In Memoriam: Marjorie Grene

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This memorial essay surveys the achievements of Marjorie Grene as a historian of philosophy and a philosopher of biology. It analyzes the way in which Grene's account of persons and knowledge developes in relation to her work in succession on the thought of Michael Polanyi, Maurice Merleau-Ponty and the ecological psychology of James J. and Eleanor Gibson.

Introduction

Marjorie Grene died on March 16, 2009, at the age of 98, in Blacksburg, VA. To aggregate and paraphrase the several touching but often also humorous comments I found on the web by former students and colleagues, she was regarded as an in-your-face blunt, extraordinarily clever, uncompromising, compassionate and incisive philosopher who was always irreverent before orthodoxies—a memorable and brilliant thinker. Some of the postings comment insightfully on Grene's philosophical commitments and this no doubt is what she would have preferred rather than preoccupation with her persona. Assessment of her contributions to philosophy had already begun in Grene's last years. I won't pretend in this memorial reflection that I can contribute more than a few scattered thoughts assessing Grene's work. I have not read all of the great many things that she wrote in her nearly seventy years of doing philosophy; several that I have read (some more than once), I did not understand. Some that I did understand and regarded as extraordinarily insightful, Grene, to my dismay, later disavowed. She was a thinker who regularly re-evaluated her philosophical commitments and she spoke as directly about what she later took to be her own earlier missteps as those of other thinkers.²

Grene was still energetically doing philosophy up until her mid nineties. Here is a survey of some recent work perhaps familiar to readers of TAD, although this is by no means all of her prodigious output late in life. She, of course, was a plenary speaker at the 1991 Kent State Polanyi Conference where her address carefully laid out the meaning of "personal" and "subjective" in PK, which she re-read after more than twenty years. 3 She both defended Polanyi's careful account against standard misreadings and suggested why Polanyi has been little appreciated by mainstream philosophy. A She also accused Polanyi of inserting a "treacherous footnote" (PT, 171) not heretofore noticed in Part IV that indicated he was not completely consistent and in fact undermined his own case.⁵ In 1995, she published A Philosophical Testament which she contended was not a conventional autobiographical memoir but a collection of philosophical musings about what had interested her in her long life as a philosopher. These interests cluster around epistemic questions about what it means to be a person. I find this book a very thoughtful, probing inquiry which in many ways builds upon philosophical suppositions found in Polanyi's writing. 6 In 2002, Grene became the first female philosopher to have a volume in The Library of Living Philosophers dedicated to her work. The Philosophy of Marjorie Grene is a collection of essays treating several elements of her philosophical thinking, along with Grene's insightful and often pointed responses to all 23 essays, and a 25 page "Intellectual Autobiography." In 2004, with David Depew, she published The Philosophy of Biology: An Episodic History (Cambridge University Press). This history of the philosophy of biology is a tome longer than PK and equally dense; it begins with Aristotle and moves forward to and through the major

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discussions in the contemporary period, discussions involving both scientists and philosophers and in which Grene often has been a major player.

In the following paragraphs, I try to outline the contours of Grene's philosophical achievement and provide some insights into the coherence of her philosophical ideas. I approach these objectives by drawing out and examining some of the historical particulars and themes touched in Grene's 2002 "Intellectual Autobiography" and her responses to essays on her thought in PMG, as well as comments she makes in several other publications. I commend Grene's account in PMG of her intellectual pilgrimage as a rich piece of self–reflection likely to intrigue anyone and especially anyone even vaguely interested in her years of work with Michael Polanyi. As I have argued elsewhere, I believe Polanyi's high praise for Grene noted prominently in the Acknowledgements of PK(xv) as well as in his letters, needs to be recognized as a marker signifying that Polanyi truly regarded Grene as a catalytic peer. Grene was as well a philosophical successor to Polanyi who took what she regarded as the best fruits of their collaboration and continued to devote herself to the service of inquiry.

The Importance of History and the History of Philosophy

Although she contends the particulars of her personal history have no place in an intellectual autobiography, Grene affirms that those particulars did strongly shape her life and work as a philosopher:

As has long been the case with most women, and still holds today for very many, my personal history has had a very important influence on my professional work, keeping me from it in large measure for many years and encouraging me...to work in areas I would not myself have chosen. But the particulars of that history are irrelevant to the present story. It is not my life as a growing girl, wife, mother, farmer's wife, and farmer that belongs in this volume, but only my life in philosophy, patchy though it happens to have been (*PMG*, 3).

Grene takes history seriously and this shows up in several ways. Here she seems primarily to be referring to what she regards as her own rather odd professional teaching career and publication record. She sees this oddness as a reflection of both her gender and her commitments and the prevailing disposition of academic American philosophy at the time she became a professional philosopher. But this affirmation strikes me as not merely an interesting biographical footnote; it can be read also as an affirmation that fits into Grene's larger philosophical realist account of the nature of human personhood. Like Michael Polanyi, Grene more or less subscribes to philosophical notions that Polanyi identified as the "calling" which persons have. As Grene puts it in one place, "we find ourselves as real beings in a real world in which we are trying to find our way" (*PMG*, 362) and this project of finding our way engages persons in trying to understand and make commitments about the world. The "accidents of personal existence" are the "concrete opportunities" (*PK*, 322) in which achievements emerge and personal responsibility is exercised.

After taking an undergraduate degree in zoology at Wellesley in 1931, Grene went to Germany to study with Heidegger, Jaspers and others for a couple of years. She did not much like the ideas of Heidegger or Jaspers, although she suggests that she learned a great deal from their historically-oriented courses on Plato, Kant and Hegel (*PMG*, 6, 256). In her study, she notes that she reconfirmed a conclusion she had come to even as an undergraduate, namely that it simply made no sense to her to "accept the *cogito*, and all it implies, as the unique starting point of philosophy..." (*PMG*, 4). Grene rightly indicates that this refusal is a theme that runs through her philosophizing from early to late. She is a thinker who insists that humans are bio-social creatures and we

must begin not with the *cogito* but with the embodied person, an environmentally-grounded, alert respondent in contact with social companions. We are shaped by and the shapers of the communities in which we participate:

To be alive, however, is to be somewhere, responding somehow to an environment, and in turn shaping that environment by our way of coping with it. To study human practices, including language, as forms of life is to study them as activities of the particular sort of animal we find ourselves to be (PT, 63-64). ¹⁰

Her early study in Germany with thinkers who are anti-Cartesian¹¹ does seem to have influenced her at least insofar as she comes upon the notion in Heidegger (and later in Sartre) that a person is constituted as a being-in-a-world. However her publications and comments make clear that Heidegger as well as Sartre and Kierkegaard are, she believes, largely misguided thinkers. After completing her Ph. D. at Radcliff (1935) with a dissertation on *Existenzphilosophie* that she describes as "hasty and atrocious" (*PMG*, 7), she found that she could not land a philosophy job so she sought a grant to go to Denmark to study Kierkegaard, that "gloomy Dane" (*PT*, 5) about whom she later wrote an unpublished, and now lost, book (*PMG*, 8). Although Grene does not seem to have high regard for either her graduate or early post-graduate projects, she does note that she found "inspiration" (*PMG*, 7) in three graduate school teachers with whom she worked, David Prall, Alfred North Whithead, and C. I. Lewis. Again it is primarily work with her teachers on figures in the history of philosophy that she thinks was important, although she says that work with Lewis also launched her dissertation and her interest in the emerging new logical positivist movement which brought her to the University of Chicago in 1937 to work as a teaching assistant in order to participate in Carnap's seminar.

She was not long infatuated with positivism, although she did not really believe she had grasped its weaknesses until she began working with Polanyi (whom she did think had fathomed that weakness) after she met him when he lectured at the University of Chicago in the spring term of 1950. Her seven years at the University of Chicago in an official teaching role had earlier come to an end in 1944, when, as she bluntly puts matters without elaborating, "MacKeon had me fired" (*PT*, 5). By 1950, she had become a farmer and mother and henceforth essentially operated outside academic university-based philosophy, although she did do some scattered publishing. After their serendipitous meeting in Chicago, Polanyi hired Grene, probably first in 1950 or 1951 (with soft money), to work with him on his upcoming Gifford Lectures and thereafter off and on for six years to work on converting the Gifford Lectures to *PK*. Grene, in 1952, moved to Ireland and a farming life there outside the university, although she did work diligently with Polanyi until the 1958 publication of *PK*.

In 1960, Grene was appointed to teach Greek philosophy in Belfast. This was the first of several short-term appointments until she returned to the University of California, Davis, in 1965 where she taught for 13 years; after she retired from Davis, she took many short term appointments, eventually teaching at more than 20 universities. Grene identifies her return to teaching in Belfast as a pivotal time for her because it led her to a more careful study of Aristotle and to dig more deeply into questions in the philosophy of biology. This was a time that launched her post-*PK* professional life in two directions, history of philosophy and philosophy of biology. She interpreted Aristotle "as a metaphysician motivated by his researches in biology" [*PMG*, 15] but what she learned in her contextual study of Aristotle she used to gain perspective on modern biology and contribute to contemporary discussions in philosophy of biology. In fact, one of Grene's early historically-oriented books is *The Knower and the Known*, published not long after *A Portrait of Aristotle* (University of Chicago Press, 1963). This 1966 book, In a I have noted above, she later heavily criticizes, but originally she intended it to be, as one letter to Polanyi puts it, a book focusing on "historical studies in the light of *PK*." *KK* is dedicated to

Michael Polanyi.

In sum, Grene has been an important recent contributor to the history of philosophy. She is a figure who emphasizes that careful, detailed study of figures in historical context can provide insight about how such materials bear on contemporary philosophical discussions. In PMG, she calls this a "bi-contextual point of reference" and she provides this rationale for such an approach: ". . . since we are histories, and Western philosophy is a history, locating our own concerns judiciously within that history illuminates and enriches our own beliefs and our own arguments" (PMG, 10). Or as she more succinctly and much more personally summarizes the significance of her investigations in the history of philosophy, "my sorties into a number of areas in the history of philosophy have helped me toward not so much a set of conclusions, as of premises" (PMG, 26). Interestingly, Grene's sensitivity to history in the case of philosophical figures parallels the sensitivity Polanyi often showed in works like PK for considering scientists and scientific discoveries in historical scientific context. However, Grene identifies one of her differences with Polanyi as turning on her serious appreciation for the history of philosophy:

But I have also [over the course of her career] developed interests that were, so to speak, decidedly extra-Polanyian. Once I returned to teaching, I found myself fascinated by various figures, and periods, in the history of philosophy, subjects that held little interest for Polanyi. When I was working with him (Polanyi), I did indeed try to assist him with historical information when it was needed; but he thought of history from a scientist's point of view—as a source from which to cull tidbits, but no more (*PMG*, 61).

Philosophy of Biology

Certainly Grene will be remembered as one of the founding figures in philosophy of biology as we presently know it. Her book with David Depew, The Philosophy of Biology: An Episodic History, is a magisterial account. Grene worked on a number of different issues within philosophy of biology. Conceptual problems in evolutionary theory were a continuing major interest. From the period just after the publication of PK in the early sixties when she was still interacting with Polanyi as his late ideas developed, Grene tried to introduce a variety of European scientists whose writing was philosophical and focused on biology and anthropology. Her correspondence with Polanyi in this period provides a lively running commentary on some of these figures that she was reading and thought Polanyi should study. This body of work, she says, "gave me a broader perspective on philosophical questions connected with biology" (PMG, 18) and she in 1969 published a book treating several of these figures (Approaches to a Philosophical Biology) which by 2002 she said she "should have left unwritten" (PMG, 18). Grene's interest in European philosophical scientists seems to have stirred neither American scientists nor philosophers interested in philosophy of biology, but she likely underrates the importance of this material in her later life when she calls it "my excursion into the work of more peripheral thinkers" (PMG, 19). Grene notes that much of her early work in philosophy of biology was devoted to two problems, "reductionism (is biology reducible to chemistry and physics?) and the question of hierarchies in biology" (PMG, 19). She suggests that her work in philosophy of biology drew her into broader questions about philosophy of science. 18 But it is certainly also true that her even earlier work with Polanyi in philosophy of science sets her up to be unhappy with much she finds in philosophy of science—even before she did significant work in philosophy of biology. John Compton, many years ago did an analysis of Grene's contribution to philosophy of science, which I believe is still a very insightful account. 19 He shows how Grene has worked to reconceive the cognitive claims of science and the problems of realism on the basis of what he calls "recent historical and processoriented analysis of inquiry" (354), by which he means Grene's appropriation of anti-Cartesian late modern thinkers, such as Polanyi, Merleau-Ponty and the Gibsons, as I suggest below. Compton says Grene's thought is grounded in "an ontology which takes life seriously;" that is, she provides "this evocation of life at the center of being and knowing" (356) which is her "most distinctive contribution to philosophy of science" (357). This also, of course, animates her thinking about issues like reducibility and hierarchy in philosophy of biology since one cannot affirm the "'primacy of life' thesis" (359) with a one-level ontology, as her early work with Polanyi surely made clear to her.

Grene's *PT* and her "Intellectual Autobiography" in *PMG* unequivocally affirm that Grene's philosophical interests and contributions extend well beyond the sub-specialty of philosophy of biology and beyond philosophy of science per se. Several of the issues she pursues in these areas do seem to have grown out of her early work with Polanyi in philosophy of science and particularly her early study of the modern synthesis that began with Polanyi in the fifties. ²⁰ I find that most of the philosophy of biology issues that later interested Grene are issues that fit with her larger pattern of interests in problems of knowledge and personhood. Despite her claim that her "life in philosophy" has been "patchy" (*PMG*, 4), it seems to me relatively coherent. She insightfully notes, about her work in not only philosophy of biology but also her work in history of philosophy, "... somehow the problem of the person has been haunting me through all these wanderings..." (*PT*, 174). Indeed, I think one might see Grene's push to clarify certain philosophical matters in contemporary biology as part of an effort to take seriously the challenge found in the final section of *PK* whereby biology must ultimately explain how we have come to have the modern committed biologist (or philosopher of biology) at work on the interesting problems of biology. ²¹

Grene's Intellectual Mentors

Yet I find, looking back, that it is successively Polanyi, Merleau-Ponty, and Gibson who mark the significant stages on my (intellectual) life's way (*PMG*, 81).

This succinct comment by Grene identifies the primary intellectual resources that Grene acknowledges that she has drawn on and put together as she has articulated her philosophical perspective.²² Very briefly, I comment below on what she seems to have found in each of these figures.

Grene worked closely with Polanyi in some periods of the 26 years from 1950 when she met Polanyi until Polanyi's death in 1976. The first eight years were focused on the Gifford Lectures and the long project of hammering out PK, which differs substantially from the Gifford Lectures. Later years were a less intense sort of collaboration, since Grene then had numerous academic responsibilities and a growing professional career as a historian of philosophy and a philosopher of biology. Nevertheless, the Grene-Polanyi letters suggest that Grene was often deeply involved in some later Polanyi projects such as the Study Group on the Unity of Knowledge. She also carefully scrutinized and criticized drafts of many Polanyi lectures and papers that eventually became late Polanyi articles and books. Although she never says so, she was more than merely a passive observer watching as Polanyi refined his ideas in PK about "two kinds of awareness" to produce the philosophically richer theory of tacit knowing found in late publications. The correspondence shows that it certainly understates matters to identify Grene simply as a humble editor of KB and a polite commentator on the multiple drafts of material that became TD!

Polanyi generically called "objectivism" and what he terms "the critical tradition." Although I don't think she believes Polanyi nails down very carefully the details of the recent history of ideas (or the history of philosophy), she seems to think his critical philosophizing is more or less on target and some of her studies in the history of philosophy give detail and nuance to this account. Of course, she likes Polanyi's constructive philosophy (his alternative to "the critical tradition") even better than his critical philosophy. She accepts what both she and Polanyi early term the "fiduciary program" which she in PMG defines as "a kind of lay Augustinianism, in which we recognize that our reasoning always rests on the attempt to clarify, and to improve, something we already believe, but believe, of course, in such a way that we recognize that we might be mistaken" (13-14). Grene calls herself a "dogmatic fallibilist" (PT, 3). Like Polanyi, she is a realist but, as some of the quotations used above suggest, she does not intend for her realism to be understood as that term has come to be used in contemporary philosophy of science debates.²⁴ Perhaps even more than Polanyi, Grene emphasizes the precariousness of knowledge and the necessity of commitment. 25 Later in life, she used more traditional philosophical language to formulate some of these elements of her epistemic perspective: "knowledge is justified belief, which we have good reason to believe, but can never 'know' for sure, is true" (PT, 25). Grene, of course, very much likes Polanyi's account of science emphasizing the continuity between (1) ordinary perception and problem solving and (2) the specialized investigations and discovery in science. She likes the fact that Polanyi took seriously the history of science and the practices of scientists. She eventually uses the framework of ecological psychology and some of the language of Merleau-Ponty to articulate her ideas about the life-world of science, but she first works out these views in working with Polanyi. Science is a special and fascinating world (or community of inquiry) in which one may dwell to learn its practices, ideals, problems and vision of things, but it is a human world, like the many other culturally specific human worlds in which one can become a responsible person; all such worlds are nested within the natural world.²⁶ The element of Polanyi's thought that Grene most frequently references is the theory of tacit knowing. She claimed in 1977 that Polanyi's best formulations of the theory of tacit knowing "should be the conceptual instrument for a one hundred and eighty degree reversal in the approach of philosophers to the problems of epistemology" ("TKG," 168). She holds that the claim that knowledge "always entails a from-to structure" (PMG, 14) is a fundamental commitment about the importance of the unspecifiable, a commitment on which one can build not only a sensible vision of science but a sensible account of the way persons live, using their powers to indwell as they seek orientation in the world:

This was a good platform, I think, on which to build a vision of science, of knowledge, and of human reality against and beyond the divided *res cogitans* and *res extensa* bequeathed to us by Descartes. Indeed, it was in the introduction to *Knowing and Being* (1969), a collection of Polanyi's essays which I edited, that I first formulated the slogan "All knowledge is orientation" (*PMG*, 14).

Grene discovers Merleau-Ponty in 1960, only two years after *PK* is published at the time her work in the history of philosophy and philosophy of biology was beginning.²⁷ Although Grene always appreciated Polanyi's ideas about embodiment which are central to the theory of tacit knowing, she eventually came to think Polanyi had not thoroughly explored embodiment at the primordial level of perception. To put it in language she uses in *PT*, Polanyi had shown there is "no sharp cut between belief and knowledge" but she found Polanyi's work less effective in showing there is "no sharp cut between perception and belief" (*PT*, 25).²⁸ Grene contends that the connection between perception and thought must be robustly represented.²⁹ She found a richer account of perception and embodiment in Merleau-Ponty, although Grene is quite clear that Polanyi's tacit knowing and Merleau-Ponty should be linked:

Perception is both primordial—the most primitive kind of knowledge—and pervasive: the milieu, on our side, within which we develop such information as we can obtain, such beliefs as we can articulate, concerning the places, things and processes among which we live, move and have our being. That is, I think, something like what Merleau-Ponty meant by the "primacy of perception". It is also the necessary foundation of Polanyi's doctrine of tacit knowing (*PT*, 25).

In *PMG*, Grene suggests Merleau-Ponty "seemed to me to be saying, in a different order, what Polanyi was saying independently, in *Personal Knowledge* (20).

Another way that Grene identifies what special she found in Merleau-Ponty concerns Merleau-Ponty's appropriation of ideas in Continental philosophy, especially notions about "being-in-the-world." She contends that Merleau-Ponty "took what was right in it [i.e., being-in-the-world] and placed it in a more appropriate context" (*PT*, 69). He provides "the most effective account so far of what it is to be in a world: to be a person living his (her) life in the odd fashion vouchsafed us by the contingencies of global, biological and human history" (*PT*, 80). Merleau-Ponty's account distinguishes the "physical, the vital, and the human order," showing how these "spheres of reality" operate successively in boundaries left open by the next lower order of existence (*PT*, 80). Merleau-Ponty, more than Polanyi, establishes Grene's persistent "counter-Cartesian *leitmotif*" (*PMG*, 21) in terms of his insistence on locating bodiliness in the world:

Merleau-Ponty's "centrifugal pluralism," ... his reliance on the situation of the painter, who "brings his body with him," as the appropriate model for the way in which we are all bodily with, yet still over against, things in the world, in such a way that we make a world as it makes us (PMG, 21).

Grene regards Merleau-Ponty as a figure who was "developing a new, or renewed ontology" and thus was providing "a metaphysical, as distinct from a purely epistemological, refutation of phenomenalism." This ontology she identifies as profoundly realistic and aimed against prevailing psychological views of "the causal theory of perception...which would exile significance from any ontological status" (606). She argues that Merleau-Ponty rejects the reigning "nominalistic thesis that only particulars are real" (606). His "refutation of phenomenalism and of nominalism" affirms an "ontological pluralism." That is, Grene affirms that he saw that "a one-level ontology is inadequate and incoherent," and recognized "that there are hierarchically organized systems, entities, or processes, that can be studied on more than one level because that is how they *are*" (607).³²

In sum, what Grene found in Merleau-Ponty she describes as a new "voice" (*PMG*, 20). She suggests that she worked too closely with Polanyi "and I suppose too much in isolation from any philosophical community" (*PMG*, 20). Merleau-Ponty was something of a way back into philosophy since he spoke an "existentialist discourse" (*PMG*, 20) that she had started from in her early studies in Germany. Most important, Merleau-Ponty bound notions of person tightly to living nature.

Merleau-Ponty's thesis of the primacy of perception, of his reflection on human perception in particular, gave me a starting point, not made explicit in Polanyi's account of from-to knowing, for a radically post-cartesian conception of persons as part of living nature, but with a difference. In short, in reading Merleau-Ponty, I found myself, as Kierkegaard would have put it, "his reader" (*PMG*, 20).³³

Finally, it is the ecological psychology of J.J. and Eleanor Gibson³⁴ that Grene adds to Polanyi and Merleau-Ponty to produce the peculiarly insightful mix of anti-Cartesian ideas informing her philosophical stance. She spends a chapter in PT (129-151) specifying what she thinks is philosophically important about ecological psychology and also makes interesting comments on it in her "Intellectual Autobiography" (PMG, 21-26), as well as in an essay explaining "the primacy of the ecological self." ³⁵ Despite her appreciation of Merleau-Ponty's emphasis upon the "primacy of perception" and embodiment, Grene eventually came to believe all of this "cries out for a foundation in a theory of perception" (PMG, 26) which the Gibsons have more recently provided. ³⁶

What she finds in the ecological view of perception is an alternative to the theory of perception that sharply distinguishes sensation and perception, that is, the theory of perception that underlies almost all modern philosophy and which cuts off living persons from the dynamic environment in which they live: we "find ourselves cut off from any direct, reality-based contact with that alien otherness... and it must be we who read 'meanings' or 'values' into that desert-like stuff out there" (*PMG*, 22). Grene contends that psychology as well as philosophy took the path of reifying the distinction between "meaningless sensations, carrying little or no information about the world, and full-bodied perceptions, based on association and judgment" (*PT*, 132). Ecological psychology reverses all of this and takes a serious realist turn, since it studies animals in their habitats and argues "what is primary is not inner bits of sensation, but the grasp by an animal, through its perceptual systems of what matters to it in its environment" (*PT*, 136).³⁷ Using the language of the Gibsons, there are "invariants" (i.e., "constancies in the flow of stimulation") which permit the animal in its environment to pick up (i.e., use its perceptual systems to recognize) "affordances of the environment: opportunities offered it" (*PMG*, 24). In the human case, perceptions are saturated with cultural ingredients but culture is situated within nature and, as in the case of non-human animals, "in all our enterprises the threefold structure of events or entities, information and affordances persists" (*PMG*, 24).³⁸

Grene argues that the philosophical importance of an ecological account of perception is far reaching because it reframes deeply embedded, common notions about persons, knowledge of the world and selfknowledge. She contends that "the ecological approach to perception puts the natural foundation of our search for knowledge in a new and much more promising light" (PT, 171). As I implied above, she thinks the problem of how sensation becomes perception simply dissolves and it becomes clear that there is usually not a hard and fast line between perception and conception if you accept an ecological account: "Meaning is not something superadded to the environment by human linguistic or other conventions. . ." (PT, 143) but the world (or environment) of animals, including human animals, is full of meanings by virtue of the direct apprehension of affordances: "... all seeing is seeing-as... perception is always the engagement of an active exploring organism with the affordances of things and events that are happening, within reach of its perceptual systems, in its real ongoing world" (PT, 143). What this entails is a thorough re-conception of notions about self and world and how they are bound up together. One must recognize that "to perceive oneself is, except in very peculiar circumstances, to coperceive the world:" that is, "... to be aware of ourselves... is to be aware not only of a product of that world but also of aspects of the world that bear on its production" ("PES," 112). Grene uses the Gibsons to deny categorically modern thought's "supposition that we have some hidden subjective awareness, or selfawareness, set against a spread-out, meaningless external world" (PMG, 25). The notion of a person that emerges from an ecological perspective is one that at last is no longer "haunted by the specter of 'consciousness" (PMG, 25).³⁹ Rather than inward consciousness, Grene tends to focus on the responsibility that persons can assume as figures who belong to particular human communities: "What I want to stress even in the individual is not anything inward, but something like an ordering principle, a center of responsibility to principles, ends, or causes,

something beyond myself to which I *owe* allegiance" (*PT*, 178). An ecological approach, Grene thinks, can provide a "solid basis, both epistemological and ontological" (*PMG*, 24) with which to understand human practices, including those of science, embedded in human communities:

The seeker within any human tradition...learns to pick up information that enables him or her to 'perceive' the affordances of that environment. There is no simple formula for such efforts and achievements... but they can be best understood as extension of, or analogues to, the dimensions of perceptual exploration and perceptual learning that we share with distant cousins...(*PMG*, 25).

In sum, anyone who wants to understand the final formulations of her philosophical perspective must take Marjorie Grene quite straightforwardly when she says "I think that the Gibsons' work . . . can contribute to a more adequate conception of the way we cope with the world around us through the perceptual systems conferred on us by our evolutionary history" (PT, 130-131).

In some ways, of course, the ecological account supersedes ideas Grene drew from Polanyi and Merleau-Ponty, but in other ways Grene meshes the views of all her mentors. She notes that her "earlier guiding lights, Polanyi, Merleau-Ponty and Plessner, have contributed" to views "anticipating some aspects of Gibson's ecological realism" (*PMG*, 25). About Polanyi, she says "Gibsonian perception is also tacit knowing; there is certainly a kinship between the two views" (*PMG*, 61). About Merleau-Ponty, she says, "... I found in Gibson a striking convergence with Merleau's views" (*PT*, 130).

Marjorie Grene frequently tended to downplay her own originality as a thinker: "Not that I invented my concept of the person; I am far from claiming to be an original thinker. But most of those who have influenced my thinking on this matter, or have helped me to formulate my views are dead: Michael Polanyi, Helmuth Plesser, Maurice Merleau-Ponty—writers unread, in any case by contemporary analytic philosophers" (*PMG*, 195). Like John Compton, I think Marjorie Grene had an extraordinary gift for putting things together. Usurely this is a kind of originality that has yielded important philosophical achievements. Many will sorely miss the vigor, wit and creativity with which she long engaged in philosophical reflection, which she characterizes at the end of her "Intellectual Autobiography" very humbly: "I have been, it seems as Polanyi thought one should do, trying to clarify, and improve my fundamental beliefs" (*PMG*, 26).

Endnotes

¹As I note below, Grene was honored in a Library of Living Philosophers volume (29, edited by Randall E. Auxier and Lewis Edwin Hahn, *The Philosophy of Marjorie Grene* [Chicago: Open Court Publishing, 2002]) seven years before her death. This volume, noted hereafter as *PMG*, was actually her third festschrift. Those interested in a full list of Grene's publications should consult the bibliography included at the end of *PMG* (569-579).

²Particularly in comments in late publications such *A Philosophical Testament* (Chicago: Open Court Publishing, 1995 [hereafter *PT*]) and in her *PMG* "Intellectual Autobiography" (3-28) and responses to essays (see, for example, 378, 510, 547), Grene makes clear her sharp criticisms of her own earlier work. In response to a 2001 e-mail noting that I very much liked *The Knower and the Known* (Berkeley: University of CA Press, 1966, [*KK*]) and *PT*, Grene wrote the following: "By now I'm also very suspicious of much in the Knower and the Known (sic)—especially the Darwinism chapter, which is awful, and the teleology chapter, which is mistaken" (12 March

2001, Grene to Mullins e-mail). In a reply to Helen E. Longino's essay in *PMG* on Grene's naturalism, she says "First about Plato and Aristotle, *The Knower and the Known* was a deeply flawed book. I hadn't thought the first few chapters too bad, but what Longino quotes me as saying about Aristotle is downright silly" (99). In her reply to David Hull's *PMG* essay, Grene wryly commented, "as his account makes clear, I write too much too hastily: a remark that can probably be applied to what I am writing at this moment" (279). Especially some of Grene's views on evolution have changed as she grew older. In *PMG*, she made very clear that she did not wish to be dogged with things she wrote earlier: "But the greater richness of current evolutionary theory does, I'm afraid, make me ashamed of some of my pronouncements, not indeed, in my callow youth, but in my naïve middle age. It is not only the first year of life in which we assimilate our culture: one does or can, keep revising one's beliefs. In this case, what I believed thirty years ago I want in part very emphatically to reject!" (81).

³Marjorie Grene, "The Personal and the Subjective," *TAD* 22:3 (1995-96): 6-16 which is hereafter noted as "P and S."

⁴See not only "P and S" for comments on ways Polanyi is misread, but also Marjorie Grene, "Tacit Knowing: Grounds for a Revolution in Philosophy," Journal of the British Society for Phenomenology 8, no. 3 (October 1977): 164-171. This short article, noted hereafter as "TKG," written just after Polanyi's death provides an account of Polanyi's philosophical development from roughly the mid-forties just before he meets Grene (1950) until the late sixties when Knowing and Being: Essays by Michael Polanyi (ed. Marjorie Grene [Chicago: University of Chicago Press, 1969]) is published (KB hereafter). Grene's criticisms of Polanyi are found here ("TKG") and in other publications ("P and S," PT and PMG) but also in her correspondence with Polanyi, most of which covers the period after the publication of PK. The archival Polanyi-Grene correspondence is in the Papers of Michael Polanyi in the Regenstein Library of the University of Chicago, Box 16, Folders 1-15. Citations of archival material below are simply by box and folder. In general, my view is that Grene does a superb job in "TKG" and her other scattered comments of analyzing the development of Polanyi's philosophical ideas from the mid forties through the late sixties. She shows how the problems of the administration of science are succeeded by deeper epistemological problems which are addressed by analyzing scientific discovery and ordinary perception, showing the foundational nature of belief. She traces the course of Polanyi's deepening understanding of "two kinds of awareness," eventually producing his mature theory of tacit knowing. She sees parallels between Polanyi's ideas and those of other thinkers, some contemporary. However, Grene undervalues some of Polanyi's writing from the late thirties and early forties on liberal society; she may not know this writing or she may simply think of this early writing as no more than early evidence of Polanyi's opposition to "planned" science. I believe, however, there is more here, namely an interesting and unique formulation of classical liberal social philosophy. Grene also does not seem to recognize how some early Gestalt-influenced notions about "two kinds of order" prepare the way for later discussions of "two kinds of awareness." Finally, Grene does not see much of value in Polanyi's late effort at a grand synthesis focused on meaning which is published in Meaning, his book with Harry Prosch. She does offer, in both letters and print, some interesting and pointed criticisms of ideas in this late material which begins to take shape in lectures of the late sixties.

⁵I discuss Grene's account of the footnote in my essay in *PMG* (44-45).

⁶I wrote a *TAD* review essay on *PT* that noted its several themes (*TAD* 27:1 [2000-2001]: 33-45). Much to my surprise, Grene sent me an e-mail indicating she liked the review (28 Nov. 2000, Grene to Mullins e-mail).

⁷*PMG* was reviewed by Robert Doede in *TAD* 31:1 (2004-2005): 46-48.

⁸At the end of *PMG* (566), Grene points out that not all of what she regards as her significant contributions in the history of philosophy were treated in the volume. While her work on Descartes, Heidegger and Sartre was considered in essays, there is nothing in the volume on her work on Aristotle or Merleau-Ponty, two figures very important for her development. Grene notes that she therefore says quite a bit about her work on these figures in her "Intellectual Autobiography." As her list of publications shows, Grene actually has written

about a large number of figures (especially if you count figures like Polanyi, Plessner, etc.) that she does not mention.

⁹This is the view (i.e., catalytic peer and philosophical successor) that I argue for in "On Persons and Knowledge: Marjorie Grene and Michael Polanyi" (*PMG*, 31-60). As the *PK* Acknowledgments make plain, Polanyi recognized that Grene was really a backstage force important in the task of bringing *PK* together. Elizabeth Sewall, another reader of *PK* drafts, also recognized Grene's contributions. See her comments in "Memoir of Michael Polanyi," p. 16 (Box 46, Folder 12). Interestingly, Grene was also a figure who collaborated with J. H. Oldham (a third reader of drafts) when *PK* was in press to try to see that the soon to be published *PK* would be reviewed in important journals. See the letters (J. H. Oldham Archive, 10.4, University of Edinburgh Library) exchanged between Grene and Oldham in May and early June of 1958 (*PK* was published June 20, 1958). Grene herself responded to what she took to be an early, somewhat befuddled *Encounter* review of *PK* (vol. 11, no. 3 [1958]: 77-80) by Michael Oakeshott. See Grene's letter in the very next issue of *Encounter* ("Personal Knowledge," *Encounter* vol. 11, no. 4 [1958]: 67-68) where she very succinctly laid out the argument of *PK* and tried to get Oakeshott on track. Some of these matters I treat in my unpublished paper "Marjorie Grene and *Personal Knowledge*" given at the 2008 Loyola Polanyi conference.

¹⁰In a response to Anthony Perovich's essay in *PMG*, she says "I am trying to take a new path, . . . a path that avoids what Plessner called 'the Cartesian alternative,' . . . setting off from a different starting point, one which takes seriously our *location*, not just geographically, of course, but within a tradition, or a cluster of traditions, in which we find ourselves and which we may in turn to some extent modify by the way we interiorize or, to some extent, reject, its ways of symboling. Merleau-Ponty's version of being-in-the-world, Plessner's account of the differences in positionality between plants, animals, and human persons, or Polanyi's concept of indwelling can all be useful, it seems to me, in helping to develop such a view" (*PMG*, 195).

¹¹Some of Grene's early scholarly writing grew out of her study in Europe. When Charles M. Sherover, takes her to task for her earliest books on the existentialists and Heidegger, she repents but only slightly, allowing that she was somewhat sloppy as well as angry and frustrated with Heidegger from when she listened to him in 1933 (*PMG*, 550). She admits her voice might have been less shrill if she had not been exiled from teaching and significant contact with an intellectual community. There is little in *Being and Time* that she likes and Heidegger's word play she pronounces "a con game to which I long ago developed an immunity" (*PMG*, 547). A more careful but still pointedly critical late discussion of Heidegger, as she notes, is in *PT*, 70-79. See her comments on Sartre in *PT*, 79 and *PMG*, 565-566.

12One has to be careful with this point concerning the influence of Continental ideas about "being-in-the-world" on Grene or, for that matter, Polanyi. In *PT*, she says the "exposition" in both Heidegger and Sartre is "defective" (60). Grene commented to Philip Sloan, "What interested me in Polanyi's work was his reflection on scientific discovery and scientific knowledge. Heidegger's *Dasein* has little to do with knowledge of any kind. And Polanyi's concept of indwelling was a late comer in his thought, conceived in a context far removed from Heideggerian 'being-in-the-world'" (*PMG*, 257). She goes on to note that she thought Polanyi was "wholly innocent of any knowledge of our philosophical tradition, whether past or recent" but was a physical chemist whose philosophizing aimed to clarify "what he called the unspecifiable component of scientific practice" (*PMG*, 257). She says "as for phenomenology—I'm sure Polanyi never read a word of Husserl" (*PMG*, 257). Grene acknowledges that in 1960 when she read Merleau-Ponty "like some other readers, I found a kind of parallel between the two works [i.e., *PK* and *The Phenomenology of Perception*]. But that was a parallel, not an influence, and one that Polanyi resented and rejected" (*PMG*, 257). Grene here does shed interesting light on the development of Polanyi's philosophical ideas but her comments somewhat overstate matters perhaps because she has simply forgotten many details of her work with Polanyi. As I note below, Grene is very influenced by Merleau-Ponty when she discovers him in 1960 and she works hard to put Polanyi and Merleau-Ponty together

in the sixties. There are prefatory statements and sometimes short discussions by Polanyi in his books and articles in the sixties that suggest some parallels with modern Continental thinkers; these may in some cases have been added at Grene's insistence. Because Grene was excited about Merleau-Ponty and often mentioned him to Polanyi in letters, Polanyi did read Merleau-Ponty and criticized him. The Grene-Polanyi letters suggest Polanyi actually was reading a wide range of material, often recommended by Grene, throughout the sixties. In one letter, (15 July 1962, Polanyi to Grene, Box 16, Folder 1), Polanyi says "I have always felt uneasy about the way my work is related to phenomenology, so I bought a copy of <u>Cartesian Meditations</u> by Husserl." The letter then quotes from Husserl many times as Polanyi tries to make certain points. Polanyi at times argued with Grene about philosophy in his letters; sometimes he analyzed drafts of Grene articles and commented just as bluntly as Grene commented on his writing.

¹³Grene acknowledges that very early she found Tillich's "thin theism" attractive and "Kierkegaard's breast-beating supersubjectivity, much less so, to put it mildly" (*PMG*, 547).

¹⁴Grene says these are the "two spheres of interest that have kept my attention more or less continuously since 1960" (*PMG*, 20). As I suggest below, she regards the history of philosophy as an interest that she developed that was "decidedly extra-Polanyian" (*PMG*, 61).

¹⁵See her discussion in *PMG* of her historical work on Aristotle and how it contributed to her forays in philosophy of biology (14-16).

¹⁶KK was published in 1966 but she says in the "Preface to the Paper-bound Edition of 1974" that it was mostly written from 1961-1963 (but see note 17 below) so it apparently immediately follows her book on Aristotle. Grene's letter to Polanyi of January 19, 1963 (Box 16, Folder 1) notes that the Aristotle book is due out in March. KK is a demonstration of Grene's developing interest in both history of philosophy and philosophy of biology. In addition to chapters on important figures in the history of philosophy, KK has a chapter "The Faith of Darwinism," which by 2002 Grene regarded as misguided (PMG, 16-17). Even in her "Preface to the Paper-bound Edition of 1974," Grene qualifies some of the things she originally wrote in the book.

¹⁷This was Grene's description in her long letter to Polanyi (see p. 3) dated January 19, 1963 (Box 16, Folder 1) where she also includes an outline for the book. She indicates she has been trying to start the book since the previous May and now has a rough introduction. She also suggests that Polanyi urged her to put together a book along the historical lines that she sets forth in the outline. In *PMG*, Grene says about *KK* that it was a book "intended to show some guidelines in the history of philosophy that might help lead to a philosophy like Polanyi's..."(25).

¹⁸The final chapter of Grene and Depew's 2004 *The Philosophy of Biology: An Episodic History* (348-361) argues that philosophy of science, long caught between the residue of logical positivist views and social constructionist views, should be reshaped by the best of the recent tradition in philosophy of biology. Although there is but one reference here to Polanyi, the tracks of the *Personal Knowledge* project and Grene's work with Polanyi thereafter can be clearly seen. This final chapter much resembles the argument in Grene's 1985 article, "Perception, Interpretation, and the Sciences: Toward a New Philosophy of Science" in *Evolution at a Crossroads: The New Biology and the New Philosophy of Science*, ed. David J. Depew and Bruce H. Weber (Cambridge: MIT Press): 1-20.

¹⁹ Marjorie Grene and the Phenomenon of Life, "Proceedings of the Biennial Meeting of the Philosophy of Science Association, Vol. 1984, Vol. 2: Symposia and Invited Papers (1984), 354-364; at one point also available at http://www.culturaleconomics.atfreeweb.com/Anno/Compton%20Marjorie%20Grene%20 and%20the%20Phenomenon%20of%20Life%20%20PSA%201984.htm

 20 She notes in PT that one of her first tasks in working with Polanyi was to find for Polanyi in the literature of biology "heresies in evolutionary theory, specifically critics of the evolutionary synthesis" (91).

²¹Grene might not like my suggestion here linking her work in philosophy of biology with the argument

in Part IV of *PK*. Although she was an eloquent early defender of this section of *PK*, Grene became more and more critical of Part IV. Here is her comment in 2002: "...when I looked more carefully than I had at the time into the literature of evolutionary biology, I found Polanyi's argument (of Part IV of *Personal Knowledge*) even more shocking than I had originally thought it; so that interest, too, took me away from his work" (*PMG*, 61). On the other hand, Grene continued to appreciate what Polanyi said in Part IV about "*ultrabiology*" (*PK*, 387) In *PT*, Grene says, "epistemology is a branch of ethology. In the same spirit, Polanyi called the problem of knowledge *ultrabiology*..." (47). In *PMG*, she says, "despite my misgivings about Polanyi's treatment of evolutionary theory, I still appreciate his dubbing epistemology, or philosophy of science, 'ultrabiology.' When we reflect on the nature of epistemic claims, we are indeed studying the behavior of some peculiar animals, in this case, a subset of our own kind" (61-62).

²²Grene frequently also mentions Helmut Plessner as an instructive figure but in *PMG* she says of Plessner, "Plessner just seemed to fit in well, I suppose, with what I was already thinking" (81). See also *PMG*, 18.

²³Although I specify some important things in the rest of this paragraph, the simple answer to the query about what Grene accepts of the perspective she and Polanyi work out in their collaboration is this: most everything one finds in Polanyi publications about knowing and human persons. In PMG, Grene does note that it is "probably correct... that my years of working with Polanyi have continued to influence my thought and writing, more than I have recently recognized" (61). It is perhaps easier to identify elements that Grene rejects or seems not to be enthusiastic about as her own study turned in new directions than to specify what she shares with Polanyi. Grene says relatively little about what might be called the political philosophy themes in Polanyi. Grene is concerned with persons and knowledge but her philosophical orbit simply does not seem to touch some of the larger social themes that were central to Polanyi as a fin de siècle Hungarian Jewish scientist who fled two countries in the first fifty years of the twentieth century. Grene eventually comes to reject what I will simply dub openings to religion of which there are many in Polanyi's writings. She thinks such openings are unwarranted and are certain to turn off philosophers of science who might otherwise take Polanyi seriously. Although she early was a defender of Part IV of PK, eventually, as I have noted above, Grene comes to believe Polanyi's discussion of evolution is misguided. His biology is outdated and his larger philosophizing about evolution she seems to think is too grand or at least is likely to put off most scientists and professional philosophers. Perhaps these three areas can be pulled together by saying that as Grene continues with her own work she seems increasingly uncomfortable with the way in which Polanyi weaves elements of a Lebensphilosophie with his account of persons and science, and with his epistemology and his cosmology.

²⁴See Compton's discussion in "Marjorie Grene and the Phenomenon of Life," 355-356 as well as Grene's comments on the debate in philosophy of science in *PT*, 115-123. Generally illuminating of her realism is her chapter in *PT*, "The Primacy of the Real" (113-126), which often references Polanyi and Merleau-Ponty. Her title she says identifies what she is looking for, which "is something like what Merleau-Ponty expressed in his thesis of 'the primacy of perception" (115). She has tried and discarded various other tags for her brand of realism (such as "comprehensive realism") which she acknowledges is akin to Polanyi's realism, "a feature of his argument that I still heartily subscribe to" (*PMG*, 61).

 25 Note her 1991 discussion of commitment: "Purged of its Christian over- or undertones, however, the Commitment chapter [in PK] with the argument that builds up to it still seems to provide an appropriate foundation for a philosophy of science, a theory of knowledge, and a perspective on the nature of responsible personhood. As I have already noted, it is a precarious foothold rather than a firm foundation, but in our situation I believe that is the best we can do... Commitment, however, has, I should think, to retain its precarious ontological position as the stance of a given embodied person, cast ephemerally into the flow of history, and pre- and posthistory, self-obliged to obey a calling that takes him (her) beyond the confines of subjective preference" ("P and S," 14).

26 "Responsible human beings, as I understand them, are natural entities who have achieved personhood through participation in a culture (or a spectrum of cultures) itself contained within nature" (PMG, 100). In another place she says, "we need in philosophy . . . to recognize that there is a living world of which we are part. Being-in-a-(human)-world is our way of being-in-an environment, as all living things are, and in particular as one variant of the way all animals are" (PT, 76). Grene appreciates the way in which Polanyi's account of science and his theory of tacit knowing focuses both on the kinship of living things and the distinctiveness of human possibilities and human endeavors such as serving self-set standards in responsible scientific inquiry.

²⁷She notes, "I think that both the realism of Polanyi's account of science and my own long-time weakness for realism-wherever-possible contributed to my enthusiasm for Merleau's work" (*PT*, 129). Interestingly, she suggests that later in her life it is this same "weakness for realism-wherever-possible" that leads her from Merleau-Ponty who emphasizes the "primacy of perception," to the ecological perceptual psychology of the Gibsons, where an even better realistic account of perception is worked out (*PT*, 129ff). See my discussion below.

²⁸To David Depew, in *PMG*, Grene comments that Merleau-Ponty's phrase the "primacy of perception" is "not easily generalized except on the later ground of Gibsonian ecological psychology. It certainly does not apply to Polanyi, whose view of sensory experience was necessarily limited to what was available to him at the time. And his from-to model of knowledge stems from his reflections about science rather than being directed to everyday perceptual experience" (311). I suspects this overstates matters.

²⁹In *PT*, Grene notes: "Nor, I admit, can I accept nowadays the sharp distinction, as Kant insisted on it, between perception (or, more generally, 'intuition', *Anschauung*) and thought (concept, *Begriff*)... But if thought without perception is empty (as it is), perception, on the other hand, is always already in some primordial way 'thoughtful' or 'conceptual'" (34-35).

³⁰As I have noted above, she has in mind that Heidegger and Sartre did not treat it in the right context. She does seem to think, soon after she discovers Merleau-Ponty that Polanyi's theory of tacit knowing is an appropriate context within which to discuss being-in-a-world. She notes in *KK* (1966 but written earlier) a connection between Polanyi's ideas about indwelling and "the existentialist thesis that our being is *being in a world*" (56). She follows with this claim about mind: "This interpenetration of 'self' and 'world' is not only a central characteristic of mind; it is what mind is" (56).

³¹Marjorie Grene, "Merleau-Ponty and the Renewal of Ontology," *The Review of Metaphysics*, vol. 29: 606. All pages noted in parentheses in the remainder of this paragraph are citations to this article (605-625).

³²Any reader of her discussion of Merleau-Ponty's ontology who is thoroughly familiar with Polanyi's thought will, of course, recognize similar themes (e.g., an attack upon one-level ontology, affirmation of hierarchy, etc.) in Polanyi.

³³In *PT*, she notes that "my insistence all along on understanding ourselves as living, although I didn't derive it from him [Merleau-Ponty], certainly harmonizes well with his stress on the importance of the lived body" (81).

³⁴Eleanor Gibson's work continued that done earlier with her late husband and Grene become a friend of Eleanor Gibson. See *PT*, 130 for Grene's account of how she came to be acquainted with the Gibsons and ecological psychology which she began work on in 1969. Until she read James Gibson's last book, *An Ecological Approach to Visual Perception* (1979), she did not recognize ecological psychology as an important venue to be mined to state her philosophical views.

³⁵"The Primacy of the Ecological Self," *The Perceived Self: Ecological and Interpersonal Sources of Self-Knowledge*, ed. Ulric Neisser (Cambridge: CUP, 1993): 112-117. Cited hereafter as "PES."

³⁶Clearly, Grene makes the same criticism of Polanyi, although she apparently thinks Merleau-Ponty better represented perception than Polanyi: "... my previous mentors, Polanyi and Merleau-Ponty, had both

lacked an adequate theory of perception on which to base their views" (*PMG*, 22). She also laments "the difficulty of Merleau's rhetoric" (*PT*, 131) and apparently thinks the work of the Gibsons will be more readily assimilated by philosophers, a point that I am not so sure about.

³⁷Grene regards the Gibsons as philosophical realists who are doing experimental psychological research keenly attuned to the way animals have capacities to pick up information in the environment. In the course of evolution, animals, including human acculturated animals, develop perceptual systems, enabling them to cope with threats and opportunities in their particular environment. She claims the ecological account of perception "follows the richer and biologically more appropriate ecological aspect of the Darwinian tradition" (*PT*, 142). The Gibsons' ecological approach to animals is a realist approach that puts the problem of knowing and the problems of being a person (as Polanyi and Merleau-Ponty also affirmed but less rigorously) in a natural and evolutionary context: "For Gibson (or the Gibsons). . . as human reality is one version of animal reality, so human knowledge is one species-specific version of the ways that animals possess to find their way around their environments" (*PT*, 144). This is a deeper way to put the matter she put in the preface to *KB* where she first says knowledge is "orientation." Of course, by the time she discovers the Gibsons whose evolutionary orientation she much appreciates, she has long ago changed her mind about the worth of Polanyi's effort to link tacit knowing tightly to evolutionary development (i.e., Part IV of *PK*).

³⁸In *PT*. Grene notes that James Gibson contrasts perception which is "direct but already cognitive, though tacitly so with the indirect avenues to contact with reality mediated by human tools, languages, and pictorial representations" (145). Her discussion continues, focusing on Gibson's discussion of several kinds of what she calls "indirect knowledge" (148), which she links to Polanyi's discussions of subsidiary and focal awareness.

³⁹In *PMG*, she also responds to Jacquelyn Kegley in a similar way: "... I want so much—again, as an anti-Cartestian—to avoid any systematic use of the concept of consciousness, let along self-consciousness, in my reflections about our peculiar way of life" (81-82).

⁴⁰"Marjorie Grene and the Phenomenon of Life," 354.