TRADITION & DISCOVERY

The Polanyi Society Journal

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Tradition & Discovery

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Submission Guidelines

Submissions: All manuscripts should be submitted as a Microsoft Word file attached to an email message. Articles should be no more than 6000 words in length (inclusive of keywords, abstract, notes, and references) and sent to Paul Lewis at lewis_pa@mercer.edu. All submissions will be sent out for blind peer review. Book reviews should be no more than 1000 words in length and sent to Jean Bocharova at jbocharova@msjc.edu.

Spelling: We recognize that the journal serves English-speaking writers around the world and so do not require anyone's "standard" English spelling. We do, however, require all writers to be consistent in whatever convention they follow.

Citations:
- Our preference is for Chicago's parenthetical/reference style in which citations are given in the text as (last name of author year, page number), combined with full bibilographical information at the end of the article. One exception is that Polanyi's major works may be cited parenthetically using the following abbreviations (with abbreviations italicized):

CF	*Contempt of Freedom*
KB	*Knowing and Being*
LL	*Logic of Liberty*
M	*Meaning*
PK	*Personal Knowledge*
SEP	*Society, Economics, and Philosophy*
SFS	*Science, Faith, and Society*
SM	*Study of Man*
STSR	*Scientific Thought and Social Reality*
TD	*Tacit Dimension*

  For example: Polanyi argues that …. (*TD*, 56). Full bibliographical information should still be supplied in the references section since many of us may work with different editions of his works.
- Endnotes should be used sparingly and be placed before the reference section.
- We do recognize that Polanyi's work connects with scholars who work in diverse disciplines that use different style guides. To the extent that our software allows, we will accept other styles (e.g., APA or MLA) so long as the author is consistent and careful in following it. The main point, of course, is to give the reader enough information to locate and engage your sources. Manuscripts that are not careful and consistent in style will be returned so that the author can make corrections, which may delay publication.

For more information see http://polanyisociety.org/Aims-and-Scope-9-12-18.htm and http://polanyisociety.org/TAD-Submissions&Review-9-12-18.htm

ISSN 2154-1566 (online)
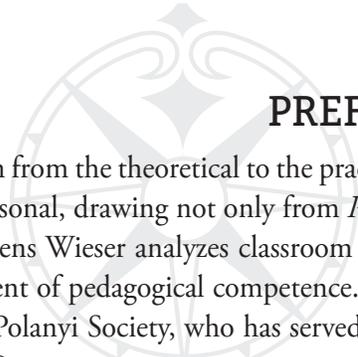
PREFACE

Essays in this issue span from the theoretical to the practical to the personal. Mel Keiser expands on the post-critical meaning of personal, drawing not only from *Personal Knowledge* and *Meaning*, but also the work of Stanley Hopper. Clemens Wieser analyzes classroom interactions to explore the role that tacit knowledge plays in the development of pedagogical competence. Finally, we have an interview with Walt Gulick, one of the veterans of the Polanyi Society, who has served in many roles, including Board President and Book Review Editor for *TAD*.

Do remember that the Polanyi Society (and *Tradition and Discovery*) need your support through dues and/or donations. While production costs of the journal have decreased since we went to this all-electronic format, there are still costs to producing this quality of journal. Moreover, the Society has expanded its activities beyond the journal and annual meeting to include Zoom sessions devoted to various topics. Please consider donating to the Society.

As always, keep up with the latest in News and Notes.

Paul Lewis

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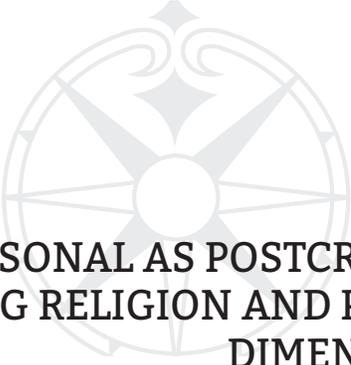
THE PERSONAL AS POSTCRITICAL AND THEOPOETIC: EXPLORING RELIGION AND POETRY IN POLANYI'S TACIT DIMENSION

Mel Keiser

ABSTRACT

Exploring Polanyi on religion in Personal Knowledge *and* Meaning *as mystical, metaphoric, and mythic as well as ritual and belief, I seek to clarify the meaning of the personal through a lens combining postcritical and theopoetic perspectives. Stanley Hopper's theopoetic similarly criticizes, and seeks unconscious depths beneath, modern dualism, deepening Polanyi's discussion of the religious efficacy of figural language. The personal for Polanyi embraces tacit commitment, from-to emergence, communal connectedness, creativity shaping our world, integrating self and world through figural language, process of discovery, and affirmation of God as presence and integrative agency in our existence and understanding. Poteat deepens the personal with effects of first-person-singular grammar. While affirming via negativa, letting go of frameworks, Polanyi insists traditional frameworks are essential to religion. He criticizes modern poetry for shattering Christian frameworks. Not recognizing religion in its fragments, he misses an unrealized potential for understanding religion as the depths of the tacit dimension. Letting go all frameworks, thoughts, rules, and goals in the via negativa, we dwell in mystery within which God presences through evocation of poetic images, and we experience our personhood as elusive selves enveloped in and impelled by divine Mystery.*

Distinctive if not unique among philosophers, Michael Polanyi describes the religious experience of mystical contemplation and explores the nature of religion as a metaphoric and mythic creation. In *Personal Knowledge: Towards a Post-Critical Philosophy*, amid developing his paradigm-shifting philosophy of knowing, especially scientific knowing, he presents a profound description of religion viewed through a postcritical lens. In his final book, *Meaning*, he explores religion as a metaphoric and mythic framework through his postcritical lens and through what I call—drawing on Stanley Hopper—a theopoetic lens.

In the 1970s, Stanley Romaine Hopper introduced *theopoiesis* into theological discourse to shift theology (in Polanyi's language) from a critical to a postcritical understanding: from an intellectual pursuit of an objectivistic logos to a personal participation in *poiesis*, the dimension of our unconscious creating. Through use of the imaginative grasping, shaping, and evocative power of the poetic, poetic moments can make present the divine, enabling theology to go beyond the confines of critical dualism that separates God, world, and humanity. The theopoetical

> *doing* of theology implies *not* one more sortie into the bushes of some manorial *Dogmatik* accompanied by the hounds of the Reformation and the still resonant horns of the medieval *Summas*; the *doing* of theology has to do with evoking the *logos*, with bringing the god to presence (Hopper 1992, 208).

Polanyi has enriched his understanding of religion by exploring metaphor and myth. Connecting Hopper's theopoiesis with Polanyi's postcritical understanding further illumines the use of metaphor in religious thinking and deepens understanding of the agency of religion in the tacit dimension. Using both lenses elaborates the meaning of the word *personal* employed by Polanyi and developed further in a linguistic perspective by William Poteat. Through such a personal lens, I see in Polanyi's life-enhancing presentation of the tacit dimension a religious depth that is a potential not yet articulated in his brief explorations of religion.

Mystical Contemplation

In *Personal Knowledge*, Polanyi describes religion as mystical contemplation. With a poetic intensity amid his predominantly conceptual style of discourse, he speaks ecstatically of such a contemplative act. Ordinarily, we observe and manipulate our experience through a "conceptual framework" that is a "screen between ourselves and these things…which keeps us aloof from them." But, he writes,

> Contemplation dissolves the screen, stops our movement through experience and pours us straight into experience; we cease to handle things and become immersed in them. Contemplation has no ulterior intention or ulterior meaning; in it we cease to deal with things and become absorbed in the inherent quality of our experience, for its own sake. And as we lose ourselves in contemplation, we take on an impersonal life in the objects of our contemplation; while these objects themselves are suffused by a visionary gleam which lends them a new vivid and yet dreamlike reality. It is dreamlike, for it is timeless and without definite spatial location (*PK*, 197).

Contemplation carries us into the dimension of our tacit experience. In all our tacit indwelling, we are *immersed* in the things of reality on the basis of which we perceive, think, and act. Contemplation is a conscious entry into our tacit immersion, letting go of the mind's control: the "mystic seeks to relax the intellectual control" over his perceptual field, which "scans each object…to identify [its] particulars" (*PK*, 197). In our normal conscious lives, the *movement* [is] *through experience* to *handle things*—with words, ideas, and our hands. This is the way we live much of life—moving through, from the past through the present, towards the future focused on particulars. In the act of contemplation, however, we become immersed in the present of our tacit dimension.

We experience our tacit dimension not subsidiarily, depending on it as the means to explicitness, but in itself. What rises into consciousness from our tacit depths is the realm of our indwelling unity with things. We experience ourselves in intimacy with things as we are *in the objects of contemplation*. We take on an *impersonal life* because we are aware of ourselves no longer as separate individuals but as one with these objects. The impersonality is "complete participation," which is "self-abandonment" and not "complete detachment"—both a "visionary act" and a "submergence of his person" (*PK*, 197).

The act of contemplation is *timeless* as we become immersed in the present. As we let go of the whole framework of intelligent understanding, we have a sense, *a visionary gleam*, a *dreamlike* vividness, of us and all things as *divine miracle*, as part of a divine whole, as expressions, *features of God*.

> The whole framework of intelligent understanding, by which he normally appraises his impressions, sinks into abeyance and uncovers a world experienced uncomprehendingly as a divine miracle…. [T]hrough a succession of detachments…[we] seek in absolute ignorance union with Him who is beyond all being and all knowledge. We see things then not focally, but as part of a cosmos, as features of God (*PK*, 197–198).

By letting go of the intelligent framework by which we ordinarily distinguish things, in contemplation we become non-focally aware of our interrelatedness with all the world and of God as a Whole who can be seen in all its parts. "God," Polanyi says, "cannot be observed, any more than truth or beauty can be observed. He exists in the sense that He is to be worshipped and obeyed, but not otherwise; not as a fact—any more than truth, beauty or justice exist as facts. All these, like God, are things which can be apprehended only in serving them" (*PK*, 279).

"[R]elax[ing] the intellectual control" and entering into such mystical moments, we "concentrat[e] on the presence of God, who is beyond all physical appearances." Polanyi calls this "sink[ing] into abeyance" a "breaking out" because "contemplative communion" requires "an elaborate effort of thought, supported by ritual" (*PK*, 197). What the Christian mystic "seeks…is surrender to the love of God, in the hope of gaining His forgiveness and admission to His presence" (*PK*, 198). Divine presence is not observable but "overwhelms and pervades…[and] transforms the worshipper." "[C]loser to sensual abandon than to exact observation…, [m]ystics speak of religious ecstasy in erotic terms…. But religious ecstasy is an articulate passion and resembles sensual abandon only in the surrender achieved by it" (*PK*, 198).

What an amazing religious affirmation of the *via negativa*, an experience beyond words that suspends all words and ideas as we participate in the divine mystery of being. As Polanyi says, this is a "process…known in Christian mysticism as the *via negativa* and the tradition which prescribes it as the only perfect path to God stems from the *Mystic Theology* of the Pseudo-Dionysius" (*PK*, 197). Unfortunately, Polanyi does not explore this gem of a religious statement in its relation to the tacit dimension.

Religion as Ritual in *Personal Knowledge*

The mystic's "contemplative communion" is "supported by ritual" (*PK*, 197). Ritual is a framework that "comprises a sequence of things to be said and gestures to be made" (*PK*, 198), which involve "surrender [that] corresponds" to the mystical letting go of intellectual control. It is "the highest degree of indwelling that is conceivable." "Anyone sincerely saying and doing these things in a place of worship could not fail

to be completely absorbed in them," for they "involve the whole body and alert our whole existence" (*PK*, 198).

Polanyi insists the framework of ritual has clues within it that, rising from the tacit dimension, can inspire faith and the search for God: "I have described Christian religious service as a framework of clues which are apt to induce a passionate search for God. I have spoken of the tacit act of comprehension which originates faith from such clues. The capacity for such skilful religious knowing seems universal, at least in children" (*PK*, 282). By indwelling ritual, "the worshipper accepts the obligation" to strive for God's presence, which is beyond his "unaided powers," in the "hope of a merciful visitation from above" (*PK*, 198).

Indwelling the Christian framework, however, is not enjoyable as are other frameworks because there is an inherent tension in it: "The confession of guilt, the surrender to God's mercy, the prayer for grace, the praise of God, bring about mounting tension." Perfection and satisfaction are not attainable, as the "ritual of worship is expressly designed to induce and sustain this state of anguish, surrender and hope" (*PK*, 198). It is like "the heuristic upsurge which strives to break through the accepted frameworks of thought, guided by intimations of discoveries still beyond our horizon" (*PK*, 199). While this *breaking out* seeks a "casting off the condition of man" (*PK*, 198), that condition is inescapable, "like an obsession with a problem known to be insoluble, which yet follows, against reason, unswervingly, the heuristic command: 'Look at the unknown!'" The Christian framework "permanently satisfies…man's craving for mental dissatisfaction by offering him the comfort of a crucified God" (*PK*, 199).

Having explored religion as the *via negativa* of mystical contemplation and ritual that supports it, Polanyi adds to what he has said of God as presence and the idea of God as a cosmic heuristic field: "We may envisage then a cosmic field which called forth all these centres by offering them a short-lived, limited, hazardous opportunity for making some progress of their own towards an unthinkable consummation. And that is also, I believe, how a Christian is placed when worshipping God" (*PK*, 405). While not a fact or observable entity, God is nevertheless a tacit principle of physical creation, a teleological cause that draws forth all creatures in the evolutionary process. Such causal language for God is a far cry from the language of mystical communion with God, of which Polanyi gives no acknowledgement.

Polanyi's presentation of religion in a postcritical perspective in *Personal Knowledge* explores religion, therefore, in several ways: as mystical contemplation; as ritual supporting mystical contemplation and "partaking devoutly in the religious life" (*PK*, 198); as theological ideas of guilt, forgiveness, and mercy in contemplation and ritual; and as different views of God as the whole in which we participate in contemplation, the presence we strive to experience and obey in ritual, and the teleological principle of creation.

Metaphor and Myth in *Meaning*

While not dealing with religion as such in *The Tacit Dimension*, Polanyi develops further the structure and process of the tacit dimension and thus elaborates on his postcritical perspective in *Meaning*. Our bodily commitments to what is beneath notice, to our tacit awareness, emerge into explicit awareness: attending *from* the tacit *to* the explicit. Our tacit commitments are connections with many things. What is explicit—a perception, a word, an idea, an image—is the result of an emergent process that integrates some elements to which we are tacitly committed, issuing as a *gestalt*, a figure or pattern.

In writing *Meaning* at the end of his life, Polanyi uses this *from/to* structure and process to investigate religion and the imaging of God through the figural language of myth and metaphor. Combining a theopoetic perspective with the postcritical, he shows how metaphor and myth create and grasp meaning.

They move us in our depths to surrender to being moved. They are whole-making by integrating disparate elements in our lives. They show our lives and the whole world to be meaningful, held within a framework of religion. Apart from a framework, however, as with modern poetry that has discarded all frameworks, there is only meaninglessness.

The from/to action of tacit knowing is an integrative activity. All our conscious knowing depends on a tacit organizing of disparate elements into patterns that emerge into consciousness as what is known, whether a thing perceived, a theory thought, a discovery revealed, a machine constructed, or a poem created. Metaphor, Polanyi explains, is an imaginative "integration of incompatible clues into a focal whole" (*M*, 76; see 149, 157). The two parts of a metaphor—I would suggest "wine" and "sea" in Homer's metaphor of the "wine dark sea"—interact (i.e., modify each other) on the tacit level as they are attended subsidiarily *from to* the explicit whole, which is the metaphor itself. Polanyi speaks of this "interaction" (*M*, 75) as both a "bearing upon" and an "embodying": the sea bears upon the wine and is embodied in it (*M*, 151, 78). Using I. A. Richards's explanation of metaphor, Polanyi distinguishes the "tenor" (the subject, the sea) from the "vehicle" (what modifies the subject, the wine): "The tenor bears on the vehicle, but…the vehicle (the focal object) returns back to the tenor (the subsidiary element) and enhances its meaning, so that the tenor [i.e., sea], in addition to bearing on, also becomes embodied in the vehicle [i.e., wine]"[1] (*M*, 78).

Metaphors have "emotionally charged meaning" (*M*, 151) because we ourselves are caught up in them:

> the subsidiary clues—consisting of all those inchoate experiences in our own lives that are related to the two parts of a metaphor—are integrated into the meaning of a tenor and a vehicle as they are related to each other in a focal object (a metaphor). The result is that a metaphor…carries us away, embodies us in itself, and moves us deeply as we surrender ourselves to it (*M*, 79).

A metaphor is therefore an integration of subsidiary parts into an explicit whole but is as well an integration of self, both into that literary whole and within oneself, within one's emotional experience. Metaphors, to one degree or another, integrate the self. Metaphor is then a means to express the self's "basic imaginative capacity for integrating two or more disparate matters into a single novel meaning" (*M*, 79) and a means to "'carry us away.' In surrendering ourselves, we, as selves, are picked up into the meaning of the symbol" and "become *embodied in it*" (*M*, 73; his italics).

In a poem the *from/to* structure is more complex. Not only is it functioning in each metaphor, but the entire complex of meaning, which is the poem, involves a tacit integration of many factors: "the rhythm, rhyme, sound, grammar, and all the other more subtle formal aspects of a poem, along with the several allusions of its parts, all jointly bear on the meaning of the poem" (*M*, 80). And it integrates us:

> [poetic meaning] is not merely established by an integration of subsidiary clues directed *from* the self to a focal object; it is also established by surrendering the diffuse memories and experiences of the self *into* this object, thus giving them a visible embodiment. This visible embodiment serves as a focal point for the integration of these diffuse aspects of the self into a felt unity, a tacit grasp of ourselves as a whole person, in spite of the manifold incompatibilities existing in our lives as lived (*M*, 75).

God of *Personal Knowledge* Revised in *Meaning*

The word "God," viewed now in *Meaning* as metaphoric, functions in the same integrative way as metaphor and poem: "Through our integrative, imaginative efforts we see…[God] as the focal point that fuses into meaning all the incompatibles involved in the practice of religion. But, as in art—only in a more whole and complete way—God also becomes the integration of all the incompatibles in our own lives." The integrative function is now, however, comprehensive. God integrates not only the various elements of religious practice but the entirety of our lives. In defining God as a focal point of integration, Polanyi avoids a "critical" definition of God; "God is thus not a being whose existence can be established in some logical, scientific, or rational way before we engage in our worship of him" (*M*, 156).

This new theopoetic imaging of God as the focal point and integrative energies of the incompatibles of our lives is different from Polanyi's talk of God in *Personal Knowledge* as a cosmic heuristic field drawing forth a gradient of meaning, and as the one whom we strive to obey. While Polanyi continues to speak of a "gradient of meaning" that "is operative in evolution in addition to purely accidental mutation and plain natural selection…[that] somehow evokes ever more meaningful organizations (i.e., boundary conditions) of matter" (*M*, 173), he no longer identifies this as God. He uses it rather to show that "[t]here is no scientific reason why we cannot believe," even for modern sceptics, the "religious hypothesis…that the world is meaningful rather than absurd" (*M*, 179). This opens up the possibility to engage in a kind of religious belief that the world is meaningful.

He does continue in *Meaning* to speak of the *via negativa* as the mystic's contemplative search for the *presence of God*. Detachment from all particulars (presumably cognitive as well as perceptual) *grants union* with God. Through *love of God* the whole world is seen as *miracle*:

> the Christian mystic…seeks a visionary sight lying beyond the intelligent analysis of his surroundings, but by this *via negativa* he seeks the presence of God. Through a series of detachments, he strives for the absolute ignorance of particulars which grants union with him who is beyond all being and all knowledge. In a perfect love of God the world is revealed as a divine miracle (*M*, 128).

He then goes on to connect the divine presence, united within contemplation, with the metaphoric function of fusing disparate elements:

> In the West…the union of incompatibles was first elevated to a general theological principle by Nicholas of Cusa under the influence of the *via negativa* of Pseudo-Dionysius. He called it the *coincidentia oppositorum* and argued that such a *coincidentia oppositorum* was the least imperfect definition of God (*M*, 129).

Religion as Mythic in *Meaning*

Religion is mythic as well as metaphoric. Like "God," myth has the integrative function of fusing incompatibles, opposites, into a whole. The whole, however, is not merely a metaphor or a poem but encompasses the whole of the total cosmos. Myth, like art, is the result of the integrative activity of the imagination. In myth, however, the world as a whole is grasped by selves as they evolve from their subhuman origins. Following Mircea Eliade's discussion of myth, Polanyi sees myth as definitively cosmogonic,

which in its "conception of creation encompasses the *whole* world" (*M*, 124; his italics). What myth presents to its archaic adherents is a meaningful world: "For Eliade the prime value of archaic myth lies in showing the world to be full of great meaning" (*M*, 127–128). In myth an individual experiences "the wonder of our being" but "does not feel shut up in his own mode of existence" (*M*, 128). Rather "the myth of creation makes us aware of a deeper reality" (M, 146); the self experiences its own underlying connectedness with the "cosmic totality" (*M*, 128; Hasumi, x)—with its human community present and past, its culture of thoughts that transcend the individual, and its natural environment. In the midst of all this, the self experiences through myth the mystery of its origins and the potential greatness of its destiny and comes to "feel at home" in the universe (*M*, 147).

The world we come to feel at home in is a sacred world. Following Eliade, Polanyi says the religious occurs in sacred time and sacred space, which are set apart from ordinary profane existence (cf. *M*, 81, 85, 87, 124–130, 147–150, 179–180). Picking up the point from I. A. Richards's talking about the way an artwork is separated from the ordinary by a frame, Polanyi insists that religious meaning requires "detachment" from the ordinary ruck of our existence, which is what he takes Eliade to mean in separating sacred and profane. While focusing on the framework of ceremonial occurrences evocative of the sacred among archaic people in Eliade, Polanyi does not explore Eliade's talk of hierophanies, individual experiences of the sacred. While Polanyi could explore mystical moments as hierophanies, he only explores the metaphoric function of integrating incompatible elements in the framework of mythic ritual.

Separating sacred and profane, as Eliade does and Polanyi accepts, is an unfortunate assertion of a dualism—not that there isn't a distinction, but the sacred is present in profane life. Ordinary life is called profane when its sacrality is not acknowledged; when recognized, it is called sacred. In not mentioning individual hierophanies and in accepting Eliade's dualism, Polanyi is focused rather on the indispensability of ritual frameworks to experience the sacred.

Nevertheless, Polanyi's use of his postcritical lens to show the tacit-explicit emergent integrative process in the poetic realm of metaphor and myth contributes significantly to understanding the religious importance of the tacit dimension as it reveals a *deeper reality* amid our interconnectedness with all of being in which we come to *feel at home* in the universe.

Polanyi and Hopper

Polanyi's engagement with the poetic forms of myth and metaphor exhibits Hopper's three steps in *theopoiesis*: the step back, the step down, and the step through. The first step, *back*, recognizes the problem with objectivism and allows the dualistic system of modernity to crumble. The second step, *down*, is the dissolution of the rigid ego boundaries of the Western self. The third step, *through*, is experiencing God "coming to presence" (Hopper 1992, 297) through the power of the poetic word. Polanyi similarly attacks modern dualism and, with the subsidiary self, dissolves the modern self as rigid ego. Polanyi exhibits the third step with his "contact with reality" (*PK*, 5–6) as "ecstatic vision" and "contemplative communion" through which we let go of all intellectual control to "live in" and "become immersed in" the divine presence.

In this third step, however, Hopper is awaiting divine presence without framework, since none from the modern West works any longer. Not only has the objectivistic system shattered, but the meaning he seeks does not lie in frameworks:

What we are confronted with today is the problematic of the radical revisioning of our way of seeing and thinking. The traditional symbol systems have been sprung: the classical metaphysical model for talking about "God" and the manifold of our experience is no longer our "house of being." We are shorn and bereft of these plain and comfortable perquisites. It is not even a question as to whether we can come up with a theology "in a new key"; it is a question rather as to whether theology, insofar as it retains methodological fealty to traditional modes, is any longer viable at all (Hopper 1992, 207).

Similarly immersed in divine presence, while for Polanyi forms and traditional frameworks are of compelling interest, Hopper sees them as having become the objects of commitment rather than putting us in touch with the realities they purport to express. The experience of the divine as Presence, Logos, Being in its sustaining and integrating mystery, not the frameworks that have shattered, is the center of religion and the basis of our religious sense that self and world are ultimately meaningful. Using Polanyi's words, we lose our tacit grasp on the reality the form is intended to manifest; we no longer attend from our contact with divine reality through the framework but rather focus explicitly on the framework. Letting go of all frames—as in the *via negativa*—Hopper descends into the depths to contact afresh the reality of divine mystery. These experiences as episodic revelations are precipitated through metaphor. They open out to the world as they inhere in a community of lived coherence and presuppose a linguistic community, a poetic culture, and a network of commitments to teachers, words, interpretation, and reality.

Necessity of Religious Framework for Polanyi in *Meaning*

Using a postcritical lens, Polanyi explores religion in *Personal Knowledge* as depth experience of mystical contemplation, ritual practice, conceptual belief, and ethical action. In *Meaning*, combining with the postcritical a theopoetic lens, he looks at religion as a tacit emergent phenomenon of imaginative meaning fusing incompatibles. Religion is located in the figurative, integrative, emergent language of metaphor and myth, and in God it is redefined as a focus of metaphoric fusion and presence. In his longer exploration of religion in *Meaning*, he continues to speak of the mystical *via negativa* in the same words and elaborates on ritual using Mircea Eliade. He makes clearer his insistence on the necessity of a framework as essential to religious meaning, obviously thinking of the scientific framework as essential to scientific discovery. He insists that religion is a coherent framework, that our life to be meaningful requires just such an articulate framework, and that this framework must be, moreover, a traditional one: "Subjects that lie deepest in our existence are most fitly recalled in traditionally recurrent forms, since an 'established' way of doing so expresses our affiliation to a comprehensive and lasting framework much better than a form we simply improvise for the occasion" (*M*, 118). He then goes on to say not only that traditional frameworks best express the deepest in our existence but also that only through them are our life and death given meaning:

> The destruction of formal occasion in the name of authenticity has the effect of diffusing our existence into scattered details, deprived of memorable meaning. Only through our surrender to such occasions do we find ourselves affiliated to a comprehensive, lasting framework which gives meaning to our life and death and to the myriads of separable events in between (*M*, 119).

There is an inherent political conservatism in this insistence on traditional frameworks, which he admits: "no matter how liberal a free society may be, it is also profoundly conservative" (*PK*, 244). He acknowledges that the coercive power of the state is used both to support "universities, churches, academies, law courts, newspapers, political parties" and to "guard the wealth of the landowners and capitalists" (*PK*, 245). He opposes "radical action towards the establishment of justice and brotherhood." While recognizing injustice, he insists that "[u]njust privileges prevailing in a free society can be reduced only by carefully graded stages; those who would demolish them overnight would erect greater injustices in their place" (*PK*, 245). He is obviously writing from his experience of the disastrous Russian Revolution and its spread into Hungary.

"Radical action" for him means violent overthrow of liberal government. But what of nonviolent radical action within liberal society that seeks to eliminate the oppressive frameworks of sexism, white supremacy, militarism? These are frameworks within our so-called free society. While the democratic institutions of free society should be activated rather than demolished, these oppressive systems need to be demolished. All too often, "carefully graded stages" in traditional frameworks has meant *do nothing, or not enough*.

Finding the source of meaning and creativity deeper than frameworks, however, can issue in radical nonviolent social transformations. If Polanyi had located the religious in the tacit dimension and integrative powers of *poiesis*, not constrained by an articulate framework, he could have affirmed the possibility of the transformation of society by new explicit constellations of social life emerging from *improvise*[d] *occasion*[s] integrating disparate elements in people's lives—like a discovery or a poem rising to consciousness. *Theopoiesis*, through its metaphoric power of fusing disparate elements and evoking divine mystery in the depths of our tacit lived existence, from which we live and create, can reorient our world by helping us let go of traditional oppressive frameworks and allow new patterns of fitting relations with selves and the natural world to emerge from the tacit dimension. Religion grounded in the tacit dimension can become a means for political and cultural transformation.

Modern Poetry as a *Meaningless Heap* in *Meaning*

Polanyi's examination of modern poetry, however unwittingly, exhibits the limits of how far he has developed his combined lens towards, and where he stops short of, the fullness of the personal. He insists on defining religion in terms of explicit traditional frameworks, in terms of myth and ritual, as indispensable to religious thought and practice. While obviously one of the ordinary and important ways of defining religion, upheld through personal commitment and personally meaningful to him and many others, there are clues in his extraordinary transformative conception of the tacit dimension that he has not plumbed: religion as the mysterious depths of the tacit dimension that are experienced in the *via negativa* and underlie all religious thought and action (actually all thought and action).

While he sees the traditional religious framework of Christianity as forever shattered in visionary art, Polanyi is able to affirm in it, however, a universal meaning on the feeling level:

> Visionary art has shown us that it is…possible for our imagination to integrate these incompatible elements into a meaning—a meaning that cannot be expressed in any set of coherent, explicit statements, a meaning that is born and remains at the level of feeling but which is nonetheless a genuinely universal personal meaning and not merely a subjectively personal meaning (*M*, 159).

Nevertheless, he concludes that the *universal personal meaning…remains at the level of feeling*, lacking a narrative framework, and therefore presents the world as meaningless: "unlike the contents of a work of visionary art, the contents of a religion will have as their import the story of a fundamentally *meaningful* world, whereas the import of a work of visionary art is rather that the world is a meaningless heap of inchoate things" (*M*, 159). He elaborates further on the feeling-impact but meaninglessness of visionary art, such as modern poetry:

> Because painters and poets condemned the world as absurd, they represented it as a heap of fragments. But because they were artists, their vision brought this supposedly dead pile to life in their works of art! These artists thus preserved the honor of their nihilistic protest by cutting the world to pieces; but they inadvertently triumphed over this destruction of meaning in our social life by evoking in this rubbish meaningful images never witnessed before. This triumph at once crowned the artists as creators of meaningful visions and succeeded in allowing them, in their own minds, to leave the "pile" there as an expression of protest against the chaotic conditions of the age (*M*, 115–116).

We hear in these passages the voice of the scientist committed to meaning as conceptual framework, indispensable to the work and sustained, as he insists, by the tacit dimension. We hear as well a scientist's persistent corrective of modernity's dualistic understanding of the world, as he affirms the world's meaningfulness. And we hear a scientist affirming the truth of various mythic stories in biblical accounts, even when their "representational content" is not factually true, because they present our lives and world as meaningful. For those for whom the lack of factual truth is "one of the serious stumbling blocks to the acceptance of religion in our day,"

> we see in the creation stories, the miraculous-birth stories, the Crucifixion and Resurrection stories a meaning expressing the whole significance of life and the universe in genuine and universal feeling terms. Then we can say: It does not matter. If not this story exactly, then *something like this* is somehow true—in fact, is somehow the highest truth about all things (*M*, 159; his italics).

By embracing religion as mythic, he does not require religion to have the conceptual veracity of a scientific system but more loosely only the "plausibility" of "import":

> if we can regard religious myth as plausible, the sort of world that religious myth represents—a meaningful world—must be thought by us to be plausible. We must be able to say: If not this story exactly, then *something like this* story is how all things are put together. In other words, it must be plausible to us to suppose that the universe is, in the end, meaningful (*M*, 159–160; his italics).

The world is meaningful. The Bible affirms this. The miracles and myths are true, even when not factually true, because the import of the biblical narrative framework is that the world is meaningful.

Meaningfulness in Modern Poetry's Fragments

In science, the meaning of the world is held within frameworks of understanding and practice. Polanyi applies this same pattern to religion: frameworks are essential, sustained by the tacit dimension. Yet I would say, using Polanyi's own crucial insights, that religious efforts at comprehending the meaningfulness of the world rest on the ultimate meaning we *know* through our indwelling and experiencing the mystery of being but cannot *tell*—as in the *via negativa*—not in the frameworks we can *tell*. By looking through combined postcritical and theopoetic lenses at the tacit dimension, rather than at tacitly sustained religious frameworks, we can make religious sense of the fragments in modern poetry and in our everyday existence. Locating religion fundamentally in the mysterious depths of the tacit dimension of our being in the world, which stories can present and poetry can evoke, we have a deepening of the meaning of the personal upholding the frameworks and the forms in our lives.

Modern poets are attacking the same thing Polanyi is: the objectivistic framework of Western thought. For them the traditional framework of modernity includes Christian thought and practice, which they see as forever shattered. Amid the shards of Christianity seen by them as a Cartesian-infused and mythic system, they look for meaning in the everydayness of our bodily being in the world. The everyday does not lack all coherence, but it has a *lived* rather than an intellectually comprehensive coherence. While Polanyi insists that the world is meaningful, this conclusion leaves unanswered the deeper question of the personal— whether my life in this world is meaningful. In our daily living, whether in perception of ordinary things emerging from tacit awareness or in a moment of mystical contemplation, we can find a fullness of meaning through the tacit metaphoric integrations of a multitude of incompatible ingredients incarnate with divine mystery—if we are open to the depths of our own tacit dimension.

Consider Polanyi's example of modern poems as *a meaningless heap of inchoate things*: Ezra Pound's famous poem "In a Station of the Metro":

> The apparition of these faces in the crowd,
> Petals on a wet, black bough.

Polanyi calls this an "expression of fragmentation, which refuses to accord any meaning to our modern world" (*M*, 77; Pound 1928, 89).

While Polanyi affirms the meaningfulness of *the level of feeling* that is a *genuinely universal personal meaning*, he stops short of embracing this as definitive in itself of religion because religion must have an explicit structure of myth and ritual, a *story of a fundamentally meaningful world*. While mystical contemplation, obvious in how he describes it, has this level of feelingful universal personal meaning he sees in visionary art, he will not accord fragmented modern poems with the religious meaning he experiences in contemplation. While the framework is let go in contemplation, rather than being shattered as it is for these poets, he is unable to see the sacredness of this heap of things as features of God.

While this Pound poem makes no reference to God, has no hint of traditional religious matter, and has no framework holding together the images in the two lines, it sees faces in a crowd and petals in their *thereness*, their *suchness*. It performs the metaphoric integrative process Polanyi has just talked about—seeing faces as petals. One of the great religious questions in my experience, I found in Tillich, is: Why is there something rather than nothing? Here are two things, faces and petals. To see beyond their facticity to wonder that they are is to experience the mystery of being. To yoke together faces as petals, and petals as

faces—integrating incompatibles arising from the tacit dimension—can draw forth wonder at our being. Naming and conjoining faces and petals, ordinary things rather than objects of contemplation, take on the aura of *beingness*—and affirmation of growth and beauty. "Petals" are flowers in a stage of growth which bring aesthetic pleasure. Faces as petals suggest the appearance of humans as beautiful and in a transient moment of growth.

The poem does not suggest there is something sacred about them, but they are seen without any framework as *suffused by a visionary gleam which lends them a new vivid…reality* in the simplicity of their sheer being and beauty and in their connectedness with each other grasped through the metaphoric process. I would not call them "dreamlike," as in contemplation, but Pound is presenting them in their vividness.

In modern poets—T. S. Eliot, Wallace Stevens, H.D., William Carlos Williams—we see that the traditional frameworks of modernity and Christianity have been shattered. For some the traditional Christian symbols, though broken, as Tillich would say, are recovered. But for all, whether using traditional symbols or not, they are seeking beneath all systematic thought the evocation of mystery in the particulars of our personal lives through metaphoric fusions that manifest mystery and create a felt wholeness of self dwelling in a meaningful world of lived coherences without dedication to a conceptual framework. While Polanyi is explicitly wed to the important view of religion as explicit framework sustained by the tacit dimension within which mystical contemplation can occur, there is a fruitfulness in his postcritical perspective that he himself did not discern and that can deepen his presentation of the personal—which, of course, fits his understanding of the nature of creative discoveries: that their significance extends beyond what their discoverers recognize. What matters ultimately in a religious sense is the mattering of mystery, the coming to the presence of the divine: in a person, a thing, a word, an event, *or* (but not only) a framework.

While they always have a penchant for becoming idolatrous objects, losing religious depth in calling attention to themselves, they can be filled with presence, again and again. God can come consciously to presence not only within poetic metaphor, as Hopper has so richly shown, but also within ritualized memory and reenactment of a revelatory event in an explicit comprehensive framework, as Polanyi has shown. And as modern poets show, divine presencing can occur as well within any artifact, any place or time, the texture of interwoven lives, and a sensing of the wholeness of being.

Religious Potential in the Tacit Dimension: Trust and Mystery

While religion can inhere in frameworks and in moments of experience, the tacit dimension is inherently religious, even though Polanyi does not explore it as such. All our knowing and our very being are dependent on tacit indwelling, which involves commitment. Insofar as our being depends ultimately on such commitment, such faith, it is religious. Such commitment is not conscious decision but is the exercise of our tacit agency given in our very being. Nor is it directed toward a god or a dogmatic belief or a written text but embraces that which is unknowable. Tacit commitment is a matter of existential trust beneath all knowing, without which we could not know or be. While we can specify various things we trust—the earth we walk on, the language we speak, our bodies' skills, what our teachers have taught us, our intellectual abilities, the clues we followed in making a discovery, the general reliability of other people—there is beneath these in every tacit commitment a trust in ineffable being, ours and the world's. We live and know by faith.

The tacit dimension is inherently religious, not only because it is a realm of faith (as trust) but also because, as the basis beyond all explicit knowing and control of our existing, knowing, and doing, it is a realm of mystery. The religious is the ultimate depth of mystery in our tacit dimension. We have to trust

this tacit mystery in order to be. It underlies our lives as selves in our fundamental identity, connectedness, origins and endings, openings to ultimate understanding, and transformation and integration of new life. Even if we spend much of our lives trying to ignore or control it, it is forever beyond our knowing and controlling.

As tacit, the religious is the mysterious background of my personal being in the world, which I "know" primordially by being in it, committed to it, depending on it, and subsidiarily attending from it. Reality has many aspects, each articulated on the basis of tacit indwelling, whether political, scientific, or cultural. The deeper potential of the religious in postcritical perspective is, therefore, those aspects of faith and mystery in the tacit dimension. As faith, the religious is present in every tacit activity as existential trust. As mystery, the religious is known on different levels in a diversity of ways: tacitly—as the dimension of depth in the mystery of being selves in the world; and explicitly—as a pervasive sense of being (a sense of presence, fullness, wholeness, wonder, or dread), the felt texture of communal connectedness (the sacrality and love in interpersonal being), distinguishable moments of experience (a hierophany), and a figural aspect of something (the symbolic reality of sculpture, cathedral, poem, dance, artifact).

This mystery of being lies deeper than the experience of a meaningful world seen as a whole and as features of God, and deeper than the integrative work of myth and metaphor, because it underlies conscious recognition of communion with the world and union with God, and all our linguistic activity. The *via negativa*, which Polanyi embraces, is a letting go of all frameworks—perceptual, intellectual, ritual, ethical—as descent into, surrender to, Mystery. Ritual can elicit such immersion, but immersion can also happen in one's individual ordinary life and in individual meditation. In his profound discussion of mystical contemplation, Polanyi will not rest in unknowable, uncontrollable, ineffable Mystery, which the *via negativa* does, say, in the writings of Meister Eckhart. It rises for Polanyi, however, immediately—wonderfully so—to a conscious pattern of us as part of the whole of being and of it as divine, features of God. It is this presence of Mystery in the depths of our tacit dimension, beneath all the forms of thought and ritual, that I am seeing as the potential for naming something still deeper in the tacit dimension as religious.

For this underlying primordial reality, I would use the name "God" for that which I trust, knowingly or not, in order to be; that which I am committed to and rely on as background of all my interconnectedness with being; and that which I sense as Presence. While Polanyi, aligning himself with Tillich, does speak sparingly of God in terms of mystery and depth, and of divine presence, he could develop these clues into a more cohesive postcritical way of understanding and speaking of God and religion.[2]

Inherent Tension in the Christian Framework

Polanyi makes clear that there is an *inherent tension* in the Christian framework (*PK*, 198–199). Yet no such tension exists in the *via negativa*. It is his traditional understanding of the Christian framework as *teleological* and *deontological* that causes the tension (to use Niebuhr's words for the major traditions in Christianity of striving for a goal or obeying a rule; see Niebuhr 1963, 132-136). When he speaks of *striving* towards God and *obeying* God, forgiveness and mercy, engaging in communal ritual, Polanyi is using explicit principles and practices that have emerged from and are sustained by the integrative power of the tacit dimension. However real in his and most (but not all) Christians' experience, they are part of the framework, arisen to be sure from the tacit dimension but not inherent in the divine mystery in the tacit dimension.

The *via negativa* in Polanyi's profound affirmation lies deeper than thinking and willing. These are suspended, as he says, when *sink[ing] into abeyance*. Yet he speaks in a deontological and teleological manner of an *obligation* to strive, "to seek in absolute ignorance union with Him" (*PK*, 198). He aims at a goal, "gaining his forgiveness and admission to His presence" (*PK*, 198), a monarchic metaphor of dualistic separation in traditional Christianity. He even seeks the impossibility of "casting off the condition of man" (*PK*, 198), inscribing a dualism of self and God.

He contradicts his *sink[ing] into abeyance* when he says an act of contemplation involves *an elaborate effort of thought*. It is a *breaking out* that focuses on God rather than on things. While it may in fact take a struggle to enter the contemplative mystic dark, it is done, rather, by letting go of one's grip on ideas, obligations, and goals—yes, a *sinking*—not by thinking and willing. We cannot let go of thinking by thinking. We cannot let go of willing by willing. Unintentionally, it would seem, Polanyi is expressing a *critical* dualism of God and world. The tacit dimension is a depth metaphor, yet he speaks of encountering God as a "visitation from above" (*PK*, 198). If in mystic contemplation, all things can be seen as features of God, then we do not shift our focus from the world to God but attend to God in the world. That is what modern poets are doing as they find Reality in the particulars of the world, whether using transformed Christian symbols or not.

The contemplative vision of oneness involves apprehension, yet he speaks of it as obedience, which lies on the level of framework. God, Polanyi says—like truth, beauty, and justice—is *apprehended only in serving them*. While serving can be obeying—or simply flowing from love—apprehension is awareness not obedience. How am I obeying when experiencing all things miraculously as features of God? What then is obedience? If it is adhering to God's commands in scripture, to the discipline of ritual practice, or to divine directives experienced in a contemplative moment (as in the experiences of Moses, Elijah, Jesus, and Paul), that would be following explicit written words, patterns of actions, or emergent insights. In any of these cases, obedience may be flowing from a contemplative moment, but they are not moments of *detachment* in *absolute ignorance*.

With Polanyi's enthusiastic description of the contemplative moment and commitment to serving and worshipping God, I believe we have a profound affirmation of his own experience at the different levels of the tacit dimension in the *via negativa* and the teleological and ontological frameworks of ritual practice, ethical principles, and doctrinal beliefs. What I am suggesting, however, is that the combined postcritical and theopoetic lenses take us into the depths of the tacit dimension, revealing the presence of *the personal* dwelling in the divine presence.

On the *Personal*: Polanyi and Poteat

Polanyi has gone far towards imagining a fully personal perspective on religion by combining a theopoetic perspective in his last book with his already redolent postcritical perspective. The meaning of personal in *Personal Knowledge* and *The Tacit Dimension* is elaborated in the tacit dimension and commitments, from/ to emergence, communal connectedness, creativity shaping the world we live in, integrating self and world through figural language, discovery of the new, affirmation of God as presence, and integrative agency in our existence and understanding.

Embracing mystical contemplation of the *via negativa* takes us into a level of feeling in our personal depths. Insisting on the framework of ritual, and its verbal theological ingredients, as enabling and extending mystical experiences presents ritual as the habitation, sustenance, and provocation of personal agency. In *Meaning*, Polanyi enriches understanding of the personal in religion by exploring the further reaches of

personal creativity as we shape meaning of our being in the world through metaphor and myth. Imaging God becomes more personal as Polanyi lets go of God as teleological cause. He combines his thoughts of mystical experience with the integrative activity of persons in myth and metaphor, enacted from one's own individual and social perspectives.

All of what he says about religion as mystical, metaphoric, and mythic is his philosophical attempt to fulfill his commitment to express his own beliefs underlying his thoughts, as he says in *Personal Knowledge:*

> I believe that the function of philosophic reflection consists in bringing to light and affirm-ing as my own, the beliefs implied in such of my thoughts and practices as I believe to be valid; that I must aim at discovering what I truly believe in and at formulating the convic-tions which I find myself holding; that I must conquer my self-doubt, so as to retain a firm hold on this programme of self-identification (*PK*, 267).

While his description of mystical contemplation is obviously from his own experience, he does not speak personally of it, in the first-person singular—of what *I truly believe*—but mostly in the third person with a few uses of the first-person plural. The *via negativa*, for example, is what it is for people in the tradi-tion of Dionysius the Pseudo-Areopagite. As William Poteat has argued, however, something more of the personal—our personal backing—shows itself when we speak in the first-person singular. When I speak in the first-person singular, I show my relation to myself, the way the self that I am is present in my speaking, and the way I am relating to the subject matter of my speech:

> "I" always functions reflexively. It not only calls the attention of the hearers to a particular about which something is being said, it refers reflexively for the speaker to his own activity of speaking, and this is not logically on all fours with *what* is being said (Poteat 1969, 133; his italics).

The reflexive self in its *own activity of speaking* stands *behind* what it says and stands *in* how it uses words in multiple ways:

> Our personal backing is behind our acts and our uttered words in many different ways. Sometimes we mean what we do and say, and saying is what we have done; sometimes we mean them, but not quite; sometimes we believe we mean them and are taken to mean them, but if we are asked, we are not sure; sometimes we don't mean them at all—and say so, with our eyes; sometimes we don't mean and don't by any means say. And it is difficult, now that you think about it, to say what exactly it is to say (Poteat 1968, 211).

This first-person action is essential, as well, to myth as imaging creation and eschaton. I "*indwell, give my personal backing* to the radical beginnings and endings" that myth provides beyond my own life story I can tell (Poteat 1968, 229; his italics). So in ordinary talk and mythic speech, we give our backing (intend some meaning, whether conscious or not), in some way or another, to what is said.

At the end of his essay on "Myth," Poteat quotes a passage from Sören Kierkegaard that expresses this reflexiveness in the self that I have always loved since encountering it in college: "'By relating itself to its own self and by willing to be itself, the self is grounded transparently in the Power which constituted it.' And this formula again, as has often been noted, is the definition of faith" (Poteat 1968, 230, n. 21;

Kierkegaard 1941, 216). This self-reflexiveness is manifest, though not said, in first-person-singular speech. It lies beneath all frameworks, all words, all ideas. I am *grounded transparently* in the divine creative *Power*. This is the ground from which I enact my personal backing of my words, acts, beliefs. While *transparent*, it is mysterious, beneath seeing and saying. It is the realm of the elusive self inhabiting the mystery of being. Poteat speaks of the uncatchable elusiveness of the self:

> "I" is a logically extended concept since what it names over and above what may be stated in and hence known by means of reports upon behavior or dispositions to behavior systematically eludes, at any given level of reporting, incorporation into the reports of that level…. [This is] systematically elusive, but elusive of this kind of public discourse only, not completely elusive of my awareness (Poteat 1969, 130–131).

Kierkegaard does not include our interrelatedness with other persons and with the natural world in our self-relatedness to self and God, while Polanyi and Poteat do—Polanyi in his tacit bodily indwelling of the world and visionary gleam of the whole as features of God, and Poteat as speaking always in a dialogical relationship of my "I" to another "I," which is always in a concrete *place*, not abstract *space* (see Poteat 1993, 23–42). This interrelatedness dynamic is in the depths of the tacit dimension beyond knowing, in the Mystery of being. I find in this interrelatedness in Mystery, the habitation of my elusive self, the locus of religion in its deepest sense, potential but not elaborated by either Polanyi or Poteat. Beneath all frames and forms, all words and ideas, all myths, metaphors, rituals, and the linguistic level of first-person reflexivity, I am participating in the present moment in this mysterious dynamic of being, whether present to it and aware of it or not. Here is where I find potential for a deeper way of thinking of God, doing theology, how to enter mystical moments, and the way of a spiritually open life in the world.

What is very hard for us, born in the Enlightenment—as Poteat was wont to remark—is to speak of what we experience in this realm in the first-person singular. This is what Polanyi meant by discovering and saying what beliefs underlie his thinking, while *conquer*[ing] *my self-doubt*. This is what Poteat's talk of speaking in the first person is pointing to. Yet our critical mind rebels, while our postcritical mindbody beckons.

Polanyi has not owned the mystical vision as his own. Poteat has not shared publicly what he discerns in his first-person reflexivity of his experience of the Power. It is obvious that the way Polanyi speaks of mystical contemplation is his own experience. Early in his career, Poteat does speak personally of Christ incarnate in his own experience: "Christ is known only in my own existence—in my enactment of myself…the real thing, the *Incarnation itself*, just right here within the very act of existing which is myself!" (Poteat 1993, 107–1083; his italics).[3] While this is a powerful and moving affirmation, he could have shared with us more personally, in the first person, what this experience was for him of Christ within himself beyond his ecstatic declaration that his mindbody is incarnate with Christ.

In his last book, *Recovering the Ground: Critical Exercises in Recollection*, Poteat moves away from affirming the intimacy of *indwelling* to affirm that God and self exist in a less intimate way of *relationship*. He speaks repeatedly St. Paul's words of that "in which I live and move and have my being" (Poteat 1994, 23, and fourteen other places) but has moved away from talk of divine indwelling, such as Christ in me. For Paul it is God as that in which we live and move and have our being (Acts 17:28); for Poteat it is the world. While he says "the ground of our mindbodies [is] in the good creation," God is not the ground of self and world but is rather the Reality we are "in a covenant with" that has "made us into transcendent spirits…in

speech exchanged": "the God in speaking with whom our transcendence…[of] our unique acts of speech… was accomplished" (Poteat 1994, 123). We stand *before* God not *in* God, nor God *in* us. Speaking of one of his mentors, he says, "Niebuhr and I have shifted away from the ground upon which dualism arose and has thriven by taking our stand upon the self before God" (Poteat 1994, 123; cf. 121–128).[4] While our mindbodies are grounded *in the good* creation, they are the ground of all meaning: "Our sentient, motile and oriented mindbodies in the world…are the ground of all meaning and meaning discernment, whence all reflection derives" (Poteat 1994, xiii; emphasis added).

What however is the ground of the mindbody? Polanyi speaks of mystical uniting with divine Presence through the integrative creativity of the tacit dimension. Poteat repeatedly refers to St. Paul's "I live and move and have my being," but it is in the world, not in God. I am suggesting that my mindbody, your mindbody, and the worldbody we grasp and shape through the emergent tacit integrative creativity are grounded in the Mystery we inhabit. Through this personal lens, combining postcritical and theopoetic, we become aware of the dynamic inter-responsiveness of my self relating with myself, relating with other persons, relating with all of being, and relating with the Power that is constituting me.

The personal is the deepest reaches of the self within my self, within the net of being, and within the Mystery (I call divine, and even God)—while as I am within it, it is within me. Using metaphor and metaphoric creations (myth, story, anecdote, witness, pillow colloquies) in the first-person singular, I manifest the Mystery in the depths of my tacit dimension as I take it up and dwell within it as this person I am. Religious thinking, acting, and being are reflecting such indwelling as they bend back upon Mystery in my mindbody in the world. Uniting the postcritical and theopoetic, sustained and enacted by the tacit dimension in the first-person singular, I intend (speaking personally, beginning to do what I am advocating) to think, write, and be—and show forth myself as—a person, aware of, attending to, being directed by, embracing ("willing to be itself" in Kierkegaard's words), and expressing the mindbodily elusive self I am as *grounded transparently in the Power*.

ENDNOTES

[1]In explaining how metaphors "can *move* us so greatly—can carry us away" (*M*, 76; his italics), Polanyi uses I. A. Richards's distinction between tenor and vehicle. I have always found Richards's use of these particular words confusing for distinguishing subject (tenor) from its modifier (vehicle). Polanyi affirms an "'interaction' view" (*M*, 75) and shows how the two terms in tension (in my example "sea" and "wine") that make up the metaphor are the result of the integrative work of disparate elements in the tacit dimension. The focal object is the metaphor in which tenor and vehicle are related: "a tenor and a vehicle are…related to each other in a focal object (a metaphor)" (*M*, 79). We are *carried away* because "all those inchoate experiences in our own lives that are related to the two parts of a metaphor—are integrated into the meaning of a tenor and a vehicle" (*M*, 79).

It gets confusing when he speaks of the focal object not only as the metaphor but also as the vehicle—"the vehicle (the focal object)"—and the tenor as "the subsidiary element" (*M*, 78). This would mean that the vehicle is explicit and the tenor is tacit. But he presents both vehicle and tenor as the two explicit parts of the focal metaphor into which all our inchoate experiences are tacitly integrated. So what is interactionist in Polanyi's understanding of metaphor? The interaction Polanyi has in mind may be the two explicit parts, tenor and vehicle, conjoined in the metaphor. It may be the tacit and explicit interacting, as when he speaks of subsidiary tenor and focal vehicle. It may be all the inchoate elements interacting as they are being integrated into the two parts. Most likely, it is all of these—certainly the interaction on the tacit level and their appearing integrated on the explicit level. He does affirm that the tenor both bears upon and is embodied in the vehicle. Does the vehicle reciprocally bear upon and embody the tenor? Are these bearing and embodying tacit or explicit, or both? Are tenor and vehicle interacting with each other, or is it a one-way street of the tenor relating to the vehicle?

I find a clearer postcritical viewing of metaphor in Charles Feidelson's *Symbolism and American Literature*. Feidelson knows nothing of Polanyi. Correcting the imbalance in Richards, which Polanyi is following, Feidelson shows how each term in a

metaphor modifies the other. His example is Andrew Marvel's "the iron gates of life" in which the two terms "iron gates" and "life" generate the power of the metaphor by interacting with each other. In Richards's language, but making it mutually interactive, Feidelson says that both terms in their interactive togetherness become both tenor and vehicle. This interactionist view

> establishes the idea of life *under the aspect of* iron gates, and of iron gates under the aspect of life…. From this stand-point, both the similarities and the differences between tenor and vehicle become irrelevant. If the two terms are seen under the aspect of each other, the *real* tenor is a meaning produced by the interaction of the two terms, which together form the vehicle (Feidelson, 60).

Feidelson is criticizing Aristotle's classical definition of metaphor. Aristotle thinks in terms of class logic: a metaphor combines terms from two classes. They are "atomistic words" that resemble one another when seen as subclasses of a larger class: "The terms retain their logical discreteness, and the metaphor is only a conventional device for summarizing a logical relationship, founded ultimately on resemblance between things" (Feidelson, 59). Feidelson is more postcritical than Polanyi on the nature of metaphor in his clearer presentation of the interaction of the two terms: they are seen as mutually illuming the other, each experienced under the aspect of the other. While Feidelson does not have the concept of the tacit dimension, this interaction is clearly occurring through integrative activity beneath explicit consciousness as created by a poet and received by a reader.

[2]See *PK*, 283, n. 1, also 6, 199, 202, and Eliade in *M*, 126, 128, 146–147, 155–156.

[3]See R. Melvin Keiser, "Toward a Post-Critical Theology"; Cannon and Hall, *Recovering the Personal*, 137–138.

[4]While Niebuhr may somewhere use this neo-orthodox phrase, "before God," his theoethics of responsibility is centered in responsiveness to God acting on him within his inward relatedness with the world in every moment, and is therefore the ground of his personal being (see Niebuhr 1963, 122–126).

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THE DEVELOPMENT OF PEDAGOGICAL COMPETENCE IN TACIT KNOWING: TOWARDS A POLANYIAN FRAMEWORK FOR THE EMPIRICAL ANALYSIS OF COMPETENCE DEVELOPMENT

Clemens Wieser

ABSTRACT

Polanyi's theory of personal knowledge provides a paradigmatic conceptual framework for the empirical analysis of tacit knowing and learning. We use this framework to analyze the development of pedagogical competence. Drawing on Polanyi, we regard pedagogical competence as a particular field of professional tacit knowing that relates subsidiary and focal awareness of events in class, effects situated appraisal, and relates events to teaching intentions. The development of pedagogical competence takes place when a teacher struggles to relate teaching intentions to ongoing events in tacit knowing and engages in situated experimentation. Based on Polanyi's conception of subsidiary awareness, focal awareness, and appraisal, we present an empirical vignette from a case study. In it, a teacher engages in situated experimentation to resolve two opposing semantic fields in class: an intended field of interaction, which focuses on the lesson topic, and the field of student peer relations. Based on our analysis, we argue that the teacher's competence development is focused on the educative task of managing students' peer culture, while the teacher's focal awareness remains on the didactical task of teaching a subject.

The Development of Pedagogical Competence in Tacit Knowing

Polanyi's theory of tacit knowing makes it possible to perform an empirical analysis of pedagogical competence, and competence development, because it provides a framework for the interpretation of tacit knowing in teaching situations. Based on Polanyi's theory, we argue that teachers rely on subsidiary awareness to guide their attention in interaction and that they shift their focal awareness to evaluate and relate to meanings expressed by students. Furthermore, we argue that shifts in focal awareness initiate the development of pedagogical competence, which we define, with reference to Dreyfus (2008), as the ability to teach "involvedly and intuitively" without having to make "detached choices for action." In contrast to positivist attempts to reduce competence to explicit knowledge, we endorse Polanyi's conception of competence,

"which authorizes a fiduciary choice made and timed, to the best of the acting person's ability, as a deliberate yet necessary choice" (*PK*, 332). From a Polanyian perspective, competence is a state in which teachers use their awareness to appraise a pedagogical situation, recognize a unique set of cues in this situation, and relate these cues to their teaching intention. Polanyi argues that competence relies on personal participation, which can only be rational to a certain extent because "all knowledge is either tacit or rooted in tacit knowledge" (*TD*, 24), which means that the existence of "a wholly explicit knowledge is unthinkable" (*TD*, 55, 195; *KB*, 144). Arguing with Polanyi, we presuppose that any explicit knowledge a teacher has is grounded in personal knowing and that this knowing is characteristically procedural, as reflected by the present participle form of the term "tacit knowing." Consequently, "knowledge is an activity which would be better described as a process of knowing" (*KB*, 132).

Competence development thus takes place as an activity in which teachers tacitly acquire rules that need to be followed in teaching. Competence development in practice is widely inexpressible, a characteristic that Polanyi prominently illustrated through the phrase "we can know more than we can tell" (*TD*, 18). This contrasts with the domain of explicit knowledge, the contents of which we can communicate in the propositional form of language. At the same time, explicit knowledge can never be wholly impersonal, as "even the publicly confirmed and reconfirmed statements of science are rooted in the consensus of professional opinion" (Grene 1974, 57). Polanyi emphasized that competence development is based in personal commitments, which we are unable to specify because we are in them, and "are unable to focus our attention upon […] without destroying their subsidiary function" (*M*, 61). Polanyi's theory allows us to emphasize that teaching practice is no mechanical procedure but rather an "art of knowing" (*PK*, 56–57), which cannot be specified in full detail or transmitted positivistically, since no prescription for it exists (Simpson 2019). Rather, competence development requires teachers to make an effort in relation to personal experience (Allen 1978) and requires a "model of an exemplary person (real or imagined)" (Margitay 2010, 82). This means that professional learning requires an ecology that goes beyond curriculum and teacher education programs. As a form of art, teaching relies both on intimations that are tacit in nature and on personal commitments to principles for teaching that are consciously available to the teacher: "To become effective in action the principles of right, wrong, duty, etc. have to operate on the situation subsidiarily or focally. Subsidiarily they give the focal situation tacit intimations of right and wrong. Focally, they analyze the practical situation cognitively" (Broudy 1986, 8). This illustration of tacit knowing clarifies that a teacher who may think critically about teaching cannot resort to critical thinking in teaching practice, which has fundamental consequences for the empirical analysis of teaching.

An empirical analysis of teaching that respects this function needs to be grounded in an epistemology of tacit knowing. Consequently, this paper illustrates a set of elements and processes of tacit knowing, while acknowledging that we cannot fully cover the many epistemological insights that Polanyi provides within a limited space. Such epistemological insights have been discussed in depth by eminent Polanyi scholars such as Grene (1974) and Prosch (1986), on whose analysis of Polanyi we draw to illustrate elements and processes of tacit knowing that are empirically evident in interaction. This focus on empirical evidence is relevant due to our analytical interest in teachers' competence, which can be analyzed through video data of classroom interaction, as well as their competence development, which can be analyzed through teacher interviews. At the same time, the data we use does not allow us to address processes of cognition because these processes are not evident in video or interview data. Accordingly, we do not engage in an analysis of all processes and aspects of tacit knowing that have been addressed by Polanyi (for an overview of these aspects, see Gulick

2016, 303). Some processes are fundamentally cognitive and thus cannot be analyzed in video and interview data. This includes thoughts active in working memory, psychodynamic factors such as integrations, or indwelling as the result of interiorizing objects so they can function as subsidiaries. Consequently, our analysis focuses on aspects of tacit knowing that are empirically present in data: in video data of classroom interaction, we find phenomena of (a) appraisal, which is documented in the teacher's situated reactions; (b) embodied skill, such as posture, gesture, and bodily movement; (c) expressions of interest, goals, and expectations; and (d) words and grammar used as a means of expressing and evaluating meanings in interaction. These four aspects of tacit knowing can be directly analyzed in video data. Beyond this, interview data can be used to document (e) the personal framework of interpretation consisting of presuppositions and beliefs and (f) connoisseurship as "a tacit feat of intelligence" (*SM*, 23)—these two aspects can be communicated through narratives, as "personal experience through time involves an inherently storied or narrative structure" (Mullins 1993, 112). However, interview data can only be a complement to video data, as it does not provide us with data on tacit knowing that is effectively used in teaching practice. Methodologically, the tacit knowing of professionals can be accessed through interpretative methodologies that provide dedicated tools for the analysis of tacit knowing, such as ethnomethodology and documentary method (Hammersley 2018; Bohnsack 2014). These methodologies present elaborate strategies for the interpretation of competence in skillful practice (Wieser & Klinger 2020).

The analysis of competence in skillful practice by Polanyi features the prominent example of knowing how to ride a bike (*PK*, 51–52; *KB*, 141). Polanyi points out that a cyclist does not possess propositional knowledge about the physical principle of cycling but nonetheless knows how to ride a bike: "From my interrogations of physicists, engineers and bicycle manufacturers, I have come to the conclusion that the principle by which the cyclist keeps his balance is not generally known" (*PK*, 51). Principle here refers to the set of procedural maneuvers necessary for keeping the cyclist in balance throughout a ride. Polanyi accepts the existence of such a principle and assumes that cyclists know this principle tacitly, and not as a set of propositions (*PK*, 91). Nor is it, to begin with, possible to learn to keep balance on a bike by trying to follow an explicit rule (*M*, 41). Knowing how to ride a bike is widely used as an example of somatic tacit knowing that is independent of culture (Collins 2013). Building on Polanyi, we argue that tacit knowing is not only important for cyclists but also for professionals: Polanyi himself uses surgeons as an example of professionals who rely on tacit knowing. In his example, surgeons hold propositional knowledge about the topography of an organ but are not able to articulate the professional knowing used to perform an operation. Operating is described as an example of professional tacit knowing in which surgeons relate generalized explicit knowledge from anatomy to a particular of vessels and tissue. Interestingly, Polanyi underlines that professional tacit knowing is ineffable and that a surgeon "is in fact using his intelligence very much like a rat running in a maze" (*PK*, 94). Together, the cyclist and the surgeon examples illustrate that ineffability is characteristic of both somatic and professional tacit knowing. The central difference between these two types of tacit knowing is that somatic tacit knowing, such as riding a bicycle, is less dependent on immersion in a culture, while professional tacit knowing depends on becoming socially embedded in the appropriate group of experts (Collins 2013, 258). More specifically with respect to teachers, Broudy (1965, 410) argues that professionalism depends on immersion in explicit professional knowledge, which creates a "body of systematized knowledge organized in distinctive problems." Such professional knowledge is described in the disciplinary fields of education. As a discipline, education in the continental-European tradition is typically described as encompassing three central domains (English 2013, 5): content knowledge about the subject,

didactical knowledge about the organization of subject-specific teaching and learning, and educative knowledge about moral guidance and personal formation beyond subject-related learning. Content knowledge as well as principles of didactic and educative knowledge can be transmitted in teacher education and together provide professional pedagogical knowledge, while awareness of cues and events in class needs to be learned in practice. Based on this description of professional pedagogical knowledge for teaching and the relation of explicit knowledge and tacit knowing, we use the following section to illustrate how Polanyi's conception of tacit knowing can be used in empirical research focusing on pedagogical competence.

In the empirical analysis of professional tacit knowing, the relationship between tacit knowing and awareness is of central importance. Awareness in skillful practice, and the dependency of focal awareness on a tacit awareness of subsidiary elements, is one central aspect of Polanyi's conception of tacit knowing. Polanyi provides an account of the relation between tacit knowing and awareness in skillful practice and argues that our ability to be focally aware of an object (or event) relies on a tacit awareness of subsidiary elements of this object. Pedagogical competence is no exception to this, since teaching always relies on the interpretation of a situation in class and on an understanding of the classroom context. Pedagogical competence is therefore expressed in shifts of orientation that relate to different didactical and educative objects of awareness. Polanyi's theory illustrates the existence of different ranges of expressibility, different types of awareness, and different forms of intention. Taken together, this enables us to establish an elaborate conception of pedagogical competence and its development.

Elements of a Polanyian Theory of Competence Development

Polanyi's theory of tacit knowing allows us to identify elements of professional involvement in education. Based on our empirical interest, we find the central elements of Polanyi's theory to be subsidiary awareness, focal awareness, and situated appraisal. These elements are outlined in the following paragraphs, which focus on the pedagogical competence of teachers.

Subsidiary awareness enables teachers to know what is going on in class. It is characterized as tacit and non-propositional, which makes it difficult for teachers to cognitively access and describe what they were aware of in a particular situation and how this awareness guided their practice. However, these characteristics enable performance because teachers do not have to consider what they are doing and can refrain from thinking about the premises for their practice. Following this assumption, teachers have limited access to tacit knowing in practice because it is only possible to maintain their practice if they avoid any explicit consideration of appropriate actions: "He [the practitioner] knew what he was then doing, not in the sense that he had to dilute his consideration of his premises with other acts of considering his consideration of them" (Ryle 2009, 158). Subsidiary awareness thus enables teachers to intentionally approach a teaching objective. In aiming for this objective, teachers are subsidiarily aware of cues and events in class that are relevant with respect to this objective. Subsidiary awareness is brought into focal awareness when an event requires attention, e.g., when learners need support during an exercise. In focal awareness, teachers attend directly to elements of a situation to adjust their teaching practice. The process of adjusting teaching to suit events in class is widely non-deliberative and enables teachers to comprehend elements of a situation and the relationship between them. This comprehension takes place through situated appraisal.

Appraisal refers to the process in which the involved engagement of teachers with a situation leads to comprehension of its constitutive elements. In appraisal, teachers assess the constitutive elements of a situation and relate them to a teaching objective. Elements that are relevant to reach a teaching objective are

brought into focal awareness, while teachers remain subsidiarily aware of other elements that support action towards an objective. Taken together, subsidiary and focal awareness support the achievement of a teaching objective: in a teaching situation, teachers use their awareness of student reactions to adapt their teaching, for example because they become aware that students need a different explanation of an illustration that was shown on PowerPoint. Functionally, appraisal enables teachers to perform in class because it provides a "from-to knowing" for action (*M*, 34). During appraisal, teachers experience the classroom situation as a whole and not as a set of individual elements—the latter would require an established appraisal of a situation to which elements can be related (a "given" situation). As phenomena, appraisals are present in "practical knowledge" (*M*, 41), particularly in situations where practitioners are reflecting in practice: "By reflecting on the way we are performing it [the act] we may seek to establish rules for our own guidance in this act" (*PK*, 30). Again, this guidance does not rely on critical reasoning, which would require teachers to reflect on how to act and to reflect on the corresponding mode of reflection. This reveals another key characteristic of appraisal: appraisal takes place independent of critical reasoning because it accommodates the singularity of a situated event and integrates subsidiary awareness into focal awareness to act in a situation.

From a Polanyian perspective, the development of pedagogical competence takes place in involved practice, with teachers engaging in situations and using situated appraisal to achieve a teaching intention. The development of pedagogical competence originates in a specific type of experience: when teachers experience a teaching situation in which their knowing does not enable them to relate an event in class to their teaching intention, their from-to knowing no longer provides an orientation from the current situation to an intended outcome. In the introduction to *KB* (xvi), Grene argues that "all knowing is a kind of orientation, in which we rely on clues within our bodies to reach beyond ourselves, to attend what is out there." This experience forces teachers to experiment within a surprising situation to identify its constitutive elements. In experimentation, teachers bring elements of a situation into focal awareness for at least two reasons: (1) to find out if they are constitutive of the event and (2) to arrive at a new from-to knowing that addresses the event. In experimentation, teachers re-relate the intentions of teaching to a situation in order to comprehend an event and arrive at appropriate orientations for practice. In this way, teachers establish a new orientation that provides from-to knowing that guides them through a surprising situation. In doing so, teachers develop their competence, and their set of orientations is transformed. Figure 1 provides a visual overview of the functional elements of tacit knowing that we have described. In this figure, elements of tacit knowing that orient practice are illustrated as boxes, whereas the process of the development of new orientations is illustrated with arrows.
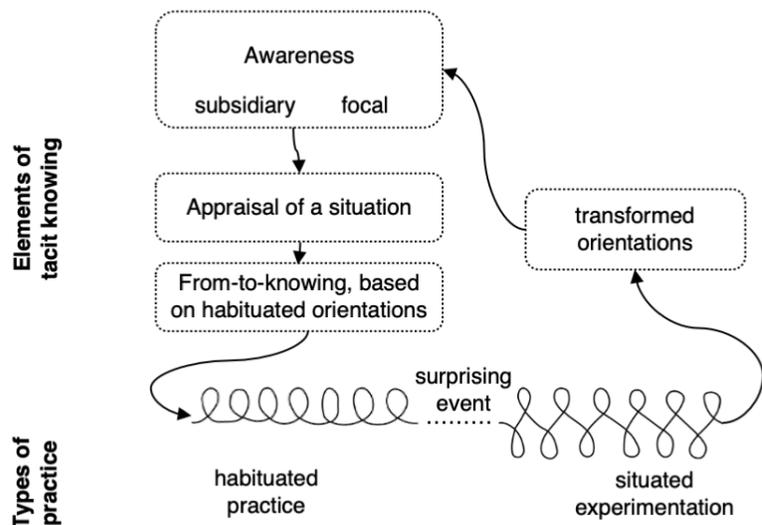

Figure 1:
The development of pedagogical competence in tacit knowing

The Empirical Analysis of Competence Development: A Vignette of an Experienced Secondary School Teacher's Development of Pedagogical Competence

The following vignette focuses on the tacit knowing of an experienced secondary school teacher named Patrick and illustrates his competence development. Drawing on Polanyi, we demonstrate that Patrick uses tacit knowing to make his students focally aware of the lesson topic. This discussion can be seen as a social process in which teachers communicate personal meaning about a topic and relate to the meaning that students communicate, which involves both content and didactical knowledge. The vignette itself is taken from a case study that focuses on a series of economics lessons in a grade 9 class in an Austrian secondary school.

Polanyi's theory enables us to comprehend the way in which tacit knowing grounds teaching practice, that is, how subsidiary and focal awareness continually provide orientations for teaching. As argued in the first section of the paper, some aspects of tacit knowing, such as teachers' focal awareness and appraisal, are empirically present in video data. The content of this focal awareness can be identified through the sequential analysis of teachers' actions and their reactions to students. Sequential analysis also allows us to determine how teachers appraise a situation, based on the way they react to previous action. However, some elements of tacit knowing are not empirically present in our data. Subsidiary awareness, the orientations on which we rely to attend to a situation around us, also known as the "proximal term" of tacit knowing (*KB*, 140), remains widely absent in video data. Furthermore, video data of classroom interaction documents involved practice and does not allow for an analysis of teachers' theoretical knowledge used to interpret pedagogical situations. Such knowledge can be accessed through interviews, which provide a space for teachers to express considerations with respect to the aims and objectives of teaching and curriculum decisions. Using Broudy's distinction of teaching as a craft and teaching as a profession (quoted in Simpson 2019), we emphasize that interviews provide an opportunity to analyze professionalism as the relation between theoretical knowledge on education, educative aims, and practice. However, such a perspective excludes the craft aspect of teaching, which we argue needs to be regarded as much as professional aspects of teaching, given the significant numbers of teachers leaving the profession at an early career stage (Johnson et al. 2019; Whalen et al. 2019). Following these considerations, the subsequent analysis focuses on video data and the craft of teaching.

Data was collected through video ethnography (Wieser 2015) and analyzed using a documentary method approach (Wieser & Klinger 2020). Documentary method is particularly useful for the analysis of tacit knowing due to its dedicated focus on tacit knowing in interpretative analysis, which includes two steps (Bohnsack 2014): (1) Formulating interpretation focuses on what is being said, the explicit meaning in interaction expressed through language. This step aims to describe the topical structure of interaction. (2) Reflective interpretation focuses on how things are said, referring to the implicit meaning that is documented in the way a person relates to previous actions and events through a speech act. Our analysis of tacit knowing thus focuses on the relation between an action and the way in which a reaction relates to the context of previous actions. The interpretation of the sequential relation between action and reaction makes it possible to describe the orientations in which a person reacts to previous actions and events. Consequently, this approach enables an analysis of tacit knowing that is inexpressible for the practitioner.

Patrick's teaching, documented in video data, reveals his intention to make the semantic field of economics appear in class. Semantic field refers to a space of relationally held meanings of a group: "In the very act of specifying semantic fields, people engage in an act of closure whereby they become conscious of what

they have excluded and what they must therefore include" (Ingold 2005, 127). In school, semantic fields often relate to two meanings: the meaning of the subject taught and the meaning of peer relations within the student group, which reflects social status and group membership. In institutional schooling, these semantic fields are frequently opposed to each other: A teacher commonly intends to focus interaction on the semantic field of the subject taught, while students do not necessarily share this focus. Rather frequently, we observe that student interaction focuses on peer relations and social status instead. This opposition is present in our vignette, where the students focus on their peer relations while Patrick experiments with the situation to refocus the semantic field on economics.

To focus the semantic field on economics, Patrick starts to present concepts and representations of economics and discusses them with the students. This way, he establishes an initial contact between the students and the field of economics. This contact emerges through a presentation of concepts (such as market and market structures) and models (such as Maslow's hierarchy of needs and a video clip that models the relationship between wishes, needs, and demand). Patrick's presentation is accompanied by statements from the students, who share their thoughts and ad-hoc hypotheses on economic relationships, leading to a discussion of concepts. Patrick later described this discussion as challenging because the students did not show a commitment to the semantic field of the lesson. Instead, the students continually undermined the emergence of economics as a joint field of attention and engaged in a discussion of peer relations.

In the vignette, Patrick intends the lesson to focus on a discussion of the field of economics, while the students use it for a discussion of peer relations. Patrick's involvement in these situations is based on his situated appraisal, which makes him focus either on the field of economics or on the students' discussion of peer relations. In class, several situations force Patrick to engage in situated experimentation because the tacit from-to relations he relies on do not lead to a realization of his intention. In experimentation, Patrick brings different elements of the situation into focal awareness to identify constitutive elements and revises his practice to match the current situation. This experimentation reconfigures the relationship between teaching intentions and strategies—Patrick tacitly develops new from-to relations in professional practice and learns to be pedagogically competent in the situation. The following vignette illustrates a moment in which such a reconfiguration took place.

"Enough Already! Really! Ack! This Is Getting on My Nerves": The Continuous Opposition of the Semantic Field of the Lesson and the Field of Student Peer Relations

In the following vignette, Patrick's teaching relates to the semantic field of economics. He wants to explain concepts relevant to economics, such as market, and different market structures. To do this, he presents a PowerPoint slide that introduces several economic concepts: needs, demand, and act of purchase. These concepts are linked to each other in a flowchart, illustrating that a person can experience a need, which has the potential to become a demand to purchase goods at a certain price, leading ultimately to an act of purchase. Patrick has already used the same flowchart in the previous lesson to discuss the first two concepts. In the current lesson, Patrick continues to discuss the concepts introduced in the flowchart by asking, "The act of purchase—where does it take place?" This question initiates a conversation, and students state different places: "in a shop," "online," and "at home." The last statement is taken up by Patrick, who is surprised by the comment but then acknowledges that acts of purchase indeed can take place at home when they are online. This situation is one of many in which Patrick demonstrates that he is not challenged

by student statements that relate to the semantic field of the lesson, even when he has expected different answers. In this situation, Patrick relates student statements to the intended semantic field of economics.

As the lesson advances, Patrick moves on to the next PowerPoint slide, which shows the same concepts but also introduces the term "market." This slide shows a model that relates the concepts "needs" and "demand" to the concepts "market" and "supply." Patrick comments on the model and then tells students to write the definition of "market" in their exercise books: "Supply and demand meet on the market. There are different market structures." Then, he tells the students to read one page in their textbooks and identify key concepts related to the term "market." After they read the page, Patrick discusses these terms with the students and uses the blackboard to write terms down and draw the relation between supply and demand for three market structures: (1) the competitive market, (2) a monopoly, and (3) an oligopoly (see Figure 2).

Figure 2: The teacher illustrates different market structures on the blackboard.

Patrick then asks the students to write these terms down, together with their respective definitions. While discussing these terms, some students get involved in an argument on the Greek roots of the terms "monopoly" and "oligopoly," and their meanings. More and more students start to share their ideas and contribute to a lively discussion across the classroom that grows increasingly noisy. This situation is the first instance in which the field of interaction shifts, and students start to discuss their peer relations. The situation unfolds in the following conversation[1] between several students: Ciljeta, Deniz, Feodora, Oana, Pablo, and Wahid (for the students' location in class, see Figure 3):

Feodora: It is most likely Greek. [Several students comment.]

Teacher: I don't know, Feodora.

      └ Pablo: She is right.

Oana [nods]: I agree with Feo.

[Students continue to comment on the matter.]

Teacher: [staccato] I had no Greek. So I can't say anything about it.

Several students: We don't have Greek either.

Teacher: But it means… [Students continue talking, while Feodora and Ciljeta loudly discuss across class.]

      └ Ciljeta [to Feodora]: Oka-ay, Feo. [Students continue talking.]

Teacher: [steps away from the blackboard, brings thumb and index finger to the base of his nose] It means in any case…

      └ Feodora [to Ciljeta]: Yeah, I apologize.

Ciljeta: Yeah, we got it, it's Greek.

Teacher: In any case, it means… m-a-n-y. [takes his hand off his nose]

Teacher: Alright, now we've said it five times: We got it. We don't have to repeat it another five times. We got it. That's enough.

      └ Ciljeta: But I've told Feo personally.

      └ Deniz: Yeah, it's enough.

Wahid: Say it one more time, Ciljeta.

Teacher: That's enough, Ciljeta. It's disturbing.

In this situation, the interaction shifts away from the semantic field of economics. Students relate to economics only on a symbolic level, establish a new semantic field that focuses on peer relations, and thus stand in opposition to the semantic field of which Patrick remains focally aware. Patrick reacts to this by shifting his focal awareness, stating, "I had no Greek." This statement acknowledges a lack of knowledge with respect to the Greek language origin of the terms "monopoly" and "oligopoly" and provides a ritual conclusion that aims to return to the intended field of communication: economics. However, the students do not validate Patrick's conclusion but remark that the lack of knowledge is an insufficient reason for ending their discussion. Their focal awareness remains on their peer relations: Oana validates the truth status of Feodora's statement, while Ciljeta says, "Yeah, we got it, it's Greek," and thus presents an alternative ritual conclusion that semantically ratifies the truth claim of Ciljeta's proposition, while the gestalt of her

expression simultaneously rejects the social mode in which the proposition is presented. Ciljeta disapproves of Feodora's behavior because it contributes to the semantic field of the lesson and not to the discussion of peer relations. The discussion of peer relations becomes increasingly prominent in the interaction until Patrick intervenes to reset the focus.

Patrick disapproves of the students' actions by saying, "That's enough," marking that their focal awareness on peer relations lies outside the semantic field of the lesson. His action proposes to exclude the topic of peer relations from interaction. However, Ciljeta does not accept his proposition and again opposes Patrick's conclusion, arguing that her action is not related to the public sphere of teaching and learning.

Implicitly, Ciljeta acknowledges that her focal awareness of peer relations opposes the semantic field of the lesson. In her statement, Ciljeta constructs a difference between the public domain of classroom interaction that has its focus on the topic and a private domain of classroom interaction that may focus on student peer relations. Even the person sitting next to Ciljeta, Deniz, who until this point remained focally aware of peer relations, validates Patrick's conclusion: "Yeah, it's enough." Nevertheless, Wahid encourages the opposition of the students against the semantic field that Patrick is trying to establish, saying, "Say it one more time, Ciljeta." In consequence, Patrick repeats his conclusion, addressing Ciljeta by name: "That's enough, Ciljeta. It's disturbing."

However, Patrick refuses to focally attend to a discussion of peer relations. In the minutes of interaction that follow, students continue to discuss their peer relations through a series of validations and oppositions, using economics as a semantic proxy, without committing themselves to the semantic field of economics. Patrick, forced to attend to peer relations, struggles to relate students' practices to the semantic field of economics and bring the focal awareness of students to the topic of economics. As the lesson progresses, the students repeatedly shift back to the negotiation of peer relations.

After several attempts to shift students' focal awareness through situated experimentation, Patrick expresses his frustration because the students have established an oppositional field of interaction. This oppositional field creates a joint awareness characterized by insults and—more importantly—by turning away from a commitment to explore and discuss economics. This opposition becomes increasingly problematic for Patrick, who intends to foster a discussion of economics as the semantic field of the lesson. The opposition stabilizes over time, and students continue to exchange insults loudly across class, thereby disapproving of each other as peers and preventing the interaction from remaining on topic. Besides these problems, Patrick manages to stop the students' opposition by tasking them to copy the schematic drawing on the blackboard into their exercise books. While the students are busy with the task, Wahid, one of the students, breaks the silence. This marks the moment where Patrick focally attends to the educative problem that he faces:

> Teacher: [turns away from the blackboard and towards the class] <[shouting] That's enough! * Really!> Ack, I have really had enough now. I quietly asked Deniz before to not use words like these. And what do you do? In the middle of a quiet moment, you throw in some insulting terms. Break out of it. * I am not the strictest teacher, but that really gets on my nerves. * How you are talking to each other, how you interact with each other. * That is… ugh… Horrible. Low-wes-st of the low. Break out of it. * At least when I am here. *** <[breathing out] Phe-ew.> Now I feel alright again.

*Figure 3: Videography screenshot, minute 00:24:46: "That's enough! * Really!"*

Patrick's exclamation "That's enough!" focally attends to the insulting terms that the students have used about each other. During the lesson to which this vignette belongs, Deniz called another student an "idiot" and got a warning from Patrick for using this word, which in turn resulted in Burak calling Deniz an "idiot" for making the insult. Shortly afterwards, Oana called Wahid "so stupid," and Wahid in turn called her a "freak" who should be quiet. More generally, "That's enough!" relates to actions that oppose the joint focal awareness on economics, leading to situations where interaction shifts away from the semantic field of the lesson. This prevents Patrick from presenting economic concepts and discussing them with the students. At the same time, students focally attend to their peer relations instead of showing a commitment to discuss economics. This opposition destabilizes the intended semantic field of the lesson, which itself is a prerequisite for discussing economic concepts.

Patrick also elaborates on the reasons for his exclamation. Until Wahid's last insult, the students focused on the task, copying the schematic drawings on the blackboard into their exercise books in relative silence (Fig. 2). Through his exclamation, Patrick clarifies a rule: insults should not be part of teaching and learning interaction. He justifies this rule by stating that he is "not the strictest teacher," acknowledging that his teaching also allows an amount of play beyond a focus on the subject. Implicitly, he also states that play is acceptable in teaching and learning situations if it does not refocus the interaction on semantic fields other than the lesson topic.

His statement "at least when I am here" limits this rule to the time of lessons, when he is part of the interaction. Here, he implicitly demonstrates the difference between the focus on a topic during lessons and a focus on peer relationships outside lessons. The statement also indicates his didactical intention to make economics the semantic field of interaction. After expressing his irritation with the situation, Patrick concludes by asking, "Did my message get through?" He wants students to focus on the topic of the lesson instead of focusing on peer relationships. This vignette is typical for the educative problem that Patrick faces. Throughout the lessons that we observed, students spent significant amounts of time negotiating peer relations, which continually impeded focal awareness on the topic of these lessons.

To summarize, the teacher involved in this situation relies on tacit knowing in interaction with students, using student comments related to the semantic field of the lesson to guide focal awareness of students

and requesting their commitment to teaching and learning. He also reacts to students who destabilize this focal awareness and asks them to commit their focal attention to the lesson topic. He expresses his irritation when students pay attention to objects outside the intended semantic field and when they shift their focal awareness to such objects. Our analysis shows that such shifts undermine joint attention to the object of the lesson, a state of interaction where students and teacher focally attend to the same object and thus come to share the same goals. In such a state, teacher and students develop joint focal awareness in which they share the commitment to help each other achieve an intended goal. In our case study, we identified the maintenance of students' focal awareness as one central element of pedagogical competence. From a pedagogical perspective, this maintenance of focal awareness requires a commitment to a joint intentional object. However, our case study illustrates that a significant number of students do not enter such a commitment and instead continually oppose teachers' efforts to guide focal awareness towards the lesson topic. The students' focal awareness remains on peer relations, which conflicts with the semantic field of the lesson. Ultimately, the teacher is not able to establish a joint focal awareness on the lesson topic. From a Polanyian perspective, such a situation requires situated experimentation and focal attention to the conflict.

Conclusion

Our analysis illustrates how a teacher organizes classroom interaction by validating student actions and elaborating on them when they relate to the intended topic. We showed that the teacher was not challenged by student actions related to the topic of the lesson, indicating that didactical aspects of teaching remained unproblematic for him. Even when student statements were not factually correct, the teacher had no problems relating them to the semantic field of the lesson. Here, the teacher tacitly integrated subsidiary cues from student actions into the object of his focal awareness, economics, and continued teaching with an orientation that focused on presenting and elaborating on the topic. Throughout the lessons, we found numerous situations in which the teacher became subsidiarily aware of student actions that related to the lesson topic, which enabled him to validate, elaborate on, or oppose these actions without having to focally attend to them. In these situations, teaching practice remained unproblematic: his focal awareness remained on the topic that he intended to teach—economics. However, our analysis illustrates that the teacher had difficulties in situations where he was forced to relate to another, opposing field of orientations that disrupted the semantic field of the lesson and required experimentation.

From a Polanyian perspective, interactions that require teachers to engage in experimentation provide the potential for the development of pedagogical competence. In our vignette, the teacher's experimentation focused on the semantic field of peer relations, an educative aspect of teaching. This semantic field stands in opposition to the semantic field of economics on which the teacher focuses. Here, the situation forces the teacher to shift away from the didactical orientation of presenting and discussing the topic because this orientation does not lead to a procedural activity to which students commit. In this situation, the teacher focally attended to the discussion of peer relations, which he had to consider in pursuit of his intended aim of teaching. However, the subsequent interaction illustrates that the teacher shifted his focal attention back to the lesson topic instead of focally attending to the students' peer relations. Our analysis indicates that the unstable peer relations of students constitute a semantic field of attention that impedes a commitment to the lesson topic.

The vignette illustrates that the situation requires the teacher to attend to two semantic fields, which reflect in two aspects of pedagogical competence: First is the field of economics, which relates the presented

content to the knowledge of students. From a pedagogical point of view, this field requires a *didactical* orientation. Second is the field of peer relations, which relates to teaching and learning only indirectly and focuses on care work and the development of social relations that enable collaboration for learning. From a pedagogical point of view, this field requires an *educative* orientation.

With respect to competence development, our analysis shows that the teacher maintains a didactical orientation throughout the interaction. This didactical orientation does not allow him to move from the current situation to his intended aim of teaching, which forces him to experiment with the situation and find new from-to knowing that will allow him to address the problem. One way to resolve the problem is to foster peer relations. We argued that the educative task of fostering peer relations needs to be brought into focal awareness to resolve the ongoing conflicts in class and establish collaboration for learning. Based on the vignette and further analysis of our data, we argue that the development of pedagogical competence involves at least two fields: a didactical field that relates to teaching and learning and an educative field that relates to peer relations. In our case study, the teacher remained focally aware of the didactical field of interaction and did not shift his focal awareness to the educative field of student peer relations. From a Polanyian perspective, the situation would require the teacher to focally attend to students' peer relations in order to develop from-to knowing that would accommodate the educative aspects of teaching.

ENDNOTE

[1]Our empirical analysis relies on a partiture transcription that uses the following conventions: Loud speech is <u>underlined</u>, e.g., "Teacher: <u>That's enough!</u>" Refraining from a speech act is marked with …, e.g., "Teacher: That is… ugh… Horrible." A pause in speech acts lasting up to five seconds is marked by * (one * per second). Lengthened speech is marked by a hyphen, e.g., "Ciljeta: Oka-ay, Feo." An overlap in speech is marked by ∟ at the position where another person starts their speech act. Nonverbal actions are described in squared brackets, e.g., "Oana [nods]: I agree." Nonverbal actions accompanying speech acts are marked by angle brackets, e.g., "Teacher: <[shouting] <u>That's enough!</u> * Really!>.

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MY LENGTHY INVOLVEMENT WITH POLANYI'S THOUGHT: AN INTERVIEW WITH WALTER GULICK

Phil Mullins and Walter Gulick

Keywords: Michael Polanyi, meaning, evolution, ordering principle, emergence, biosemiotics, reality, ontological levels, from-via-to, moral inversion

ABSTRACT

In this interview, Phil Mullins asks Walter Gulick about what originally attracted him to Polanyi's thought. What aspects has he felt might be improved and/or further developed? What is the ongoing import of Polanyi's accomplishments, and where does the Polanyi Society go from here?

Mullins: Fifty years ago, in the fall of 1972, the first issue of the [Society of Explorers newsletter](#) was distributed to a small group of people who had indicated they were interested in the thought of Michael Polanyi and wished to form a network. Your name is on that list, and you indicated that you were interested in "Polanyi's thought as it related to (a) philosophical psychology, (b) metaphysics, (c) theory, and (d) religious faith." As a scholar, you have worked on Polanyi for a long time and have developed a number of ideas about what Polanyi was up to and where his ideas might be improved. You also have worked diligently for fifty years to promote an institution, the Polanyi Society, that has produced conferences, annual meetings, a journal, a website, and, in a word, a certain amount of stimulating conversation about Michael Polanyi. I happen to have known you for most of those fifty years, and I want in this interview to gather up some of the interesting twists and turns in your long study of Polanyi's philosophical perspective. I also want to review your role in promoting the Polanyi Society and your vision about where the society as a small scholarly group should be headed in the post-pandemic academic world. You were the first board president, serving for seven years after the society became a legal entity, and you have been a major contributor to program planning for thirty years. But perhaps we should begin by having you briefly identify how you came to be interested in the thought of Michael Polanyi. Also, what made you, in 1972, identify the broad areas of interest you identified, and do these areas continue to be your areas of interest in Polanyi?

Gulick: A little background information should help illuminate how I developed interest in Polanyi. As a geology major at Pomona College in California, I was depressed during my sophomore year. I couldn't figure

out what the point was to living. Summer work as a field geologist in Idaho certainly didn't help me answer that question. So, after graduation in 1960, I accepted a three-year appointment to teach at Tarsus American College in Turkey to determine what I wanted to do next. I thought I was going to be teaching general science courses, but they needed a math teacher, which in college had been my worst subject. Well, teaching trig, solid geometry, and matrix theory certainly didn't help me answer my lingering questions about meaning. However, as a senior at Pomona, I had taken a course in contemporary philosophy from Morton Beckner, an author (as was Marjorie Grene) of an early book on the philosophy of biology. On the basis of that one course (and strong interest), I was able to teach the introductory class in philosophy in Tarsus as a replacement for the regular teacher who was on sabbatical.

Teaching that course was illuminating and stimulating, so I decided to apply for a graduate degree in philosophy. I soon found out that what was being offered as philosophy in different universities emphasized logic and the analysis of language rather than the pursuit of wisdom, which is what interested me. Moreover, each department I corresponded with wanted me to take another undergraduate year of philosophy courses before being admitted to graduate work. I had taken two semesters of classes on the Bible at Pomona from Gordon Kaufman that were instructive but didn't really excite me. Nevertheless, I found out that courses at a theological seminary were offering material that was close to my true interests in meaning and value, and they didn't require me to take more undergraduate classes. So I ended up in New York in a joint program pairing Union Seminary with Columbia University. And it was in a bookstore on Broadway across from the Columbia campus in the fall of 1964 that I saw a new paperback by a Hungarian author with enticing chapter titles like "Order," "Skills," "Articulation," "Commitment," and "Knowing Life." Somewhat later I purchased Michael Polanyi's *Personal Knowledge*.

In the fall of 1964, I met a charming lady at Union, and after three weeks of dating I proposed to her. It took another week for her to say yes. With an emotionally powerful interest now added to a demanding set of courses and fieldwork, I did not find time to do more than peruse *PK*. Then, after Barbara and I were married in 1965, I needed to provide for us while she finished her degree, so I took a job as a TIAA group insurance administrator. Once she graduated, we moved up the Hudson to Tarrytown. Amid the sea of the *Wall Street Journal* and *New York Times* on the commuter train, I was the only person reading philosophy. It is thus not surprising that I decided to add a PhD to my MA. I returned to Claremont, where Granville Henry (just deceased in 2021) encouraged me to take Polanyi's work seriously. Doing so remained more of a hope than an actuality, for in the course of writing my 500-page dissertation on "Kant's Idea of Metaphysics," I tried to read all of Kant's published works I could get my hands on. And in addition to finishing the dissertation while teaching at Oregon State, I now had kids to help raise.

Thus in 1972, the possibility of actually reading more Polanyi prompted me to join the Society of Explorers. Given the work I was doing on Kant, you can understand why I listed metaphysics and philosophical theory as areas of interest related to Polanyi's work. I mentioned philosophical psychology because I intended to return to work on lived meaning. And in mentioning religious faith, I was pivoting back to my thesis at Columbia on faith as understood by H. Richard Niebuhr, Erik Erikson, and Willem Zuurdeeg. Today I do not disavow my interest in these areas as they relate to Polanyi's thought, but that is because I find most anything Polanyi has written to be of interest. But if forced to choose one topic, it would be how Polanyi handles the issue of meaning. For after I had moved to Montana, it was in reading *Meaning* during a sabbatical at the University of Delaware's Center for the Study of Values in 1981 that I became totally hooked on Polanyi's thought. My early interest in meaning has never abated. Indeed, now in Billings, I have

been doing a weekly local TV show titled *Callings* (a good Polanyian term) in which I interview guests about what gives their lives meaning and satisfaction.

The 1991 conference at Kent State celebrating the hundredth anniversary of Polanyi's birth provided another occasion that expanded my involvement with people excited by Polanyi's thought. Discussions there, particularly with Gabi Ujlaki of the fledgling Michael Polanyi Liberal Philosophy Association, led to my being granted a Fulbright to teach a semester in Budapest, a city then still recovering from its Soviet past. My experience there in 1993 deepened my appreciation of Polanyi's Hungarian roots. It also led to our hosting a Slovakian and two Hungarian exchange students, sources of great joy further tying us to the region.

Mullins: I recall responding to one of your annual meeting papers in the seventies that was concerned with poetry and making meaning; your background narrative puts this in a broader context, and it does seem that some of your recent writing focuses also on problems of meaning. But you have over the decades written prolifically on many topics touching aspects of Polanyi's thought. You have published [over thirty articles in *Tradition and Discovery*](#) (not to mention [about twenty TAD book reviews](#)—and you were the *TAD* book review editor for twenty-five years), plus there are a number of things in *Polanyiana*, *Appraisal*, and a host of other less directly Polanyi-related journals, and you have contributed essays to collections that became books. You appreciate Polanyi's philosophical perspective, but you have offered criticisms and interesting constructive amendments. You find Polanyi's discovery-centered revisioning of philosophy of science insightful. You are attuned to Polanyi's effort to revitalize liberalism, but perhaps more than any other scholar you have put Michael and Karl Polanyi together. Your own contemporary political philosophy and persistent activism moves beyond Michael Polanyi (and also outside the current Montana mainstream). You have linked Polanyi's thought to a variety of other contemporary thinkers and to emerging areas of inquiry such as biosemiotics and religious naturalism. Can you provide something of an overview of the ways in which you have taken up and retooled Polanyi's ideas? If not an "overview," can you at least comment very briefly on major areas of Polanyi's thought that you want to appropriate but amend in interesting ways? Perhaps you could begin by summarizing some of your criticisms of Polanyi's ideas about biology and evolution.

Gulick: I believe Polanyi's rejection of neo-Darwinian thought in Part IV of *PK* (see *PK*, 385) is unfortunate for a couple of reasons. First, it encouraged William Dembski and others to promote the thought that Polanyi rejected evolutionary theory and that his ideas could be used in support of creationist Christianity. However, Polanyi did not reject evolutionary theory; he only argued that natural selection and mutations (as they were discussed by most biologists in the middle of the last century) were inadequate to account for the development of new species and the advanced complexity evident in the historical record. He argued that some ordering principle is needed to account for the progress he discerned in evolutionary process.

But secondly, his notion that an active ordering principle is needed (*PK*, 382) unfortunately relies on taking machine development literally as a model for how the emergence of new species occurs. Indeed, both the creation of machines and the emergence of new species have telic aspects, but the former is intentionally purposeful while the latter is only incidentally so. Novelty which is actively intended is an example of what I term moderate emergence, whereas unintended preprogrammed changes like maturation are examples of weak emergence (see my "Forms of Emergence," [TAD 46/1 [February 2020]: 55–59](#)). Only planned development, as of a machine, can be explained by some preexisting ordering principle or purpose. The adjustments of species to changing niches giving rise to phylogenetic change is not governed by a preexisting

purpose or ordering principle, such as is used in specifying the operational principles of a machine to produce a planned outcome. Evolution occurs at a species level which lacks the purposefulness of an individual living being.

Mullins: Can you say a bit more about how you think insights from contemporary dynamic systems theory and biosemiotics help in reformulating and addressing some of the problems that interested Michael Polanyi in biology and in a reformulated biologically grounded philosophical vision that takes seriously human learning to be at home in the universe?

Gulick: Good question that I would broadly recast as follows: how is biology related to finding meaning in life? Let's go back again to evolution and emergence. The factors driving evolution are after-the-fact adjustments of living beings to environmental changes in ways that may or may not incidentally favor survival. The many factors involved in natural selection are better understood by chaos and complexity theory than by the determinative laws of physics and chemistry. And, of course, Polanyi also rejected the deterministic laws of most scientistic accounts. But as we have just seen, his alternative reliance on ordering principles was not an adequate replacement. Biological evolution unfolds in nonlinear response to all impinging forces and properties, not just to those that contribute to fulfilling a design or ordering principle. So I agree with Marjorie Grene's late attack on Polanyi's progressivist account of emergent evolution (the view that humans are involved in some grand evolutionary purpose), but I take my critique beyond any of Grene's analyses of which I am aware.

Now if Polanyi had simply said that neo-Darwinian thought is not a complete explanation of how evolution has taken place, he would have been on solid ground. Such factors as horizontal gene transfer, genetic drift, symbiogenesis, the Baldwin effect, and geographical (and therefore reproductive) isolation also contribute to evolutionary change.

And although I disagree with his rejection of neo-Darwinian thought, it is also important to recognize that Polanyi developed two notions that illuminate the mechanisms by which evolution occurs: boundary capture and emergence. Both the intended and accidental use of otherwise uncommitted boundary conditions are factors in the emergence of novelty, whether we are speaking of machines or evolution. Machines and living beings each function according to what Polanyi terms rules of rightness that transcend the laws of physics and chemistry. When the rules of rightness are followed, machines and living beings function as emergent phenomena achieving purposes not available to lower levels of being.

The aspect of biosemiotics that most attracts me is that it focuses broadly on the meaning of signs for living things. It attends to how signs work at many different levels for living beings. Therefore, biosemiotics also does carefully attend to higher-level significance that is largely lacking in biology's lower-level attention to instinctual processes of signaling. Biosemiotics does not replace biology's understanding of such things as the chemical pathways within cells whereby metabolites initiate chemical cascades and operate according to self-regulating feedback loops. Rather it supplements and deepens some of Polanyi's insights. For instance, Polanyi writes, "Living beings function according to two always interwoven principles, namely as machines and by 'regulation'" (*PK*, 342). In perhaps overly simplistic terms, it can be said that traditional biology studies animals' bodies as machines, whereas biosemiotics takes a more holistic, ecological view related to Polanyi's notion of regulation. Thereby, context, interpretation, and choice gain a place in evolution and the rise of animal intelligence. Beneficial interpretation may be, as Polanyi recognized, stored through an animal's latent learning, but it may also take on historical significance as a species develops habitual

interpretive responses to predictable environmental factors. Biosemiotician Jesper Hoffmeyer's distinction between analog and digital codes enriches the view of meaning I borrowed from Susanne Langer and that I fuse with Polanyi's thought. Hoffmeyer notes that analog information provides an organism with "outside" contextual information while digital codes provide "inside" coping adjustments. In humans, language as a digital code opens up the past and future as resources for meeting challenges.

Mullins: As you have noted, emergence and levels are central to Polanyi's notions of anthropogenesis and the stratified universe. To what extent do you feel Polanyi has given an adequate account of these concepts?

Gulick: I see them as fecund notions that call for further development. At the very least, it is important to distinguish more clearly between emergence as a process and as a product. I previously mentioned my distinction between weak emergence (internally driven as in maturation) and moderate emergence (significant change caused by outside forces). In addition, I postulate a category of strong emergence involving autopoiesis and some robust forms of self-organization. The emergence of life and the creation of thought from brain activity are examples of strong emergence. I think the three types of emergence as processes coupled with nested frames of intention has an as yet unrealized capacity to serve as a general hermeneutical function comparable to Peirce's notion of immediate and dynamical interpretants. I leave it to you, Phil, and others to say whether I am interpreting Peirce correctly.

In speaking of nested frames of intention, I am simply referring to the assumptions, some very general, some increasingly specific, one uses in either interpretation or creativity. I find it difficult to distinguish ontological from epistemological levels, but I am more parsimonious than Polanyi in speaking of a stratified universe of ontological levels. Much that is ontologically distinct seems better understood as a matter of scope rather than level. For instance, the strong nuclear force which binds the fundamental particles of matter together operates at a vastly different scale than gravity, the force of which we are aware. But since both are in play throughout the cosmos, they are better seen as forces distinct in scale rather than as occupying different levels. Moreover, our language allows us to look at the same phenomenon in a variety of ways, but that does not justify one in speaking of different ontological levels. Bottom line: more work needs to be done in distinguishing ontological levels from conceptual distinctions created by different perspectives, disciplines, and assumptions. I am presently working on a new essay that recasts some of Polanyi's ideas about ontological levels, so stay tuned.

Mullins: We have disagreed in the past about how best to characterize Polanyi's understanding of reality. Briefly indicate how you characterize Polanyi's interpretation of reality in contrast to your own view.

Gulick: Anyone who has followed my discussions of Polanyi's ideas is well aware that I find his discussion about degrees of reality untenable. Famously, in *TD*, 32–33, Polanyi states that minds and problems are more real than cobblestones because they have the independence and power to manifest themselves in as yet unthought ways in the future. A protean notion of reality seems problematic in many ways. Suppose one solves a problem. Does it then lose its reality? If one answers "yes," then one accepts the anthropocentric view of a Protagoras that man is the measure of all things. If Polanyi had said problems and minds are more significant for humans than cobblestones, that would recognize the variable impact some things have on human experience. But "reality" or some similar term (existence? actuality?) is needed to refer to the persistent beingness of things apart from their potential or actual impact on humans.

Time for confession. My aim of setting forth a simple and coherent understanding of reality has not yet been satisfactorily achieved. I am still working on this matter. On the one hand, I have come to the point where I am willing to accord all things and relations available to thought or consciousness with the term "reality." Then one needs to specify between such things as ideas about material reality, fictive reality, and delusional reality since the universality of the term "reality" renders the term by itself useless. On the other hand, I would term "existent" all those materially based things or forms of energy that potentially can be studied scientifically, whether or not we are aware of their existence. More controversially, I would like to limit the term "ontological" to aspects of the realm of existent things. My complaint about Polanyi's usage is that he usually treats "reality" much in the universal way I suggest, but he does not subdivide it into types of reality. Thus, his tendency to ground reality in anthropocentric concerns, including the potential for discovery, seems to push his thought toward an idealism that, on most views of contradiction, clashes with the scientific realism that is evident in his philosophy of science discussions.

Mullins: Are you accusing Polanyi of promulgating an incoherent dualistic philosophy?

Gulick: Not at all. I'm suggesting that it is to his great credit that he shows in several ways how both a scientific realism and two kinds of idealism can coherently fit into a comprehensive philosophical world-view. The arc of his career-based study embraced the biological insights of a physician, the understandings of a successful natural scientist, the social concerns resident in politics and economics, the epistemological insights attendant to tacit knowing, and the philosophical importance of a synoptic vision lending meaning to life. The comprehensiveness of his worldview is one of his lasting achievements.

How does Polanyi connect these various pieces together? First, I submit that there is an underlying dualism in his thought, but that this is a virtuous recognition rather than a pernicious problem to be overcome. Personal knowing has both subjective and objective poles (*PK*, 300). This merely states the fact that we are embodied beings with particular agendas seeking connection with independent realities about which we aim to speak with universal intent. Personal purpose and receptive insight are united in Polanyian personal knowing.

The dualism of which I have just spoken is a variation on Cartesian res extensa and res cogitans. But isn't admitting into one's philosophy the distinction between extended thing and thinking thing, or more colloquially matter and mind, the great error that led modernism astray? The distinction is problematic only if matter and mind are each interpreted as a substance, that is, "a thing which so exists that it needs no other thing in order to exist" (Descartes, *Principles of Philosophy*). Such an understanding of substance creates the problem of how the two are connected and encourages the development of schools of thought which choose one or the other substance as foundational. But Polanyi escapes the dichotomy between materialism and idealism by adopting both as comprising different levels of a comprehensive whole. That is, secondly, his theory of emergence allows for entities governed by different rules to coexist coherently. The law of contradiction need not apply between emergent levels. Mind is an emergent quality dependent on a very complex arrangement of matter and energy. There is no Cartesian chasm between the two in this formulation. Polanyi's view is legitimated by his evolutionary account of anthropogenesis. It also accords with our very commonsensical observation of differences between matter and thought.

Third, and quite obviously, the evidence of perception attests to the distinction between matter and mind as concomitant realities. One need not appeal to Samuel Johnson kicking the stone to refute George Berkeley's subjective idealism or bring up the notion of secondness in Peirce's thought. Our ordinary

experience of the world attests both to the distinction between mind and matter and to their interdependence. One can use a term like Poteat's "mindbody" to emphasize the dependent interlocked nature of body and mind. But this neologism must not obscure the methodological differences between fruitful ways of analyzing and understanding the world of matter and energy in contrast to how the world of thought is interrogated and understood.

Fourthly, Polanyi's notion of ontological levels illuminates the different procedures appropriate for examining matter in contrast to emergent thought. Reductionism is a valuable process for advancing understanding in scientific investigation, as Polanyi recognized. Mathematical formulation can be useful in illuminating patterns and laws. However, Polanyi's assumption of scientific realism makes sense of the material world but not of the emergent world of the arts and humanities and the everyday usage of language. This latter world is oriented around human purposes and meanings. Some aspects of this world are simply constructed and can give rise to a limited version of subjective idealism. But Polanyian thought can also be used to make a good case for a version of objective idealism. The transcendent ideals of truth, beauty, and goodness have an intersubjective reality intimately tied to social and personal viability and flourishing.

Mullins: I want to relocate our discussion a bit to focus on some of the elements central to Polanyi's notions about tacit knowing that you have developed. Perhaps your best-known emendation of Polanyi's interest in tacit knowing is the way you have suggested talking about the "from-via-to" aspect of consciousness. Your account has been adopted by many scholars who make use of Polanyi's epistemology. Can you succinctly comment on your intentions in this innovation?

Gulick: My notion of the "via" represents yet another way in which Polanyian thought discloses and includes aspects of both scientific realism and several types of idealism. Already, Polanyi's "from-to" structure of consciousness honors the dependence of thought on embodied subsidiaries and processes. Presumably all animals can act intelligently in terms of a from-to structure. But what makes human agency different from the intelligence of other animals is the use of language—discursive symbolism. As Susanne Langer points out, we humans have an irrepressible need (except maybe in some meditative states or deep sleep) to impose symbols (interpretive words and images) on experience. The "via" recognizes that symbolism, whether imagistic or discursive, is what gives rise to conception rather than simple stimulus-response signaling meaning. Through conception, we can remember the past and plan the future. Through language, heightened social influence occurs, and out of that our whole cultural world blooms. The entire "from-via-to" process is essential to understanding some of the special qualities of human agency; it underlies intentional action as well as thought. I earlier indicated how different interests and assumptions contribute to framing the from-via-to process at the "from" level. Purposeful intention thus is largely rooted at the tacit dimension. Appropriate language to articulate this intention is evoked and expressed to make explicit our intended meaning. Without the "via" of language, there would be no human civilization or culture or cultural diversity as we know it. The scope and complexity of meaning would be seriously diminished. I believe the addition of the "via" to the human cognitive process is a step consistent with and helpful to advancing the impact of Polanyi's thought.

A future project for Polanyians would be to explain in more detail ways the "from" and the "to" help create experience. I think others are correct in suggesting that Polanyi's notion of tacit knowing is vaguely defined. In my 2016 article in *Social Epistemology* (30/3: 297–325), I distinguished nine still very broad sources, aspects, or functions involved at the "from" level. But as I state in that article, "Polanyi's references

to the tacit dimension are not motivated by a desire to give fine-grained information about the psychological or biological processes that make thought and intentional action possible." Rather his intention in expanding Brentano's notion of intentionality by adding the "from" to Brentano's "to" was to provide a framework upon which the processes of personal knowing might be described. Polanyi's notions of trick, sign, and latent knowing help illuminate tacit processes of the "from." As Polanyi never tired of pointing out, he turned Gestalt ideas into an epistemology.

Not only is the "from" dimension chock full of elements and processes awaiting further specification; the "to" dimension of meaning also takes on varied forms. Again, Langer is helpful. Meaning can be primarily intellectual, rich in connotation and denotation. It can be primarily perceptual in nature. It can be imaginative, reflective, descriptive, or action oriented. The frameworks employed in thought shape and limit the "via" in certain ways that in turn focus the "to" in specific ways.

Mullins: Polanyi contended that the way thought has developed within modernism is the source of many of society's problems. He proposed some important changes, and your work has proposed further modifications of some Polanyian ideas. What do you make of the way Polanyi has interpreted the course of history in the first two-thirds of the twentieth century? Are you convinced by his account of moral inversion as a contributor to the last century's disasters and perhaps the malaise among intellectuals in this century's first twenty years?

Gulick: Polanyi seems on target in his portrayal of the Enlightenment's unintended destructive consequences. When skeptical doubt, useful in challenging superstition and unjust social arrangements, became married to scientific objectivity as the only reliable guides to truth, Western traditions of normativity could be and often were swept aside as merely subjective and unreliable. Once moral and religious constraints are interpreted as sneaky vehicles of elite control, as is voiced in Marxism (or other contemporary frameworks with a dynamo-objective coupling), the natural moral passions of humankind, enhanced by Christian values, are let loose in unrestrained ways toward utopian ends. Violence and totalitarianism become acceptable as a means of social melioration and control.

Such is the core of Polanyi's theory of moral inversion. This theory provides his rationale for resurrecting normative belief both as a dependable moral guide and as an inevitable component of any framework of thought, including scientific thought. Overall, I find his insight to be quite brilliant as an account of the rise of individualistic nihilism as well as social dysfunction. My only caution would be against overemphasizing the importance of moral inversion as a cause of war. We humans are motivated by many interrelated factors. Thus, among the complex causal factors leading to World War I are the clash of empires with their secret alliances, nationalistic impulses of repressed groups within larger states, a pervasive mood that saw war as a cleansing force, and the militaristic intransigence of such figures as Kaiser Wilhelm II. Then the unjust reparations imposed upon the German people by the Treaty of Versailles was a key factor leading to the rise of Hitler and World War II, as Polanyi saw. My point is that moral inversion is best seen as a significant background influence that has been too easily overlooked when twentieth century events are analyzed.

Mullins: Your comments lead me back to the question of how you see Polanyi's thought contributing to our ability to feel at home in the universe.

Gulick: Something I cherish in Polanyi's thought is its richness and suggestibility. I can here mention only a few highlights. First, he recognized the importance of congenial social relations. He gloried in the

collaborative work of scientists and in inquiry generally. Would it not be wonderful if societies of explorers could become more abundant? He devoted a full chapter in *PK* in support of conviviality in social relations. The joy of learning and discovering is essential to any life well lived. Richard Gelwick aptly called Polanyi's thought a "heuristic philosophy." In particular, Polanyi affirmed the satisfaction of obtaining broader and deeper contact with reality: "Though powerless to argue with the nihilist, [a person alive to discovery] may yet succeed in conveying to him the intimation of a mental satisfaction which he is lacking; and this intimation may start in him a process of conversion" (*SFS*, 81).

Polanyi clearly saw that not just any form of society can adequately provide the freedom and support that would encourage social conviviality and allow the individual full freedom to seek discoveries. "Love of truth and of intellectual values in general will now reappear as the love of the kind of society which fosters these values," he wrote, "and submission to intellectual standards will be seen to imply participation in a society which accepts the cultural obligation to serve these standards" (*PK*, 203). Societies that seek the common good will flourish when many of their citizens are committed to public liberty rather than self-interest alone. "A free society is not an Open Society," Polanyi wrote, "but one fully dedicated to a distinctive set of beliefs" (*LL*, xviii).

In his old age, Polanyi sought to integrate his concern for these and other factors contributing to the satisfactions attendant to feeling at home in the universe. The vehicle he selected for such an accomplishment is an indwelt understanding of meanings: "Man lives in the meanings he is able to discern. He extends himself into that which he finds coherent and is at home there…. In order to hold these meanings securely in the reverence they seem to demand, contemporary man therefore needs a theory of these meanings that explains how their coherence is no less real than the perceptual and scientific coherences he so readily accepts" (*M*, 66, 68). I believe it is important not just to assert the reality of these coherences but build on what it is that makes values and cultural experiences worthy of reverence. One such factor is their ability to carry us away with their tacitly grounded emotional power. Here we are not just talking of facts, but of what is significant to us, what furthers our deepest desires and purposes. If such things are denigrated as merely subjective, the appropriate response is to assert that significance felt by a human for life-affirming values is far more important to being at home in the universe than mere so-called objective facts.

Mullins: Let us shift from questions about understanding Polanyi's ideas to questions about stimulating further interest in Polanyi as a rich thinker worth of study today. You certainly have had an important organizational role in the Polanyi Society for many years. What you think the Polanyi Society should be doing in the next turn?

Gulick: I identify with the Greek notion of philosophy as a love of wisdom. That implies that one should try to grasp a little understanding of as much of what is going on in the world as possible. When I first finished graduate school, as an expression of my broad interest I tried to write articles on a variety of topics for a variety of groups. That turned out not so much to be an expression of wisdom as an adventure in fragmentation. For about four decades now I have found my academic home. It's with the Polanyi Society. For being one interested in many disciplines, I guess it was natural that I identify with and follow the thought of a polymath like Polanyi. Now I am at the point in my life where I am trying to integrate what I have learned and haven't entirely forgotten. My 2020 article "Toward a Comprehensive Interpretation of Aesthetics" in *American Journal of Theology & Philosophy* (42/2–3: 151–174) is one such attempt at integration. I think investigating the diverse sources of wisdom and working toward synthesis remains a worthy pursuit.

With regard to the immediate future of the Polanyi Society, I want first to commend the work of many scholars in excavating and interpreting the broad scope of Polanyi's accomplishments. We have already generated a rich public conversation. I think the major task of the society now is to find ways of connecting Polanyi's insights to contemporary issues and other thinkers. It is good that *TAD* is now publicly available online. The articles in the July 2021 issue of *TAD* written in response to the theme "Polanyian Reflections on the Current State of Democracy in the U.S." are exemplary models of what I think we should be doing. I am encouraged by the group of somewhat younger Polanyians who are ready to upgrade our web resources and expand our reach through social media. I applaud the members of the society for living up to the standard of conviviality Polanyi advocated. As my time in the society is phasing out, I am humbly grateful for the opportunity to have been instructed by Polanyi and for the many good exchanges with fellow Polanyians.
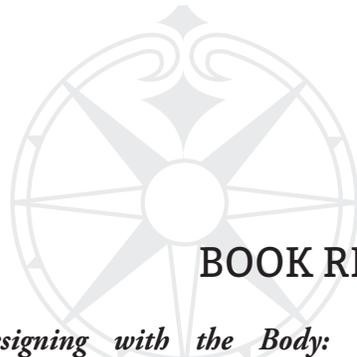
BOOK REVIEWS

Kristina Höök. *Designing with the Body: Somaesthetic Interaction Design.* **Cambridge, Massachusetts: The MIT Press, 2018. xxxiii+237 pages. ISBN 9780262038560. Hardcover $30.00 (£25.00).**

I started to read *Designing with the Body* in the early stages of the COVID-19 pandemic. My mind was distracted by the global crisis and the accompanying pandemonium. Our "lifeworlds" (experiences of reality in our day-to-day lives) had radically changed from interacting face to face to relating as objects mirrored in Zoom space—as disembodied, impersonal videos in a computer or smartphone camera. For the most part, we saw people in the flesh at a distance and interacted with them through large plastic barriers and facial coverings revealing only eyes. A new culture developed of isolation, distance, and impersonal interaction through technology. We lived as if experiencing the world from a removed, depersonalized point of view: a world where abstract virtuality became our reality.

In assessing this context of abstract virtuality, the questions and discussion in Kristina Höök's book are of more importance and urgency for us now in the immediacy of our presence that is removed from concrete reality than when she first envisioned her project. I will briefly outline her book before plunging into a more detailed discussion.

How can we develop designs for technology in the Internet of Things, for wearables, for processor-embedded or app-aware appliances, for furniture, for lights, or for cushions and mats? More generally, how can we develop designs for technologies that not only fit humans but also help individuals, society, and institutions to improve? The book answers that we must start from the body ("soma") in unity with the mind holistically, from the inside, from one's own subjective or first-person experience. Too much design is oriented towards a cognitivist, symbolic, linguistic, objective third-person point of view. However, Höök argues that although we cannot get away from language and its embedded third-person point of view in the articulation of our subjective, first-person point of view, we need to acknowledge and use our subjective first-person experience with technologies. Furthermore, she argues that we use the tacit knowledge we acquire when we interact with technologies as primarily active and experiential beings within our "lifeworlds," or sociocultural and sociotechnical eco-niches. The use of tacit knowledge is necessary for developing designs. "Tacit knowledge," Höök writes, "is and will continue to be part of the bodily, emotional, and subjective aesthetic experiences" (202). For that matter, tacit knowledge is used in all creative endeavours.

Tacit knowledge links the subjective to the objective. It is bi-directional, or two-dimensional. The articulated objective design points inward to the tacit knowledge used in the subjective, first-person dimension of the creation and appreciation of that design. The inner, unarticulated and pre-articulated subjective experience of tacit knowledge points outward to articulation in words, symbol systems (such as sketches or pictorial designs), and physical objects in the world for use by people. Objects designed from a base within the first-person subjective experience of the designer(s) could help people, as users of and interactors with the object, become aware of themselves through the emotions and thoughts evoked in the use of the physical

object, not only as a means to an end but also as an aesthetic experience ("soma-aesthetic" experience).

Höök and her design team developed prototype processor-based technologies that interact with body heat, breath, and small and slow body movements of the user that attempt to assist the user to become bodily aware. Höök's design philosophy becomes materialized and socialized in the physical objects that she and her design lab team not merely design but also build (see chapter 4, "Soma Mat, Breathing Light, and Sarka: An Autobiographical Design Account," 83–115). Höök provides a succinct outline of her philosophical approach to design and, for that matter, to everything: "… what are the best practices for learning about and changing yourself? ….[A new interactive processor-embedded technology]…needs to be grounded in knowledge of bodily processes, engaging your senses and attention to help you turn inward and learn something about yourself, even changing yourself. Where would you start?" (83–84). Good question. Where does one start in developing technologies that actually help us learn about ourselves from the inside out? Rather than use the customary procedure of looking at ourselves from the third-person point of view, as if we were data in a graph or variables in mathematical game-theoretic and micro-economic rational choice functions, we might start designing technologies within the first-person stance. Start with yourself, Höök suggests. Your inner experiences and self-awareness can help develop technologies that actually offer feedback into your inner experiences and improve your self-awareness of your inner world.

From this point forward, I adopt the first-person subjective experience as a "proof-of-concept" of Höök's general philosophy (as well as her philosophy of design). However, I face a dilemma in attempting to adopt the first-person stance: how, in a world where we are in a matrix of illusory, virtual objects—these days more than ever before—can we relate to those objects from a first-person point of view? We are now disembodied beings, barely living in our own bodies.

I will describe how I worked with adopting the first-person stance in reading Höök's book and writing this review. To get inside my body, to experience what Höök advocates for the best design, I first decided to practice slow movement by following practitioners of Qigong (or Shibashi 18) on YouTube. In announcing what the slide displayed at the beginning of a session of Qigong, one practitioner said to follow along as if following the movement in a mirror. This immediately objectified me as the practitioner. I imitated as best as I could what I saw on the screen, tried to follow what I heard in the voiceover instructions, and attempted to read and remember the quickly disappearing names for each of the slow movements. At best, I gave full attention to what I saw, heard, and felt as I mimicked the movements of the two-dimensional image on the computer screen.

Following Höök's advocacy for slow thought, I practiced slow reading and slow reflection about what I was reading. But as Höök admits, reading, talking, and even thinking or cognition involve the use of objectifying language. Though we may stretch language to describe new inner experiences, even with new metaphors and new phraseology we objectify our new subjective awareness. There seems to be nothing else that we can do. As the philosopher Ludwig Wittgenstein said, there is no private language. According to Höök, however, "*soma-based design entails a qualitative shift from a predominantly symbolic, language-oriented stance to an experiential, felt, aesthetic stance permeating the whole design and use cycle*" (175, italics in original). I put aside critical reactions, though I was aware of them—such as it doesn't matter how we come up with an idea, a design, an architecture, a blueprint, a drawing, a cartoon; what matters is whether it's any good. Indeed, that is the basic question one has: is the book, movie, theory any good? The evaluation of a book, theory, design based on its psycho-socio-historico origin

has been dubbed the "genetic fallacy." So my critical mind, objectifying as all criticism is, wondered whether Höök was committing the genetic fallacy with respect to design. Suppose a design is just a variation of a traditional design and does not originate from first-person experience. Suppose the design is a third-person modification of a design done in a generic style, or genre. The outcome, the design, can have value with respect to the value system adopted by those who appreciate the style and genre of similar but different designs. It can be good and liked by some people in a specific group, audience, or market.

My point is that from within the I-experience, within the first-person self-aware experience, one acknowledges when one jumps out of the I-experience and moves into the third-person, objectifying experience of whatever, as an It-experience. The critical stance, one that I seem to flip into as a habitual critical thinker, even in my deepest moments of reading from the stance of the first-person, is in a sense alien to the first-person experience. In the critical stance, one objectifies everything and deploys the "*predominantly symbolic, language-oriented stance to an experiential, felt, aesthetic stance….*"

I put aside those critical moments, but I experienced them. So, continuing with my dilemma, I wanted to adopt a first-person experience in reading this book and in writing this review as a unified, singular person with mind and body subjectively experienced in a unitary fashion. However, in the global lifeworld of isolationism in the pandemic, the only contact with others was I-IT in the global matrix of virtuality, intruded, interrupted, and disrupted. In the symbolic-oriented matrix of virtuality, where everyone is compelled to adopt a third-person stance in order to connect with others, an attempt to adopt a first-person stance goes against what seems to be a compulsory or, at best, a natural standpoint. It seems that even now my first-person frame of reference is continuously bombarded by the nonstop droning, screeching

noise from the third-person, disembodied shouts of the ephemera in the current world of virtuality. Even the now customary flash of thought, the tweet, the post, is expressed in flash-by words and images streaming on a screen, transient though externalized. Once saved in a file, the transient words flash up on the screen as virtual objects. Once the file is sent through the internet, the words in the file can only be read in the third-person stance, in the abstract digital medium of pixels on a screen. The thoughts expressed in and through the words are objectified by the third-person who cannot have a real first-person, face-to-face, I-Thou interaction with the writer and issuer of the words. Can one say the same about words printed in a book? Do words in print exclude a first-person experience of the book, and do they exclude an I-Thou relationship with the author of the book?

Socrates complained about writing freezing thoughts as opposed to thoughts developing, evolving, and even improving within face-to-face speech. When thought is frozen on the printed page, authors are prevented from changing their minds. In face-to-face interaction, one can immediately change one's mind, trying out and trying on different thoughts and alternative points of view. Language as living speech is not objectified. Speech in face-to-face interaction connects people, not as an intermediary object but as a means for relating people through their words, facial expressions, body language, and, often, with respectful physical contact such as a hand on a shoulder or a pat on an arm. However, in nearly total virtuality during the height of the pandemic, thoughts were both objectified and transient. Language disappeared with the flow of pixels on the screen, but speech as objectified on the screen became externalized and even alien to the originator of the words saved into a digital file, transmitted through the internet, and appearing digitally in the pixels. The written words became alien as another object, not frozen but as disappearing objects flying by on the screen as one

scrolled the screen pages. Moreover, the meaning dissolved through the utter objectivity of language as pure syntax and as a product of objective algorithms that govern software applications, the apps loaded into the memory of the device.

One can rightly comment that a dilemma arises when we attempt to use the first-person stance in our daily lives and activities that include the use of computer technologies. The first-person stance is often countered and subverted. Computer technologies inherently compel us to adopt the third-person stance. Hence, the matrix of almost total virtuality in our use and reliance on computer technologies for connecting with other people preexisted the isolationism created to avoid the extremes of the pandemic. The lifeworld, distorted by the pandemic in which the globe is still immersed, shifts the dilemma of the matrix of virtuality in confrontation with the subjectivity of the first-person experience, moving it from the background into the foreground and forefront of consciousness. Höök has a reply to my critical self in chapter 8, "The Politics of the Body" (177–195), and chapter 9, "A Soma Design Manifesto" (197–208). There is a way through the dilemma in the I-experience of her thought as an expression of her book.

What is this thought as an expression of a book? How can thought be other than objectified when articulated in a book? When articulating their thought in a book, how can an author avoid becoming objectified as the text and the thought in the text are objectified?

Thought as an expression of the book is similar to the thoughts and feelings of a person that are evident in facial expressions, body language, and carriage of the body in movement. In the global lifeworld of the matrix of virtuality, the first-person experience has now become a form of resistance. The first-person stance resists the domination of the use of third-person symbolic systems as objects in themselves rather than as media for expressing thought and for representing worlds as environments that we inhabit. These third-person symbolic systems objectify subjective experience and inner awareness. The third-person stance ignores and side-steps reflective thought in meditation.

How can we regain our experience as humans, each with our own subjectivity in the inner and pre-articulate world, in the face of domination by abstract, impersonal symbols and artifacts—especially computer technologies—with alien procedures and processes? The short version of the answer, according to Höök's general philosophy, is that while everything that is us, that makes us human, is now compelled to inhabit the matrix of virtuality, we can resist inhabiting that matrix by living through and with the first-person, I-experience. But one may justly wonder, as I have done and admitted in the above, whether there is a constant flip-flop between the first-person stance in our immersion in the reading of a book and in the writing about it. The question is, apart from the use of language and computer technologies, when one reflects in thought and writing about the flip-flop between the first-person and third-person stance, is one inevitably drawn into the third-person person stance? Even apart from the use of language and symbolic-oriented technologies, is not the very attempt to reflect and critically examine one's experience with adopting the first-person stance actually a flip into the third-person stance? Is not the very attempt to reflect and critically examine one's experience in "designing with the body," as Höök has described in her book, a flip into the third-person stance?

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Filip Jaroš and Jiří Klouda (eds.). *Adolf Portmann: A Thinker of Self-Expressive Life.* **Springer: Biosemiotics Volume 23. ISBN 978-3-030-67809-8. Hardcover $169.99. ISBN 978-3-030-67810-4. E-book $129. https://doi. org/10.1007/978-3-030-67810-4.**

This collection on Adolf Portmann's contributions to biology and the philosophy of biology is a volume in the Springer Biosemiotics book series. Its fourteen essays are organized under four rubrics: (1) Paving a Path to the New Biology; (2) Biology, Biosemiotics, Anthropology; (3) Philosophical Aspects of Portmann's Work; and (4) Historical Context and Later Reception. Here I will comment primarily on a few essays of special interest to readers who are familiar with Michael Polanyi's thought. Independent of links to Polanyi, however, I emphasize the importance of Adolph Portmann to philosophical biology; the essays in this book provide analysis and an overview that make his contributions clear.

Adolph Portmann (1897–1982) was a Swiss zoologist particularly interested in morphology and animal behavior. Marjorie Grene wrote about Portmann's approach to biology and aligned him with the post-critical philosophical ideas of Michael Polanyi. Grene's letters to Polanyi in the sixties encouraged him to read Portmann and several other European scientists-philosophers. She consulted Portmann (a leader in the Eranos intellectual discussion group) about how to set up the Study Groups' programs funded by the Ford Foundation. These groups originally aimed to bring together independent thinkers like Portmann who resisted much that was dominant in several areas of science and philosophy of science. The plan was to use Polanyi's epistemological innovations as a galvanizing element that might initiate a broader reform movement in the still largely positivist-influenced cultural mainstream (see discussion in Breytspraak and Mullins, 2017).

Following Jaroš and Klouda's helpful introduction (1–9) is a lucid English translation of a short 1965 Portmann essay, "New Fronts of Biological Work" (13–21), that originally was a contribution to a festschrift. This brief Portmann reflection concisely articulates his view that a new and significant perspective in philosophical biology was emerging—one quite different from the immensely fruitful recent approach to biology Portmann called the "physico-chemical technique" (13). Portmann saw the new approach, growing out of the German tradition of biological research, as focusing on the fact that "living beings appear in the world as subjects, and that they settle into, and intervene in, environments as relatively autonomous centres of action" (14). Organisms are perceiving beings embedded in a changing environment, and they "integrate their experience into their mode of existence and process their experience independently of conscious processes" (14). This approach to living beings brought what Portmann called a "fresh perspective to peculiarities of appearance" (19). That is, "self-presentation" (20) of living beings becomes "the instrument of a special manifestation of life" that expresses "special and species-specific features of an organism in the language of the senses" (20).

Perhaps most interesting for Polanyians is a Marjorie Grene essay that turned up in the Portmann archive in Basel, Switzerland (apparently Grene gave a copy to Portmann at some point when she consulted him). Titled "The Language of Nature Re-Read" (23–42), this hitherto unpublished piece was the third lecture in a series on "man in nature" (41) that Grene gave in the sixties at Queens University, Belfast. At the time, she was keenly interested in Portmann and used Polanyi to clarify some of Portmann's themes. Interestingly, the Grene lecture references Polanyi's Duke Lectures (1964), and parts of this lecture are also in sections of Grene's *The Knower and the Known* (1966), a book dedicated to Polanyi that Grene says was mostly

written from 1961–1963 at Queens University (see her Preface to the 1974 paper-bound edition).

Grene was one of the first interpreters of Portmann for an English-speaking academic audience; a chapter on Portmann in her *Approaches to Philosophical Biology* (1965) was also later included in *The Understanding of Nature* (1974). As the editors of this new collection put matters, Grene's Belfast lecture attempts to "work out an 'ontology of the living' which lies at the foundation of Portmann's new biology" (4). Put somewhat differently, Grene saw that Portmann, several other European scientist-philosophers, and Polanyi all recognized "the limitations of a mathematizing approach to organic phenomena." They instead emphasized "the rich reality of color, sound, smell and taste that makes up the sensory plenum of living nature as experiencing and experienced." Grene emphasizes—and saw that Portmann and Polanyi emphasized—"that there is no one language in which nature's truth is eternally and unambiguously written" (25). She argues that narrow modern naturalism arose from epistemic ideas, and only a renewed philosophy of knowledge provides release from the consequences of this naturalism such that humans are "not disinherited, but at home in the living world." Portmann seems, more or less, to have recognized all this, but Grene argues that it is Polanyi who provided the "missing philosophical keystone" in his account of tacit knowing and "by the ontology it entails" (23).

In a volume of material focusing on Portmann's ideas and research, this Grene essay unpacks Polanyi's thought in a way that draws Portmann into the discussion and shows how his biology complements and amplifies some of Polanyi's own ideas about life. Grene provides an articulate account of Polanyi's approach to biology, making clear what she was putting together in the mid-sixties as a philosopher of biology. Portmann seems to be a philosophical biologist whose work is now being picked up by some working in the interdisciplinary field of "biosemiotics." Perhaps the publication of Grene's "The Language of Nature Re-Read" will encourage those interested in "biosemiotics" to take a closer look at Polanyi's philosophical ideas. Grene makes a solid case that Polanyi provides helpful underpinning for Portmann.

Other essays in this collection include the following (and here I omit some entirely): Roger Stamm (affiliated with the Portmann archive) provides a broad-based essay and supplementary material nicely summarizing Portmann's research and teaching (45–69). Riin Magnus compares von Uexküll's and Portmann's approaches to cognitive and perceptual schemes in living beings (71–87). Essays by Andres Kurismaa (89–118) and Filip Jaroš (119–142) outline Portmann's influence on anthropology, which perhaps exceeded his influence on biological research. Markus Wild's essay (145–158) shows how Portmann's approach to biology is a "reluctant relative" (145) of Goethe's approach. Jiří Klouda links Portmann's new morphology and hermeneutics (199–218). Ivana Ryška Vajdová's essay lays out the connection between Carl Gustav Jung and Portmann and shows how Portmann worked to broaden the conversation in the Eranos group to include science (241–256).

This rich collection of essays illumines what Adolph Portmann spent his life working on as a scientist-philosopher. Some of these essays helpfully amplify and enrich the account of Portmann that Marjorie Grene provides using some Polanyian ideas.

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Jon Lieff, MD. *The Secret Language of Cells: What Biological Conversations Tell Us about the Brain-Body Connection, the Future of Medicine, and Life Itself.* **Dallas, TX: Ben Bella Books, 2020. ISBN: 9781948836333. 350p. Hardcover $24.95.**

Among the many positive reviews of *The Secret Language of Cells*, I have found none that commented on the ways it connects with themes in Michael Polanyi's writings. This isn't surprising since Dr. Lieff never mentions Polanyi. His book is a synthesis of recent research findings in cellular biology, but, as the subtitle indicates, he writes about the broader implications of these findings. I will focus on some ways Lieff's reporting on and interpretations of the findings connect with Polanyian themes. I will not attempt to evaluate the accuracy of Lieff's biological statements, as I am not a biologist. I do trust his biology as a result of the praise for the book by people who work in this field. The first four pages of my copy of the book include effusive statements of praise, mostly by physicians and biologists from prestigious hospitals and universities. To write the book, Lieff took a three-year break from writing a weekly blog on new findings in biology and neuroscience (https://jonlieffmd.com/blog). When I went to his blog, which he has now resumed, the first thing I saw was a set of links to "14 Podcast and YouTube Interviews on The Secret Language of Cells."

The first paragraph of Lieff's introduction reminded me of this passage in Polanyi's *The Tacit Dimension*:

> The greatest secret of modern biology, hiding in plain sight, is that all of life's activity occurs because of conversations among cells. During infection, immune T cells tell brain cells that we should "feel sick" and lie down. Long-distance signals direct white blood cells at

every step of their long journey to infection. Cancer cells warn their community about immune and microbe attacks. Gut cells talk with microbes to determine who are friends and enemies. Instructor cells in the thymus teach T cells not to destroy human tissues (1).

In *The Tacit Dimension* (15), Polanyi includes unconscious events in the brain within the tacit dimension of knowing and doing. In a footnote, he proposes the following principle: "whenever some process in our body gives rise to consciousness in us, our tacit knowing of the process will make sense of it in terms of an experience to which we are attending." Whenever "T cells tell brain cells that we should 'feel sick,'" unconscious processes in our bodies give rise to conscious experiences. This connection between Lieff and Polanyi framed my reading of the rest of the book.

Marjorie Grene worked with Polanyi in the writing of *Personal Knowledge*. She said that his central argument is analogical. I say the same of Lieff's book. The title and subtitle point to two key analogies: (1) cellular language is analogous to human language, and (2) biological conversations are analogous to interpersonal conversations. Lieff, however, does not refer to these as analogies but expresses them as metaphors. I agree with Theodore Brown in *Making Truth: Metaphor in Science* (2003) that all creative scientific thinking is metaphorical. But I also agree with Stephen Turner in *Understanding the Tacit* (2014, 3) that to make sense of the tacit we need to "recognize metaphors as metaphors and analogies as analogies." I am not criticizing Lieff for not having done this; his objective was not to understand the tacit. I am saying that I must do this, given the way I have framed my reading of Lieff and my writing of this review.

Recognizing the analogical and metaphorical aspects of Lieff's use of "language," however, can

clarify some ambiguity about whether cells use one or many languages. A section of the introduction is titled "Same Language, Different Approaches." Lieff begins by listing multiple signaling devices involved in cellular conversations:

- secreted chemicals
- launched sacs filled with genetic information
- electric currents
- electromagnetic waves
- physical contact by cells
- biological nanotubes between cells

He adds, "Remarkably, all levels of cells throughout nature—humans, animals, plants, and microbes—use these same languages with the same vocabulary" (3). He is more accurate when he calls these "signaling devices" than when he calls them "languages" in the plural. These six different signaling devices are not as closely analogous to six different human languages—English, Spanish, Arabic, Hindi, Mandarin, Navajo—as they are to the signaling devices we use in our nonverbal communications—facial expressions, tone of voice, gestures, postures, odors, etc. Conversation among cells is entirely nonverbal. It is a bit misleading for Lieff to have written "these same languages with the same vocabulary." "Vocabulary" mistakenly implies that words are the units from which intercellular messages are composed.

Lieff's argument resembles Polanyi's in emphasizing the analogies between different levels of organization. He draws an analogy between the functions of organs in an organism and the functions of organelles in a cell:

> Organisms have organs—structures that perform specific functions in the body. In the same way, cells have organelles: mitochondria, nucleus, protein factories, membrane factories, and multiple large vesicles with diverse roles to play (294).

While we don't know what life is, we do know it involves information transfer based on signaling of viruses and bacteria, signaling in complex circuits of brain cells, and signaling among human beings using language and mathematics. But we also don't know exactly what information is or how it is directed in nature at these various levels (296).

These quotations suggest some of the ways in which Lieff's book can complement Part Four of Polanyi's *Personal Knowledge*, with its chapters on "The Logic of Achievement," "Knowing Life," and "The Rise of Man."

There's another connection having to do with organization. The biological conversations Lieff describes result in what Polanyi called "spontaneous" or "dynamic" order. This was Polanyi's *ideal* type of order for both scientific and economic activities. His *anti-ideal* type for the organization of these domains was centralized planning and control. Lieff comments on the absence of centralized control of the activities of brain cells:

> Efforts to understand how human brains use information have not yet been successful: no clear source of direction for the widespread information flow in brain circuits, for instance, has been found. Attempts have failed to detect a central control module in the brain, such as a seat of consciousness and subjective experience. Instead, brain activity seems to be distributed widely among diverse cell clusters using signals that change frequently in milliseconds. During neuroplasticity from learning, multiple circuits throughout

the brain alter themselves in different ways simultaneously, without an obvious central commanding post to direct these processes (294).

Conversations among other kinds of cells also lack any obvious central control.

A striking set of metaphors occurs early in the book in a section titled "From Birth to Graduation" (30–31). Lieff describes the thymus, a small gland located in front of the heart, as a (metaphorical) university. T cells are born in bone marrow and migrate to the thymus, where they are educated by two distinct kinds of teacher cells. "Only 2 percent graduate. The other 98 percent that do not meet the exact qualifications required by a series of checkpoints are eliminated by their instructors." (We all have had hard teachers, but none as ruthless as these!)

> …the most important part of the training is that T cells must understand not to attack normal human cells and tissues while they search the body for trouble. When T cells are able to identify the difference between "foreign" molecules and "self" molecules, they avoid causing autoimmune diseases (31).

I relate this to Polanyi's interest in different kinds of learning. "Learning," he says, "will be regarded as a sign of intelligence" (*PK* 71). However metaphorical his language, Lieff seems to be attributing some kind of intelligence to T cells and to the teacher cells in the thymus.

Lieff explicitly recognizes the limits to what we know. He acknowledges that we don't know exactly what life is or what information is, even though he is confident in saying that life is based on information transfer as well as on flows of matter and energy. I want to add that we also don't know exactly what "sense-giving" and "sense-reading" are. In his 1967

essay on these processes, Polanyi says that both of them require the integration of tacit subsidiaries into an object of focal attention. He writes of a "triad of coefficients" that are "akin to"—I would say "analogous to"—C. S. Peirce's "A stands for B to C." Polanyi amends this to "The person A can integrate the word B into a bearing on C" and adds that he means that the person A endows B with a *meaning* that points to C. But, beyond saying that it's a tacit act of integration, Polanyi never explains just how a person performs that tacit act. His analogy to Gestalt psychology's description of acts of perception is helpful, but I remain convinced that the process by which person A endows B with a meaning is a deeply tacit act, one that can't be made fully explicit. Lieff attributes similar *deeply tacit* acts of sense-giving and sense-reading to cells, organelles, and microbes.

In "Sense-Giving and Sense-Reading," Polanyi briefly mentions Golgi bodies in the context of discussing sense-reading as requiring "tacit semantic acts" (187). Lieff's reporting a recent finding adds descriptive details to a process Polanyi could only hint at, given the state of cellular biology in the late 1960s:

> Signals between the ER [endoplasmic reticulum] and Golgi regulate all lipids for membrane production and the proteins that alter these lipids, and place both of these molecules in precise membrane locations throughout the cell…. Lipid molecules are used to produce all membranes and are also used as signals for conversations among organelles and cells (245).

To say that these are "tacit semantic acts" is to speak metaphorically. Semantic acts relate *words* to meanings, but the signaling devices used by cells do not include words. The acts of sense-giving and sense-reading performed by cells relate various kinds of

nonverbal signaling devices to meanings. What *meaning* Lieff attributes to "meanings" in this context is a product of a tacit semantic act—sense-giving—on his part, just as the meanings you or I attribute to his use of "meanings" in this context are also produced by tacit semantic acts—sense-readings.

In his book—I haven't read all the entries in his blog—Lieff never mentions biosemiotics. But it seems reasonable to me to interpret the conversations he describes as involving biosemiotic communication. This is important for Polanyians who want to explore the connections between new biological discoveries and Polanyi because there have already been articles in *Tradition & Discovery* that discuss connections between his works and biosemiotics (e.g., Walter Gulick, "Polanyian Biosemiotics and the From-Via-To Dimensions of Meaning," *TAD* 39, no. 1 [2012–2013]: 18–33; Phil Mullins, "Michael Polanyi's Approach to Biological Systems and Contemporary Biosemiotics," *TAD* 46, no. 1 [2017]: 6–31). This book is not easy reading for non-biologists, but I highly recommend it for Polanyians who want to extend aspects of Polanyi's thinking in the light of some of the exciting new findings in cellular biology.

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