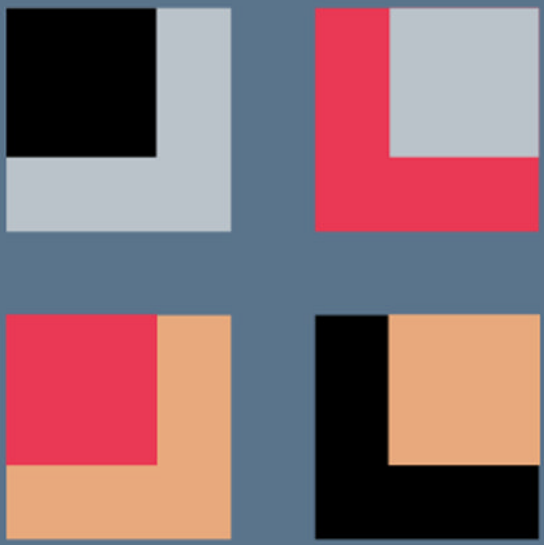
The Primacy of Movement

Expanded second edition

Maxine Sheets-Johnstone



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CHAPTER 12

Thinking in movement*

> And what is *thinking?* — Well, don't you ever think? Can't you observe yourself and see what is going on? It should be quite simple. You do not have to wait for it as for an astronomical event and then perhaps make your observation in a hurry.
>
> Ludwig Wittgenstein (1963: 106)

> As I was led to keep in my study during many months worms in pots filled with earth, I became interested in them, and wished to learn how far they acted consciously, and how much mental power they displayed…. [A]s chance does not determine the manner in which [they drag] objects [leaves or paper] … into [their] burrows, and as the existence of specialized instincts for each particular case cannot be admitted, the first and most natural supposition is that worms try all methods until they at last succeed; but many appearances [i.e., observations] are opposed to such a supposition. One alternative alone is left, namely, that worms, although standing low in the scale of organization, possess some degree of intelligence. This will strike every one as very improbable; but it may be doubted whether we know enough about the nervous system of the lower animals to justify our natural distrust of such a conclusion. With respect to the small size of the cerebral ganglia, we should remember what a mass of inherited knowledge, with some power of adapting means to an end, is crowded into the minute brain of a worker ant.
>
> Charles Darwin (1976 [1881]: 19–20,58)

1. The twofold purpose

What I hope to do in this chapter is elucidate both the experience and foundations of thinking in movement. The foundations include both the evolution of animate life of which we humans are a part and our own human develomental background. I begin with a descriptive account of what I take to be a paradigmatic experience of thinking in movement, the experience of moving in an improvisational dance. Thinking in movement is at the core of this experience, indeed, a *sine qua non* of the realization of its aesthetic form. In taking this experience as paradigmatic, I hope only to show how its dynamically-tethered thematic typifies such thinking, *not* that all experiences of thinking in movement accord with it. Forms of thinking in movement can differ considerably. Thinking in movement in infancy, for example,

can have practical, self-instructional, or explorative ends in contrast to the aesthetic ones of improvisational dance. So also with animate life generally. It is possible thus to distinguish structures in one kind of experience of thinking in movement from those present in another. What a descriptive account of the experience of thinking in movement in improvisational dance will provide is a bare bones example of such thinking, a laying out of the qualitative nature of its essentially dynamically-tethered thematic, or in other words, an example in which the qualia or cardinal structures of movement and of thinking in movement are magnified.

2. Dance improvisation: A paradigm of thinking in movement

A dance improvisation is unique in the sense that no score is being fulfilled, no performance is being reproduced. The dancers who are improvising understand this uniqueness in the very manner in which they approach the dance. They have agreed to follow the rules, as it were, of a dance improvisation, rules that might very generally be summed up as: dance the dance as it comes into being at this particular moment at this particular place. More detailed and possibly restrictive rules might structure a dance improvisation, rules that specify, for example, a certain kind of improvisation or certain sequences of movement: "contact improvisation only," for instance, or "fast group movement to alternate with slow, large individual movement." Such rules notwithstanding, the aim of the dancers is not to render something planned or choreographed in advance. Whatever the framing rules might be that act as a constraint upon movement, the aim of the dancers is to form movement spontaneously. It is to dance *this evening's dance*, whatever it might turn out to be. In view of the uniqueness of *this evening's dance* — as of all *this evening's dances* — the common aesthetical question of ontological identity does not arise. In other words, being the only one of its kind, *this evening's dance* is not measured against or viewed with respect to other performances nor is it measured against or viewed with respect to a score. Ontological status is thus not an issue. Unlike a set piece of choreography — Marius Petipa's and Lev Ivanov's *Swan Lake*, Mark Morris's *Jealousy*, Twyla Tharp's *Red, White, and Blues*, Alvin Ailey's *Revelations*, for example — *this evening's dance* is a singular performance. It is either in the process of being created — in the very process of being born — or it is not at all. If pressed for an artistic comparison, one might say — though only in a quite broad and general sense — that a dance improvisation is akin to a jazz jam session wherein a group of musicians literally make music together. They bring something into being, something which never before was, something which will never be again, thus something that has no past or future performances but exists only in the here and now of its creation.

In view of its unique appearance, it is not surprising that a dance improvisation is commonly described as an unrehearsed and spontaneous form of dance. What is not commonly recognized, however, is that that description hinges on the more fundamental characteristic suggested above, namely, that in a dance improvisation, the process of creating is not the means of realizing *a* dance; it is *the* dance itself. A dance improvisation is the incarnation of creativity as process. Its future is thus open. Where it will go at any moment, what will happen next, no one knows; until the precise moment at which it ends, its integrity as an artwork is uncharted. It is in virtue of its perpetually open future, its being in the process of being created, that a dance improvisation is unrehearsed and spontaneous. Because no set artistic product exists in advance or in arrear, the dancers have nothing in particular to practice or perfect in advance, nothing in particular to remember in order to keep. Their improvisation is process through and through, a form which lives and breathes in the moving flow of its creation, a flow experienced as an ongoing present, an unbroken now that is something akin to what Gertrude Stein called a "prolonged present" (1926: 16–17), to what William James (borrowing from E.R. Clay) called "a specious present" (1950, vol. 1: 609), and to what Henri Bergson called "a live present" (1991: 137), that is, an ongoing flow of movement from an ever-changing kinetic world of possibilities.

How is such a dance possible? How can dancers create a dance on the spot? To unravel the nature of an ongoing present and discover its generative core requires a description of the creative process from the perspective of a dancer engaged in the process. In the course of giving this description, we will find that what is essential is a non-separation of thinking and doing, and that the very ground of this non-separation is the capacity, indeed, the very experience of the dancer, to be thinking in movement. To say that the dancer is thinking in movement does not mean that the dancer is thinking *by means of* movement or that her/his thoughts are *being transcribed into* movement. To think is first of all to be caught up in a dynamic flow; thinking is itself, by its very nature, kinetic. It moves forward, backward, digressively, quickly, slowly, narrowly, suddenly, hesitantly, blindly, confusedly, penetratingly. What is distinctive about thinking in movement is not that the flow of thought is kinetic, but that the thought itself is. It is motional through and through; at once spatial, temporal, dynamic. The description that follows will attempt to capture this motional character.

I should emphasize in advance that the account is basically descriptive, not theoretical. As such, it is not an *argument* for a certain conception of dance improvisation. The purpose of the analysis is not to claim or document a theory about dance improvisation but to describe as accurately as possible, indeed, to capture, the essential character of a dance improvisation as it is experienced by a dancer to the end that the kind of thinking that lies at the core of its spontaneous creation is clearly elaborated. The account may in this sense certainly be elaborated further; it may be amended; and so on. It is offered as a phenomenological account. Precisely because its aim is to render the experience

of the dancer justly, it leaves an objective kinetic language behind, the latter language tying us to facts about the experience rather than leading us to a conception of its living quality or character. In other words, what is of interest is not that I flexed my knee, for example, or that I circumducted my arm, or that I saw another dancer out of the corner of my eye, but the experienced kinetic reality of these events. What is wanted, as may be readily apparent, is a first-person descriptive account, an account of the experience of thinking in movement as it is lived first-hand. If in the course of the description phrases or terms appear precious or fanciful verbal excesses, their successive elaboration should clarify their meaning such that anyone interested in grasping the process of creating an improvisational dance is led to the heart of that experience and to an understanding of its inherent structure: thinking in movement.

To say that in improvising, I am in the process of creating the dance out of the possibilities that are mine at any moment of the dance is to say that I am exploring the world in movement; that is, at the same time that I am moving, I am taking into account the world as it exists for me here and now in this ongoing, ever-expanding present. As one might wonder about the world in words, I am wondering the world directly, in movement. I am actively exploring its possibilities and what I perceive in the course of that exploration is enfolded in the very process of my moving — a density or fluidity of other dancers about me, for example, or a sharpness and angularity in their movement. The density or fluidity, like the sharpness and angularity, are not first registered as a perception (still less as stimuli, and certainly not as sense-data), a perception to which I then respond in some manner by doing something. Qualities and presences are enfolded into my own ongoing kinetic presence and quality. They are absorbed by my movement, as when I become part of the swirl of dancers sweeping by me or am propelled outward, away from their tumultuous energies, or when I quicken to the sharpness of their movement and accentuate its angularity or break out of its jaggedness by a sudden turn and stillness. In just such ways, the global dynamic world I am perceiving, including the ongoing kinesthetically felt world of my own movement, is inseparable from the kinetic world in which I am moving. Sensing and moving do not come together from two separate regions of experience, fortuitously joining together by virtue of their happening in, or being part of, the same body. Perceptions are plaited into my here-now flow of movement just as my here-now flow of movement is plaited into my perceptions. Movement and perception are seamlessly interwoven; there is no "mind-doing" that is separate from a "body-doing." My movement is thus not the result of a mental process that exists prior to, and is distinguishable from, a physical process in which it eventuates, nor does my movement involve no thinking at all. To separate myself into a mind and a body would be to perform a radical surgery upon myself such that a vibrant kinetic reality is reduced to faint and impotent pulp, or excised altogether. In effect, the separation would deny what I experience myself to be: a mindful body,

a body that is thinking in movement and that has the possibility of creating a dance on the spot.

The dynamic world that I and other dancers are together exploring is inseparable from the dynamic world we are together creating. Thus, with respect to possibilities, it is not as if I am contemplating — or must contemplate — a range of options in order to choose from among them a ripest course of action, given now this, now that present situation. My possibilities at any moment in the ongoing present are not explicit and neither is my choosing. Again, the idea that thinking is separate from its expression — a thought in one's head, so to speak, existing always prior to its corporeal expression — is a denial of thinking in movement. Certainly a movement might occur to me prior to its actual performance. For example, in the course of improvising, I may have a particular kinetic image or a particular kinetic inclination. At the same time that I am moving, I may have an image of a leg extension, for instance, or a fleeting image of a particular movement quality — perhaps a strong and abrupt upward movement of my arm. Similarly, at the same time that I am moving, I may have an inclination to run toward another dancer or toward a particular place on the stage. Such thoughts, while emerging within the experience of an ongoing present, do not interrupt the flow of movement which is the dance. I do not stop moving; I am not impeded in any way, brought to a standstill by the passing image or inclination and made to choose explicitly what I shall do. On the contrary, I might indeed extend my leg or thrust my arm upward or run toward another dancer or toward a particular place on the stage. The image or inclination is a kinetic form within a form, a motional thought that momentarily intrudes itself into, or superimposes itself upon, the ongoing process of thinking in movement. Insofar as thoughts *of* movement are thoughts within the global form — thinking in movement — they can be distinguished from the latter. Thoughts *of* movement are experienced as discrete events: I have an image of a certain leg extension, an image of a certain strong and abrupt movement of my arm, and so on. Within the context of improvisational dance, such thoughts arise autonomously; they are spin-offs of thinking in movement rather than the result of an ongoing process of thinking in images while moving or the result of any deliberative thinking, e.g. "what if I …" or "shall I …" or "if I were to …," and so on. In the same way that my sensings and movings are not sequential happenings but integrally entwined facets of a dance that is a dynamic form in-the-making, so I am not mentally exploring a range of possibilities first, and then later taking some action in consequence of them.

Thoughts *of* movement are not the only way in which discrete movements might find their way into the ongoing present of the dance I am creating. I might, for example, think my way into movement that, by certain cultural standards, is distinctly referential in one way or another. I might shrug my shoulders, for instance, or wave to a dancer leaving the stage, or push another dancer off balance, or fall into the arms of a nearby dancer. But this is only to say that, within the context of improvisational dance,

thinking in movement is not limited to thinking in what one might call *dance* movement. Hence, the incorporation of movement and gestures from everyday life that have certain culturally recognized meanings is always possible. It should be added, however, that such gestures or movements do not necessarily make the dance symbolic nor make the particular movement symptomatic. To use the above examples in turn, the dance in which such a movement happens is not thereby a dance about resignation, a dance about partings, a dance about aggression, or a dance about love. While each of the movements might be read off as standing for something, for the dancer creating the dance, it is the dynamic patterning of movement, its subtleties and explosions, its range and rhythm, its power and intricacy that are foundational, not its referential value as such. Thus, in *this evening's dance*, a particular movement is not "about" something any more than a smile is about pleasure.

Any process of thinking in movement is tied to an evolving, changing situation. Hence, if one would speak at all of a systematic reasonableness of meaning, it would not be in terms of an externally imposed scheme of some kind but in terms of *a kinetic bodily logos*, a body that, in thinking in movement, grasps the global qualitative dynamics in which it is enmeshed. To be thinking in movement means that a mindful body is creating a particular dynamic as that very dynamic is kinetically unfolding. A kinetic intelligence is forging its way in the world, shaping and being shaped by the developing dynamic patterns in which it is living. Thus again we see that possibilities at any moment do not stand out as so many recourses of action; possibilities are adumbrated in the immediacy of the evolving situation itself, a situation that moment by moment opens up a certain world and certain kinetic ways of being in that world. In improvisational dance, possibilities arise and dissolve for me in a fluid complex of relationships, qualities, and patternings without becoming thematic for me. We see again too, then, that choices are not explicitly made. Rather, a certain way of moving calls forth a certain kinetic world and a certain kinetic world calls forth a certain way of moving. It is as much a matter of the fluid complex moving me as it is a matter of my moving it, and at the core of that phenomenal kinetic world is a moving intelligence, a kinetic bodily logos.

There is a further way in which the actual moment by moment creation of the dance may be described as my thinking in movement. The movement that I actually create at any moment is not a *thing* that I do, an action that I take, a behavior in which I engage, but a passing moment within a dynamic process, a process that I cannot divide into beginnings and endings. There is a dissolution of my passing movements into my perpetually moving present and a dilation of my perpetually moving present into my continuing movements. The sequential, waving gesture I am now making with my arm, for example, is spilling over into a turning movement I am now making with my head, and the turning movement I am now making with my head is spilling over into a bending of my torso and a sideward leaping in a direction

opposite to that of my turning head. I have indeed made each of these movements — I have moved my way into them in the course of improvising — yet they are not detachable moments. They have no separate or separable existence for me. They are like the passing stages of a forward-rolling spiral that at the same time coils back on itself in the process of rolling forward. Even were the sequential, waving gesture I am now making with my arm to dissolve into stillness or end abruptly, I could not say when the gesture ended and when the stillness began, or that the stillness was not an ongoing creation of the dance. My thinking in movement is not an assemblage of discrete gestures happening one after the next, but an enfolding of all movement into a perpetually moving present. Thinking in movement is an experience in which the qualitative dynamics of movement combine to form an ongoing kinetic happening. A singular kinetic density evolves that is nothing other than this moment in which my arm is sequentially waving, this moment in which my head is turning, this moment in which my torso is bending, and so on. My experience of an ongoing present exists only in virtue of these immediate moments, that is, in the actual here–now creating of this gesture or movement. But this gesture or movement is itself an opening out of the dance, a process of moving. It has a spatio-temporal thickness or dynamic density about it. The turning movement I am now making with my head capsulates the dance, as it were, gathering up in its momentum all that has gone before and all that might lie ahead. Each actual movement of the dance has such a dynamic density, a density that stretches out the present moment, transfiguring it from a mere momentary bodily happening into a qualitative kinetic fullness or plentitude that radiates outward and into the ongoing qualitative process of motion that is the dance. My perpetually moving present is in this sense indistinguishable from the actual movement I am here and now creating. Thinking in movement, I am aware of a qualitative dilation and dissolution of movement, even a mutability of here–now movements and the moving present that is the dance.

There is one further aspect to be touched on in this descriptive account of improvisational dance. We have seen that, in contrast to a quite particular reification of thinking and/or to a conception of thinking as an exclusively mental event, thinking in movement is a way of being in the world, of wondering or exploring the world directly, taking it up moment by moment and living it in movement, kinetically. Thinking in movement is thus clearly not the work of a symbol-making body, a body that mediates its way about the world by means of language, for example; it is the work of an existentially resonant body. An existentially resonant body creates a particular dynamic world without intermediary. In improvisational dance, the world it creates is neither a part of the everyday given world nor a temporary fictitious world, but a protean world created moment by moment. Experienced as an elongated or ongoing present, it is a world in which there are no befores or hereafters, no sooner-or-laters, no definitively expected endings or places of arrival. For just such reasons,

the dance being created is not a dance that the dancer might acknowledge as being "about" something, unless that something were movement itself. To appreciate and to understand such a phenomenon is akin to appreciating and understanding what Gertrude Stein meant when she said, "a rose is a rose is a rose." Clearly a rose is not about something. Neither is it a jumble of petals. The same may be said of a dance improvisation. The kinetic intelligence that creates the dance informs the dance itself. No more than the dancing body must movement stand for or refer to something beyond itself in order for the phenomenon to be dance. To have meaning is not necessarily to refer and neither is it necessarily to have a verbal label. Movement — animation — can be in and of itself meaningful.

To appreciate — and indeed, to fathom — such nonlinguistic strata of experience, we turn toward that which is animate; we find in our highly symbol-laden human world patches where thinking in movement comes to light. In so doing, we discover that fundamental creative patterning of thought that is founded upon a kinetic bodily logos; we discover mindful bodies, thinking bodies, bodies that, in improvisational dance, break forth continuously into movement and into this dance, bodies that moment by moment fulfill a kinetic destiny and so create kinetic meanings. When we reflect upon our experience of moving in just such ways, examining the experience from a phenomenological perspective and discovering the phenomenon of thinking in movement, we are in turn propelled to rethink our notion of thinking — and in the process, to realize that insights gleaned from a descriptive account of improvisational dance have consequences for epistemology and evolutionary accounts of animate life as well as for aesthetics.

Before proceeding to a consideration of these broader topics, it will be helpful to consider two assumptions about thinking, assumptions that, the preceding descriptive account notwithstanding, might otherwise impede a clear and unprejudiced grasp of what it is to think in movement. The first assumption has to do with thinking itself and has several layers. To begin with, it is commonly assumed that thinking is tied to language and that it takes place only via language. It is furthermore commonly assumed that thinking and language are tied in an exclusive way to rationality. The basis for these assumptions seems itself to be an assumption: that thinking, language, and rationality form a holy, albeit human, triumvirate, a congealed sacred hallmark of preeminently *human* existence. To link thinking, language, and rationality in this manner, however, is to claim a necessary and inherent interdependence before examining the evidence from experience itself and prematurely to declare impossible something that may not be impossible at all, and perhaps, on the contrary, quite common, i.e. thinking in movement. Moreover to deny peremptorily the possibility of thinking in movement on the basis of the foregoing assumption(s) may readily involve a further assumption, namely, that thinking takes place only by means of something, in particular, a symbolic system of some sort — e.g. mathematical, linguistic, logical — a

system having the capacity to mediate or carry thought referentially. As the previous descriptive account has demonstrated, however, to affirm the possibility of thinking in movement is to regard movement neither as a vehicle for thinking nor as a symbolic system through which reference is made to something else. Indeed, steadfast and serious reflection on the phenomenon of improvisational dance shows that movement is neither a medium through which a dancer's thoughts emerge nor a kinetic system of counters for mediating his or her thoughts; movement constitutes the thoughts themselves. One might in this context paraphrase Maurice Merleau-Ponty's remarks upon language and say that, in order to understand what it means to think in movement, "*movement* must somehow cease to be a way of designating things or thoughts, and become the presence of that thought in the phenomenal world, and moreover, not its clothing but its token or its body" (Merleau-Ponty 1962: 182). Similarly, one might paraphrase neurologist Kurt Goldstein's remarks upon language and say that, "As soon as man uses *movement* to establish a living relation with his fellows, movement is no longer an instrument, *no longer a means; it is a manifestation, a revelation of intimate being and of the psychic link which unites us to the world and our fellow men*" (quoted in Merleau-Ponty 1962: 196).

Whether a matter of binding thinking exclusively to language and rationality or a matter of tying it exclusively to a symbolic system of one kind or another, the first assumption is essentially based on a reification of thinking. It is thus based essentially on a substantive rather than processual metaphysical conception and understanding of thinking. It is important to emphasize that neither the reification nor the substantive conception of thinking are unfounded; they are only narrow. In other words, what the previous descriptive account of improvisational dance challenges is not *a* linkage between thinking and language or between thinking and rationality, nor *a* linkage between thinking and symbolic systems of thought, but the view that there are no other forms of thinking, that thinking is wholly dependent on, and to that extent limited to, symbolic structures of thought, hence that it is transactable only in terms of a hard currency like language, and furthermore that it proceeds in a strictly linear fashion, its progression being marked by a systematic reasonableness that develops on the basis of exact and particular connections between what are in essence bead-like thoughts arranged in propositional sequences and/or on the basis of specific syntactic rules demanded by the symbolic counters or currency utilized. What the descriptive account of improvisational dance suggests is that to reify thinking in this exclusively linguistic, or more broadly, symbolic, manner is to perpetuate a metaphysics that is at odds with experience, and in fact, not simply at odds with a particular kind of aesthetic experience, but with a fundamental form of experience. What it correlatively suggests is that such reification is axiologically unwarranted in that it exalts humankind at the expense of denying dimensions of human experience, i.e. dimensions of thinking which, though nonsymbolic may nonetheless be designated rational and which, from

both a developmental and evolutionary perspective, may in fact be evidenced across a broad spectrum of animate life.

The assumption rooted in a reification of thinking and a substantive metaphysics may be accompanied by a parallel assumption rooted in a Cartesian separation of mind and body. To assume that thinking is something only a mind does, and doing or moving are something only a body does is, in effect, to deny the possibility of thinking in movement. If thinking is furthermore assumed to be always separate from its expression — a thought in one's head always existing prior to its corporeal expression — then thinking must necessarily be transcribed — or, given a strictly linguistic conception of thinking, *transliterated* — into movement. When the mind formulates a thought, for example, the tongue and lips move to express it; when the mind thinks of going to the store, the body complies by walking or driving it there. The notion that thoughts must be corporeally transliterated, that they exist separately from and prior to their expression, has been justly criticized by philosophers such as Wittgenstein and Merleau-Ponty. "When I think in language," Wittgenstein points out, "there aren't 'meanings' going through my mind in addition to the verbal expressions" (1963: 107). Merleau-Ponty similarly points out that "speech is not the 'sign' of thought, if by this we understand a phenomenon which heralds another as smoke betrays fire…. Nor can we concede … that it [speech] is the envelope and clothing of thought" (1962: 181–82). Although in these examples it is a question of *language* and not of movement, the same critical insights into the phenomenon of *thinking* apply. What the descriptive account of improvisational dance challenges is not the possibility that thinking, or a single thought such as an image, never occurs prior to its overt expression in some form, that is, prior to a movement or an action of some kind. When one thinks in general terms about what one will say prior to expressing the thought verbally to others, verbal thinking clearly occurs prior to its active expression. What the descriptive account challenges is the notion that thinking always and necessarily takes place in this way, thus that the mind is always one thoughtful step ahead of the body, always there beforehand to mobilize it into action.

There is an aspect of this assumption that we would do well to clarify in some detail. Though typically so regarded, movement is hardly given its due when presumptively conceived merely as the medium of a body's everyday transactions with the world. Movement is, on the contrary, first and foremost the natural mode of being a body — a ready and perpetual kinetic susceptibility and effusion, as it were, of animate life. Serious reflection on this fact readily leads one to the realization that animate forms readily inhabit movement in the literal sense of living in it and that thinking in movement is foundational to being a body, as much an epistemological dimension of bodily life as a biological built-in that makes sense. One aspect of this naturally kinetic manner of being — this spontaneous thinking in, and opening up into movement — is implicit in Merleau-Ponty's remark that Cezanne's description of himself as "thinking in painting"

is a description of a process in which "vision becomes gesture" (1964e: 178). His remark is clearly not intended to mean that movement follows perception, i.e. doing follows seeing, but that perception is interlaced with movement, and to the point, we might add, where it is impossible to separate out where perception begins and movement ends or where movement begins and perception ends. The one informs the other — inextricably, and all the more inextricably when it is a question not of *vision* becoming gesture, but of *movement* becoming movement. Consider, for example, the two basic ways in which thinking in movement may enter into the creation of a dance. One can readily distinguish between thinking in movement in and of itself and a kind of thinking in movement that is analogous to Cezanne's "thinking in painting." The distinction is in fact integral to an understanding of the difference between improvisational dance — what we might characterize as the creation of dance as artistic process — and non-improvisational dance — the creation of dance as artistic product. In creating the latter kind of dance, a choreographer obviously thinks in movement as she creates the dance, precisely in a way similar to the way in which Cezanne "thinks in painting." In broad terms, what Cezanne does with hand and brush, the choreographer does with other bodies. Moreover, like the painter, she also stands back from time to time and views the work in progress with an eye to judging its form — to changing the timing of a particular movement sequence perhaps, or of attenuating a particular gesture, or of cutting a whole passage because its dynamics are discordant. Thinking in movement is thus a compound process for a choreographer. One might characterize the difference between an improvisationally choreographed dance and a non-improvisationally choreographed one in terms of how the process of thinking in movement stands in relation to the actual making of the dance, i.e. in terms of whether the process of thinking in movement is at times "transcendental" to the dance or at all times "immanent" in the making of the dance, or in other words, whether thinking in movement is at times "thought about action" or consistently and throughout "thought in action" (Harrison 1978: 34).[1] The difference may furthermore be characterized as an outside/inside difference. Obviously, in improvisational dance, there is no critical or creative outside eye. Thinking in movement is all from the inside. The choreographed form evolves spontaneously from the ongoing process of thinking in movement. Non-improvisational dances are choreographed from the outside; hence, thinking in movement may at any time in the choreographic process be a critical thinking in movement at the same time that it is a creative thinking in movement. In formally judging a dance, or in changing its dynamics in any way, a choreographer is casting a critical thinking eye at the kinetic form she is in the process of creating. Viewing the dance with a moving eye that is consummately absorbed in the movement of moving bodies, she is caught up in a flow of kinetic thought, perceptually experiencing the dance as an unfolding kinetic drama, a dynamic form-in-the-making (Sheets-Johnstone 1966 [1979, 1980]). Thinking in movement in this choreographic way, she is not only turning "vision into gesture,"

but also gesture into vision; in the act of choreographing, she is transforming dance into movement — her "vision into gesture" — and movement into dance — "gesture into vision." In effect, while a further dimension of thinking in movement opens up in choreographing a dance from the outside, perception and movement are not thereby separable moments of the process of thinking in movement. Whether choreographed from the inside or outside — in one non-stop choreographic swoop or in sections over a period of time — the basic process of thinking in movement is the same. By having turned attention exclusively to improvisational dance, we have been able to flesh out this basic process undistracted by critical concerns, and to show how this mode of thinking, by its very nature, is the work of a mindful body.

3. Thinking in movement: Our human developmental background

In Chapter Five, in the context of showing how experimental psychological research on human infants coincides with the phenomenological notions of primal animation and of a kinetic attunement to the world, or how, in other words, movement is foundational — "primitive" — in both an epistemological and metaphysical sense, it was stated that an infant's first mode of thinking is in movement. This insight into our original mode of thinking can be further elucidated and in fact substantively documented in ways that draw on developmental as well as experimental research on infants. Studies of language development that are concerned not merely with words, but with experience before language, are particularly instructive and relevant to this elucidation and documentation. Well-known infant-child psychologist Lois Bloom's first book, for example, a monograph titled *One Word at a Time*, was concerned in part to show that first single-word utterances are in fact "conceptual rather than linguistic" (Bloom 1993: ix). The single-word utterance "bye-bye," for instance, is pegged to someone's leaving the room; it is not a locutionary statement as such, or, as Bloom describes it, a "syntactic" one. Single words are initially paired with *happenings* of some kind or other — thus "down," as in getting down from a chair; objects are paired with certain *perceived dynamics* — thus "tick-tock," as in noticing a clock. In her recent book *The Transition from Infancy to Language*, Bloom fleshes out this conceptual terrain in the process of reviewing the literature on infant development and in her related discussions of topics such as movement and change, general object knowledge, and object concepts. She does so not in great detail but to a sufficient degree to afford a general sense of what is there before language. In other words, she approaches a child's progressive mastery of language by beginning with the life of the child as an infant, in particular, with those "developing cognitive abilities in infancy that bring the infant to the threshold of language at the end of the first year" (1993: 35). It is of critical importance to emphasize that in so doing, Bloom does *not* address the relationship between

movement and thinking, or use the terms nonlinguistic and linguistic, or in fact concern herself in any central sense with *thinking*; the central terms of her discourse are cognition and affect. It is of equally critical importance to emphasize that her account of the transition from infancy to language is nevertheless replete with references to movement that incontrovertibly support the notion that infants think in movement. The value of her account in the present context consists precisely in these dual facts. In what follows, the underlying thematic of *thinking in movement* will be brought to the surface.

One of Bloom's first references to movement unequivocally attests to its primacy in the life of an infant and to its cogency in the development of language. Bloom states that "The foundation for the semantic structure of language … is in the theories of objects, movement, and location that begin to be formed in the first year of life" (1993: 37). The ensuing discussion — in fact, the section that immediately follows — is devoted to "Movement and Change" (37). Though not stated outright in the discussion, it is clear that an infant's burgeoning idea of objects is tied not to a simple visual experience of them — to *looking* at them — but to noticing whether they change, how their appearance is different in different circumstances, whether they change in conjunction with what the infant itself does with them, including how it moves in relation to them, thus also including how, though it does not locomote itself, how the act of being carried about by others affects its relation to objects, and so on. We might note that such a "theory of objects" coincides basically with what both von Helmholtz and Husserl affirm about the constitution of objects. As shown in Chapter Four, both von Helmholtz and Husserl describe how we learn about objects originally by moving in relation to them and by noticing their changing appearances in concert with our movements. Moreover this same kinetically-tethered "theory of objects" has further resonances. When Bloom, in the section on "Movement and Change," speaks of feeding bottles and blankets having "a dynamic quality" according to where the infant is in relation to them, how the infant moves or is moved by others relative to them, how they, as objects, move or do not move, and so on (38), her words recall in an abbreviated way Stern's much more highly elaborated account of vitality affects (discussed in Chapter Five). "A blanket," she says, for example, "appears when the baby is put down to rest, and then it disappears when the baby is taken up for feeding and playing…. [M]oreover, its movements are integrated with the baby's own twisting, turning, trying to rise up, and so forth" (38). It is furthermore significant that Bloom first mentions in just this dynamic context the fact that "when [children] begin to say words, their earliest words express something about objects that move" (38). As Bloom points out, this empirical finding about the centrality of movement to earliest words has in fact been made by many researchers (272, Note 10). Bloom herself goes on to make a most provocative comment. She states that "Both conceptual categories and eventual linguistic categories build on an infant's nascent theories about objects, motion, space,

and causality, and these theories originate in the early experiences that come about with movement and change in location."

Now by "conceptual categories" Bloom obviously means categories prior to language since she goes on to mention "eventual linguistic categories." In effect, though not named as such, Bloom implicitly acknowledges that infants have nonlinguistic concepts, concepts in advance of language, indeed that they have *theories* in advance of language since it is theories about "movement and change" originating in early experiences of movement and change that ultimately spawn "linguistic categories." Of further moment is that although psychologists disagree on how an infant arrives at a "theory of objects," and disagree as well as to the nature of that theory, they are in accord that "movement and invariance in the face of change" (39) are central to an infant's theory of objects. In other words, movement is the foundation of our epistemological construction of the world; even while some objects are static — like walls or pieces of furniture — there is movement in relation to them. What is crucial, then, is making sense of what is invariant amidst change. Indeed, as Bloom emphatically points out in reviewing a study by T.G.R. Bower — the study referred to and discussed in Chapter Five — which showed that infants were less disturbed or did not even notice that an object changed, but became quite "disturbed when the path in which it moved changed" — "*Movement* [is] the critical factor: either the movement of the object or the path of movement or the infant's head movement while following the object" (40). Clearly, *thinking in movement* is our primary way of making sense of the world. We see this truth enunciated again in the conclusion drawn from experimental research, namely, that "infants as young as 2 to 4 months of age can track a moving object and anticipate its reappearance" (40). Infants as young as 2 to 4 months of age are *thinking in movement*: to *anticipate* is first of all to think ahead, as in expecting something to happen; to expect the reappearance of an object that has been moving along a certain path and disappears at a certain point on that path is *to think ahead dynamically*, i.e., *to think in movement*. Moreover if an infant's perception of objects and "theory of objects" matures in conjunction with movement — its developing perception of objects being tied both to the movement of objects and to its own movement — then again, an infant is *thinking in movement* (see Ruff 1980).

As Bloom implicitly shows, "physical knowledge" matures in conjunction with an infant's developing "theory of objects" (43–46). By physical knowledge Bloom means such properties as solidity, object permanence, and even such things as gravitational effects. Infant researchers have long remarked on the fact that infants are attracted to novelty; they habituate to what is regular or expected and pay particular attention to what is unusual. The latter phenomenon — "preferential looking," as Bloom at one point describes it (43) — is regularly used as an empirical measure of an infant's perceptions, expectations, interests, and so on. Drawing in particular on a series of research studies of child psychologists Elizabeth Spelke and Renée Baillargeon that

utilize this standard technique, Bloom describes how infants even as young as two-and-a-half months have a sense of object continuity and solidity, and how those at six months have a beginning appreciation of gravity and inertia (43–44). In summing up these studies, she writes that "In all these experiments, infants demonstrated these abilities with respect to objects that *move*" (44; italics in original). Again, empirical research validates the claim that infants are *thinking in movement*. Indeed, the research itself all but articulates the truth. Precisely by *thinking in movement*, infants are gaining knowledge of "objects, motion, space, and causality" — and, we could add, of time. In progressively attaining to physical knowledge about the world in ways that are integrally tethered to movement, they are gaining knowledge about invariant and variant spatio-temporal and dynamic features of the world. We should perhaps emphasize once more that it is not Bloom's intention to present a case for movement or for thinking in movement. On the contrary, as initially suggested, the case is made by itself. We see this yet again when, after underscoring the importance of "objects that *move*," Bloom writes — a few lines later — that "A theory of objects clearly begins very early in infancy, and experiments have shown its beginnings in perceptions of objects that move in relation to a physical field" (45).

When Bloom goes on to consider what she terms "relational" concepts, the basic developmental phenomenon of thinking in movement is implicitly elaborated in further ways. Relational concepts develop outside of language. They develop on the basis of observation. Bloom defines them by saying that "Children learn about relationships between objects by observing the effects of movement and actions done by themselves and other persons" (50). It is instructive to note that Bloom's "relational concepts" are akin to what Stern describes as "consequential relationships" and to what Husserl describes as "if/then" relationships. All three are descriptive of the same basic phenomenon. An infant notices, for example, that slapping bath water causes a splash; closing one's mouth impedes the insertion of food into it; pulling on a blanket brings it closer; pushing against a bottle or a ball causes it to roll on the floor; being picked up has a certain feel to it and changes the way things in the surrounding world appear; and so on. Bloom's "relational" concepts — and their kin — are *not* language-dependent. Moreover they are not simply stepping stones integral to language development, thus essentially "pre-verbal" or "pre-linguistic" phenomena. On the contrary, they are the fundamental backbone of an infant's — and an adult's — knowledge of its surrounding world. They are the bedrock of our notion of objects, motion, space, causality — and time — just as Bloom points out. They derive from experiences in which and by which infants attain concepts of different objects and gain "physical knowledge" generally. Though just such concepts and knowledge are undeniably basic to an infant's ultimately having something to talk about, at least some of these concepts and some of this knowledge may never even wend their way into language. In other words, they are not *necessarily* articulated or

even articulable. What a blown-up balloon does, for example, when it is suddenly untied is hardly expressed by the word "deflates" or the words "splutters about." The actual dynamic kinetic event is not reducible to a word or even to a series of words. We all have knowledge of just such physical events just as we all have nonlinguistic concepts of their dynamics. We have this knowledge and these concepts because we have all been nurtured by an original capacity to think in movement, a capacity that does not diminish with age but merely becomes submerged or hidden by the capacity and practice of thinking in words.

Psychologist Jerome Bruner's focal emphasis upon narrative as the primary form of discourse and upon the central place of action in that discourse affirms this very insight. He writes that when young children "come to grasp the basic idea of reference necessary for any language use … their principal linguistic interest centers on *human action and its outcomes*" (1990: 78). His point is that narrative structure is, in the beginning, concerned with movement, in particular, with "agentivity" (77). "Agent-and-action, action-and-object, agent-and-object, action-and-location, and possessor-and-possession," he says, "make up the major part of the semantic relations that appear in the first stage of speech" (78). A particularly interesting experiment implicitly demonstrates the ready concern of infants with movement in Bruner's sense of "agentivity." In this experiment, luminous points are placed at eleven anatomical joints strategic to human walking — i.e., ankles, knees, elbows, and so on. When set in motion, the luminous points create the illusion of a person walking (or running or carrying or throwing or involved in other acts). Not only do adults readily see a person walking (or engaged in other acts: see, for example, Runeson & Frykholm 1981, 1983), but three-month-old infants do also. When the eleven luminous points are randomly organized and set in motion in computer simulations, or when the moving point-figure is turned upside down and set in motion, a coherently moving shape is no longer perceived (Bertenthal & Pinto 1993; Bertenthal, Proffitt, Cutting 1984).[2] Though some infant researchers have tied the experimental findings to the notion of infants having a "body schema" — a body schema "that permits not only the control of their own bodies but also the recognition of their fellow humans" (Mehler & Dupoux 1994: 108) — no such hypothetical explanatory entity is actually necessary. Even as a fetus in utero, an infant has a sense of gravity, i.e. of the vertical; even as a fetus in utero, an infant has a sense of its joints, i.e. through kinesthesia. Though as an infant, it has never itself walked, it has seen others walking; and again, even as a fetus in utero, it has a tactile-kinesthetic sense of its own body as an articulable, essentially dynamic form. "Agentivity" specifies a dynamic concept of action coincident with this articulable, essentially dynamic form. "Agentivity" is thus intimately related to *primal animation*. Primal animation indeed is the epistemological ground on which *thinking in movement* develops, hence the ground on which the concept of "agentivity" develops, agentivity in conjunction with both one's own actions and the actions

of others, as is evident in a three-month-old infant's recognition of a coherent moving form that in fact exists only sketchily as a luminous point-figure.

Aspects of this original mode of thinking warrant consideration with respect to their differences from linguistic thinking and with respect to the fact that in many cases, as the earlier balloon example suggests, what is thought in movement is opaque to language. With respect to differences between thinking in movement and thinking in words, attention might first be called to a coincidence highlighted in an earlier publication (Sheets-Johnstone 1996c). Both Husserl and Stern remark upon a certain lack of fit between language and experience, as evidenced by the disruptive character of language with respect to actual experience (Husserl), or by the elision of experience by language (Stern). Husserl writes that

> It is easy to see that even in (ordinary) human life, and first of all in every individual life from childhood up to maturity, the originally intuitive life which creates its originally self-evident structures through activities on the basis of sense-experience very quickly and in increasing measure falls victim to the *seduction of language*. Greater and greater segments of this life lapse into a kind of talking and reading that is dominated purely by association; and often enough, in respect to the validities arrived at in this way, it is disappointed by subsequent experience (1970b: 362; italics in original).

Stern observes that there is a "slippage between experience and words," noting that experiences of self having to do with a sense of coherence and continuity, for example, "fall into a category something like your heartbeat or regular breathing" (1985: 181). He goes on to say that "[P]eriodically some transient sense of this experience is revealed, for some inexplicable reason or via psychopathology, with the breathtaking effect of sudden realization that your existential and verbal selves can be light years apart, *that the self is unavoidably divided by language*" (181; italics added). In one sense, of course, Stern's observation straightaway validates Lacanian psychoanalytic theory: language *is* Other, but it is not necessarily the Other that Lacan proposes. In fact, in a quite different sense, Stern's notion of a self-divided-by-language is wholly contrary to Lacan's psychoanalytic and this because at its core, the self is, and has been, a distinctly different self in just the way Stern has previously described, both clinically and experimentally. The core self is an *existential* self, a preeminently bodily presence that carries with it a sense of coherence, agency, affectivity, and continuity. In the descriptive terms Husserl uses many times over, the core self is fundamentally *animate* and *animated*. Thus both the "originally intuitive life" that Husserl describes and the core or existential self that Stern describes are anchored in a dynamics of aliveness that is not simply a state of being that is there before language, but an aliveness that language, when it does emerge, can and often does fail to capture. Indeed, such a linguistic feat, we might say, is not the mission of language; one word after another, while potentially itself a highly dynamic

happening, is not equipped to render — at least in an everyday, non-poetic way — the qualitatively dynamic metaphysics of aliveness — of breathing, for example, or of the synaesthetic experience of waves crashing relentlessly upon a shore. What moves and changes is always in excess of the word — or words — that tries to name it. Thinking in movement is different not in degree but in kind from thinking in words. Words are not sharper tools, more precise instruments by which to think about dynamics, by which to hone our sense of space, time, energy, causality, or "agentivity". When the definitive shift into language takes place, that is, when thinking in words comes to dominate thinking in movement, a foundationally rich and subtle mode of thinking is displaced and typically subdued, commonly to the point that it is no longer even recognized as a mode of thinking. Experience itself may be fundamentally transformed if the shift is so compelling and overpowering, and so ultimately transforming of the person, that any other form of thinking is categorically denied.

Earlier in his career, Stern wrote of certain infant behaviors as being "resistant" to language. He termed these nonverbal behaviors "intention movements" (1981: 47), following along the lines of ethological studies and attempting to show how the behaviors were biological built-ins in the service of communication. The nonverbal behaviors he singled out were "gaze, head orientation, upper and lower body orientation, spatial positioning, and assumption of posture and distance" (45). He spoke of these nonverbal behaviors in the context of an infant's readiness or unreadiness to interact with others, viewing readiness and unreadiness not as an either/or condition of the infant, but as dynamic behavioral possibilities existing along a continuum. What is of moment is Stern's emphasis on the fact that these nonverbal communicative behaviors are neither transformed nor transformable into language; that is, while some infant nonverbal behaviors such as pointing or reaching for an object might be viewed as "'proto-linguistic' (or linguistic precursors) because they later become linguistically encoded" — as pointing, for example, becomes "gimme" (54–55) — some of their nonverbal behaviors such as averting their gaze or lowering their head "will never undergo an analogous [linguistic] transformation" (55). In discussing the reasons for their resistance to linguistic encoding, Stern points out that a word naming a behavior has none of the effect of the actual behavior itself; language is thus not equal to the communicative power of these nonverbal behaviors. He points out further that the nonverbal behaviors are dimensional rather than categorical in character; they transmit or signal "gradient information" (57–58): postures, gaze, upper and lower body orientation, and so on, have a variable affective tone according to *how* they are enacted; they signal a variable level of arousal, for example, according to *how* they are enacted. Though Stern does not speak of affective variability in such terms, there is no doubt but that the gradient character of the nonverbal behaviors is through and through a question of spatio-temporal dynamics: an infant can slowly or suddenly avert its gaze with respect to another person; it can turn its head away abruptly coincident with its sudden gaze

aversion, thus intensifying its unreadiness to interact with someone; it can turn its upper torso minimally toward another person, let its head follow minimally, and then make brief eye contact with a person, thus tentatively showing a readiness to interact; and so on. Endless spatio-temporal intercorporeal dynamics are possible. In contrast to "a verbal message" (58), the "gradient information" is precise in character. It is also transmitted with greater speed than a verbal message. In short, there is a richly subtle and complex nonverbal world that is there from the beginning of all of our lives, a dynamic world that is neither mediated by language nor a stepping stone to language, but that is literally significant in and of itself and remains literally significant in and of itself, a dynamic world articulating intercorporeal intentions that, although clearly affective in origin, are enmeshed in "agentivity," in expectations, in consequential relationships, and thereby in the phenomenon of thinking in movement (cf. Bull 1951).[3]

When Stern in his later writings examines the impact of language, he consistently emphasizes and reiterates the differences between a nonverbal and verbal world. He again points out, for example, how "Language is slow," how "Words cannot handle global experiences well," how language in fact "breaks apart rich, complicated global experiences into relatively impoverished component parts," how language "is clumsy at noting gradations between its categories," how it "may split thought away from emotion," and how some experiences such as "looking into someone's eyes while he or she is looking into yours … can simply never be captured in words; at best [such experiences] can be evoked by words." He states further that for the young child, language "creates a wide gulf between [a] familiar nonverbal world of experience and [a] new world of words," that the "schism is confusing and at times painful." In fact, "for the first time in [its] young life," a young child, "has to hold onto two different versions of the same event." He says that "Life will now … be lived more in parallel," that "The simple wholeness of experience has been broken," but that "the verbal and the nonverbal constructions of experience will live together all the same" (1990: 114).

Now while the advent of language is radically intrusive on Stern's account and to that degree may appear misconceived if not incomprehensible to many, his account is difficult to discount. To begin with, serious and extended study of a subject may well turn up findings that are radically incompatible with popular beliefs and attitudes. In this respect, Stern's account cannot be peremptorily dismissed because it is informed by years of both clinical experience with infants and developmental research into infancy, a time of life, we might note, with which we are all familiar in varying degrees, but which most of us have never actually studied either close-up or longitudinally. At the very least, what Stern's professional findings call upon us to do is to suspend judgment, to listen carefully to what is being said, to reflect carefully upon it, and then, to the best of our own abilities and situation, test out what is being said in the light of our own observations of infants. The idea that infants are nothing until they speak, that there is no thinking outside language, that there is not even consciousness outside

language — all such ideas are readily open to question when we turn in this suspended way "to the things themselves." More than this, insights are gained into language itself. When we go back to infancy and seriously attend both to Stern's account and to what is there in the form of living flesh before us, we can hardly miss the fact that *language is not experience and does not create experience*. We readily discover this fact because we can indeed hardly miss it: infants experience themselves and their surrounding world. They are animate forms in an animate world: they are reaching, kicking, smiling, pulling, turning, babbling, and more — and they consistently notice and respond to things that move. They are *sensibly* caught up in the primacy of something quite other than words. They are caught up in the primacy of movement and in thinking, not in words, but in movement.

When we listen and attend in this way, when we read descriptions of infant behaviors and interactions, when we observe infants, when we reflect back upon our own fundamental knowledge of ourselves and the world, we realize that our most basic human concepts are foundationally corporeal concepts; they derive from our own dynamic bodily lives. When we turn to any basic spatio-temporal or dynamic concept, the concept of distance, for example, and ask how we first *thought about* distance, in what terms we came to conceive of distance, or how we first came to have a concept of suddenness, in what terms we first experienced and thought about it, we realize straightaway that we did so nonverbally. These fundamental spatio-temporal concepts are not in the least language-dependent. They are first and foremost *corporeal concepts* (Sheets-Johnstone 1990). As infants, we forged just such concepts. Although we have a word to designate them, there is nothing basically linguistic about them in the least. Corporeal concepts in each case derive from experience and in no way require language for their formulation. Moreover the idea that language is there implicitly as some kind of ultimate and proper conceptual form, a kind of conceptual destiny toward which we inexorably progress as toward what, in an evolutionary context, Stephen Jay Gould describes as "the summum bonum of bigger brains" (see Chapter One, this text), is a notion at odds with corporeal matters of fact. Infancy is not a *pre*-linguistic or *proto*-linguistic state of mind.[4] It is not a *primitive* state of being, an antediluvian, prehistoric, barbarian time of life. Infancy is infancy, a period in our lives that affords all of us the crucial opportunity to experience the world and ourselves directly, as animate forms, and correlatively, to know the world and ourselves in their most basic terms: dynamically, kinetically. If anything, *language is post-kinetic*. Fundamental spatio-temporal-energic concepts come from experiences of movement, both in the form of self-movement and in the form of the movement of individuals and things in one's surrounding world. Even with such spatial concepts as that of light and dark, we do not need words or even need to witness a sunrise or sunset; blinking suffices. Indeed, our own bodily changes, our own bodily processes, quantitative ones as in growth and development as well as qualitative ones as in feelings of hunger giving way to feelings

of satiety — an experience that Stern describes for an infant as a "*hunger storm … that passes*" (1990: 31–35, 36–43) — are temporal processes. We live in and through the changes. As adults, we tend not to follow the temporal dynamics of change closely. We would thus not likely say, for example, that hunger "sweeps through [our] nervous system like a storm, disrupting whatever was going on before and temporarily disorganizing behavior and experience." Nor would we ordinarily say that our hunger then "establishes its own patterns of action and feelings, its own rhythms" (Stern 1990: 32), making us breathe faster, for example, and more jaggedly. Yet what *is* the experience of hunger for an adult? As infants, hunger affected us in just such ways and when we were fed, sucking produced rhythms that overrode the fast and jagged breathing rhythm. When as adults we begin recognizing the fecundity and breadth of our tactile-kinesthetic bodies and corporeal concepts, we wean ourselves in reverse: we back down the linguistic ladder from which we customarily see and appraise ourselves — and other creatures — a ladder whose ascension has been richly prepared for in earlier ways, but that appears to us now virtually untainted by them. We come back down to earth and recontact that original ground which gave us our first footings and which has never actually disappeared but has only been buried under a pedestalled and myopic view of language. Weaning ourselves away from the thought that all thought is language-dependent, and equally, from language-dependent thought, we wean ourselves away from a basically object- or substance-tethered metaphysics. In turn, we afford ourselves the possibility of grasping the momentous significance of movement and change, and of attaining to a metaphysics quintessentially attuned to the dynamic nature of animate forms and an animate world. A process metaphysics accurately describes the natural world, the living forms that inhabit it, and the natural contours of life itself. Thinking in movement is not only coincident with that metaphysics; it is the methodological point of departure for its formulation. Precisely as Heraclitus indicated: bodies *step* into *running* rivers.

4. Thinking in movement: Our phylogenetic heritage

Killdeer are ground-nesting birds that protect their young in two basic ways depending upon the immediate danger. When approached by predators who will eat their young, they move away from the nest and flutter their wings as if injured; when cattle approach who might trample their young, they remain at the nest, spreading their wings in a conspicuous display, which action ordinarily deflects the cattle away from the nest (Griffin 1984: 36), or they lunge toward a cow's face "thereby startling it and causing it to veer away" (Ristau 1996: 80).

Instances of thinking in movement abound in the literature on nonhuman animal life just as they abound in the literature on human infant life. That the killdeer's

behaviors *are* examples of thinking in movement, and not merely blind, robotic behaviors adaptively favored by natural selection, is an issue that will be duly addressed. Of moment now are the distinctive movement dynamics of the killdeer in each situation. As instances of *thinking in movement*, the dynamics are aptly fitted to the circumstance; each movement dynamic is in its own way a reasonable act in the service of kin-protection. Similarly, each movement dynamic has its own integrity as an act of kin-protection. To be effective, movement dynamics must be just so structured. Focusing attention on the movement dynamics of these protective acts highlights the extended and more complex spatio-temporal dynamics of predator-prey interactions,[5] where, as ethologist Donald Griffin points out, "The stakes are extremely high. For the prey it is literally a matter of life and death. For the predator, success or failure in a particular effort is less crucial, but its survival and reproduction depend on succeeding reasonably often" (1984: 73). The prize being on the one hand to stay alive, and on the other, to have a good meal, prey and predator are at near corresponding risks. The drama that evolves between and through them is clearly played out in movement, a kinetic drama through and through. Precisely because it is a spontaneous dynamic interaction not orchestrated in advance, but played out from moment to moment, it is a drama that involves thinking. To claim that there is no thinking involved would in fact be absurd. It would be absurd to claim, for example, that predator's and prey's progression of movement is tied to a set of rules that algorithmically specify both the immediate moment and the global event, as if the animals involved were following a script, their every movement being orchestrated in advance. Moreover it would be equally absurd to claim that the thoughts the animals think exist separately from the movement the animals make, or in other words, that the animals' thoughts are successively transcribed into movement — as if one of two hungry female lions in tandem strategic pursuit of a zebra were first thinking in some way to herself, "Let's see, if I head off the zebra from this direction, perhaps Mary over there will move up on its right flank and …," the lioness then following through by bodying forth her thoughts in the flesh. All such claims overlook the obvious: predator and prey alike are thinking in movement; their progression of thought — their process of thinking in movement — is tied to the evolving, changing situation itself, the situation they themselves are dynamically creating moment by moment in their very movement. That dynamically evolving situation develops its own logic, i.e. its own reasonableness and integrity, and it develops that logic on the basis of a *kinetic bodily logos*, a natural kinetic intelligence that is there from the beginning in both prey and predator and that evolves on the basis of experience. In stalking, in chasing, in avoiding — in other words, in crouching, creeping, sprinting, racing, suddenly changing directions, putting on speed, and so on — prey and predator alike make their way in a kinetically intelligent manner, a manner that is at once spontaneous and contextually appropriate. Agonistic situations in which pursuit and flight are dominant themes demand just such a kinetic intelligence, an

intelligence that is not a fixed and static body of knowledge but a dynamically evolving intelligence that grows and changes on the basis of past experience. The reproductive success of prey and predator alike depends on just such an intelligence.

The old division between instinctive and learned behavior is a spurious one, as most biologists have come to realize, an oppositional way of thinking that does not accord with facts of life. In their classroom text *Biological Science*, William Keeton and James Gould, for example, state that "[I]t is extremely unlikely that any behavior can be classified as strictly innate or strictly learned: even the most rigidly automatic behavior depends on the environmental conditions for which it evolved, while most learning, flexible as it seems, appears to be guided by innate mechanisms." They conclude that "*Instincts* … can be defined as the heritable, genetically specified neural circuitry that organizes and guides behavior," and that "behavior that is thereby produced can reasonably be said to be at least partially innate" (Keeton & Gould 1986: 554).[6] Instructive cases in point that confirm this conception of behavior are paths and shelters. Animals that make paths for themselves are not automatons blindly following a motor program, any more than are human animals who blaze trails or build roads. As Keeton and Gould's remarks implicitly indicate, creatures — including human ones — build according to what is available and/or at hand, according to what the contour of the land allows, according to what construction and/or destruction is in fact required if a path, trail, or road is to be successfully made, and so on. Moreover what starts out in a happenstance manner may be progressively improved. Griffin points out, for example, that a vole runway "may have started as an incidental result of repeated walking over the same route, but its users soon work on it actively, nibbling away at the lower parts of some plants while leaving in place the blades of grass that lean over the runway." In this way, they make the runway smooth, level, and "almost invisible from above" (Griffin 1984: 96). The building of shelters correspondingly involves thinking in movement and tailoring one's building accordingly. The nest-building of weaverbirds provides an exceptional example; its nest incorporates not only an extraordinary number of possible stitches and fastenings, but ones requiring complex weavings. Ethologist W.H. Thorpe diagrams nine different styles, including a half hitch, an overhand knot, an alternately reversed winding, a series of interlocking loops, and a slip knot (Thorpe 1974: 149). In the context of discussing instincts understood as genetically-determined behaviors, Thorpe emphasizes the fact that experience affects genetically-generated behavior. In other words, instincts are malleable; their particular realization depends upon an individual's past experience, for example, upon whether, in the course of an action, an individual is interrupted in its activities, upon what available resources provide, and so on (Thorpe 1974: 134–171). Griffin makes this very point with respect to nest-building behaviors when he states that however instinctive the behavior might be, "nest-building is anything but a stereotyped and fixed sequence of behavior patterns" (1984: 107–108). In the context of discussing various aspects of nest-building, such as

whether a bird repairs a damaged nest or abandons it and builds a new one, he remarks upon the flexibility and sensibleness of their choice, but states too that "This is not to say that birds never do foolish things in the course of nest building." He proceeds then to relate how blackbirds may become confused, starting to build "many nests in some artificial structure that has many similar-looking cavities." Their confusion, he says, appears to be about just where the nest should be located and ends in their not completing any nest. He goes on to say with respect to this behavior that "we tend to infer a total lack of thinking when animals do something foolish and wasteful of effort. But we do not apply the same standard to members of our own species, and we never infer a total absence of thinking when people behave with comparable foolishness" (1984: 109). The point is an important one. To say animals think is not to say that they think infallibly, or as Griffin puts it, it is not to say that their thinking "always corresponds perfectly to external reality." Just like humans animals, nonhuman animals make mistakes. "[E]rror," however, as Griffin points out, "is not the same as absence of thought" (109). By a similar token, instinctive behavior is not the same as absence of thought.

Intelligence in action is instinctive. *All* animals — humans included — could hardly survive much less reproduce if intelligence in action were not instinctive. In just this sense, a kinetic bodily logos is at the heart of thinking in movement. It is what makes such thinking spontaneous and contextually appropriate to the situation at hand. It is what ties thinking not to *behavior* but to *movement*, that is, to kinetic meanings, to a *spatio-temporal-energic semantics.* Instinctive behaviors are malleable precisely because they are fundamentally kinetically dynamic patterns and not chunks of behaviorally labeled "doings." To think in movement is not to think in monolithic comportmental wholes: eating, mating, courting, defending, aggressing, threatening, and so on; it is to think in dynamic terms — in terms of speed, postural orientation, range of movement, force, direction, and so on. Behavioral variations exist precisely because *kinetically dynamic possibilities* exist. It is just such kinetically dynamic possibilities that distinguish one creature from another: one creature runs faster than another, is more agile over a rough terrain than another, is more awkward in climbing than another, is less easily aroused or startled than another, is quicker to withdraw than another, and so on. From this essentially kinetic vantage point, the malleability of what are called instinctive behaviors, indeed, their *evolution*, is a matter of movement. Instincts have their genesis in animation — primal animation. When circumstances change, ways of living change, and these changes in the most basic sense are a matter of movement possibilities. A kinetic bodily logos is not some kind of adaptive mechanism; it is a real-life dimension of animate forms. An intelligence of action is a built-in of animate life. Thinking in movement is the natural expression of this elemental biological character of life.

When ethologist Niko Tinbergen relates in some detail a range of animal behavioral studies of colleagues over a twenty-five year period, his descriptions implicitly exemplify again and again a kinetic bodily logos and the phenomenon of thinking in movement. An especially impressive example concerns the seven-year study of a species of sand wasp (*Ammophila*) by G.P. Baerends and J. van Roon (at that time students of Tinbergen). The sand wasps in question live not on open land but in "knee-deep Heather" in a terrain that has "few outstanding landmarks"; what is more, they carry their "heavy prey [caterpillars] home walking over the ground below the Heather shrubs" (Tinbergen 1968: 104–105). In other words, in supplying caterpillars to their young buried in the ground, the female wasps walk the highly uneven ground below the heather; they cannot fly there. But this is not all. Each female wasp has two, three, and sometimes more nests at one time — what Tinbergen describes as a "telescoping of broods" (112). This means, of course, that she must remember the location of more than one nest. Furthermore, after constructing each nest originally and laying an egg on the first caterpillar she places in it, she makes two more calls to each nest over a period of days, provisioning each one according to its needs. An interesting difference between these wasps and what was, at the time, a more highly studied species (*Philanthus*) concerns the former's building habits. Although *Ammophila* already build their nests in a highly overgrown and therefore visually difficult terrain, rather than leaving the sand they excavate in building the nest by the nest itself, thus giving a clue as to its location, they carry it away so that a sandpile does not distinguish the nest from its surrounds. To arrange the physiognomy of the landscape in such a way, that is, to create a certain spatial semantics, is to think in movement. Moreover the building of the nest itself is a complicated process of thinking in movement: the female digs earth, pushes pebbles or bits of wood into the shaft that she makes, "works sand among the pebbles," "rakes sand," and so on (Tinbergen 1968: 106). In the course of provisioning the larvae, for example, she clears sand away that has dropped into the opening as a result of her removing the pebbles to enter the nest, and she uses her head as a hammer against the pebbles so as to close the nest after a visit. What is more, when she first returns to the nest after initially building it and laying her egg atop a caterpillar, she does not bring anything the next time, but simply "calls," as Tinbergen puts it, to evaluate the needs of the larva. Only after doing so does she return with caterpillars — in the amount necessary to sustain the larva. In other words, what she does next — what is literally her next move: to find one, two, or three more caterpillars to bring back to the nest — is each time determined by what she finds on her inspection. As Tinbergen emphasizes many times over, "All the time she remembers where all the nests are and, roughly, in what stage they are" (Tinbergen 1968: 114). Perhaps the purest and most sophisticated example of the wasp's thinking in movement concerns her ability to home in on the nest with the food. The wasp invariably climbs either a bush of heather or a young pine

tree, and then, "Arrived at the top after a laborious climb, she turn[s] in various directions, as if having a good look round. Then she [takes] a long jump, which [is] always in the direction of her nest. The weight of the caterpillar decide[s] how long this 'flight' [will] be…. The wasp then [begins] to walk, stumbling and plodding along over the rough ground." Although starting out in the right direction, she might make a wrong turn or even go in loops. She will then again climb a heather bush or young pine, look around again, and again, make another jump — in the correct direction of the nest. Various studies clearly show that the wasp's movement is tethered to landmarks — landmarks such as tufts of grass or a clump of pebbles or pine cones — "the positions of which she has to learn" (Tinbergen 1968: 120).

Thinking in movement is not only the natural expression of a kinetic bodily logos; it is the natural noetic sequel of actual experiences of movement, both self-movement and the movement of others. As indicated earlier, experiences of movement are the generative source of concepts of agentivity, of if/then relationships, of spatio-temporal invariants. They generate expectations; they are replete with kinetic concepts having to do with energy, distance, speed, range of movement, direction — in short, with a complex of dynamic qualities inherent in the experience of movement itself. Consider, for example, the seemingly simple behavior of moving away from something noxious. Zoologist John Paul Scott writes that

> Escape depends on some power of movement. A paramecium quickly withdraws from an injury, and even the sluggish ameba slowly crawls away…. [T]hose forms which can move at all retreat or withdraw in some way. Even clams can disappear quite rapidly into their native mud, as anyone who tries to dig them out soon discovers. Snails, turtles, and other animals with hard shells often escape by simply withdrawing into their armor…. An opossum which is overpowered will go completely limp and apparently lifeless for several minutes, then suddenly bound to its feet and escape if it is no longer held. Similar reactions are seen in turkey buzzards (1963: 70–71).

The tendency to place all such movement — or at least all such movement of "lower animals" — in the category of reflex behavior does less than full justice to the actual situation. An animal, even a so-called "lower animal," can, for example, hesitate before crawling away or withdrawing, just as it can hesitate before re-emerging after withdrawing. Consider the behavior of fan worms. As invertebrate zoologist Martin Wells observes, "Touch them, or pass a shadow across [their] filtering crown, and they vanish [i.e. "duck very quickly"] down their tubes, only emerging, with great caution and very slowly, after a matter of several minutes" (Wells 1968: 80). Now surely if a fan worm moves "with great caution and very slowly," however that caution and slowness might be actually measured objectively and quantified, then it can move with either a bit more or a bit less "great caution," and similarly, it can attenuate even further or accelerate just a bit its very slow movement. In short, it can vary its movement. In

fact, it is reasonable to assume that the several minutes that elapse before a fan worm reappears, and its great caution and very slow movement in reappearing, are all variable according to the variability of the circumstances themselves. In some real-life situations, for example, should a touch or shadow appear again in the course of its cautious and very slow reappearing, a fan worm will again "duck very quickly," interrupting its slow and cautious re-emergence. Clearly, a kinetic intelligence is at work in the observed behavior of fan worms. There is nothing wayward at all in this understanding and explanation of animate life, wayward in the sense of putatively ignoring the concept of adaptation and of natural selection and proffering another, we might say, "mindful" understanding and explanation in its place. On the contrary, a kinetic bodily logos — in essence, primal animation, surface recognition sensitivity, proprioception, kinesthesia, and the capacity to think in movement — is of the very quintessence of adaptation and selection. Animate forms that are born to move but that fail to be sensitive to their surrounds, that fail to be sensitive to their own bodies, and that in turn fail to think in movement do not survive. They are deficient in the very business of living. However circumscribed the range of their movement possibilities, however restricted their particular *Umwelt*, their lives depend on being responsive to a particular surrounding world as it is at this particular moment in this particular place. As was emphasized in Chapter Two, the world is not the same one day to the next and neither is a creature's life. Moreover creatures are themselves spontaneous; they move motivated by their own dispositions to move. Even anemones, animals one thinks of as sedentary, are spontaneous, generating activity on their own, and not just in response to stimuli in their surrounding world (Wells 1968: 40). Further still, individual animals can and do change their behaviors as a result of experience. Again, even anemones, animals one thinks of as totally programmed, demonstrate this capacity of animate life (Wells 1968: 42).

The focus on "lower animals" has been intentional. The tendency of many, perhaps all too many, humans is to order animate life hierarchically and to belittle what lies "below" — wherever that dividing mark might be drawn. In contrast, at least some humans readily accredit a kinetic bodily logos to "higher" animals, however indirectly. Abundant examples exist that validate the accreditation. Well-known primatologist Jane Goodall relates two incidents that, even in their brief description, straightaway illustrate and implicitly affirm a kinetic bodily logos in action. One of the related incidents concerns a chimpanzee who saves his much younger brother from severe treatment by an adult male. The younger brother's temper tantrum — the result of being hurled away by a female in estrus — was irking not only to the female but to the alpha male who was courting her. Hearing the tantrum, the older brother "who had been feeding some distance away, came hurrying up to see what was going on. For a moment he stood surveying the scene then, realizing that Pax was in imminent danger of severe punishment, seized his still screaming kid brother by one wrist and dragged

him hastily away!" (1990: 199). The other related incident concerns a group of six male chimpanzees and is equally if not more telling since it involves concerted intelligent action. The group of males came upon a female baboon carrying a small infant and feeding in a palm tree. All of the chimpanzees stood gazing up at the baboon, "their hair bristling." One of them slowly climbed a tree close to the one in which the baboon was feeding and to a height where he was level with her. Then two other males climbed two other trees so that one chimpanzee was "now stationed in each of the trees to which their victim could leap. The other three chimpanzees [waited] on the ground." The first chimpanzee suddenly leaped into the baboon's tree. The baboon made a huge leap into a tree in which another chimpanzee was stationed. That chimpanzee seized the baboon and pulled her infant away from her. All six chimpanzees subsequently shared the infant as a meal (1990: 128).

Each incident clearly indicates a kinetic intelligence at work, a spontaneously integrated and reasoned course of action. In neither case were the chimpanzees taught what to do, for example. Neither had they practiced, nor were they practicing, a "behavior." Rather, they were *kinetically attuned* to a particular situation at hand. Kinetic attunement is the work of a kinetic bodily logos, a logos that comes with a creature's being the animate form it is. From this perspective, the designations "higher" and "lower" are clearly inappropriate; each creature is what it is and is not another thing. It is quintessentially suited, and in multiple ways, to the life it lives. Not only is there an existential fit with respect to its physical and living body — what might roughly be described as a fit between its anatomical and animate form (Sheets-Johnstone 1986a) — but an existential fit obtains between the organism and its environing world, a fit that is kinetically expressed. Each species of animate form is kinetically suited to the life it lives by way of an intelligence that is of the very nature of the form itself, an intelligence that is plaited into its very tissues and expressed in the sensible ways in which it lives its life. In sum, a kinetic bodily logos is an instinctive disposition toward intelligent action. It is a disposition that is common to all animate forms of life.

We might note that it is incomprehensible how any so-called purely instinctive behavior could otherwise have gotten started. It would be absurd, for example, to think that the first living form was programmed to some *behavior* or other in advance of its leading any particular kind of life. To be viable, instinctive behaviors have to be effectively tethered to particular environing circumstances, which in fact can only be faced at the moment the animate form first encounters them. More than this, however, it is not *behavior* that first appears. In the beginning is not *behavior* any more than it is — or was — *words*. In the beginning is — and was — movement, sheer movement. What lives moves, and in moving, goes toward and away from things. It is in the process of spontaneously moving about that animate forms discover aspects of the world, and it is on the basis of this process of spontaneous movement and discovery that instincts are formed. Certain movements are instinctively ingrained because organisms *find*

satisfaction in them. It is not too much to say that they realize that their movement works, *and that in consequence, they do again what they did* when in a similar situation, *and again do what they did* when in a similar situation, and so on. In short, instincts do not have their origin in *habits*. Instincts have their genesis in movement, in primal animation; they start kinetically. They have their origin in responsivity, in the fact that creatures are *responsive* and in the fact that their responses, however accidentally they might arise, do not take place in a vacuum and are certainly not proprioceptively blind, but make sense or are dangerous, or unproductive, or have any number of other possible consequences for the creatures themselves. What starts out in movement, in exploration or by chance, is kinetically taken up, repeated, even honed and fine-tuned in dynamic, spatio-temporal ways; or it is kinetically abandoned and a different kinetic exploration and strategy are tried. Instincts develop on the basis of movement and ways of moving. They are fundamentally forms of thinking in movement, and it is because they are fundamentally forms of thinking in movement that they are malleable.

If responsivity is a near universal characteristic of life, if perception is a preparation to respond, if the fundamental nature of organisms is not to be neural repositories of information, much less information-processing machines, but to be kinetically alive to, and in, their respective worlds, then it is readily understandable why thinking in movement is a built-in disposition of animate forms. The not uncommon tendency to carve at certain self-serving human joints and thereby make honorific and pejorative distinctions on the order of "this one thinks," "this one does not," generates and reinforces an arrogantly biased metaphysics and epistemology. A broader sense of the animate is not only needed but proper in that that broader sense accommodates facts of life as enumerated in any biology text: mealworms congregate, cats pounce; creatures move toward and away from things in their environment. Animation is a primary fact of life — and thinking itself, as noted earlier, is itself a form of animation: moving forward, backward, quickly, slowly, narrowly, broadly, lightly, ponderously, it itself is kinetic.

5. Summation

A common kinetic thematic suffuses improvisational dance, human developmental life, and the lives of animate forms. In each case, a non-separation of thinking and doing is evident; so also is a non-separation of sensing and moving. In each case, qualities and presences are absorbed by a mindful body in the process of moving and thinking in movement; a dynamically changing spatio-temporal world emerges. A finer dimension of this common thematic is furthermore evident. Through the dynamics their movements explore and articulate, dancers bring forth a particular — though not necessarily singular — qualitative world. *This evening's dance* may be gay and buoyant,

for example, playful in its energies, zany in its interactions, and so on; or it may be intense and brooding, a world in which movements appear portentous and ominous, where relationships appear on edge and threatened; or it may be erratic in its swings from one dynamic contour to another, the whole united by a kinetic logic having its own unspoken integrity. Just so in the living world of animate forms, where playfulness, wariness, fitfulness, and so on, are all kinetic possibilities. Moving organisms indeed create kinetic melodies — to borrow neurologist Alexandr Luria's evocative phrase (1973: 179) — by the very fact of their aliveness. These melodies are created because qualia are inherent in movement, inherent in the dynamically moving bodies of animate forms. They are the foundational kinetic units, the cardinal structures of movement and of thinking in movement. A dynamically attuned body that knows the world and makes its way within it kinetically is thoughtfully attuned to the variable qualia of both its own movement and the movement of things in its surrounding world — to forceful, swift, slow, straight, swerving, flaccid, tense, sudden, up, down, and much more.

Caught up in an adult world, we easily lose sight of movement and of our fundamental capacity to think in movement. Any time we care to turn our attention to it, however, there it is.

Notes

* This chapter is a substantively expanded version of an article that first appeared in *The Journal of Aesthetics and Art Criticism* (Sheets-Johnstone 1981).

1. Harrison spells out the difference I am drawing between improvisational and non-improvisational dance in terms of "a creator who is 'transcendental' to his creation and [a creator who is] … imminant (*sic*) in the process of his creation's coming to be" (1978: 34). I came across his book after having written the original *Journal of Aesthetics and Art Criticism* article, but found his mode of distinguishing between "thought in action" and "thought about action" — the focus of his second chapter — richly topical.

For a full phenomenological account of dance as a dynamic form-in-the-making, see Sheets-Johnstone 1966.

2. See Runeson 1994 for an informative critique of computer-simulated point-light display experiments as against point-light display experiments of actual humans in action.

3. Bull's theory is posturally, i.e. neuromuscularly, based. A certain preparatory motor attitude — what might be termed a certain corporeal readiness — is the requisite basis of a certain action or range of possible actions. Feelings "come into the picture" between the preparatory attitude and the action (1951: 4). A "motor attitude" is thus "the initiator of feeling as well as action" (1951: 5).

4. An analogy might be made to silent films, the value of which could hardly be captured by the designation "pre-linguistic."

5. It is of interest to call attention to the fact that hunting behavior is not studied in laboratories and could hardly be studied in laboratories. Predator-prey interactions are not amenable to experimental designs. They are spontaneous, real-life interactions that can be captured in nothing less than real-life situations. Recording animal behaviors in these situations — who does what, under what circumstances, and so on — gives a sense of the intensity of the drama, but only indirectly gives a sense of the phenomenon of thinking in movement that necessarily informs it. Consider, for example, the fact that a predator chasing a fast-running prey animal must aim its charge ahead of where the prey animal is and that when the prey animal changes directions, it must adjust its own directional charge accordingly.

6. An egregious and lamentable error should be pointed out in Keeton's and Gould's text. In their introduction, they state that "To early 'mechanistic' philosophers like Aristotle and Descartes, life was wholly explicable in terms of the natural laws of chemistry and physics." A reading of *De Anima* should be required reading for all biologists, along with *The History of Animals*, *Parts of Animals*, *Movement of Animals*, *Progression of Animals*, and *Generation of Animals*, and also some excellent commentary texts, especially what is considered "the bible" with respect to Aristotle's biology: *Philosophical Issues in Aristotle's Biology*, edited by Allan Gotthelf and James G. Lennox.