutes on this and then we can discuss this.'

Skill drill

'The next activity is that we are going to bowl at the stumps in pairs. Jen and Alex can you do a quick demonstration?' [The girls jump up quickly. They each stand back about 10m from the stumps before performing a couple of bowls at the stumps with them 'backing each other up'. While they are performing Mr Brown gives some instructions].

'So remember that you need to side on, start with the T-shape, and you pretend that you have a string going from one hand to the next. What happens when you pull this down?'

Three or four girls are eager to answer 'Yes, Sacha what happens?'

'Your other arms comes over the top'.

'Fantastic That's correct, great!'

'So get into pairs and find a set of stumps to bowl at. One last thing...what I would like you to do is think about what it feels like with your bones, muscles, ligaments when bowling. What are those feelings that you have when bowling? As soon as my whistle goes again find a space and write down your thoughts'.

[The activity goes on for a couple of minutes. The girls are all excited and running and bowling and appear to be successful technically at bowling. But they are also discussing their subjective inner feelings to each other verbally and out loud. 'I can hear my bowling shoulder creak when I bowl' says Laura. 'Yeah but Mr Brown says what does it FEEL like' retorts Missy from behind the stumps. 'I suppose it feels like...oh..uh..I don't know...I suppose like an overarm when freestyling

(swimming)... It feels really unnatural, my muscles and ligaments are stretching, groaning, rolling, clicking? Is this what you think Mr Brown means Missy?

'I guess so—you just write it down and we can discuss it a little later,' Missy positively replies.

'OK everyone I would like you to swap stumps. Rotate around and tell me at the end what the differences are in your feelings when bowling to a different set of stumps' [The teacher deliberately moves the group around as some bowling set ups are on soft spongy grass, while other groups are bowling on a hard, compacted dirt area of the oval.]

[CHIRPPPPPPPP—the whistle sounds. All the students look at Mr. Brown]

'What happens when you move closer to the stumps (or further away) from them when you bowl? Why don't you try—bowl 3 from each 'spots'; close to the stumps, 1m further out and then 2m from the stumps. What changes do you notice with your bowling?'

[The bowling activity does not last for too long. The teacher Mr. Brown sees that some of the students are beginning to move off-task so he decides to call the whole group in.]

'Thanks everyone. It was evident that everyone demonstrated the bowling action really successfully. I could hear all of talking and discussing the *feelings* of the bowling motion. Some fantastic conversations were going on. So for the next couple of minutes reflect on your thoughts and jot these thoughts down in your notebooks. Remember you bowled on 2–3 different surfaces, and you bowled at 2–3 different points. What were your feelings at each of these points—remember these and write down your thoughts.

Outdoor education case study

We include, with permission of the student song-writer, extracts from the lyrics he wrote after an outdoor education experience at Bear Gully, on the coast of Victoria. The lyrics were developed from the experiential data he jotted down about his profound 'rockpooling' experience. He sang this as part of the 'entertainment' after the 'Conference Dinner' on the first night of the second outdoor education experience at the same place some six weeks later.

The song is called 'Dip your feet in' and written by a self-confessed initial critic of the experiential encounter that required spending a few stationary hours patiently observing a rockpool. Apparently bored, he took his shoes off and put his feet in the water to, we interpret, *become* other through this wild, edged experience.

So, go on and dip your feet in,

Who knows what might happen once you've been,

Give your life a miss now; you make your fate,

Don't sit around thinking then it was too late.

You have a chance, should you pass it up,

Push on through and treat it as half full cup,

There are positives here to what can be drawn,

Not necessarily a decision by dawn,

Go go go on, Dip your feet in,

Go go go on, Dip your feet in.

The experiential journal is, therefore, a crucial means of the student's attempts to re-present the corporeal engagement in time and space.

This is taken from the following publication:

Payne, P. & Wattachow, B. (2009). Phenomenological deconstruction, slow pedagogy and the corporeal turn in wild environmental/outdoor education. *Canadian Journal of Environmental Education*, 14, pp. 15–32.

Sporting case study—Hockey

On the back of my shirt it reads 'Falcons'. I am not a bird, I know that, but myself and the rest of my hockey team like to think that we emulate the graceful ascent of a falcon. In our case, we start every hockey season with the intention of ascending up the 'ladder' and claiming the title of 'Premiers'. As I and the rest of the team prepare ourselves for battle, there is an awareness that today is the Grand Final. Today is the day we have worked as a team so hard to reach. The many evenings spent running around the pitch in the cold, wind and rain seem, all of a sudden, worth it.

We line up, ready to commence the battle that will conclude the 'war'. We clap and cheer as the opposition run onto the pitch, and then they do the same in return. As we stand face to face with our opponents, and do the obligatory hand-shake, the nervous energy emerges. My tummy feels empty and is 'churning' up inside. The twisting and turning and bubbling inside send my thoughts and feelings back to my very first university examination – human structure and function. I threw up before this and whilst I didn't 'chuck' before running out onto the field, it is that same gut feeling. Perhaps more 'adult' like, I have learned to control those sensations. The nervous sweats, hairs on the back of the neck standing up...I am getting cold. My mind races again to my doctoral dissertation viva. It is nearly that same feeling... I just want the game to begin, as I did with my viva. Where is the whistle? When are we going to start this game? My mind races again. I laugh to myself...I can't even remember the first question the examiner asked me. Its amazing how something completely 'unrelated' to this moment of time shoots into my brain. I feel excited, nervous and hopeful that I will perform well. I play in a central position on the pitch. It is my job to control the play and whether I play well or not, and have the energy to run until the cows come home, is usually a deciding factor in whether we win or not. The whistle blows, the push-back is taken and battle commences. Having had just enough time to look around and decide where my next pass will go, I intercept and pass to the right. The pass is quickly returned and I smash the ball as hard as possible to the left side of the pitch. I am simultaneously barged into by a bull, or at least that's what it felt like. As I hurtle through the air in slow motion, land to the ground and feel my arm scrape across the astro-turf like sand paper on a piece of timber. The stinging sets in almost immediately. As the story goes, hockey players are a tough breed, but I can't help looking at my bleeding arm and attending to it like a cat strokes its wounds.

In six months, a group of 14 people have gone from strangers, to team-mates, to close friends. For me, hockey is much more than chasing a ball, it is a context for socialising and belonging, it is a context

where norms are almost defunct (if I were to chase a ball down the road, at high speeds, whilst knocking a few people off their feet, it would probably be frowned upon).

Dance in education vignette

It is a regular early morning mat time for about twenty children aged between 3–5. They are wriggling on the carpet of the foyer on the first day of a planned dance/movement exploration unit for this group. The purpose is to have the children in the main activity room while another staff member sets up for the first play-stations time of the day. Once the children all gather in the activity space, the teacher introduces the movement task to come, by explaining that they should try out different ways of using their own bodies, but endeavour to avoid bumping into others. She begins by using some children's yoga cards brought in from home, holding each one up and asking the group to try making the shapes indicated. These cards are in fact, drawings of a green frog making lots of different, humorous bodily shapes involving balance, connection of limbs and coordination of large body parts—torso, arms, and legs. The children are kept of task as the cards change frequently, with the frog upright, leaning over, lying on the floor. Attempting to model what they had seen, the children seem to enjoy wobbling, stretching, holding and changing their whole body shape with each card displayed.

One boy (James) who has been introduced to the teacher as the most problematic in terms of his behaviour, is making little or no attempt at first. The explanation given to the teacher is that his disruptive behaviour is largely due to a difficult home situation sometimes compounded by a food-chemical sensitivity. James' parents were also expecting the arrival of a third child, and James would also soon be moving from his familiar kinda to a school for pre-prep. James quickly loses focus after falling over with one particularly challenging body shape. He runs around the group arms wide and voice loudly screaming. This disconcerts all the remaining children, so the teacher asks them all to hold their last shape so they form 'statues in the park'. The growing stillness in the room seems to calm James, and he gradually becomes quiet and joins in by making his own 'statue'. The teacher then wanders around and amongst the children giving soft encouragement to those holding their frozen shape particularly still and congratulating those who are truly focussed on this contraction of every muscle in their body. James moves a little to grab her attention, but then receives positive feedback with his efforts to contain the difficult balance he has struck by standing on one leg.

The next instruction, once the room is still, is for all the children to 'melt' to the floor and for each to become a puddle of water spread over as much of the ground as possible. Children are clearly engaged in the imagery as it is creatively described with slow words by the teacher. They sink to the floor with and amongst each other, and James for once follows along with his peers, making a big effort to slow down his movement as he crouches low and finally lowers himself to the floor lying on his stomach with arms and legs spread wide and head on one side. He closes his eyes. The teacher has put on some instrumental music which contributes to her vocal cues which ask the children to relax, breathe and imagine they are out in the playground now, covering it with lots of puddles of water spread out and then evaporating into the air above. This quiet visualisation exercise captures the children's conscious minds and appears to calm their bodily responses so that the room is unusually calm, quiet and restful. Evidence of slower breathing and floppy bodies indicate enjoyment of this task amongst the group.

After this movement and relaxation activity, and whilst the children are still lying down, the teacher begins to explain the manner in which they are to make the transition to their next play-station activity session. Each child is gently touched on the shoulder to allow them to rise and move off to a selected play location, silently choosing their equipment or moving outside to explore the garden. James for the first time this term, has been able to respond to the process requested by his teacher, and seems to be newly in control of his behaviour when he tries not to disturb his playmates as they still lie on the floor awaiting the touch of the teacher to get up. He looks deliberately at the teacher for recognition of his efforts. This is reciprocated with a smile and nod, which brings a big grin to his face as he walks confidently outside to play in the sand pit.

A socio-cultural perspective: the personal plane of analysis

As the teacher in this vignette above, I was brand new at the centre where none of the children knew me, and I knew only a little of them. I was eager to do the right thing by the centre and I chose to use my knowledge of early childhood movement and dance to begin to build a relationship with this group of 3–5year olds. Using Rogoff's (2003) three lenses, I reflected upon this incident as follows. I was very much aware of James in the group right from the start, as he took up significant personal space, moved constantly and was very vocal amongst a generally passive and gentle class of children. I wondered if I had only exacerbated his concentration difficulties by using the chosen yoga cards, and a sick feeling in my stomach began immediately he started to run away from me around the room yelling. This was a forcible reminder that I had not had time or opportunity to establish a trusting relationship with him as yet, but it was a relief that he expressed bodily control soon after this display. I found it difficult to separate how I would act as a mother if it were my son disrupting the class, from how I should act as the adult with someone else's child, since relaxation and breathing exercises seemed to work for me with my daughter at home.

The interpersonal plane of analysis

For James I must have seemed like just another and also an unknown adult, trying to make him do something he didn't want to do and he reacted the way he was used to reacting. This time James seemed to have started off deliberately trying to gain the most attention—the promptness of his response and the look on his face I took as evidence that he had acted this way before and it perhaps was because he didn't have an alternative means of responding in his emotional repertoire. A common answer given by very young children caught in the dilemma of this type of behaviour is 'I don't know why I did it' (Nutall and Edwards, 2004). It was my intuitive switch to a calming and slow instruction for the entire class which had probably helped to stabilise James' universe at that moment, and perhaps it was just what he (and other peers around him) needed at that time of day. An embodied response from me to calm down was also needed by James at this moment in time.

The community/institutional plane of analysis

James' difficulties came with him into the centre from his home and affected everyone else and every other relationship within it. He was always the first child to be dropped off every morning, and one of the last to be picked up, five days a week. Every Monday morning arrived with his parents regaling staff with tales of the havoc he has wreaked over the weekend. He was certainly living up to the negative expectations they had of him. From this short class activity, it was clear that bodily movement and sensory awareness may have been the element which could offer James help from a non-verbal perspective to self-regulate his behaviour. I chose to continue this movement oriented approach by offering positive reinforcement and a degree of personal autonomy within safe boundaries, and allowed him to feel his emotions through the movement tasks and imaginative play. By introducing an alternative whole body movement exploration task into the daily routine, there could be a chance for overall benefits for all the children in this group with further development of creative dance and relaxation.

Discussion

These four vignettes of physical education, outdoor education, sport and dance education have drawn on the ‘lived experiences’ of each of the co-authors of this paper. They are included because they provide examples of how the moving body in different environmental and community contexts can be understood via the meanings attached and described by those that have written them. For as Denison and Markula (2003) write ‘...to experience life we chew, sniff, touch, heat up, cool down, or take a fall...all movement. Moving, in other words, contains and elicits *meaning* (our italics); it also excites, expands, and enriches every aspect of our lives. To know we have to move; to understand ourselves and others we have to move’ (p. xv). Whilst we have offered examples of contextualized situations primarily from within education, such as the physical/outdoor/dance education case studies, the sporting case study should offer other ‘educators’ in the broader community such as sports coaches, community physical activity professionals, gym instructors and personal trainers evidence of how the individuals we all work with describe their subjective, intrinsic and personally meaningful participation within moving body work.

Such vignettes also offer ongoing support to the current work of the movement, environment and community (MEC) faculty research group whereby the theoretical framework of a social ecology of education is pedagogically achieved through experiential education. We firmly believe that this research, these vignettes, provide ‘empirical’ contextualised evidence of the ‘...spatial, place and geographical constitutions of selves, identities, social practices and cultural conditions’ (p. 5). As a result there is much consistency in the work that appears here, for example with Bourdieu’s (1984) concept of ‘habitus’, Archer’s (2000) ‘primacy of practice’, Elias’ (1994) notion of the ‘figuration’ and Merleau-Ponty’s (1962) ‘primacy of perception’. This has led us we believe to be more cognizant of looking beyond individualism, anthropocentrism, socialism, communitarianism or environmentalism. In this way, we wish to:

distance ourselves from the pedagogical and methodological connotation of the individualized learner disconnected or displaced from his/her environments and, therefore, broader questions that need to be asked about the ways in which society is reconstituted, as indicated by Giddens, Bourdieu, Archer and James. Social ecology and experiential education seek to overcome the chronic lapses into individualism and isolated selves severed from others and the world in which we experience and exist. We want to move on from methodological individualism, in much the same way (Payne & Philpott, 2008).

In this paper we have highlighted the important resurgence and interest in embodied meaning-making and how individuals which engage with various movement ‘forms’, be that through physical education, outdoor education, sport or dance education, come to understand themselves (Arnold, 1979) and the consciousness of their bodies (Shusterman, 2008). Rintala (2009) has recently highlighted in the 43rd *Amy Morris Homans Commemorative lecture* that

play and the meaning of playing in its various movement forms (play, games, dance, sport, and perhaps exercise) have been diminishing as critical elements in our field...we seem to have forgotten about the immediate benefit of doing these activities—the joy, the challenge, the risk, the fun (p. 280).

Against this we feel the ‘tide turning’ in favour of more intrinsic subjective, sensory ways of knowing the moving body. Researchers, especially in physical education over the past 18 months have heeded calls about the importance of subjective knowledge and ‘learning’ complementing the objective rational approaches so common in physical education curriculum and teacher education programs. Authors such as Brown and Payne (2009), Booth (2009), Chunlei, Tito and Kentel (2009), Rintala

(2009), and Hawkins (2008) have written from various standpoints in the journal *Quest* about 'different' ways of knowing, meaning, and meaning-making through movement, sport, exercise, play and dance. There also exists a burgeoning literature base from philosophy (Cooper, 2006; Johnson, 2007; Lakoff & Johnson, 1999; Polanyi & Prosch, 1975; 1997, 2008) that examines the meaning and nature of embodied consciousness. Whilst such conceptual writing is helpful, ongoing contextualization will lead to different methodological approaches and pedagogical practices of *representation*, for as Metheny (1965) has acknowledged many of the sensory experiences that make our lives meaningful to us can never be expressed in words. Can you describe such a simple thing as the aroma of coffee?' (p. 104). This quest for adequate *representation* of such meaningful experiences has also been at the heart of many authors, such as Andrew Sparkes (2004), and Hopper et al (2008) leading at some point we hope to *legitimation* of a field consistent or at least complementary to the objectivist/rationalist way of knowing the moving body.

As can be demonstrated from each of the case studies above, be that the first lesson of the cricket unit, the lyrics of the outdoor education student, or the sentient bodily feel of the hockey player before the grand final, the sensory experiences 'felt' by each participant are uniquely their own. Sparkes (2009), drawing on authors such as Classen and Howes, describes this in terms of '*sensory anthropology*' (p. 26). Whilst sensory experiences are personal, there is a need to examine those in context, whereby cultural ideology and practice are not discounted (Sparkes, 2009). We have explained similar concepts elsewhere (Brown & Payne, 2009), where the 'nature of the experiencer' can also be described in terms of their intentionality. Here we believe that intentionality as a key concept of phenomenology, through (i) conscious intentions and (ii) preconscious demands, partially explain the subjective, intrinsic sensory experiences 'felt' by participants in the case studies. More importantly, for this paper, is how such meanings 'into the primordial and socially constructed nature(s) of experience...to promote and adjudicate different meaning levels and making processes' (p. 428) within the curricula and practical discourses of physical education, outdoor education, dance education and sport can be 'constructed'. In other words how can such sensory 'understandings' contribute to the knowledge of teachers, coaches and practitioners of the moving body? We believe that Rintala (2009) and Brown (2008) in the physical education literature provide some guidance here, while Payne and Wattchow (Payne & Wattchow, 2008; Payne & Wattchow, 2009) provide example for place, wilderness and outdoor education. For sport and exercise sciences the exemplary work of Sparkes (1991, 2004, 2008, 2009) and also Markula and Denison (2003; 2000) describe the richness of the personal meaning-making in a variety of exercise and sport related 'contexts'/environments, whilst acknowledging the important work of the social-cultural-historical landscapes often described as missing in research underpinned by phenomenological approaches.

Whilst there exists 'some' literature that 'signposts' pedagogical practice in both physical education and outdoor education, such a 'different' teaching style as demonstrated in the physical education and outdoor education case studies, we believe are still relatively minor in the teaching of these disciplines. There are a couple of points worth noting here about how these lessons were conducted and taught and consequently may be analysed: (i) the concept of kinaesthetic flow patterns or primordial meanings when describing education 'in' movement (Arnold, 1979); (ii) how the individuals tried to describe their sentient feelings when participating in movement and finally, (iii) movement as a basis for meaning.

Briefly, Arnold conceptualises movement in three forms: education 'about' movement, education 'through' movement and finally education 'in' movement. It is this final concept in which we wish to elaborate. According to Arnold (1979) education 'in' movement are those activities of movement/physical activity that are worthwhile in and of themselves from the perspective of the moving agent. The importance of them educationally is that *moving* allows the agent to actualise himself/herself in distinctive, pleasing and bodily related contexts as a process of understanding their own embodied consciousness. By focussing on the movements themselves, e.g. bowling the cricket ball, hitting the hockey ball or dipping our toe into the water, such sensations may or may not be personally meaningful to some degree and relate to the 'practical knowledge' or practical concepts

that are likely to be formed with the environment, prior to such social understandings (Archer, 2000). We also choose here to re-emphasise the work of Hawkins (2008) use of Polanyi's theory of personal meaning and the importance of understanding the differences between subsidiaries (eg fitness, health, skill development) and focal attention (the game or movement itself). For if these are confused or are not understood, by researchers, teacher educators or teachers, clearly then '...to make subsidiaries themselves the object of focal attention is to destroy meaning' (p. 351).

Authors such as Markula and Denison (2000) and Margaret Archer (2000) highlight the importance of the 'primacy of practice' and movement experiences as part of 'creating' bodily knowledge or to attempt to answer questions on what it means to be human. In doing so, both sets of authors acknowledge the issues about textual representations of bodily related activities. Archer's work utilising philosophical/sociological frames describes the importance of the primacy of practice where the *sensing* (of the body) should be seen as wordless, because it is both pre-linguistic and a-linguistic. In other words '...to assert the primacy of practice is a refusal to accord primacy to language and this is what is maintained in relation to the emergence of self-consciousness' (p. 121). Markula and Denison challenge the dominant use of language and text in representing sporting and moving experiences; '...if we entirely ignore our physicality, there is a danger that we might begin to consider language as essential, that is, a core that all else can be derived from and the only true way to understand what it means to be human' (p. 427). Drawing back to the case study for a moment, the girls can not find words to describe the sensations they 'felt' during their lesson. This example gives further evidence to the work by Denison and Markula and Archer above. Whilst acknowledging the issues surrounding use of language unfortunately it is difficult to remove oneself from its use. Sparkes (2008) suggests expanding the '...repertoire of representational possibilities' (p. 655) including that of artistic ways of knowing, as he has written elsewhere '...it is the experience that chooses the form of representation to make its presence felt, then the written text might not always be the best way to proceed' (p. 32).

Finally we wish to discuss movement as a basis for meaning. Within this brief section we describe the crucial role of the qualitative dimensions of movements (Johnson, 2008): (i) tension; (ii) linearity; (iii) amplitude; and (iv) projection. These parameters are important for they enable deeper understanding of movement and how meaning might be attached to it. We are careful here not to be reductionist. Whilst we can understand that there are subjective qualities of movement, they are done so between the organism and the environment. As humans that engage with physical education, outdoor education, dance education and sport, '...movement is one of the practical ways by which we learn the meaning of things and acquire ever-growing sense of what our world is like' (p. 21). Therefore such parameters occur continuously between ourselves and the world around us. To date we have discussed meaning as if it were purely conscious. As Johnson has written before conscious experience, our bodies are engaging meaningfully with their environments beneath a level of consciousness. We agree with Johnson that '...meaning is not just what is consciously entertained in acts of feeling and thought; instead, meaning reaches deep down into our corporeal encounter with our environment' (p. 25). Such concepts that form the 'primacy of movement' such as curved, diagonal, vertical, straight and tall must come from primordial bodily engagement where the parameters, earlier described, can help with the logic of movements. Such rich descriptions here provide 'frames' or 'lenses' for deepening our understanding of sport, physical activity, exercise and movement participation. They can also be used in the pedagogies, be they in the classroom or the sporting field, to provide students/players with opportunities to understand their bodies where such concepts and parameters can be used to highlight possible meaning-making. We also believe that such understanding can provide opportunities to make sense of who we are in the world and here we draw on Sheets-Johnstone (1999)

...we make sense of our bodies first and foremost. We make sense of them in and through movement, in and through animation. Moreover, we do so without words. This primordial sense-making is the standard upon which our sense-making of the world unfolds. (p. 148)

Implication for 'movement education' teachers and researchers

As evidenced from these four vignettes from physical education, outdoor education, dance education and sport a different logic from the 'traditional' (Tinning, 1997) is described when educating 'in' movement (Arnold, 1979). It is likely that some teachers and practitioners might be confronted by such ethnographies, but we feel that the significance of an individual's sensory 'scapes' (Sparkes, 2009) gives example to a 'corporeal (re)turn' (Brown & Payne, 2009), where the embodied basis of meaning and meaning-making of deep intrinsic, somaesthetic and subjective feelings as experienced by individuals through movement contributes significantly to the 'education' of the moving actor. We believe that in this sense we are developing deeper pedagogical relationships, as highlighted by van Manen (1997), where the child does not get marginalised in the process of developing curriculum and pedagogical approaches consistent with subjective intrinsic ways of knowing (Smith, 1991).

The importance of acknowledging such discourses, we believe has the potential to re-energise and renew the respective fields. They can also challenge long held beliefs of practitioners to look beyond the concrete, post-modern, objective, 'everything must have an answer' mentality pervasive in society and within the movement education sub-disciplines.

Clearly as educators of the moving body we need to be sensitive to the educational experiences that are held in class or on the sporting field. This paper has highlighted the often forgotten aspect of physical education, outdoor education, dance education or sport, that being the subjective experiences held by the participant or the student. Wattchow, Burke and Cutter-MacKenzie (2008) describe the concept of 'place' in outdoor education which we believe offers similarities to the moving body, for example;

A person's embodied response to place (*read moving body*) precedes, but is linked too, their social constructions of that place (*read moving body*)—the layers of interpretation that the learner develops—whether they be through personal narrative, or historical, scientific or aesthetic ways of knowing that place (*read moving body*) (p.31)

The moving body is complex and it can be examined through various research 'approaches'. What these case studies have offered, we believe, are contextualised examples of narratives that draw on historical, scientific and aesthetic ways of knowing the body within a frame of a social ecology of education.

It is important that researchers and practitioners continue to advocate and develop various pedagogies, curricula and approaches to their work, so that the multi-layered qualities of bodily movement and how individuals come to make meaning of their movement, becomes an ingrained component of their moving educational experiences.

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Footnotes

1 <http://education.monash.edu.au/research/groups/mec/docs/aare-mec-booklet.pdf>

2 Movement, Environment, Community is the name of the Faculty of Education Research Group where researchers from diverse disciplinary backgrounds including physical education, outdoor education, health education, physical activity and environmental education and ethics work in multidisciplinary way on important epistemological concerns theoretically through a social ecology of education, implemented contextually via experiential education approaches.

3 Readers are encouraged to read Jan Rintala's (1991) work on the dualisms in human movement. The term humans moving should provide a different connotation than that of human movement.

4 Polanyi's theory of meaning is drawn out from his work on the theory of personal knowledge (Polanyi, 1958; Polanyi & Prosch, 1975)

5 This case study could be described as a fictional auto-ethnography in the fact that there are 'true' representations of one of the authors, followed by sections of 'fictional' representations.

6 'the field which studies the soma: namely the body as perceived from within by first-person perception' (Hanna, 1986, p. 341)