

CARTESIANISM REVISITED: THE GHOST IN THE
MOVING MACHINE

In this essay I intend to examine Sheets-Johnstone's conception of 'thinking in movement' as it is presented in two papers (1981) and (1983 -- published in this issue). I have divided the examination into four parts. In Part I, I attempt to clarify Sheets-Johnstone's meta-theory by articulating it.¹ Part II sets her meta-theory in the context of similar levels of theoretical development in the world of modern science and philosophy. Part III is a critical discussion of the author's assumption of continuity and commonality, thus her implied commitment to a continuity-reductionist program. In Part IV, I reflect upon the relations between 'the dance' and the animal kingdom.

These two articles will be used as stalking horses for three principal reasons: (i) her work is so well-known in the dance world and among philosophers, (ii) the substance of Sheets-Johnstone's position is worthy of challenge, and (iii) her work clearly manifests a position that tells us that a human 'person' dancing is to be ultimately understood as an animal moving. It is in the interests of gaining a deeper appreciation and a more thoughtful critical appraisal of these issues that underlies, perhaps, what becomes so clear in Zorba, The Greek, when he says to his 'boss', "Let's dance".

I. 'Thinking in Movement' is rooted in mixed purposes. The central purpose is to present an account of the improvisational dance: not an improvised dance but the improvised dance. The distinction between the and an is relevant to another comparison, that between the dance and a dance.² Here, the author intends to differentiate between choreographed dance and improvised dance. These two distinctions then identify precisely the author's intended focus: to give an account of one type of dance, improvisational, and in that account to deal with the improvisational dance itself.

In this account of the improvised dance the author specifically intends to get at the nature of the improvisational process. This process is indicated to be both creative and generative and, given that it is creative, the specific task is to identify the core of that creative process which generates the dance. The author sets this task in the following context of her central purpose: to get at (i) the essential character (generative core), (ii) of spontaneous creation, (iii) of dancing, (iv) as experienced by the dancer.

The second point, spontaneous creation, is a further advance toward the precise differentiation between choreographed and improvisational dancing. The creation of improvised dance is pure spontaneity: no future, no past, only the instant of birth, and thus only here and now. As such an absolute spontaneity (i.e. a dance independent of any relationship to time, or to any form of dance), improvised dance is an ongoing or prolonged present of pure instants of spontaneous creation.

Although the dance itself is consequently in process without rules, there is a rule: the rule of the dance is that there are to be no rules for the dance. This feature of improvised dancing is not to be taken to mean that we have here a 'mindless body' -- a machine in motion without a ghost -- quite the contrary. What we have here is a mind-full body. It is exactly this thesis that compels Sheets-Johnstone to entertain certain traditional philosophical assumptions which she in fact is challenging. These assumptions refer to Cartesian dualism.

A major thesis -- if not the major thesis -- of the paper is that of the mind-full body, or what Sheets-Johnstone calls 'body-logos'. This body-logos is the dynamic logic of fundamental creativity, of which improvisational dancing is allegedly representative. The mind-full body in movement is mind literally inhabiting its natural mode of being: mind actually living in movement. This mode of natural being is a declaration of animate existence.

In each moment of spontaneous creation of declared animate existence there is the instantaneous unification of sense and motion. An instant of sense and motion is an inter-fusion such that sense or perception and motion or movement are an homogeneous whole. Thus, we have not only thinking in movement as pure spontaneity but also as pure motion. The critical feature of thinking in movement as pure motion, especially a purity of motion which is a pure spontaneous creation, is its rationality. Its rational character is, of course, kinetic, not intellectual, but nevertheless an action of directly 'wondering the world'. In this action of direct wonderment, the world is explored and systematically ordered. We have here a Wittgensteinian 'form of life' dynamicized: a form of lived movement which is being generated moment by moment. This is meaningfully lived movement: generation is creation.

The notion of mind-full body, or body-logos, as pure spontaneity, pure motion, and the creation of a pure form of lived meaning is admitted by Sheets-Johnstone to be conceptually ambiguous.³ Her own position is that the cognitive character of body-logos is rational, although she clearly understands that it would be seen by some scholars to be pre-rational; a primitive, not a sophisticated mode of being.

This is precisely the junction where the traditional assumptions of Cartesian dualism are implicated. Sheets-Johnstone asserts not only that two of these assumptions determine that the notion of body-logos will be construed as a pre-rational mode of being, but that it is just those assumptions which the notion of body-logos directly challenges. This is, perhaps, the major thesis of the paper. And it is this thesis which fully explains the peripheral purpose of her mixed-purpose paper.

The first assumption entailed by Cartesian dualism is what may be called the human distinction. It is our distinction as human beings that thinking is simultaneously rational and linguistic. Our thinking is rational, and that is only because it is always conducted within a symbol system of rules. Thus, language is the agency for symbol-making and meaning-making. In that agentive role, it mediates thought and determines that movement is the vehicle for thought. This assumption of

the human distinction reifies thinking and especially in so doing, Sheets-Johnstone believes, human-kind is being exalted at the expense of denying both that mind may be non-linguistic and still rational, and that this form of rationality may be in evidence throughout other animal species.

This last point about our shared animal character of non-linguistic rationality is Sheets-Johnstone's peripheral purpose. The account of improvisational dance itself as a creative-generative process and the notion of body-logos as the essence of that process ultimately has implications beyond aesthetics. If, as Sheets-Johnstone suggests, mind is a fundamental dynamic of kinetic rationality which is non-linguistic (not simply pre-linguistic) we can begin to tie aesthetics, epistemology, and evolution together into a meaningful picture of human-kind: we are most human when we are our fundamental animal selves.⁴ Neither communion nor community puts us in more intimate touch with our humanity than our continuity with the animal kingdom.

The second assumption is Ryle's version of Cartesianism (1949), the ghost in the machine-model of mind: it is in the body, but not of the body. Thinking, therefore, is what a mind does. What a body does is behaving -- not thinking. Mind and body relate such that thought is a covert process that is prior to overt behavior into which it must be transcribed. The notion of body-logos is a direct challenge to this mind-doing and body-doing model. Thinking in movement refutes the implicit belief that mind necessarily is prior to its overt expression. Thinking of movement and so thinking, then movement, is one possibility, but a possibility, not a necessity. Thinking in movement is movement as thought itself, "significations in the flesh"(1981:400). Movement is therefore mind wondering-the-world directly and directly making one's way in the world. Mind is thus certainly not a ghost in the machine.

The question can be raised, however, whether thinking in movement is a moving machine without a ghost, or a ghost in a moving machine? There is no doubt that Sheets-Johnstone's paper is rooted in the conviction that the Cartesian dualism is ultimately overcome by seeing mind as a commonality among species so that our human distinction is an after-thought, so to speak: linguistic rationality comes after non-linguistic rationality. With this conviction, we are neither machines nor ghosts, but simply Darwinian animals in movement and so, on occasion, in thought. In time, some of us begin to think about the movement in which we have been wondering and making our way. But our question still persists: even if we are Darwinian animals in movement and sometimes in thought, are we at least ghosts in moving machines?⁵ We may proceed to address that question as we enter the meta-theoretical and critical parts of this essay.

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II. If we consider the meta-theoretical developments in modern intellectual attempts to know who we are in the world in which we find ourselves, three meta-theories or paradigms can be identified: supernaturalism, positivistic naturalism and existential (or hermeneutic) naturalism. Generally, the rise of science meant the shift from supernaturalism to naturalism: nature was to be assumed to include both the causes and effects of all phenomena found in nature.

Supernaturalism and its model of humanity was based on the assumptions of speciality (man's divine selection), discontinuity (man's divine nature) and voluntarism (man's free will). Cartesian dualism was the modern version of this tradition which was to be by-passed by the new paradigm in the making; positivistic naturalism. In fact, what happened was the inversion of the three former assumptions: from speciality to commonality (man's natural selection), from discontinuity to continuity (man's natural status) and from voluntarism to determinism (man's will subjected to natural causation).

In honor of Darwin, we can refer to this positivistic meta-theory as the 'descent of man' perspective. The birth, establishment, and identity of the social sciences was (and is) rooted in that meta-theory. With the demise of the Vienna Circle, represented by the shift from Wittgenstein of the Tractatus to Wittgenstein of the Investigations, we were emerging into the anti-positivist revolt, which in time succeeded, so that, certainly by the 'seventies we were in a post-positivistic age.⁶ In honor of Bronowski, we can refer to the new meta-theory as 'the ascent of Man' perspective. The new meta-theory is not fully articulated, but its outlines can be identified and some axiomatic assumptions formulated.

The new paradigm can be called 'existential' or hermeneutic naturalism. Although naturalism is accepted, some refinements have been made. The original idea of continuity was a revolt against supernaturalism and that revolt is still in force. We can call that a revolt against metaphysical discontinuity (between man and nature) in order to distinguish it from functional discontinuity within nature (between species). As Bronowski has pointed out, evolutionary theory is incomplete if it cannot account for the evolution of complexity, not simply the survival of species.⁷ This fundamental shift in focus from species to complexification is indeed a perspectival change, if not paradigmatic. It is the ascent of species and especially that ascent onto a higher level of complexity which is of such significance. These are without doubt new assumptions that are crystallizing.

If humanity is not special because commonality due to natural selection is the reality of its being, then at least humanity, like any other species, is also unique: a uniqueness that becomes significant because it also means a new level of complexity. This can be called the assumption of specificity. There is a profound change here since the motion of selective natural process now begins to imply both environment and species as the theoretical site of the selective process. In our case, this is the entry point for the agentive point of view: if the species is an agent of evolutionary ascent, then agency is a natural predicate of individual activity.

Quite clearly, then, two other assumptions are taking shape as well: we may call them 'speciation' and 'determination'. The evolution of complexity means that functional discontinuity within nature and between species is a required conception and so a new fact.⁸ Since speciation is the evolution of complexity and the natural selective

process is one of ascent, determinism must be replaced by what we may call determinationism. The species may now function as an agent as well as a re-agent in the process.

When the human species is considered within the auspices of this new meta-theory, the different assumptions permit us to differentiate between the human animal and the human being. The 'descent of Man' perspective tells us about an animal who happens to be human. The 'ascent of Man' perspective tells us, instead, about the human being who happens to be an animal. If our natural mode of being is human and that is functionally discontinuous with reference to other species, then the major point concerning who we are is rooted in the unique status of our species-self-determination. We may now briefly examine one feature of our unique status as a species in order to clarify what we have called the 'new paradigm'; existential naturalism.

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III. We have in common with all species the requirement of survival and this certainly certifies our continuity. However, theoretically, we can declare that what is unique to our human way of being is that we do not merely live in order to live, we live in order to 'mean'. It is possible to formulate this so as to do justice to the cultural, social and psychological levels of our form of life: human be-ing is cultural, being human is social, and our experience of our be-ing is psychological. The theoretical point consists in the proposition that we live from, through, and for -- meaning. When we attain the sophisticated function of self-consciousness, especially in the critical mode, we are discovering that we exist. To exist is to stand out as a significant difference, and so it is to be above chance.

To be above chance is to function reflectively: to think about, talk about, and therefore to self-consciously live meaningfully. It is in the critical mode that survival and existence become differentiated -- and profoundly so when the critical mode assumes the rule-function of charismatic leadership; the agent of revolutionary change. Whether it is a Jesus or a Socrates, for instance, the critical vision of a new meaning places the charismatic leader in a conflict of mutual exclusivity with the culture. To choose existence is to affirm the new, renounce the old and risk extinction. To choose survival is to affirm the old, renounce the new, and risk non-existence.

The charismatic leader has often chosen to exist knowing that extinction was inevitable. With such historical examples we theoretically note the specie-specificity that marks the ascent of cultural humanity and the gradual self-definition process through which nature and culture are distinguished. At the heart of that difference is the functional discontinuity between survival and existence: human beings live, but in order to do so, they mean it.

The intellectual context within which we work today is not transitional. We have been in a post-positivistic period for at least two decades. Our main business is the formulation, utilization and development of what Grene has called the conceptual reformation; the existential or

hermeneutic paradigm.⁹ The axiomatic assumptions of specificity, our natural electivity, speciation, our ascent into culture and determination, our living of meaning, indicate the form of our human be-ing. It is with regard to the post-positivist age within which we live and the existential paradigm we are struggling to articulate that we can critically examine Sheets-Johnstone's position as presented in Part I of this essay.

It has been our intention to clarify Sheets-Johnstone's position by placing it in meta-theoretical or paradigmatic perspective. In view of this intention it is our critical judgement that the author's conception of body-logos is informed by her commitment to functional continuity and not to functional discontinuity. She seems to intend to define human beings by identifying the unique status of that being with a feature we share in common with other species -- thinking in movement -- of which improvisational dancing is supposed to be an instance. The conception implicit in her intention is this: to be human is to be free, to be free is an act of pure spontaneity, and to be spontaneous is to be one's fundamental animal self. (See Sheets-Johnstone in this issue, pp. 137-138). The mixed purposes of Sheets-Johnstone's paper places her, in my critical opinion, in a mixture of paradigms.

In the nineteenth, and the first half of the twentieth, centuries, it was new, exciting, and fruitful to attempt a conception of human be-ing as a derivative of a conception of the animal kingdom. This was a direct result of the continuity assumption, the reductionist program: the simple explains the complex, the earlier explains the later, the 'human animal' explains human being, and so on. What we have learned since is more than the lesson that it is easy to go back -- but once there, it is the devil's own job to get back where we were.

It now seems quite clear that the continuity-reductionistic program is unfruitful: to go back means that one can never, in principle, get back. This is, I believe, directly due to the emergent character of evolutionism, the logical form of which Bronowski has called an 'open and unbounded plan'. An evolutionary solution to a problem of biological survival is not given in advance but is created in the lived history of a species. The reductionist program called for a conception of evolution as a mechanical process, the logical form of which Bronowski calls a 'closed and bounded plan', i.e. a solution to a problem that is given in advance.

If one intends to achieve a definition of our species-specificity from the assumption of continuity, the descriptions will be given in terms of commonality -- but then the description will be pointless. It is pointless precisely because the ascent of a species cannot be accounted for by its descent: the logical character of the process of solution is in principle prohibitive. If this means, and it does, that the evolution of complexity cannot be predicted, then of what theoretical value is a description based on the same assumptions that render such explanation impossible?¹⁰

One is almost tempted to say that to offer a description based on the continuity-commonality assumptions is, in effect, to describe something as it was, not as it is. And in our case, to offer a decisive description of human freedom in terms identical with animal freedom, whatever that may mean, would indeed be to describe us, not as we are, but as we are no longer. This certainly would be 'being and nothingness', but that is not what Sartre had in mind.

Sheets-Johnstone has in effect attempted to account for Sartre's notion of freedom (1953) as pure spontaneity in evolutionary terms that in fact reduce Sartre's notion to spontaneous motion. Admittedly, this may be the fault of both Sartre and Sheets-Johnstone; nevertheless, to conceive of the freedom of human being as identical with the freedom of animals (human or not) to move spontaneously is not of interest descriptively because it is not of interest theoretically. This is true even if it is what Sartre had in mind.

Sartre's classic battle against Freud's conception of the unconscious was exactly the revolt against positivism, in particular, the principle of determinism, of which the unconscious was so notoriously representative. Sheets-Johnstone's reading of Sartre here was not in his best theoretical interest -- or in ours. We, and Sartre, are interested in the existence of human being and the freedom expressive of that elective act. Less than that is what some animals do, human or not, and that is of interest only if one is interested in animals. It may well be that whatever fruitfulness remains in the use of continuity-commonality assumptions is the clarification of this 'lower' from the vantage point of the 'higher': we may, and can, clarify animal performance at its best relative to our species, however we are simply no longer interested in what we can do at their best. Sheets-Johnstone's conception of body-logos is insensitive to that distinction, but the insensitivity is meta-theoretical, not descriptive. In so far as she works from the meta-theory of positivistic naturalism, her descriptive achievement cannot accomplish her implied theoretical intent to tell us about the freedom of human being.

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IV. An obvious objection at this point can be raised regarding theory and description: Sheets-Johnstone explicitly asserts that she intends to give a description of the improvisational dance and not a theory of a dance (improvisational). Granted the specificity of her claim, there is a problem: to work from the classic phenomenological claim of the descriptions of things as they are is a claim that can no longer be taken seriously. In the end, such a claim issues from the positivistic assumption of the separation of theory and description.¹¹

The meta-theoretical assumptions of continuity and commonality direct her descriptive treatment of the dance and lead to two consequences: (i) her description of human freedom as pure spontaneity in the form of improvised dancing is irrelevant as a description of the freedom of human being. With reference to other animal species it only tells us of what we can do at their best and what they can do at our poorest;

(ii) the theoretical intent of her description is also irrelevant. If Sheets-Johnstone intends to achieve a conception of human freedom by way of this resort to improvisational dance and evolution, then that conception is impossible to achieve, because she cannot arrive at a concept of what we do at our best. This second point raises a fundamental question about Sheets-Johnstone's paper.

Sheets-Johnstone assumes that improvisational dancing is not what human beings do at their best -- and what we mean by 'at our best' is (a) what we can do from our unique human capacities and powers, and (b) what we do do when those capacities are no longer realized with reference to standards of excellence. The suspicion is that Sheets-Johnstone chose improvisational dancing because it is not really an example of our best. Her meta-theory defined a theoretical interest that was embedded in her descriptive focus. As long as she retains the classical phenomenological posture of the theory-description distinction, she will not recognize that her descriptive focus betrays an embedded theoretical interest that contradicts her implied theoretical interests.

Her meta-theory impels her towards a theoretical conception of the freedom of the human animal which contradicts her implied theoretical interest in the freedom of the human being. Implied theoretical interest is our reading of Sheets-Johnstone's relationship to Sartre -- made more explicit in the recent seminar, published in this issue. We can only conjecture, but feel sure that we are on the mark when we say that her paper 'Thinking In Movement' was rooted in a desire to ground Sartre's conception of human freedom in human action on the one hand and in biological evolution on the other.

Improvisational dancing was meant to mediate those poles. The crucial issue is her assumption about improvisational dancing. It is difficult to imagine why anybody would assume improvisational dancing is not what we do at our best, but what we do at the 'best' of other species. It is difficult, too, to imagine why anyone would assume that thinking in movement is thinking in dancing, or why the spontaneous creation of movement is the spontaneous creation of dancing. When a dancer uses the word 'movement', must we assume that the dancer means movement at our poorest and their best -- 'their' meaning other animals?

The crux of the matter is this: if we uncritically assume that improvisational dancing is not what we do at our best but at the best of other animal species, and therefore at the poorest of our own, then Sheets-Johnstone is talking about either dancing or moving, but not both. Spontaneous movement does indeed correspond to a kind of human version of 'Brownian movement' (taken from physics -- refers to the movement of molecules in a random manner under certain conditions), but spontaneous dancing (a dance-act expressive of our best, disciplined by excellence) is of a different order. It may be an emergent dance conception of 'Brownian movement' or Pollackian action-painting in dance. If so, then what we have here is "the sophistication of extreme simplicity", a phrase used by Sir Donald Thompson to describe the Bindabu people.

To create an improvisational movement is to create the appearance of extreme simplicity, but the reality is the sophistication of the artist. There is 'spontaneity' and there is Spontaneity: a rose, is a rose, is a rose -- but not necessarily the same rose. The rose may be a role enacted by Nureyev dancing with Fonteyn.

If spontaneous dancing is indeed what we do at our best when we are committed to excellence and so, to art, then it seems absurd to claim that such art is rational but non-linguistic. Even if one is talking about movement and not dance, its spontaneous generation would be pre-linguistic, its rationality would be problematic. It would be like calling the body 'rational' because ordered and 'intelligent' because it is intelligible. Improvised or not, dancing would compel us then to theoretically insist that it is linguistic -- or 'language-like'. Human be-ing at its best is linguistic performance. What is now required is enough theoretical imagination to envision the non-vocalised languages of art. Our judgement would be that at this point, the denial of the problem of artistic language is to risk being guilty of a theoretical failure of nerve.

But, was this not exactly what Langer heroically understood, attacked, and thus produced her thesis of the non-discursive nature of artistic language? Even if Langer's theory is a failure, the failed solution does not entail a failed theoretical problem. She found the problem and had the nerve to say so -- and is still saying so. Sheets-Johnstone's papers seem to abandon the problem without exposing us to her theoretical nerve in doing so.

Given all that has been said so far, we have to declare that Sheets-Johnstone is in fact talking about improvised movement while her intent is to talk about improvised dancing. Even if we grant that spontaneous improvised movement is 'created', the status of her category, movement (not dancing) remains in force. It is not the cognitive features or the creativity of the activity in question that determines its descriptive status, but rather the order of creativity. Movement, spontaneous or not, improvised or not, is at 'their best' (the animals) and at our poorest, and so is the failure of ascent.

When talking about a species that is already ascendent, then something new is involved: to be at our best is to exist, but to be at our excellent best is to transcend. To remain at the level of movement may be creative, but to ascend to dance is transcendence. Indeed, if this means that we exalt ourselves, that is only roughly true and misses the point. The act of transcendence in ascending to art, or science, or any one of Cassirer's symbolic forms of knowledge, is exaltation. Human be-ing is existence, human excellence is exaltation, and the process is transcendence.

But who is transcending? Decartes was wrong: the mind, not the body. Sheets-Johnstone is wrong: the mind in the body. Sheets-Johnstone's combined papers are Cartesianism re-visited; Decartes with a twist.

To implicitly believe that to escape Cartesianism, one can do so by burying mind in the body and declaring a body-logos as the phenomenological essence of human be-ing, is to commit a phenomenal act of faith. A faith, in the end, that is a faith in positivistic naturalism, which is what seems to inform her work.

Evolutionary theory in 'the modern synthesis' (in American sociological thought) requires an enlargement of its premises if the evolution of complexity is to be accounted for because without such enlargements as Brownowski, Popper and, perhaps Langer, have attempted, neither culture, action or meaning can be understood as the 'natural' phenomena that they are. A deterministic model of evolution cannot do it; the logic of the plan is wrong, and Popper's work has shown that indeterminism is not enough: animals could still be envisioned as computers.¹² This would make us, if in motion, a ghost in the moving machine.

No. It is not the mind that moves the body, nor the body that minds itself, but the person. It is the person who thinks, moves, and dances. But the person is missing in Sheets-Johnstone's movement, thinking or not. It is not 'lost'. It simply cannot be found in any animals' thinking in movement. Describing from a positivistic assumption of continuity-commonality dictates a theoretical conception of animals as moving machines and the human animal as a ghost in the moving machine. The person is missing, and only a person dances, paints or composes.

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NOTES

I wish to acknowledge the following colleagues for their reading of the manuscript and their useful suggestions which when not explicitly manifest in the manuscript are certainly important influences, though invisible. Special thanks to Drid Williams for the encouragement to enter a domain of interest (the dance) which otherwise I might never have entered. Also Drid Williams challenged the 'reach' of the position taken in the paper: she intimated that our human status is indeed specific because unique, but it is more than that. It is special in the 'spirit' of the best intent of the western cultural religious tradition. Also, special thanks to Lawrence Ferrara for a challenging criticism, Tim McCracken for an important reminder, and Emma-Cecilia Calle for a fruitful reminder.

1. Since the presentation of Sheets-Johnstone's position is presented here as an organic reconstruction of her argument, conventional footnoting will be suspended. Interpretations of her position will be noted.

2. The distinction between 'a dance' and 'the dance', choreographed or improvised, has its origin in Williams' work on a semasiological theory of the dance over the past decade or more. See Williams' dissertation (1975 - the introduction, especially chapter 1, pp. 1 to 6 in particular).
3. The use of the word 'form' is rooted in an interpretive ambivalence. If improvised dance is a pure and absolutely spontaneous creation moment by moment it certainly is not clear that such a dance is in any kind of a form, i.e. structure. Yet Sheets-Johnstone insists that the dance is rational, created, meaningful: an ordered act. What we seem to have is an act of ordering without an order being enacted. If this is the case then what we have is, simply, a descriptive detail made to fit Sheets-Johnstone's intention to account for the dance from the perspective of the dancer. But not any dancer.

Sheets-Johnstone's description of improvised dance assumes a dancer with a certain mental set, one defined by Sheets-Johnstone's intellectual commitments. But it also seems to be the case that Sheets-Johnstone's account is at least consistent with the image of a naive dancer: one for whom living, not 'thinking', performance not reflection, free will not free mind, are the primary and ultimate values. Thus, knowledge that counts is knowledge for living derived from living and not from reflection on living. Thus any knowledge that gives life meaning is intuitive knowledge generated by living and only by living: it is from life not about life.

If this is the implicit image informing Sheets-Johnstone's account then it is clear why there is inconsistency in that account. An act of ordering without an order being enacted is consistent with a style of being in which life is to be a free act of living, a performance without reflection. The meaning of such a performance is based on knowledge intuitively derived, i.e. generated from living itself. Spontaneous, creative, even rational, it is implied that such living is identical in its logical character with improvised dancing. In fact, I would assert that her descriptive account of improvised dance is prescribed by an implicit theoretical image of a certain style of living: naive, intuitive, common-sensical. We may add that this style makes for practitioners but not necessarily artists, in life or in the dance.

4. The formulation after the colon is an interpretational inference. Sheets-Johnstone never asserts this, however, it is at least consistent with the logic of her paper and its status may be that of an unintended implication.
5. In a public lecture at N.Y.U. (Society for the Anthropological Study of Human Movement (SASHM), on April 30, 1982) Sheets-Johnstone declared that Darwin's theory of evolution is not reductive and mechanistic. If she is correct, then as Darwinian animals, we are neither ghosts nor machines, to be sure, but that reading is open to question and has been questioned by others, notably, by Bronowski, Grene, Langer, and Popper. I must say,

however, that in Darwin's own version of natural selection it is neither artificial selection nor natural election. The animal is a re-agent, not an agent of evolution. That is why it was precisely called natural selection. What this reveals is a behavioristic model of animal and environmental interaction. Formally or substantively this is a reductive, mechanical assumption embedded in the evolutionary principle of natural selection. Whatever Darwin's intent his theoretical formulation of selection does not admit of Sheets-Johnstone's declaration. It is even plausible to say that Darwin's theoretical intent was implicitly Newtonian: natural selection was the biological version of inertia.

6. Wittgenstein is used as a representative of many thinkers who were the makers of the revolt, i.e. Winch in sociology, Taylor in psychology, Bronowski in biology, Kuhn in physics, Gadamer in philosophy, Polanyi in physiochemistry. See Keat (1973) and Von Wright (1971) for informative discussions of the anti-positivist revolt and the thinkers mentioned above.
7. See at least the following: Bronowski (1970 -- his paper on the evolution of complexity); Grene (1966 -- her chapter on 'The Faith of Darwinism'); Popper (1972 -- his two chapters, 'Clouds and Clocks' and 'Evolution and the Tree of Knowledge'); Langer (1972 -- her chapters on 'The Specialization of Man' and 'Symbols and the Evolution of Mind'). Grene provides a brilliant critical construction of the problem and prospects of evolutionary theory: Popper, Bronowski, and Langer present theoretical proposals for the enrichment of evolutionary theory so that complexification can be understood.
8. By 'new fact' we do not mean that strata, realms or levels of evolution have not been recognized, but they have not been accepted as realities and not mere appearances and so they are treated as only epiphenomenal in significance. Ultimately then 'new fact' means that nature is a genuine multi-verse and not a universe. In one sense supernaturalism was not rejected by classical natural science, it was secularized.

Authority, determinism, legalism, and certainty are fundamental rational categories in western culture. Thus, the shift from supernaturalism to naturalism meant that nature not God is the authority, the past as causality and not the future as purpose is the determining force, physical law and not moral law is the governing rule. The western cultural demand for certainty was expressed in the specific beliefs in absolutism, formalism, and reductionism. In the rise of modern science the fundamental rational categories are therefore maintained but their content is revolutionized, i.e. naturalized and so defined in secular terms. The devastating difference in the naturalistic content of reductionism is the shift from discontinuity and speciality to continuity and commonality. In that shift the strata of nature are per force construed as epiphenomenal. In nineteen seventy-two, Jacques Monod

published 'Chance and Necessity' re-stating in more advanced micro-biological form the reductionist model of evolution. See the challenges to reductionism in the following: Grene (1971 -- especially her paper 'Reducibility: Another side issue?'), Lewis (1974 -- especially Monro's paper 'Interpreting Molecular Biology').

The second scientific revolution in the 20th century seems to have deeply challenged this secular supernaturalistic form for the content of naturalistic science. As Popper has noted, science has realized that nature is not a clock but a cloud rendering determinism absurd and indeterminism necessary for the physical universe but insufficient for the evolution of complexity. After all, if the physical world is a cloud then the biological world is a fog. As for the human world (as someone I am sure said before but not in the present context) we're in a smog. And it's ours.

9. This declaration of independence is a normative, but not an arbitrary assertion. Positivism is dead. Dead is dead. What more is there to say?
10. See Popper's discussion of the logical character of evolutionary theory (1972:265-270). Its character is historical not hypothetico-deductive: an open and unbounded plan.
11. Perhaps it is more interesting to say that the objectivist thesis that theory and description are separate realms and that the mind entertaining those realms is inherently neutral is a thesis embraced by both positivism and phenomenology and is rooted in the philosophical thought ways of premodern western culture. Grene, in fact, has made that interesting idea the thesis of her brilliant book 'Knower and the Known'. Though she focuses on positivism or western modern science and not phenomenology her analysis certainly applies to the latter. Habermas, a sociologist also educated in philosophy, explicitly singles out Husserlian phenomenology as one that entails the objectivist thesis -- and finds the roots of that thesis in western philosophy. My guess is that both Grene and Habermas have been, in part, inspired by the original critics of objectivism in Husserlian phenomenology as have phenomenologists themselves, though of its ontological or hermeneutic development. Heidegger and Gadamer were the original critics of Husserlian objectivism.

What we have as the upshot of all this is the defeat of objectivism. That defeat is based on the following insight: if man is in nature because he is of nature and if his nature is culture as a form of social life, then mind is that form of life. Knowledge then inherently entails interest so that value judgement is a logical feature of the act of knowing: mind is not pure (neutral) but impure and so bias is necessary (but not sufficient) in order to know.

12. Both Popper and Bronowski explicitly concern themselves with determinism, indeterminism, and the issue of man as a rational, 'free' self. Their common theme is that scientific conceptions must be changed so as to fit the facts of rationality and freedom.

Popper specifically focuses on the problems of how 1) meaning can influence the world, 2) meaning can influence the body, 3) meaning is possible in nature. Bronowski has specifically focused on the problems of how 1) the brain can function as a computer and still provide for the function of a self, 2) the evolution of complexity is conceivable. Their common theme on the human being as a rational and free actor is that knowing is a variable process and that process and outcome are not predictable: in Bronowskian terms, an open and unbounded plan.

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