

**Thinking Bodies, Dancing Minds:  
Research with Communities of Creative Minds**

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**ABSTRACT:**

The dynamic and spatial relationships that characterise a fine choreographic creation are evidence of complex thinking in four dimensions. In seminal investigations researchers from the Victorian College of the Arts and the Universities of Melbourne and Western Sydney collaborate with dance artists and scholars to explore the nature of thinking in the embodiment of kinaesthetic, cognitive, emotional and aesthetic perceptions. The project was funded by the Australian Research Council and included a study of fifty-five adolescent boys and girls who took part in an intensive dance enrichment program at the Australian Choreographic Centre in Canberra in 2004. The 23-minute film, *Quantum Leapers*<sup>1</sup>, is one of the publications resulting from the investigations and will be shown during this session. It reveals in vivid images how the nature of early experience in dance may influence life-long attitudes to thinking about the art form of dance and how issues of importance to young people can be explored through its practice.

**Background to the research**

In September 2001 the Australian Research Council (ARC) announced that the Victorian College of the Arts School of Dance with its University and Industry partners<sup>2</sup> had been successful in obtaining substantial funding for a major new research project. The three-year Linkage project (2002-2004) titled *Conceiving Connections*<sup>3</sup> built on *Unspoken Knowledges*, the team's earlier research into choreographic thinking<sup>4</sup> and aimed to increase our understanding of dance audiences. The research has addressed problems that have been identified by the dance industry as critical to its viability among the contemporary performing arts in Australia and is seen as a significant initiative in Arts - Industry related research. The implications of the findings of our research will not be lost on educators.

The work of dancers, teachers, choreographers, observers and researchers over many years has revealed the value of experiences in dance and the other creative arts<sup>1</sup> (see footnote).<sup>5</sup> In the field of dance this begins with our first movements and our earliest perceptions, for, from infancy onwards, we interpret the world not just intellectually, but through our senses, our physical intelligence. We gather understanding through facial expressions, tones of voice, gestures and postures of the body, the things we see, hear, smell, taste and touch.

'Through such understandings, we move to imagining a whole world that might be: the region of speculation, possibility, forecasting, memory, and art. And since dance is one of the few arts made out of our own bodies (singing is another), and because it generally employs all the body, not just some specialised parts, it is well placed to act out our sense of ourselves as individuals and as social groupings: as gregarious yet lonely, as skilled yet vulnerable. In short, as that paradoxical phenomenon, embodied minds - that is to say, hungry, reflective, sexual, consciously mortal creatures'<sup>6</sup>

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<sup>1</sup> *Champions of Change: The Impact of the Arts on Learning*, The Arts Education Partnership and The President's Committee on the Arts and the Humanities, Washington, 1999, 2nd Edition. Note: *Champions of Change* (1999) is a collection of seven major studies that examined the role of arts education on the academic, behavioural, and thinking lives of children.

These, then, are some of the ideas that gave rise to our research and have continued to shape the questions we have investigated, e.g., 'What is the nature of choreographic thought?' and 'What do we need to know about audience responses to subtle and complex dance creations in order to enhance enjoyment and understanding of the dance artist's work?' These questions have driven our most recent research. The relationship between dance experience and audience development is a central concern.

### **Thinking in Action: Thought Made Visible in Contemporary Dance**

A choreographic creation is a network of dynamic and spatial relationships. The deliberate design of bodies in space is mediated through time, forming a flux of dancing energy and transient, ever changing forms. To speak of a dance work in these terms seems both sensible and self-evident for this is what an observer sees.

Such a creation can be said to emerge from a complex adaptive system formed over time between the dancers and the choreographer. It is an evolving process mediated by the skill and experience of the participants, the quality of their exchanges and the multitude of images, sounds, emotions, ideas and kinaesthetic understandings that they bring to it. What individual audience members make of a particular work of art – a painting, a poem, a building, an opera or a dance – depends on individual expectations and experiences. A work of art may engender a range of responses: emotional, aesthetic, cognitive and kinaesthetic. However, the experience of the dance artists, those who create the work, is entirely different and this is the focus of this paper.

Many of us are familiar with the enchantment and absorption that characterise creative processes in science and the arts. In dance, the explorations can produce a large range of movement material and ideas. Editing, modification, creation and re-creation results in a kind of evolution; a movement subtlety seen in one dancer appears in the body of another, changed, often extended or transformed by the individual length of an arm or leg, a subtle shift of focus, a sudden stillness, an inclination of the head, perhaps a radical recasting of the rhythmic tensions. Throughout our research, wherever we observed the creation of dance works over a period of time, this process was duplicated. What emerged under our eyes was something we now recognise as a complex dynamical system, one in which many levels of thought, action and interaction grow or evolve in time. These interactions sometimes resemble those of social exchanges (as we will see in the documentary film, *Quantum Leapers*). We can trace in the film and other documentation how tentative beginnings become complex explorations and how these influence the imagination of each dancer.

### **Evolution and Emergence in the Creative Process**

Contemporary thinkers in philosophy, the sciences and the arts are now enabling us to see the choreographic processes we have studied within a framework informed by knowledges from many disciplines and especially those informed by theories of biological evolution.<sup>7</sup> The words 'evolve' and 'emerge' are part of a language we already use to describe what we see in the studio or the classroom on a daily basis and the world as a whole is now understood as interrelated and relational, rather than predetermined by fixed laws. The emphasis is on continuity, flux and change: forms not adaptive to the purposes for which they have been created are not likely to survive robust challenges, whether of reflection and thought, the limitations of human endeavour or an imbalance between natural forces. Perhaps it is not surprising that individual researchers on our team frequently refer to the role of evolutionary processes although the experience is mediated through disciplines as varied as music, literature, cognitive psychology, history and dance.<sup>8</sup> One of our researchers has written

Humans, of all ages, not just infants, need to have their impulses of sympathy attuned to by others. This is the basis of companionship. Humans need to share experiences and skills in order to make sense of them. They need to feel pride in accomplishment, and to experience the admiration of affectionate, generous companions. Dance and music are particular cultural substantiations of this need to share sympathetically with others. To share, we use gestures of voice and body, as well as language.<sup>9</sup>

### **The Quantum Leap Experience in 2004.**

In 2004 and 2005 our attention has been focused on the participation of over fifty young and inexperienced dancers in a longitudinal and intensive out- of- school 'dance enrichment program'. This activity is one of several supported by the Australian Choreographic Centre (ACC) in Canberra. The main aim of the ACC is to assist in the nurturance and development of Australian choreographers and their work. As part of this commitment young choreographers with established reputations are invited to work with the *Quantum Leap Youth Choreographic Ensemble*, a group that consists of talented young people with a potential for undertaking creative explorations in the medium of dance and for developing or increasing dance and movement skills. They are auditioned from the local community and adjoining regional areas. The group chosen is composed of equal numbers of boys and girls. The participants often come from a non-dance background, bringing talents for martial arts, gymnastics, ballroom dancing, circus, and other physical disciplines into a contemporary dance milieu.



*Jason Franks leaps and is caught by Paddy McQuiggan. Photo by Sue Healey*

Our study of these young people has been a rewarding and enlightening experience. It has led, we believe, to ever more fruitful insights into the role of embodied cognition and non-verbal communication in the growth of human consciousness. It has also refocused attention on earlier studies which connected a sense of personal identity to a growing understanding of meaning and purpose in the adolescent years.<sup>10</sup>

'Identity Formation in the Adolescent Dancer' is the subject of a PhD thesis to be completed in 2006.<sup>11</sup> Commenting on the plethora of studies undertaken within the school environment this researcher says 'The consequence for the arts in justifying their existence through academic values is that the little research available does not offer a platform for the research of the unique experiences inherent in arts participation. There needs to be constructive

formulation for the existence of arts programs, giving insight into the arts phenomenon as it is known, as it is actually experienced.<sup>12</sup>

### **Themes, processes, methods.**

Although the structure of the Quantum Leap program follows the traditional dance practice of class, rehearsal and performance, the social interventions that inform and guide these activities extend well beyond this structure. All participants are valued for their uniqueness - their contributions to the building of a supportive community and risk taking in a safe environment. A significant element in these processes is the belief that young people can contribute to the choreographic enquiry or research in the same way as older, more experienced professionals. Skills, imagination and a willingness to consider the ideas of others are vital factors, as is the experience and quality of the leadership within democratic processes that value the contributions of all members of the group.

In 2004 the Quantum Leap ensemble focussed on the Eternity Exhibition at the National Museum of Australia in Canberra. The exhibition provided a basis for the themes that were to inspire the development of the years' work and a final performance in the Canberra Theatre Centre's Playhouse. Several visits to the museum led to ongoing studio discussions about the individual lives and experiences that were brought together under the overarching theme of 'eternity'. Through improvisation and set tasks the young dancers explored with their mentors and each other the ten emotional states around which the eventual performance would be structured.

Program notes for the performance of *Eternity* indicate that poems by Francesca Rendle-Short<sup>13</sup> 'provide a profound basis for the imaginative journey of contemplating and owning our own intimate experiences of these states of being.' The mystery of these 'states of being' weaves itself through the choreographic journey, maybe never to be fully revealed. The messenger, in the form of a letter, brings news and sculpts the journey. Good news or bad news, it brings messages of separation, mystery, hope, joy, loneliness, thrill, devotion, fear, chance and passion. These messages 'challenge our daily life and colour our journey to its conclusion.' Mark Gordon, Director of the ACC also notes the range of young professionals, dance artists and composers, who have contributed to the final form.<sup>14</sup> He remarks on the way they have worked in collaboration with the young dancers, teasing out ideas and acting as mentors, guides and role models in a rich exploratory process.

### **A Community of Creative Minds at Work**

February 2004 sees the beginning of the working process. The girls and boys meet with the choreographers and begin in small groups. Under the experienced eye of Artistic Director, Ruth Osborne, a group of eleven boys and young men work with choreographer, Darren Green. Their theme is 'fear'. They have wondered at the stories of fearful episodes told by the subjects of the Eternity exhibition.

Feel fear? Be very afraid.

Perhaps the strongest of all emotions fear can crucify your body. Faced with impending danger, your hair stands on end. Blood runs cold. Flesh creeps. Adrenalin pumps as you flinch, shake or quiver, even petrify. Terrors by their nature must be faced alone. But in retelling the horror, fear **can** unite.<sup>15</sup>

They talk about it in the studio, tell their own stories, listen to the experiences of others in the group. They improvise to find movement ideas while the stories still grip the imagination. These are strategies used by actors too but the dancers at this stage have only words and images in the mind: now their bodies must find images powerful enough to convey all this without words. The choreographer demonstrates a slow sustained crawl across the floor; he encourages Charlie to find a similar quality: 'disembodied tortoise fluid' he says earnestly as he concentrates on the young dancer's effort. Nobody finds this funny. The absorption in the group is intense as Charlie, now the subject of their entire focus, melts his body into the floor, slows the pace of the backwards motion, mysteriously finds a quality of creepiness and fluidity. 'That's great' says the choreographer. Everyone relaxes.

The author at this point in the address screens action images from the film, *Quantum Leapers*



Choreographer, Darren Green, (R) works with a group of 'Quantum Leapers' at the Australian Choreographic Centre in Canberra. Photo by Sue Healey

They have all learned something, just by observing the process. It is repeated many times. They build a pyramid of bodies: bigger stronger bodies supporting the younger, lighter ones. 'Wider and longer' urges the choreographer as a group advances menacingly, 'keep it muscular, keep it tense'. And then, when the boys are encouraged to recall what it is like to be truly intimidated he asks them to find the postures of intimidation in their own bodies. 'What does it look like? Show me.' Two fourteen-year-olds struggle to find it. We observe that this is difficult: shoulders lift and chins jut, small chests struggle to expand. No words can easily convey the endearing quality of the effort to find the threatening stance they have often observed in the schoolyard. Fortunately the filmmaker has recorded it all. After two hours of effort they take a short break. Back again in the studio they work again. By the time the workshop is over there are dark rings under young eyes but faces are relaxed as they josh one another and prepare for going home. For most of them it's school tomorrow. For one fifteen year-old home is a long drive to the regional town of Young, two hours away. But like many others, Jamie has parents who value their son's involvement in this demanding process. They repeat the journey many times over the next six months.

### **Comparisons and questions.**

Was the creative process we observed in the youth ensemble in Canberra different to that practiced by the professional dance artists we had studied over the previous five years? We think not. Emotional and intellectual engagement with an idea or image was central to the processes pursued by both groups. The key to this engagement was often provided by a choreographer who could find gestures or words that bridged the distance between the intellectually understood and the range of feelings elicited by this understanding. Sometimes



this process worked in reverse: the choreographer recognising in a dancer the kinaesthetic subtlety and refinement that illuminated the idea.

Our research into 'Choreographic Cognition' began in 1999. The dance work *Red Rain*<sup>16</sup> was created for the *Unspoken Knowledges* research project over a period of nine months and won Melbourne's Green Room Award for original choreography in that year. The choreographer and the dancers were both researchers and the subject of the research.



*In the studio the choreographer and dancers discuss possible solutions to the problem of spatial manipulation in a complex relationship of floor pattern to the movement material. Choreographer, Anna Smith (back to camera), dancers L-R, Kathleen Skipp, Hannah Panelli, Deidre Stewart, Tamara Steele, Nicole Steven. Photo, Shirley McKechnie*

As a starting point for movement ideas the choreographer chose the words 'blood' and 'red'. She offered brief snatches of imagery from some remembered readings, perhaps from some personal experience of loss. A passage from *The Egyptian Book of the Dead* evoked more universal imagery: 'At the ends of the universe is a blood red cord that ties life to death, man to woman, will to destiny. Let the knot of that red sash, which cradles the hips of the goddess, bind in me the ends of life and dream.'<sup>17</sup>

Here is a summary of extracts from the choreographer's journal and from recordings of discussions with the dancers.

... soaking the high air scarlet'; 'blood silently burning'; blood knotted to life and death. These words engender imagery that is textural, sensuous, and provocative; images that have their roots in the legends of many cultures. The single word 'blood' provides a rich and eloquent source for movement invention. Red wax drips onto bare skin; it is like blood ebbing slowly. Red wax on white paper; blood on white snow. The legendary lantern fuelled by burning blood was called 'the lantern of life and death'.<sup>18</sup>

Many ideas give birth to the movement material: a torrent flows; a visceral relationship with images and light suggests 'blood red'. The movement through the space is sometimes chaotic, sometimes stilled. Tensions are dynamic and urgent, at other times structured to suggest a sensual flow. Movement combines with text, molten wax, drifting paper and other elements to create a richly layered and contemplative work. In its final form the work is suggestive of the cycles of experience in which rituals of birth and death, isolation and community, mark the passing of women's lives.



*Meredith Blackburn in 'Red Rain', Photo by Anna Smith*

Like the young dancers in *Eternity*, these highly skilled and experienced dance artists have found the movement material via an exploration of their own thoughts and feelings and their observations of all the movement material invented or discovered during the creative process. Discussions were lively, sometimes profound, the work continued to evolve as the choreographer made decisions about the design required for each section of the structure. She is the final arbiter of the work's overall form and shape, for the dance takes place in time; the rhythmic and dynamic complexities of music apply in the spatial realm and are amplified by dramatic time scales, breath rhythms, and natural physical time scales enhanced by dancerly skills. These are basic understandings shared by all choreographers. The complex of imagery oscillating in a fine choreographic or poetic mind resembles the harmonics that shimmer around a single note played on a violin. Musicians draw on acoustic knowledge and music theory to explain this phenomenon. We ask 'what kind of theoretical framework will help us to elucidate the 'shimmer' that surrounds the kinaesthetic image or idea?' The lived experience of each dancer contributes to the work. Dance in this context can be thought of as heightened movement, as poetry is heightened speech. The concept of embodied cognition or embodied thought now presents a challenge for cognitive scientists, psychologists and philosophers, as defined by one of the Chief Investigators in our research team.

'...the majority of theories in cognitive psychology assume that human memory and cognition involve verbal and/or visual representation. In comparison, creativity in contemporary dance is movement-based and material evolves from experimentation

and exploration in the medium itself. The source of an idea in a new work may be drawn from any modality - visual image or space; heard or felt rhythm, beat, texture, visual, auditory, muscular, or psychological tension; emotion; sound; word; concept. The idea is then expressed through movement, tension, and stillness. Second, most theories of cognition derive from studies of static items and objects such as words or pictures. Generating, performing, or observing contemporary dance defies this, too - movement-production and perception-processes being visual, spatial, temporal, and kinaesthetic.<sup>19</sup>

We propose that while forms of contemporary dance are conceived as works of art they can also be seen as examples of embodied cognition or 'thought in action' - thought made visible in contemporary dance. In an educational context this concept is still not well understood. During our research the inextricable connections between mind and body, thought and action, were observed in the studio and the video camera captured and held the evidence for our reflection.

*"On Friday I had a great rehearsal; I think I passed through a difficult stage. I always feel as though I am over-anxious to know the work, what it is. But it is not alive yet so how can I possibly expect to know what it is? It has to breathe its own existence, and I have to be patient, to allow it to evolve itself. The work is an organism which creates its own body, so to speak. Does this make sense? Perhaps I understand the dilemma much better now."*(Anna Smith, *Choreographer: Notes from the daily journal of 'Red Rain'*, 22 July 1999.)

## Notes and References

<sup>1</sup> A film by Sue Healey.

<sup>2</sup> The University of Melbourne; MARCS Auditory Laboratories, University of Western Sydney; The Australian Choreographic Centre; Australian Dance Council (Ausdance) and The Australia Council for the Arts.

<sup>3</sup> See [www.ausdance.org.au/connections](http://www.ausdance.org.au/connections)

<sup>4</sup> See [www.ausdance.org.au/unspoken](http://www.ausdance.org.au/unspoken)

<sup>5</sup> Fiske, Edward B., (ed.) *Champions of Change: The Impact of the Arts on Learning*, The Arts Education Partnership and The President's Committee on the Arts and the Humanities, Washington, 1999, 2nd Edition. Note: *Champions of Change* (1999) is a collection of seven major studies that examined the role of arts education on the academic, behavioural, and thinking lives of children.

<sup>6</sup> Grove, Robin and McKechnie, Shirley in Grove, R., Stevens, C.J., McKechnie S., (eds.) *Thinking in Four Dimensions: Creativity and Cognition in Contemporary Dance*, Melbourne University Publishing, Melbourne 2005, p.4

<sup>7</sup> McKechnie, Shirley, 'Dancing Memes, Minds and Designs' in Grove, R, Stevens, C.J., McKechnie, S., (eds.) *ibid* pp. 81-94

<sup>8</sup> McKechnie, Shirley, 'Dance – The Dance Ensemble as a Creative System' in Wissler, Rod, et al. (eds.) *Innovation in Australian Arts, Media and Design: Fresh Challenges for the Tertiary Sector*, Post Pressed, Flaxton, Qld 2004, pp. 13-28

<sup>9</sup> Malloch, Stephen, in Grove, R., Stevens, C.J., McKechnie, S., (eds.) *ibid* p.26

<sup>10</sup> Erikson, E.H., *Childhood and Society*, (2<sup>nd</sup> edition) New York, W.W. Norton & Company Inc., 1963



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- <sup>11</sup> This research is being undertaken by Shona Erskine (dancer and psychologist) at the University of Melbourne with the support of the Australian Choreographic Centre and the *Conceiving Connections* research project.
- <sup>12</sup> Draft Report by Shona Erskine, 2005.
- <sup>13</sup> Stell, Marion, (ed.) *Eternity: Stories from the Emotional Heart of Australia*, National Museum of Australia, Canberra, 2001
- <sup>14</sup> Choreographers Jodie Farrugia, Vivienne Rogis, Anton, Solon Ulbrich, Darren Green and Paul Zivkovich; and composers Adam Ventoura, Luke Tierney, Nicholas Ng and Julian Day.
- <sup>15</sup> Rendle-Short, Francesca, in Stell, *ibid.*
- <sup>16</sup> Created by choreographer, Anna Smith, in collaboration with professional dancers: Sheridan Davy, Jade Duffy, Hannah Panelli, Kathleen Skipp, Brooke Stamp, Nicole Steven, Deidre Stewart.
- <sup>17</sup> Ellis, N., *Awakening Osiris: A New Translation of the Egyptian Book of the Dead*, Elsevier, 1998.
- <sup>18</sup> Anna Smith, Research Notes, *Red Rain*, May 1999.
- <sup>19</sup> Stevens, Catherine, 'Transdisciplinary approaches to Research into 'Creation, Performance and Appreciation of Contemporary Dance', in Grove, R., Stevens, C.J., McKechnie S., (eds.) *Thinking in Four Dimensions: Creativity and Cognition in Contemporary Dance*, Melbourne University Publishing, Melbourne 2005, pp. 157-158