

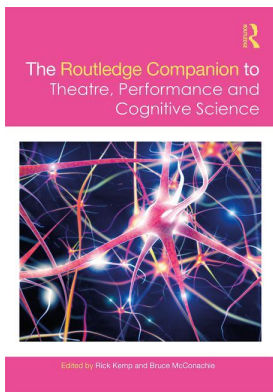
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WATCHING MOVEMENT

Phenomenology, cognition, performance

Stanton B. Garner, Jr.

Peter Brook famously wrote, 'A man walks across [an] empty space whilst someone else is watching him, and this is all that is needed for an act of theatre to be engaged' (1968, 9). In recent decades, science has taught us much about the cognitive mechanisms engaged by this minimalist scene and more elaborate ones that include performers moving and acting on stage. We know that our perceptual system operates on and through movement – in other words, that we understand our environment through our potential to interact with it in embodied, situated ways. As part of our evolutionary legacy, we are cognitively primed to detect movement in this environment, especially animate movement. Though the precise mechanisms underlying this association are subject to disagreement, we know that we engage in similar neural operations when we perceive intentional movements – or actions – as we do when we execute these movements ourselves. It is also clear that our ability to do so in specific situations is influenced by cultural conventions, individual movement repertoires and factors such as training. Finally, we know that the acts of imagining, remembering and verbally recounting actions engage cognitive mechanisms that we employ in action observation and execution. This is true when we read about an action or hear an action recounted by someone else.

As I consider the implications of movement and movement perception for theatrical and other forms of spectatorship, I will return to some of these insights and the cognitive research that supports them. Drawing together cognitive science, neuroscience, psychology, cybernetics and linguistics, the expanding field of motor cognition has much to tell us about the cognitive transaction between audience and performer. While neuroscientists and other cognitive scientists illuminate the cognitive operations governing movement perception, they have little to say about the experiential dimensions of this and other cognitive processes: 'what it is like' (in Thomas Nagel's phrase) to engage in cognitive acts such as moving or observing movement. To raise this issue is to introduce concepts such as consciousness, subjectivity, givenness and awareness that science has historically excluded from its epistemological and methodological domains. The relationship between what can be described scientifically and what we experience has been termed the 'hard problem' of consciousness. In philosopher and cognitive scientist David J. Chalmers's words, 'How can we explain why there is something it is like to entertain a mental image, or to experience an emotion? It is widely agreed that experience arises from a physical basis, but we have no good explanation

of why and how it so arises. Why should physical processing give rise to a rich inner life at all? It seems objectively unreasonable that it should, and yet it does' (Chalmers 1995, 201). This relationship is complicated by the fact that the cognitive operations underlying this inner life are largely sub-personal, operating below the threshold of awareness. Shaun Gallagher uses the term 'pre-noetic' to designate those aspects of the mind that influence 'how the body anticipates and sets the stage for consciousness' (2005, 2). But cognitive mechanisms often have experiential correlates and outcomes, whether we attend to them or not. Neural mechanisms that respond to the movements of others by vicariously enacting their execution operate automatically; in this sense, we are cognitively wired for movement responsiveness. It is often also the case, though, that we experience this resonance in our bodies, swaying uncomfortably in our seats, for instance, while watching a tightrope walker balance herself 30 feet above us. There may be an epistemological gap between third-person and first-person perspectives, but cognition retains its subjective registers.

Consciousness, subjectivity and experience are the domain of phenomenology, a philosophical discipline that attempts to understand the givenness of experience and the elements that constitute it (*phenomenon* comes from a Greek word meaning 'to appear'). For most of its 125-year history, this tradition has developed apart from and in varying stances of opposition to the empirical tradition of the human and physical sciences. Practitioners of the sciences of mind, in turn, have historically discounted phenomenology for what they perceive as its subjectivism and lack of scientific rigour. In recent decades, however, a number of cognitive scientists, philosophers of mind and phenomenologists have embraced a dialogue between these two approaches. In the pages that follow, I will discuss this dialogue and some of the methodological terrain it has attempted to negotiate. I will then consider the convergences and divergences of these two approaches on the subjects of movement and movement perception. Finally, I will analyse a scene from a recent production of Arthur Miller's *Death of a Salesman* in order to demonstrate the insights that a phenomenologically inflected cognitive reading – or a cognitively inflected phenomenological reading – can provide when applied to movement perception in performance.

Phenomenology and cognitive science

When philosophers, scholars and the occasional layperson use the term 'phenomenology,' they often refer to different things. In its loosest sense, the term denotes introspection, the act of paying attention to one's experience. Health-care professionals often use the term in this way when they advocate listening to patients' accounts of their symptoms in addition to analysing these symptoms diagnostically. A more specialised sense of the term is employed by practitioners in a variety of disciplines, who pursue first-person insight while simultaneously combatting the subjectivism that 'untreated' experiential accounts fall prey to. In fields such as psychology, sociology, anthropology and geography, specialised methods have been developed for obtaining phenomenological data, including carefully prescribed interview protocols, and for analysing the experiential structures that characterise psychological states such as jealousy and regret, initiation rituals and cultural spaces.

Behind these practical uses of 'phenomenology' is the philosophical movement inaugurated by Edmund Husserl at the turn of the twentieth century and the methods associated with this philosophy. Husserl's phenomenology was an attempt to ground philosophy in consciousness's engagement with the world. It did so by challenging what Husserl called the 'natural attitude': the everyday assumption that the world exists as we think it does when we take it for granted, that it exists outside and independent of us. Subject to measurement,

experiment and calculation, this is the realist world that science takes as its subject. If we bracket this assumption, however, and suspend all certainties as to the world's objective existence or non-existence (Husserl's terms for this process are *epoché* and *reduction*), we enter the phenomenological attitude, which discloses the world as it manifests within our experience. Husserl writes, 'It is not until one consistently and completely carries out the *phenomenological reduction* [...] that one obtains *pure* lived experience, as the object of the phenomenological perception, and, for the first time, achieves genuine phenomenological perception in its radical distinctiveness from empirical perception' (Husserl 2006, 40–41). While this bracketing is sometimes mistaken as a retreat from or denial of the world, in phenomenological terms it discloses the world as a correlate of our experience rather than accepting it unreflectively as those in thrall to the naturalist attitude do. Evan Thompson describes this shift, '[O]nce we adopt the phenomenological attitude, we are interested not in *what* things are in some naïve, mind-independent or theory-independent sense, but rather in exactly *how* they are experienced, and thus as strict relational correlates of our subjectivity' (Thompson 2007, 18–19). Gravity appears very differently when we consider it as an experiential phenomenon than it does when we contemplate it according to Newton's or Einstein's laws.

Husserl's successors in the continental phenomenological tradition – Edith Stein, Martin Heidegger, Jean-Paul Sartre, Maurice Merleau-Ponty, Emmanuel Levinas and others — challenged and refined Husserl's phenomenological project and the methods he developed for implementing it. More recent philosophers and scholars have deepened this appropriation and critique by setting the phenomenological tradition in dialogue with contemporary critical theory and identity studies.¹ This interest in applying phenomenology to rapidly evolving theoretical fields — and thereby testing its explanatory reach and limitations — extends to theatre, dance and performance studies, which have seen an upsurge of phenomenological interest in recent years. The formal application of phenomenology to dance studies was inaugurated with Maxine Sheets-Johnstone's *Phenomenology of Dance* (1966), and this approach was introduced to theatre studies with Bruce Wilshire's *Role-Playing and Identity: The Limits of Theatre as Metaphor* (1982) and Bert O. States' *Great Reckonings in Little Room: On the Phenomenology of Theatre* (1985).² In response to new forms of technologically mediated, immersive and participatory performance, and taking advantage of new ways of thinking about experience, subjectivity and the body, phenomenological scholarship since 2000 has kept pace with the expanding field of performance studies.³

Surprisingly little of this work has acknowledged or engaged with cognitive studies, which has expanded over the same period in ways that often complement the work of performance phenomenology. For their part, cognitive theatre scholars have only recently begun acknowledging the important role that phenomenology has played in the theoretical development of cognitive science over the last 25 years. A key moment in the broader conversation between phenomenology and cognitive science that followed a long period of mutual neglect and suspicion was the publication of Francisco Varela, Thompson and Eleanor Rosch's *The Embodied Mind: Cognitive Science and Human Experience* in 1991. In this pivotal study, the authors proposed an enactive model of cognition, in which embodied, autonomous agents bring forth their cognitive domains through skilful interaction with their environments. By understanding cognition as 'lived history, whether seen at the level of the individual (ontogeny), the species (evolution), or social patterns (culture)' (Varela et al. 1992, 213), this approach returned experience and its organism-centred perspective to cognitive science. Enactivism as articulated by Varela et al. owes an acknowledged debt to phenomenology, particularly Merleau-Ponty's phenomenology of embodiment, perception and situatedness in the world. 'We hold with Merleau-Ponty,' they write, 'that Western scientific

culture requires that we see our bodies both as physical structures and as lived, experiential structures—in short, as both “outer” and “inner,” biological and phenomenological’ (xv). By incorporating Merleau-Pontean phenomenology with the emerging ‘interdisciplinary matrix’ of cognitive science (xvi), Varela, Thompson and Rosch consider their project a radically new implementation of the French philosopher’s conception of embodiment.⁴ (For additional insight into the links between enactivism and phenomenology, see Chapter 17.)

Enactivism became one of a number of areas in which cognitive science, philosophy of mind and phenomenology interact in order to explore their compatibilities and differences. The journal *Phenomenology and the Cognitive Sciences* was founded in 2002 as a venue for investigating this intersection, and its contributors have been at the forefront of those seeking to integrate empirical science with the study of consciousness (and vice versa). Some of the most influential books for cognitive theatre studies have advanced the research opened up by this convergence: Alvin Noë’s *Action in Perception* (2004), Gallagher’s *How the Body Shapes the Mind* (2005) and Thompson’s *Mind in Life: Biology, Phenomenology, and the Sciences of Mind* (2007). In each of these studies, empirical science is challenged to accept the necessary perspective of experience, while phenomenology is asked to address the insights generated by neuroscience and other experimental sciences. Gallagher and Dan Zahavi’s book *The Phenomenological Mind* (2008; 2nd ed. 2012) introduces cognitive scientists to the phenomenological dimensions of their research, while the former’s introductory book *Phenomenology* (2012) situates the philosophical tradition within this new interdisciplinary matrix.

Theoretical and methodological collaboration between these approaches is not without its challenges. One of these challenges has to do with the nature and scientific status of first-person evidence. Scientists engaged in the experimental study of cognition typically collect data from selected subjects under controlled laboratory conditions, and they take care to eliminate individuating variables that skew representative conclusions. In other words, they employ outside-in research protocols. Phenomenologists, on the other hand, investigate cognitive and perceptual processes from the inside-out, taking the individual’s experience as their starting point. It would be a mistake to equate this process, as some have in the past, with subjectivism, the idea that experience and knowledge are merely subjective, hence biased and unable to achieve general explanatory power. As Varela points out, ‘Experience is clearly a personal event, but that does not mean it is *private*’ (1996, 240). Though phenomenologists take subjectivity as their object of inquiry, they employ rigorous methods to identify the essences (*Wesen*) underlying subjective phenomena, elements that persist when a phenomenon is varied. Identified through this process, phenomenological insights and models become transpersonal, available to others to test, confirm and revise. In this sense, phenomenological understanding is progressive, as previous models and descriptions are re-examined in light of new experiential data and acts of attention. Attention to issues of gender in the late twentieth century, for instance, led feminist philosophers to challenge the models of experience produced by earlier male phenomenologists.

Since phenomenology employs its own procedures and yields its own kind of results, however, the question of how one incorporates its first-person descriptions with the results of experimental science remains an open one. Among the solutions proposed for addressing this issue are strategies for ‘naturalising’ phenomenology by making its data and methods usable to scientific inquiry (see Petitot et al. 1999). Neurophenomenology, a programme introduced by Varela in the mid-1990s and taken up by researchers in a number of areas, seeks to integrate phenomenological analysis of experience, dynamic systems theory (which is highly compatible with phenomenological models) and experimental brain science. Subjects in neurophenomenological studies are trained to provide reliable and consistent descriptions of

their experience, and these descriptions are used to generate variables for further experimentation and to provide models that can be used in interpreting neurobiological data. Central to Varela's attempt to bridge the 'experimental mind-experiential mind gap' is his principle that '[p]henomenological accounts of the structure of experience and their counterparts in cognitive science relate to each other through reciprocal constraints' (Varela 1996, 343). This principle, which provides a useful guideline for anyone working at the intersection of cognitive science and phenomenology, dictates that each approach provides a reference point and check for the other. In practice, the notion of 'constraint' suggests that neurological findings can be validated or questioned in part according to their 'fit' with experiential data and that phenomenological accounts of experience be re-evaluated if they depart markedly from agreed-upon findings in experimental science. Orthodox practitioners in both disciplines will reject such constraints, but the theoretical and methodological reciprocity between these different approaches to the study of mind has demonstrated its power to advance cognitive science, phenomenology and the conversation between them.

One of the areas where this conversation is starting to have an impact is theatre and performance studies. Phillip Zarrilli's work, for instance, illustrates the inroads that phenomenology and enactive theory offer to the actor's creative process and the field of actor training,⁵ and it is increasingly common to see phenomenology referred to by scholars and practitioners adopting cognitive approaches to other performance areas. My focus in the remainder of this essay will be on one of the most fertile areas where phenomenology and cognitive science converge: theatrical and other forms of spectatorship. If the idea of enaction and its cognitive/phenomenological corollaries lead naturally to the performer making things happen on stage through embodied, meaning-filled interactions with her environment, they also point to the spectator, who co-constitutes the performance through equally embodied perceptual acts. Some of the most important work on performance cognition — Bruce McConachie's *Engaging Audiences: A Cognitive Approach to Spectating in the Theatre* (2008), for instance — focuses on spectatorship, while theatre phenomenology has a long tradition of approaching performance from the audience's point of view (hence the importance to this tradition of Merleau-Ponty's phenomenology of perception). I use 'spectator' and 'spectatorship' advisedly, since both approaches have challenged the ocularcentrism and sense of disembodiment with which these terms are associated. In phenomenology as in enactive cognitive science, vision forms part of the subject's broader, sensorimotor engagement with its world. Far from being the property of a passive disembodied consciousness, it moves, acts and explores in conjunction with the body's other sensory openings on its environment. What happens to perception when we return it to movement — the movements it enacts and the movements it perceives in the world around it? What happens to spectatorship if we consider vision and the other senses within a dynamic of sensorimotor engagement?

Movement, perception, kinaesthesia

As early as the nineteenth and early twentieth centuries, psychologists and philosophers recognised a connection between movement, perception and action recognition. In 1852, Rudolf Lotze theorised that visual sensations are integrated with an individual's muscular sense in making spatial determinations, while Hermann von Helmholtz argued that the information that triggers a motor command is also recruited to recognise external movement (Berthoz 2000, 9; Viviani [1990], 17). This 'motor theory of perception' was amplified years later in James Gibson's ecological psychology, which posits that '[t]o see things is to see how to get about among them and what to do or not do with them' (Gibson 1979, 223). It was also

developed in Noë's *Action in Perception* and in the work of Marc Jeannerod, Alain Berthoz and others in the field of motor cognition. As Jeannerod states in the foreword to *Motor Cognition: What Actions Tell the Self*, this field investigates 'the way actions are thought, planned, intended, organised, perceived, understood, learned, imitated, attributed or, in a word, the way they are represented' (2006, v). It should be noted that 'representation,' in Jeannerod's sense of the term, does not refer to a Cartesian cognitive model in which pictures of the world and one's experiences are manipulated by disembodied mental processes; rather, it encompasses the multiple ways that action manifests itself in an embodied, environmentally oriented cognitive field.

Contemporary interest in this relationship was intensified by the discovery in the early 1990s of mirroring systems in the brains of macaque monkeys and the later discovery of equivalent systems in humans. Neurons in these systems fire when a subject moves, when that subject observes another subject move and when actions are remembered, imagined or read. Action-oriented mirror neurons are associated with other neurons that respond similarly to the observation of emotion. Mirror neurons were heralded in the popular press and by some scientists as providing the neurological key to mind-reading, action understanding, imitation and empathy, and these claims were subsequently challenged by other scientists who disputed the neurological evidence and the far-reaching conclusions drawn from it. Stepping back from the polemics on both sides of this debate (particularly those of mirror-neuron sceptics), we should recognise that mirror-system research is compatible with the work of other scientists studying motor perception, much of which preceded and does not depend on the neuronal claims of mirror-neuron theory. One of the distinguishing features of mirror neurons, for instance – that they respond to goal-directed, or intentional, action but not to random movements – was well established by earlier experimenters such as Gunnar Johansson, who studied movement perception using point-light displays of moving figures in the early 1970s.⁶ One need not subscribe to the precise neural mechanisms that mirror-system researchers propose for linking mirror-neuron activity with other cognitive activity – the interaction between mirror neurons and higher-order cognitive functions like theory of mind, for instance, which attributes mental states to others – in order to incorporate their expanding understanding of movement perception with parallel research in this area.

Empirical research on movement perception and motor resonance has yielded an increasingly detailed understanding of theatrical and other forms of spectatorship. Not surprisingly, given the medium's focus on kinetic action, much of the analysis of spectatorship and movement has focused on dance. In the early 2000s, a research team headed by Beatriz Calvo-Merino looked at the brain activities of experts in classical ballet, experts in Brazilian capoeira and inexperienced control subjects when they were shown videos of ballet or capoeira movements (Calvo-Merino et al. 2005). Their findings showed increased activities in areas of the brain associated with mirroring activity in those who viewed movements from the tradition they were familiar with, thereby demonstrating a link between motor expertise and action observation. In a similar study based on interviews and other qualitative research methodologies, Matthew Reason and Dee Reynolds found that the kinaesthetic and emotional responses of spectators asked to watch classical ballet and the South Indian *bharatanatyam* differed in kind and intensity based on their cultural familiarity with these forms (Reason and Reynolds 2010). Such research contributes to a kinaesthetically oriented tradition of dance theory that stretches from John Martin's modern dance criticism of the 1930s to Susan Leigh Foster's *Choreographing Empathy: Kinesthesia in Performance* (2011). But empirical research on movement and movement perception has been applied to theatrical

and other forms of performance, as well. In their study of the roles of distance and biological movement in extra-personal space perception, for example, Giorgi Committeri and Chiara Fini speculate that motor resonance (vicariously enacting the movements of other) can be modulated by the physical distance between the observer and the observed body. Our desire to sit closer to the stage, they suggest, could be driven not only by our desire to see better, but also by the attempt ‘to have a better “resonance” with the movements and gestures of the actors, in order to be part of this “near,” shared common space’ (2016, 34).

Phenomenology has played and continues to play an important role in the study of movement and movement perception. Vittorio Gallese, a member of the research team who discovered mirror neurons at the University of Parma, used the philosophy of Merleau-Ponty to frame the team’s neuroscientific findings (Iacoboni 2008, 16–17), and Alain Berthoz has collaborated with philosopher Jean-Luc Petit on a physiological and phenomenological study of action (2006). Phenomenology, of course, has a long history of considering movement ‘from the inside,’ and much of it is centred on kinaesthesia and kinaesthetic experience. The term ‘kinesthesia,’ which combines the Greek words *kinein* (to move) and *aesthesis* (sensation), was coined in the late nineteenth century by British neurologist Henry Charlton Bastian to describe sensations resulting from or associated with movement (1880, 543). Closely akin to ‘proprioception,’ the sense I have of my body’s posture and the relationship of my limbs to each other, kinaesthesia is my awareness when I move that I am doing so. Motility and the kinaesthetic sense are fundamental to Husserl’s phenomenology of consciousness and world-constitution: I come to know my world by moving through and engaging with it, and this interaction deepens my reflexive sense of my own kinaesthetic capabilities. Kinaesthesia is also important to Merleau-Ponty’s analysis of motility, motor intentionality and what he calls ‘body schema.’ In a memorable passage from *The Structure of Behavior* in which he describes a soccer player moving a ball downfield, Merleau-Ponty describes the merging of movement and environment in the player’s felt dynamism: ‘The field itself is not given to him, but present as the immanent term of his practical intentions; the player becomes one with it and feels the direction of the “goal,” for example, just as immediately as the vertical and horizontal planes of his own body’ (1963, 168). At this moment, he writes, ‘consciousness is nothing other than the dialectic of milieu and action’ (169).

No philosopher has contributed more to the understanding of movement experience than Maxine Sheets-Johnstone, whose book *The Primacy of Movement* (1999; expanded ed. 2011) and numerous other publications over the past 50 years offer a kinaesthetically grounded dynamic phenomenology. According to Sheets-Johnstone, we are born into movement, born *as* movement: ‘This primal animateness, this original kinetic spontaneity that infuses our being and defines our aliveness, is our point of departure for living in the world and making sense of it. [...] *We literally discover ourselves in movement*’ (1999, 117). Most explanations of human movement, she argues – including the work of much traditional phenomenology, cognitive science and other disciplines exploring this area — minimise or neglect the role of kinaesthesia in sensorimotor and higher-order development. Against mirror-neuron theorists who privilege autonomous neural mechanisms in action understanding, for example, she argues that mirror neurons ‘are contingent on morphology and corporeal-kinetic tactile-kinaesthetic experience’ (2012, 385).⁷ Our brains, in other words, form neural connections based on our own kinetic/kinaesthetic dynamics and possibilities of movement. In identifying and detailing the kinaesthetic foundations of human movement, Sheets-Johnstone draws widely and deeply on infant research, paleoanthropology, microbiology and neurology, and her arguments engage important debates within these (and other) fields. But as befits a philosopher who is also a trained dancer, her phenomenology is rooted in the self-exploration

of movement. Any time we want to pay closer attention to the kinaesthetic body, she points out, 'there it is' (2003, 75). By insisting on this step, she reminds us that phenomenology is more than a field of insights that can be brought into dialogue with scientific findings; it is a methodological invitation to inhabit these insights oneself and formulate new ones. A 'corporeal turn' in philosophy, she writes, requires that we become aware of movement: 'It thus asks us [...] to be silent, and, in our silence, to witness the phenomenon of movement—our own self-movement and the movement of all that is animate or animated in our surrounding world' (2011, xix).

Attending to movement on the stage

Sheets-Johnstone's words present scientific accounts of motor cognition with a challenge and an invitation. When neuroscientists study movement perception, they do so in laboratory settings where subjects are immobilised to varying degrees by the requirements of the experiment. The functional magnetic resonance imaging (fMRI) technology that many experimenters use to measure neural activity, for example, may require that the subject be strapped down with his or her head secured in a brace. In addition, the actions these subjects are asked to observe often involve isolated body movements (an arm and hand lifting a glass of water) rather than movements that are integrated with the entire body and responsive to other people's movements. Scientists, in other words, tend to study motor cognition outside of the real-world conditions in which embodied subjects move in relation to their environment and other moving subjects. A phenomenologically sensitive approach to movement perception offers the opportunity to return cognition to its natural experiential field. In this animated field, we are always moving, even when we seem to be still. This is as true for theatrical and other forms of spectatorship as it is in non-performative situations. While the myth of the audience's stillness is well-entrenched — 'the spectators hung motionless on every word' — theatrical watching is an intensely kinetic and kinaesthetic activity. Seated in the auditorium while watching a play, I adjust my position, feel my chest rise and fall as I breathe, glance around me from time to time, lean forward at a particularly intense moment and glance at my watch during a particularly tedious one. When I fix my gaze on something, my eyes undergo saccadic, or involuntary, movements every second. In differently socialised theatrical cultures and in immersive and other forms of participatory theatre, I may encounter expanded possibilities for movement, but these possibilities represent an expansion of spectatorship's inherent motility.

In conjunction with these and other movements, my attention ranges over and through my perceptual field, actively selecting perceptual objects within a background awareness of my body as kinaesthetic entity. As George Home-Cook notes in his phenomenological study of theatrical listening, attention is 'a dynamic, intersensorial, bodily engagement with the "affordances" of a given environment' (2015, 2). By foregrounding elements of this environment in my awareness, attention inside and outside the theatre selects the objects of consciousness and cognition. This cognitive faculty plays a determining role in action observation and the kinaesthetic resonances that accompany it. When I walk down a city street or sit on a bench and observe the flow of pedestrians around me, I am faced with myriad subjects walking, pushing strollers, carrying things, talking with others or on cell phones, doing some or all of these at the same time. Individuals move along 'intentional arcs' (Merleau-Ponty 2012, 137), but they do so with environmentally attentive, often improvised coordination—hence the fact that they're not colliding with each other every few steps. As my eyes survey this scene, attention determines what I focus on: the man trying

to eat a sandwich, the couple hurrying to cross the street before the light changes, the elderly woman walking her dog while other pedestrians try to pass her. Every time my focus shifts and I observe someone new, I apprehend that subject's action as part of the collective flow and sense it with my kinaesthetic imagination.

Theatre, of course, does not disclose itself to me in the same way that a city street does — even, provocatively, when it takes place on one of those streets. Unlike the movements and gestures of everyday pedestrians, its actions present themselves *for* the eyes and other senses as well as *to* them. These actions are selected, rehearsed and staged in ways that call attention to individual actors, gestures and lines of dialogue over others. Perceptually speaking, though, theatre presents kinetic/kinaesthetic attention with complexities similar to those it encounters in extra-theatrical environments: multiple action points, movement interactions and spectators who direct their attention consciously as well as preconsciously through the movement 'affordances' they are presented with. Motor cognition and mirror system research describe the preconscious mechanisms at work when I observe a complex movement field like this, but without a first-person perspective on environmentally situated movement interactions, this research is limited in its ability to account for the experiential dynamics of this process.

In order to suggest what a phenomenologically informed cognitive analysis of theatrical movement perception might look like, I will briefly discuss the climactic confrontation sequence between Willy Loman and his son Biff Loman in Robert Falls' 1999 production of *Death of a Salesman*, which featured Brian Dennehy as Willy and Kevin Anderson as his oldest son.⁸ This sequence, which takes place late at night in the Loman kitchen after their failed restaurant meeting, is initiated by Biff telling his father that he's leaving in the morning and won't return.⁹ Refusing to shake his hand, Willy attacks Biff for making a failure of his life, but Biff counters with accusations of his own and an angry, pleading insistence on who they both are ('Pop! I'm a dime a dozen, and so are you!'). Kinetically and emotionally, the scene escalates in intensity until Biff, shattered by his outburst, breaks down, crying with his head in his father's lap.

When one attends to the experience of watching this sequence in performance, its kinaesthetic dynamics reveal themselves in complex, performance-specific ways. Different actors make individual choices when interpreting their characters' movements, and these choices are realised through specific bodies and individual movement styles. Taking advantage of his heavy stature, for example, Dennehy moved his upper torso as a block, leading with his chest and shoulders as if armouring himself while pushing his way through the world. For much of his performance he accentuated what he was saying using his right arm and hand; at other times, he kept one or both hands in his pocket.¹⁰ To watch Dennehy's Willy move on stage was to recognise and feel the embodied, self-containing dynamic of his actions and gestures. As he and Anderson faced off in the kitchen, their physical action tracked the emotional dynamic that fueled their interaction. Cognitive scientists and phenomenologists have both noted the connection between emotion (or affect) and movement. As Alain Berthoz puts it, '[T]here is no perception of space or movement, no vertigo or loss of balance, no caress given or received, no sound heard or uttered, no gesture of capture or grasping that is not accompanied by emotion or induced by it' (2000, 7). When Anderson's Biff recounted to Willy that he ran down the stairs at Bill Oliver's office with a stolen pen in his hand, he gesticulated agitatedly, underscoring deeply felt words with arm and hand movements, then clutched his father when he pleaded that 'all I want is out there, waiting for me the minute I say I know who I am! Why can't I say that, Willy?' When Willy responded to his 'dime a dozen' claim by lashing back ('I am not a dime a dozen! I am Willy Loman, and you are Biff Loman!'),

Anderson rushed at Dennehy, grabbed him and shoved/dragged him to the chair as Dennehy cowered and moaned. It was a kinetic and emotional slug-fest, with each taking the initiative and then registering the impact when his attack is countered.

Neurological and other research on motor cognition clarifies the mechanisms at work when we watch stage actions such as these: our cognitive involvement in goal-directed movements such as Anderson grabbing Dennehy by the shoulders or the latter's fierce arm movements when he declares 'I am Willy Loman.' As the sequence unfolded on stage, though, these mechanisms operated with an integration and variability that phenomenological observation is better suited to illuminate. Actors move with their whole bodies, for one thing; when Anderson grabbed Dennehy's shoulders, he braced his legs, torso and neck to counter the latter's resistance. Actors also move in relation to and at the same time as other actors, which means that spectator processes a field of multiple movements, each with a rival claim to kinaesthetic attention. As I watched this scene multiple times on videotape a number of years after seeing it live, I felt my attention drawn to different actors, sometimes in rapid succession. Though the sequence centres on Willy and Biff, Linda and Happy were also onstage, and while they were relatively motionless during most of the confrontation, they retained their kinetic/kinaesthetic agency. I occasionally glanced over to reaffirm their presence as witnesses to this encounter.

The intricacy and mobility of the spectator's kinaesthetic allegiances in this sequence were foregrounded at its conclusion. Having pushed Dennehy's Willy down onto his chair and towered over him (Dennehy shielding his head with his right arm), Anderson's Biff sank to his knees at the end of the line 'There's no spite in it any more. I'm just what I am, that's all,' his anger broken, and started to sob while he held the side of his father's face with his hand. Raising himself on his toes, he fiercely kissed Willy on the cheek. Dennehy held his hands awkwardly above Biff's head as if not sure what to do with them then put his arm around his son's neck, ran his fingers through his hair with his other arm around his shoulder, pulled him upward and kissed him on the neck. As he held Anderson in an embrace, the latter reached around and held his father firmly and tenderly. Dennehy kissed him again, and Anderson quietly rose and disengaged himself. The intimacy of these movements was inseparable from the intense tactility of their contact with each other, and both contributed to the exchange's powerful emotional/kinaesthetic effect. Watching this sequence, I felt each hugging the other, alternatingly and at the same time. In this sense, I switched between the two men, inhabiting the kinaesthetic perspective of one, then the other. But I also inhabited their mutual embrace in a wider attentional field that transcended the individuality of kinaesthetic points of view. Theirs were not separate actions; they were interactions, each man's gesture intimately caught up in the other's. From this perspective, the object of kinaesthetic attention was mutual movement—sometimes synchronous, sometimes asynchronous, but always coordinated in perceptual terms. The tightness of their embrace made this interactivity clear, but the kinaesthetic inseparability of individual and collective action evident here — and the spectator's attentional agency in shifting between these kinaesthetic levels — could be seen in their heated interactions leading up to this point as the actors moved toward, away from, around and in physical contact with each other. The interactivity of their movements resembled, at moments, the experience of watching dance, where performers engage in individual and ensemble movements and spectators vicariously inhabit these on a continuum between the kinaesthetic I and the kinaesthetic we.

The spectatorial responses I have detailed in my account of the confrontation sequence in *Death of a Salesman* are clearly influenced by 'mirroring' and other cognitive mechanisms that scientists have made great strides in understanding. That these responses have empirical

corroboration enhances the explanatory authority of phenomenological description. What phenomenology offers, in turn, is the ability to investigate the operations of movement and movement observation in dynamic, intercorporeal situations. With its rigorous experiential investigations, phenomenology provides a method for recognising the kinaesthetic nuances generated in these situations, for understanding the holistic, dynamic body as it moves and is observed in multiple active kinetic environments such as theatre. In doing so, it ventures outside and often beyond empirical studies in order to confirm their insights, complicate their models and offer directions for future research. It will be fascinating to know, when the experimental procedures are developed for measuring this, what the neuroscience of kinaesthetic perception in theatrical and other performance environments looks like. But experience has its own modes of disclosure, and these illuminate the felt dimension of cognitive life. One perspective supports the other. When phenomenology and cognitive science engage in dialogue, the study of movement, movement perception and other cognitive actions reaches above and beneath the threshold of consciousness.

Notes

- 1 See, for example, Young (1980), Ihde (1993), and Ahmed (2006).
- 2 For a history of phenomenological approaches to theatre in the late twentieth century, see Garner (2001).
- 3 See, for example, Kozel (2008), Home-Cook (2015), and Bleeker et al. (2015).
- 4 It is worth noting in this context that Merleau-Ponty engaged with neurology and developmental science in his early work. *The Phenomenology of Perception*, for instance, refers to cases of neurological pathology like that of Johann Schneider, who sustained brain injuries during World War I and was the subject of a 1918 study by German neurologists Kurt Goldstein and Adhémar Gelb (see Merleau-Ponty 2012, 105–140; Garner 1994, 33–36).
- 5 See, for example, Zarrilli (2007, 2009). Another scholar whose work on acting has been influenced by this dialogue is John Lutterbie, whose use of dynamic systems theory in *Towards a General Theory of Acting: Cognitive Science and Performance* (2011) bears evidence of his earlier work on phenomenology and performance.
- 6 Point-light displays are produced by filming a moving human figure with lights attached to his or her joints. Abstracted from the human body, these lights are set against a dark background. In a still image, the glowing dots are typically not recognisable, but when viewed in motion—in other words, dynamically—they are immediately discernible as a moving figure. Subjects in these experiments show a preference for biological over non-biological movement.
- 7 As Sheets-Johnstone points out in *The Primacy of Movement*, the sensorimotor system is the first developing perceptual system evident in the foetus (2011, 228).
- 8 This production of Miller's play, which originated at Chicago's Goodman Theatre in 1988, opened at the Eugene O'Neill Theatre in February 1999.
- 9 The sequence can be found in Miller (1967, 127–33).
- 10 Watching Dennehy move as Willy is different from watching Dustin Hoffman in the 1985 television production of *Salesman*. In this production, Hoffman walks stiffly but moves his arms and upper body with an almost histrionic gestural expressivity.

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