

Moving and Thinking Together in Dance

JOHN SUTTON

The collaborative projects described in this e-book have already produced thrilling new danceworks, new technologies, and innovative experimental methods. As the papers collected here show, a further happy outcome is the emergence of intriguing and hybrid kinds of writing. Aesthetic theory, cognitive psychology, and dance criticism merge, as authors are appropriately driven more by the heterogeneous nature of their topics than by any fixed disciplinary affiliation. We can spy here the beginnings of a mixed phenomenology and ethnography of dance practice and choreographic cognition, which is deeply informed and empirically inspired by the best current theory in the sciences of the embodied mind.¹ These sciences must themselves increasingly deal with culture and cognition all at once: questions about pleasure in movement, habit and skill, and kinaesthetic memory, for example, *require* neuroscientific, physiological, psychological, sociological, and anthropological investigation simultaneously. These then are essentially collaborative enterprises, and the active interpenetration of the concerns of dance practitioners and academic researchers is one remarkable success of Unspoken Knowledges and Conceiving Connections.

Mapping the uniqueness of dance (and of its differing traditions and styles) requires cognitive scientific enquiry into similarities with

and differences from other temporal and performing arts, and other embodied activities such as sport; and this in turn requires close access to the kind of thick description available to participants and experts in each domain. If experimental intervention in this context involves the collaboration of dancers, choreographers, and dance audiences in the creation, development, performance, and analysis of new funded works such as *Red Rain*, *Not Entirely Human*, *Fine Line Terrain*, and *Quiescence*, enthusiasts are likely to embrace this empiricism most willingly. In reflecting on these discussions of 'bodymind' and of the choreographic process by Robin Grove and Sue Healey, my remarks focus first on some questions the papers raise about the interplay of cognitive and motor systems – of, roughly, knowing or thinking and doing or moving – in choreographic cognition. Then I'll briefly sketch one natural extension to the dynamical orientation of this research in the shape of recent ideas about the 'extended mind' and 'distributed cognition'.

Dance practitioners and experts are intensely attuned to the non-referential features of movement: as Shirley McKechnie writes, 'subtle dynamic shadings, tensions and releases, rhythmic patterns and counterpoints are the stuff of which dance phrases, motifs, themes and variations are constructed'.² Of course, as Robin Grove's discussion of Keats reminds us, the verbal arts too rely on all kinds of hints, pulses, and rhythms, and we don't favour novelists just for telling good stories; but he rightly goes on to argue that the intrinsically embodied nature of dance-making renders especially salient forms of experience 'that can hardly be translated into words'.

Writers on both practice and theory in dance, then, emphasise the independence of the embodied, procedural systems involved in movement from more obviously representational systems such as autobiographical memory and semantic knowledge. Symptoms of this independence include the frequent inarticulability and the conscious inaccessibility of many processes underlying complex movement (in its conception, its execution, and its appreciation). Of course some verbal descriptions offered by dance teachers and by critics can be more effective or satisfying than others; but this ability to *tell* is an entirely different skill from the more mysterious battery of coordinated perceptual-motor-memory capacities which underlie dance production and performance.³

Such enactive skills and habits are also learned differently from explicit thought, for they need repetition, practice, and grooving; those on which we rely in ordinary life are thus often 'traceless practices', to the extent that we often don't see them as forms of memory at all.⁴ But these danceworks are extraordinary, and far from traceless. The various records of their development document visually as well as verbally the development of these specifically regulated forms of improvisation, offering rich resources for the study of realistically complex procedural memory. They reveal, for example, in convincing detail how the deliberate, explicit disrupting in rehearsal of such 'habitual, flowing awareness' can be difficult and occasionally frustrating.⁵ In dance as in sport and in ordinary routinized activities, thinking *can* cause trouble. The initial development of a skill may require hard, effortful, conscious control, but when a set of embodied movements is inhabited fully, wholly and easily remembered in the muscles, it can often be *explicitly* forgotten.⁶ This 'expertise-induced amnesia'⁷, which often accompanies higher levels of spontaneous skilled performance or flow, is prized in much sports psychology: its absence or breakdown, when explicit memory and conscious control of movements return, is a sign of difficulty or failure. In the extreme, 'choking' under pressure, or other forms of performance breakdown or 'yips', can be partly caused and then entrenched by excessive attention to, or reflection on, skills which had been successfully routinized.⁸ It would be intriguing to investigate any comparable kinds of difficulty or blocks experienced by dancers, both within ordinary rehearsal processes, and in any longer-term disruptions in the individual body-mind.

But in dance, and especially in the highly collaborative projects described in this book, there is not such direct competition between conceptual and explicit knowledge, on the one hand, and the enduring, fluid wisdom of the 'bodymind' on the other.⁹ Sue Healey's account of the pleasurable cumulative evolution of the *Niche Series*, and of how complex theoretical concerns about space informed the designs, movement phrases, and performances of a sequence of performances, demonstrates that explicit, conscious and procedural embodied forms of thinking and feeling can and often need to interpenetrate. Philosophical or political ideas, wishes, hints and half-remembered dreams, idiosyncratic individual memories, cognitively-loaded emotional states and

moods, perceptually-driven assessments of complex cultural situations, and other cognitive processes which are (to varying degrees) more articulable and accessible than is movement itself, can all influence the creation, performance, and enjoyment of dance. The extent and nature of these intricate interactions depend on the kind of artwork and the context of performance.¹⁰ The impenetrability of the motor system is far from complete: unless thinking could work *with* moving, and doing *with* knowing, the richness and flexibility with which kinaesthetic memory is honed and accessed for particular purposes in dance would be sharply limited. These investigations offer a unique opportunity to track the literal incorporation over time of idea-patterns as they are embodied into movement-patterns and gradually inhabited and then actively lived out to the full in performance.

The documented uses of notebooks and video in the evolution of these danceworks demonstrate that this process of transmitting, playing with, and selecting elements across an ensemble of dancers did not occur solely within each individual choreographer's mind. Particular movements and sequences could loop out into the world, jump across bodies, get tried out briefly and discarded or remoulded, and then be accessed again and again later through the enduring technological record. This is just the most obvious of a number of respects in which the creative processes in question are literally distributed, or extended across many brains, bodies, and artefacts.

Researchers on these projects have already convincingly applied recent dynamical hypotheses in cognitive science to the case of choreographic cognition, and Shirley McKechnie has pointed to the relevance of dynamical systems concepts to understanding creative processes in small groups of dance practitioners.¹¹ One concrete way in which these thoughts might develop in future is by making contact with compatible ideas about the extended mind and distributed cognition. As Andy Clark puts it, 'our brains make the world smart so that we can be dumb in peace'.¹² This includes our collective and individual utilization and mastery of external symbol systems and artefacts like videos, notebooks, and notations. But cognition is interpersonally as well as technologically distributed: we work together with each other in many ways to form temporarily integrated larger systems with cognitive characteristics and abilities which are often quite different from the mere sum of individual capacities.

In the choreographic process, existing movement repertoires are often reconstructed in the spread of embodied ideas and movement patterns across individuals. Rebuilding the old familiar ways under particular new circumstances or demands, the shared memory evolved by particular ensembles need not be held in any single person or in any single or canonical notation. Choreographers and dancers alike continually lean on, manipulate, recirculate, and transform materials held in and spread across a range of media, including idiosyncratic but repeatable movements, shared kinaesthetic memories, verbal or other labels and compressed or shorthand cues, and external recordings of various kinds. Each such form of scaffolding has its own distinct properties. So choreographic cognition, as the contributors to this book realize, is an intricate natural artistic domain in which to study the peculiar interfaces that emerge in intelligent action which is extended in space as well as time across the diverse components within such groups of practitioners and their cognitive technologies. I fervently hope that the collaborations reported here in practice and research can be continued and further developed.

Endnotes

- ¹ One model, at the phenomenological end of this spectrum, from writing about music might be David Sudnow's brilliant, often agonizingly precise account of learning to play improvisational jazz piano, now republished as *Ways of the Hand: a rewritten account*, 2001.
- ² Shirley McKechnie, 'Movement as Metaphor: the construction of meaning in the choreographic art', in *Proceedings of the 7th International Conference on Music Perception and Cognition, Sydney 2002*, C. Stevens, D. Burnham, G. McPherson, E. Schubert, J. Renwick (eds.) (Adelaide: Causal Productions), pp.157-160, at p.158.
- ³ Probing the extent of this independence is one inspiration for the new work on the effects of expertise on dance perception and reception reported by Stevens in this e-book ('Trans-Disciplinary Approaches to Dance Research'). In the extreme, it might be possible to match dissociations at aesthetic, psychological, and neurophysiological levels. The aim would be to contrast four groups: professional choreographers, and some dancers, who are both highly skilled and deeply knowledgeable about the movement they are watching; experts who are not practitioners (such as some critics), who may have a rich and relevant semantic and associative network as they watch movement, but lack the history of embodied performance; other dancers who may be highly skilled performers but lack the relevant explicit or theoretical understanding; and

naïve novice subjects. This may work more neatly for certain traditions of classical dance than for the projects reported here, in which all dancers were actively involved in the conception as well as the execution of their performances.

- ⁴ Paul Connerton, *How Societies Remember*, 1989, p.102.
- ⁵ Catherine (Kate) Stevens, Stephen Malloch, Shirley McKechnie, and Nicole Steven, 'Choreographic Cognition: the time-course and phenomenology of creating a dance', *Pragmatics and Cognition 11* (2003), 299-329, quoting from Nicole Steven's *Red Rain* rehearsal log-book.
- ⁶ Hubert Dreyfus, 'The Current Relevance of Merleau-Ponty's Phenomenology of Embodiment', *Electronic Journal of Analytic Philosophy* (1996), <http://ejap.louisiana.edu/EJAP/1996.spring/dreyfus.1996.spring.html>; Edward Casey, 'The Ghost of Embodiment: on bodily habitudes and schemata', in D. Welton (ed.), *Body and Flesh* (Blackwell, 1998), 207-225.
- ⁷ Sian L. Beilock and Thomas H. Carr, 'On the Fragility of Skilled Performance: what governs choking under pressure?', *Journal of Experimental Psychology: General 130* (2001), 701-725.
- ⁸ One suggestive study is Mark Bawden and Ian Maynard, 'Towards an Understanding of the Personal Experience of the "Yips" in Cricketers', *Journal of Sports Sciences 19* (2001), 937-953.
- ⁹ In many sports too, of course, it's vital for conscious and verbally-mediated current factors to influence skilled performance; embodied action can be sculpted, not just disrupted, by deliberate thinking. A more integrated picture in which motor skill expertise lies in the *links* between knowing and doing, which has influenced my remarks here, is developed in Fran Allard and Janet L. Starkes, 'Motor-skill Expertise in Sports, Dance, and Other Domains', in K.A. Ericsson and J. Smith (eds.), *Toward a General Theory of Expertise*, 1991, 126-152.
- ¹⁰ Whereas the uses of explicit intervention in these dance projects were mainly confined to the rehearsal process, choreographic practices specifically aimed at improvisation as an end in itself may 'merge cognitive and motor faculties' in a more deliberate and ongoing way: see for example Ivar Hagendoorn, 'Cognitive Dance Improvisation: how study of the motor system can inspire dance (and vice versa)', *Leonardo 36* (2003), 221-7. Sue Healey in the *Niche Series*, and Anna Smith in *Red Rain*, in contrast, were less interested in deliberately putting 'the implicit properties of the motor system... under conscious control' (Hagendoorn, 'Cognitive Dance Improvisation', p.222), and keener instead to let the works evolve or self-organize: Anna Smith wrote of feeling that she was 'over-anxious to know the work; what it is' (quoted in McKechnie and Grove, 'Thinking Bodies', *Brolga 12* (2000), 7-14).
- ¹¹ Stevens *et al*, 'Choreographic Cognition' [note 5 above]; McKechnie, 'Movement as Metaphor' [note 2 above], p.160.
- ¹² Andy Clark, *Being There: putting brain, body, and world together again*, 1997, p.180. As well as the work in developmental psychology cited by Stevens and McKechnie, other key sources for these movements are Edwin Hutchins, *Cognition in the Wild*, 1995, a remarkable study of the

spread of cognitive processes involved in navigation across many brains, bodies, and machines; Andy Clark and David Chalmers, 'The Extended Mind' *Analysis* 58 (1998), 7-19; John Haugeland, 'Mind Embodied and Embedded', in Haugeland, *Having Thought*, 1998, pp. 207-237; Susan Hurley, *Consciousness in Action*, 1998; and Mark Rowlands, *The Body in Mind: understanding cognitive processes*, 1999.