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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 bibliographical 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*

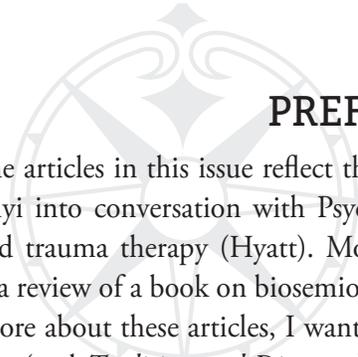
For example: Polanyi argues that (*TD*, 56). Full bibliographical information should still be supplied in the references section since many of us may work with different editions of his works.

- 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://polanysociety.org/Aims-and-Scope-9-12-18.htm> and <http://polanysociety.org/TAD-Submissions&Review-9-12-18.htm>

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PREFACE

As is often the case, the articles in this issue reflect the expansive relevance of Polanyi's thought. We have articles that put Polanyi into conversation with Psychology (Barnes), studies of judgment and decision making (Moodey), and trauma therapy (Hyatt). Moreover, this issue contains historical perspective on Polanyi (Mullins) and a review of a book on biosemiotics, which will be of interest.

Rather than say more about these articles, I want to devote the remaining space to reminding readers 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 keep producing the quality of journal we have for the past few years.

Moreover, the Society has expanded its activities beyond the journal and annual meeting. As News and Notes has documented, the Society has been holding periodic Zoom sessions devoted to various topics. We plan to continue those. We are also in the process of revamping the Society website and creating a separate site for *TAD* where we can more easily expand our digital footprint. We also continue to provide travel grants to in-person meetings. So please consider donating to the Society. Information can be found in News and Notes.

Paul Lewis

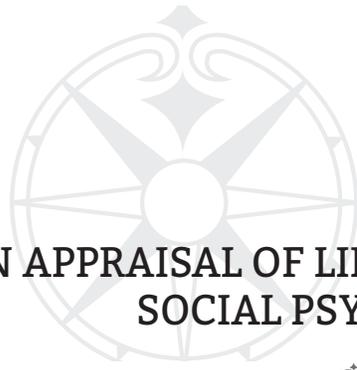
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A POLANYIAN APPRAISAL OF LIKERT-SCALE MEASUREMENT IN SOCIAL PSYCHOLOGY¹



Collin D. Barnes

Keywords: Likert-scales, social psychology, Michael Polanyi, pseudo-substitution, subsidiary-focal awareness, interpretative frameworks

ABSTRACT

Rating scales that link numbers to verbal labels are ubiquitous in social psychological research and are used to re-express individuals' attitudes on wide-ranging matters in quantities that can be treated statistically. These re-expressions pay tribute to an objectivist framework, but at the expense of eclipsing the powers of personal knowing Polanyi attributes to other minds. This fact comes to the fore in the present paper through an investigation of Polanyi's analysis of linguistic indeterminacy, indication and symbols, and the application of neurological models to persons who are competent to make sense of their own lives. Accrediting the result of this inquiry compels one dedicated to Polanyi's thought to wonder how social psychology ought to be conceived. Clues to an answer appear in the educational bonds formed between mentors and pupils in the transmission of cultural lore.

“What do I mean when I say ‘the pupil’s capacity to learn *may* come to an end here’? ... [W]hat am I doing with that proposition? Well, ... I wanted to put that picture before him, and his *acceptance* of the picture consists in his now being inclined to regard a given case differently: that is, to compare it with *this* rather than *that* set of pictures.”

Ludwig Wittgenstein, *Philosophical Investigations* (1953, 57)

Likert-scales have a lengthy history in social psychology and are widely used even today for the measurement of attitudes, which Gordon Allport (1935) once famously identified as “probably the most distinctive and indispensable concept in contemporary American social psychology” (798). Although complexities abound in experts’ discussions of the subject (e.g., Eagly & Chaiken, 1993; Schwarz & Bohner, 2001), attitudes are characteristically portrayed as individuals’ favorable versus unfavorable evaluations of target objects. They include about every conceivable entity one could develop a disposition toward, including rapidly presented polygons and ideographs (Monahan, Murphy, & Zajonc, 2000), mundane laboratory tasks (Festinger & Carlsmith, 1959), national affiliations (Golec de Zavala, Cichocka, Eidelson, & Jayawickreme,

2009; Staub, 1997), sociocultural outlooks (Altemeyer, 1998; Pratto, Sidanius, Stallworth, & Malle, 1994), and religious beliefs (Altemeyer & Hunsberger, 1992; Hunsberger, 1989). The technique bearing his name was pioneered by Rensis Likert in 1932 as an improvement over L.L. Thurstone's more "laborious" (6) approach, and most Likert-scales operate by simply associating numerical values with words that express graded levels of agreement ("1: Strongly agree") or disagreement ("5: Strongly disagree") with a series of statements—e.g., "We must strive for loyalty to our country before we can afford to consider world brother-hood" (Likert 1932, 17).^{2,3}

Importantly, first-time students of psychological research may wonder what assurance they can have that the statements, labels, and numerical values depicted in Likert-scales appear the same to different persons. How, after all, are they to verify that one respondent's reading of a statement, and the rating he or she selects in relation to it (e.g., "5: Strongly disagree"), are interpreted in the same way by other respondents? Moreover, how can they guarantee that individuals perceive the difference in meaning between adjacent ratings (e.g., "1: Strongly agree" and "2: Agree") in an equivalent way, or even whether these perceptions remain consistent across different statements? At one time, these students' instructors may have puzzled over similar problems. But having come to trust that any such divergences are "washed out" or are of negligible "practical" importance when the ratings of many respondents get averaged together, they escape the weight of their doubts and offer the same service to students by training them to think along similar lines.

Michael Polanyi's philosophy of personal knowledge, however, encourages us to do otherwise. It countenances the hesitations of students and those their instructors originally felt as clues to a genuine deficit in Likert-scale measurement that is not resolvable or made negligible by statistical procedures, but is, instead, *disguised* by them. The goal of the present paper is to investigate the nature of this disguising—what it is, how it happens, and whose purpose it serves—by drawing on several of Polanyi's insights, including his discussion of linguistic indeterminacy, his work with Harry Prosch on the phenomena of indication and symbolism, and his portrayal of neurological models applied to persons competent of asserting their own purposes. As the argument unfolds we will see that the word-meanings contained in Likert-scale instruments are not only indeterminate, but that they say nothing without being indwelt and asserted by a person who uniquely circumscribes their meaning. These circumscriptions get hidden behind numerical values reflecting psychologists' own allegiances, and in granting this we will be compelled in the end to ask what a Polanyian conception of social psychology looks like. Despite having to postpone a developed answer to a later essay, enough will be said here regarding it to justify Sigmund Koch's (1999a) observation that psychologists committed to the scientific study of humanity may find Polanyi's philosophy "*too liberating*" (111). Because the respect Polanyi pays to other minds is presupposed in all that follows, a summary of his reflections on this point is offered here before we begin.

Polanyi's Respect for Other Minds

Relatively early in *PK*, Polanyi notes how infants' primitive modes of orienting themselves in the world (e.g., looking, touching, tasting) are akin to those of other species, but he also highlights their capacity for language. It enables them to engage in sustained thinking, grants them access to "the whole cultural heritage of [their] ancestors" (69), and has no equal in lower animals. A graded transition exists for Polanyi between these two kinds of knowledge—i.e., knowledge we acquire through basic sensory experiences and integrate into skilled performances we cannot fully express (e.g., swimming or riding a bicycle; *PK*, 49-50), and knowledge we can cognize in speech or other symbols (e.g., a recipe, musical score, or map). The former

he calls tacit knowledge, and the latter explicit, but one should not suppose that these are independent dimensions because they have different names. In truth, they are interwoven, with tacit knowledge being the more fundamental of the two (*TSOM*, 12). It pervades all manifestations of what we know, even when what we know is highly formalized, as in science and mathematics (*TSOM*, 13). These extraordinary feats of articulate intelligence have their roots in our primitive existence too and are foreshadowed for Polanyi in “[t]he groping movements by which worms explore the path in front of them” (*PK*, 388; see also *TSOM*, 16).

A defining feature of tacit knowing is its power to integrate particular clues into coherent totalities. This integration is often automatically performed at the level of vision (e.g., distinguishing a figure from a background), but at the level of abstract thought aspiring toward true portrayals of reality (e.g., a tremendous scientific breakthrough), it is achieved responsibly and effortfully in a skillful act of a person serving standards he or she holds to be universal (e.g., *PK*, 106). It is by trusting one’s body and cultural training as the preconditions for any skillful performance aspiring to universal relevance that the individual accepts his or her existence as an opportunity to investigate reality and search for the truth (*PK*, 252, 269). Consequently, if through one’s self-accredited powers of knowing clues are integrated that imply the presence of other living beings and, beyond this, beings possessing rational minds capable of responsible action, creative problem solving, believing and knowing, then by extension, one accredits those other minds with all the capacities one recognizes his or her own mind to possess (*PK*, 343-346; see also *TSOM*, 33-34). Such accrediting entails shouldering the obligation to relate to them accordingly. This, in a nutshell, is why Polanyi acknowledges the reality of other minds. Indeed, as comprehensive entities, they are more real for him than cobblestones (*TD*, 32-33). Moving forward, it is imperative that we not forget the aforementioned obligation. It has a bearing on the kind of relationship a Polanyian perspective sees as fitting between researcher and those researched, or, indeed, between any persons.

Linguistic Indeterminacy

Why is it that Polanyi believes persons are indispensable to circumscribing the meaning of words and the statements they contribute to? We can answer this question by consulting his discussion of precision in descriptive speech. He opens it with the following observation: “[W]e must accept the risks of semantic indeterminacy, since only words of indeterminate meaning can have a bearing on reality and that for meeting this hazard we must credit ourselves with the ability to perceive such bearing” (*PK*, 251). The notion of “semantic indeterminacy” is important for recognizing what kind of precision we can expect from our words, including those printed in the items of Likert-scale instruments, and what—or, rather, who—decides their meaning, in the final analysis. It points us back to earlier material in *PK* where Polanyi discusses the operational principles of language and speaks of the “double indeterminacy” of our articulate systems (95).

In connection to the former, Polanyi identifies two “laws” of special importance—that of Poverty and of Consistency. The Law of Poverty states that in order for a language to be functional it “must be poor enough to allow the same words to be used a sufficient number of times” (*PK*, 78). Polanyi illustrates this necessity by inviting us to imagine a “millionfold” enrichment of our language with the addition of 23⁸ eight-letter, code word substitutes for “each different sentence ever printed in the English language” (*PK*, 78). Although these codes may, at first blush, appear to create greater economy of communication by summing up entire sentences in single-word replacements, the avalanche of additions would, in fact, destroy our very ability

to learn them. Words acquire their meaning through repeated usage, and the addition of 23⁸ code words would either prevent repetition from ever occurring or make it so rare as to defy the possibility of learning.

The significance of this becomes apparent when we note how our experience of reality is continually changing—no two moments are ever exact repetitions. If they were, we would not even recognize that time had passed (*PK*, 79-80). In consequence, a finite number of words must be applied to an infinitely fluctuating scene; or, said differently, a single word must be able to apply to *every conceivable* manifestation of its referent. This is why “only words of indeterminate meaning can have a bearing on reality” (*PK*, 251) and it presents an obvious complication for consistent usage. According to the Law of Consistency, “[o]nly when repeatable utterances are used consistently [a ‘deliberately imprecise’ term, Polanyi says] can they have a definite meaning” (*PK*, 79), and “we can achieve consistency only by identifying manifestly different situations in respect to some particular feature” (*PK*, 80). This “requires,” he adds, “a series of personal judgments” (*PK*, 79) about what aspects of some experience cohere as its significant and defining features and what aspects of it are okay to ignore.

Every time we use the words of our language, we make such judgments, and by them we “shape” (*PK*, 97) their meaning. In ordinary cases, these judgments are so subtle, implicit or habitual as to escape notice, but in exceptional cases they are not. Novel experiences impel us to *rely* on our words and associated concepts to make sense of them even while we *reconsider* their appositeness for this very purpose. When Polanyi speaks of the “double indeterminacy” of our articulate systems, it is this simultaneous reliance and reconsideration he is referring to (*PK*, 95; see also 112). However, novelty should not be made too much of. It is, indeed, possible to rely on language even while reconsidering ordinary happenings, but, of course, it is not very convenient to do so. Whichever is at issue, the point is the centrality of the person in deciding one way or another whether his or her words are adequately shaped to fit experience. One’s language community offers guidance, but no preordained solution. In this way, Polanyi destabilizes the presumed simple correspondence between our words and experiences in order to throw us back on ourselves as the ones responsible for saying and discerning what we mean. But—and this is crucial—he does so with the continued reassurance that we are competent to make such judgments (*PK*, 91).

This is evidently a critique of the objectivist desire to narrow the boundaries of meaningful speech to that which maps one-to-one onto experience, but it is also a check on the nominalist who champions the “open texture” of words (*PK*, 113). As already noted, to have any bearing on reality whatsoever, the meaning of our language must remain receptive to new generalizations and re-interpretations. But we must ask, what prevents the openness of our words from veering into complete vacuity, one that would permit us, for instance, to designate a new species of owl as a skyscraper, alligator, apple pie, or sparrow? “Indeed,” asks Polanyi, “why should we ever say one thing rather than another, and not pick our descriptive terms at random?” (*PK*, 110). This is the next problem to concern us, and Polanyi’s answer is two-fold. It involves 1) recasting the meaning of truth as the rightness of concepts within their proper framework, and 2) appealing, as above, to the personal role of the speaker in judging this rightness within that framework.

Regarding the first answer, Polanyi says, “the principle which must guide us when adapting the meaning of words, so that what we say shall be true [is this]: the corresponding conceptual decisions must be right—their implied allegations true” (*PK*, 111). In the example above, we say owl rather than sparrow because the former, as an extension of the concept *owls* “makes sense; while a modification of our conception of sparrows ... makes nonsense” (*PK*, 111). It does so in a way analogous to chemists’ changing the definition of isotopes to include deuterium when it was discovered. According to the original definition of isotopes, deuterium

did not qualify because it was “chemically separable from its fellow isotopes” (*PK*, 111). This fact, however, was ignored by chemists who elected instead to restrict the definition of isotopes to elements which, despite their separability, maintain an equal nuclear charge. Their grounds for this? The fact that maintaining the first definition of isotopy would lead to a classification of deuterium in the periodic system that “would have been misleading to the point of absurdity” (*PK*, 111).

For those with little education in chemistry (including the author), this example is particularly apropos because it reveals how the rightness of conceptual reforms hangs upon standards of judgment that are appreciated and exercised rightly by those deemed competent to do so. There is something *in* chemists’ sense of “absurdity” that is opaque to outsiders, not even fully effable by them, and yet absolutely integral to their judgments about sensible and insensible classifications in the periodic system—judgments that are not arbitrary, but seek to uphold standards chemists believe have an authentic bearing on reality. We can say the same with respect to morphologists when they identify a new species of owl as an “owl” rather than a “sparrow.” Their justification for adapting the one concept rather than the other lies in their distinctive training. Only portions of this training manifest in rules that are explicitly defensible. Its more vital aspects exert their influence through the feelings of satisfaction morphologists rely on for making judgments.

Between owls and isotopes, morphology and chemistry, the degree to which the terms of our judgments about true generalizations and conceptual reforms can be explicitly and precisely stated varies. But even though precise articulation may be greater in chemistry than morphology, the personal contribution of the scientist is not nullified. Granting this brings us to Polanyi’s second answer to nominalism. We see it effectively in his analysis of tests we make to assess the precision of our descriptive words (*PK*, 251). These words designate things that are not in turn designated but experienced. When we call a designation precise, we apply to the word a test that cannot itself be made the subject of testing without introducing an infinite regress—i.e., we cannot go on asking, “Is the test demonstrating the designation’s precision itself precise, and how about the test of the test, etc.?” Polanyi concludes, “[t]he precision of a word will ultimately always rely, therefore, on a test which is not precise in the same sense as the word is said to be” (*PK*, 251). The regress stops when we accredit the person performing the test with the power to declare its precision.

When we say that a word is precise (or apt, or fitting, or clear, or expressive), we approve of an act of our own which we have found satisfying while carrying it out. We are satisfied by something we do in the same way as when we make sense of blurred sights or faint noises; or when we find our way or recover our balance. We properly declare the outcome of this personal comprehension of our own, by saying that a word which we are using is precise (*PK*, 252).

Responding to objectivism and nominalism in this manner reveals that for Polanyi language is an indeterminate phenomenon whose meaning is always managed by personal decision. We must add, then, by extension, that words say nothing on their own, but only when asseverated by a person—just as a statement of fact lacks the status of a sentence until an individual is prepared to stand behind it (*PK*, 27-28). With respect to the words Polanyi uses to express the fundamental beliefs of his philosophy, he puts it this way:

The words I have spoken and am yet to speak mean nothing: it is only *I* who mean something *by them*. And, as a rule, I do not focally know what I mean, and though I could

explore my meaning up to a point, I believe that my words (descriptive words) must mean more than I shall ever know, if they are to mean anything at all (*PK*, 252).

What does all of this say about Likert-scale measurements? First, it says that the unasserted statements contained in them are inert on their own, “no better than...unsigned cheque[s]; just paper and ink without power or meaning” (*PK*, 28). They neither say nor mean anything until the individual brings them to life by pouring him- or herself into them as resources for expressing his or her experiences and beliefs. When laying down numeric responses to them, the individual affirms or disaffirms their bearing on this material, yet these responses are not *precise* in any impersonal or exhaustively formalizable sense. Ineliminable penumbras continue to surround them that are not blemishes or failures of exactitude but stand to the individual as parts awaiting integration into a whole. *They are clues to a person* who knows his or her meaning and means more than he or she knows (*TD*, 4).

But are not these penumbras recognized by psychologists in their notion of variability—i.e., the idea that people differ in quantitatively specifiable ways? Variability points not to the necessary indeterminacy of language’s relation to experience and the participation of persons in discerning meaning, but to the sum of the mathematical deviation of *numbers* (e.g., individuals’ scale totals) in a sample from their mean, squared and divided by an adjusted sample size.⁴ Indeterminacy for psychologists, therefore, applies to the sum of scores’ (X) squared distances from an aggregate representative quantity of greater interest to them (\bar{X}). That this is so is evident in how psychologists refer to these indeterminacies as “noise” or “error” and seek by their methods and statistical adjustments to minimize them as far as possible. Likert scale ratings are, thus, not respecting of semantic indeterminacy as Polanyi conceives it, but of statistical indeterminacy; or, to say it differently, psychologists’ techniques conceal semantic indeterminacy by introducing statistical indeterminacy in its stead. This qualifies for Polanyi as a pseudo-substitution because it disguises the unformalizable personal contribution to deciphering meanings behind numerical values that can be treated formulaically, supposedly require little-to-no such deciphering, and appear, therefore, more scientifically objective (*PK*, 16-17). Such substitutions are used “to play down man’s real and indispensable intellectual powers for the sake of maintaining an ‘objectivist’ framework which in fact cannot account for them” (*PK*, 16-17).

In the vicinity of this quotation, Polanyi offers his own illustration of pseudo-substitution. He references objectivists’ use of “simple,” “economical,” and “symmetrical” to characterize excellent scientific theories, and he notes how such words imply criteria for evaluation that are impersonal and confined to the palpable. They are not, however, fitting depictions of Einsteinian relativity, which no responsible scientist would exclude from the rank of excellent theories. Its sublimity is found for Polanyi in its rationality, and he insists that such terms as “simple” are used for “smuggling” into our thinking this “essential quality” of excellent theories because “a mistaken conception of objectivity forbids us openly to acknowledge [it]” (*PK*, 16). To refrain from the pseudo-substitution would imply that science has a bearing on the metaphysical, that “those peculiar intellectual harmonies” we call “rational” in ourselves have the potential to put us in contact with what is rational in nature (*PK*, 6, 11, 13, 16; see also *TSOM*, 20-21).

In this case, the pseudo-substitution is a *smuggling in*, but in relation to Likert-scales and respondents’ ratings thereof, it is a *disguising out of notice* individuals’ personal participation in expressing what they believe and know. Despite this difference, the purpose of maintaining an objectivist picture of reality is served in both cases.⁵ Diagnosing the use of numbers in Likert-scales in this way is our first step towards witnessing how respondents’ minds and frameworks get overshadowed by those of the psychologists who study them.

In the section that follows, we show the importance of this observation by examining Likert-scale reporting in light of Polanyi and Prosch's application of subsidiary and focal awareness to the experience of metaphor. They draw out two phenomena in relation to it that are particularly relevant for our purposes—namely, indication and symbols.⁶ Our treatment of these will reveal how the pseudo-substitution brought to light here takes on a meaning for researchers that respondents do not share and thereby reinforces the idea that it is the formers' meanings that hold pride of place in social psychology.

Indication and Symbols

Polanyi and Prosch address indication and symbols in their discussion of metaphor and as part of their larger effort to extend personal knowledge from its roots in bodily operations to a wide range of "coherent entities" or meanings—e.g., "Michelangelo's *Moses*, Beethoven's Ninth Symphony, the virtue of justice, and the Christian God" (*M*, 67)—that naturalistic philosophies have taught us to doubt as mere artifacts of material processes and psychological needs. Concerning indication, Polanyi and Prosch observe that a word "bears on something else which is its meaning" but that "[a] word and its object are not equal partners in this association" (*M*, 69). The object or meaning is of greater importance.

Were we to come upon Trafalgar Square in London, for instance, and there be directed to the Nelson Column by a tour guide pointing and uttering the words, "Nelson Column," we would not treat the latter as equal in importance to the object. Indeed, the guide's words and pointing would have low intrinsic interest and occupy subsidiary awareness relative to the column which would have high intrinsic interest and occupy focal awareness. We would rely on the tour guide's pointing and speaking as clues we integrate into a coherent knowledge of the Column. Whereas the name "will be remembered only because of its meaning," say Polanyi and Prosch, "the Column will be remembered for its own sake" (*M*, 69). As other examples of this from-to relationship in semantic indication they mention "road signs...maps or drawings by engineers," and "mathematical formulas" (*M*, 70). Readers are encouraged also to recall the story Polanyi tells of sharing letters written in foreign dialects with his English-speaking son. He had to double check the language the correspondence arrived in before passing it on. Why? Because however "vividly aware of the meaning conveyed by the letter" he was, he "yet [knew] nothing whatever of its words" (*M*, 57): "I have attended to them closely" says Polanyi, "but only for what they mean and not for what they are as objects" (*M*, 57).

A different and more complicated phenomenon of meaning-making is found in symbols where an object of little-to-no significance in itself becomes significant to a person for its ability, upon his surrender to it, to harmonize a range of otherwise diffuse personal experiences (*M*, 71). Before me on my desk, for instance, is a small and imperfect stone carving that in itself is hardly the height of beauty. It would recall little or nothing to anyone and be of little value in the marketplace. What it recalls and brings into coherence when I ponder it, however, are a variety of events surrounding a long-needed respite and the hope of other respites to come. This humble symbol, like all symbols (flags, medals, tombstones), retain the subsidiary-focal distinction observed in indication above, but the positioning of intrinsic interest is reversed—i.e., what is subsidiary now has a stronger intrinsic interest than what is focal. This reversal is intended to show how symbols are such only for those who are prepared to give themselves over or surrender to the relevant objects. While the capacity to experience objects as symbols is surely native, it must also be properly cultivated. This latter fact shows how training in scientific thinking has the potential to divest its students of their symbols. When material reality is made ultimate, and all else illusory or derivative, the carving on my desk remains just that, a carving, and nothing more. But when meaning is respected and the capacity for

experiencing it nurtured, individuals have the potential to get “*carried away*” by such objects (*M*, 71). That is, the tremendously important, yet scattered and subsidiary experiences of their lives get “*embodied*” in the objects they treat as symbols, and these objects, in turn, “reflect back upon [individuals’] subsidiaries, fusing [their] diffuse memories” (*M*, 73).

I would now like to fold Likert-scale assessments into our discussion, showing how they relate to indication and symbols as discussed by Polanyi and Prosch. Doing so will require that we depict the situation separately for respondents and researchers. In hospital rooms, pain ratings are sometimes requested of especially young patients with numbers linked to stylized human faces expressing graded levels of discomfort (e.g., Hicks, von Baeyer, Spafford, Korlaar, & Goodenough, 2001; Wong & Baker, 1988). To a visitor who sees such scales pictured on the wall, as they sometimes are, the numerical values hold little intrinsic interest relative to the faces. Like the tourist pointing to the Nelson column, the quantity points subsidiarily to the far more interesting focal object of a human expression; and to the suffering patient, both the numerical value and face are subsidiary to the focally absorbing experience of pain. Although with other Likert-scale tools the phenomenon of interest may press less urgently for attention, the situation is similar. The widely cited instrument by Mirels and Garrett (1971) for capturing the Protestant work ethic is a case in point. Individuals presented with this measure respond to a series of 19 statements—e.g., “There are few satisfactions equal to the realization that one has done his best at a job,” “Life would have little meaning if we never had to suffer,” and “A distaste for hard work usually reflects a weakness of character” (41)—using quantities ranging from -3 (“I disagree strongly”) to +3 (“I strongly agree”). Each numerically tagged affirmation or dissension across these 19 statements stands for the respondent as a subsidiary and relatively uninteresting pointer to a focally vital feature of a way of life he or she submits to as authoritative.

Progressing through the 19 items, however, the phrases respondents encounter and serially set their seal to may take on a greater significance, such that their concluding experience of the instrument has some kinship with a symbol’s ability to integrate the diffuse features of their lives. It differs, however, in three ways: the depth of surrender it evokes, the scope of integration it provides, and its interchangeability with other objects. A designation distinct from “symbol,” therefore, seems warranted. We will adopt the word *token* for this purpose. A good example is found in the labels that popular measures of personality assign to respondents. Such instruments are not employed in social psychological research, do not always rely on Likert-scale measurements (e.g., they may, instead, use “True”/ “False” designations), and do not directly reference a cultural outlook as Mirels and Garrett’s (1971) instrument does. Nevertheless, just as those who discover their “personality types” may feel that their distinctive attributes are brought into coherence by the label they are given (e.g., “introvert”), so those who respond to Likert-scale measures in social psychology may experience something similar (e.g., “Whatever these 19 statements represent to psychologists, they certainly picture to me some important beliefs I hold”).⁷

Indeed, unlike popular personality assessments, individual contributors to social psychological research walk away with limited knowledge about the specific dimensions of their lives that have been assessed. Nothing akin to personality labels is typically offered them, nor indeed any news of their individual results. Thus, to suggest that the Likert-scales encountered in research are experienced by respondents as tokens of their lives is not to say that they always are, but only that they sometimes and *at best* are. It is to acknowledge such scales’ potential for introducing coherence where it may be lacking while simultaneously emphasizing how unlikely they are to evoke the surrender a revered flag or anthem does, be as encompassing as a personal hero’s tombstone, or as irreplaceable as a precious heirloom. Tokens can be taken up for a time and later left

or forgotten in the place of others, but stained-glass depictions of John Wesley that recall his ministry and esteem for hard work cannot. For those reared to embrace the way of life he honored, such objects inspire a level of surrender and scope of integration that Mirels and Garret's (1971) scale can neither approach nor replace.

Shortly we will contrast this situation with that of researchers, for whom the notion of symbol remains relevant. To prepare for this, however, we should first ask what activity among researchers parallels the respondent's work of indication in completing a Likert-scale assessment. Recalling the tour guide's pointing to the Nelson Column, we can see the many members of a researcher's sample standing in a similar capacity. They (X_1, X_2, \dots, X_N) point via their individual scale averages ($\bar{X}_1, \bar{X}_2, \dots, \bar{X}_N$) to the aggregate quantitative characteristics (e.g., \bar{X}, s^2) of a psychological construct (e.g., the Protestant work ethic). In so doing they occupy the researcher's subsidiary awareness, holding little intrinsic interest to him or her except for their ability to numerically cohere into a focally more interesting statistical object.

Thus, right away, we see a point of division in the role of the numerical for respondents and researchers. For the former, numbers are proxies for words of indefinite meaning that they employ to personally assert the bearing of statements of comparable indefiniteness on their lives. Researchers, on the other hand, never approach respondents' lives. They turn instead to pseudo-substitutions commensurate with their social scientific framework in order to license their focal interest in aggregate quantities that permit generalizations. But this suggests that researchers have a myopic focus on numbers to the exclusion of their non-numerical meanings, and this is not so. Numerical representations hold ascendancy for researchers in the analysis phase of their work, when they are computing variables and examining their statistical relation with others. The non-numerical meaning of these variables holds ascendancy for them in the interpretive phase—i.e., when researchers translate their results back into the theories of psychology and relate them to real-world anecdotes. In truth, the two are never wholly divorced from one another. They stand rather in an asymmetrical relationship that researchers shift the direction of depending on their activities.

A vital question we have to address is what permits researchers to transition so seamlessly between numerical and non-numerical meanings. Our answer will appear in the following section. The point here is simply to acknowledge researchers' movement between numbers and non-numerical meanings and to highlight how the former assumes an importance to them that *never* emerges for respondents. It is also to say that whatever non-numerical meanings researchers turn to for interpretive purposes, they reflect personal discernments researchers make within a framework that holds their allegiance, not the discernments respondents make within their own. The degree of their coincidence or divergence is an open question not resolvable by statistics.

The above suggests another distinguishing feature between respondents and researchers. Whereas serial indication in Likert-scale items may transition them to a token for respondents, serial statistical mapping of Likert-scale values in relation to other such values across presented and published studies transition these into symbols for researchers—symbols, that is, of their myriad and passionate strivings toward a comprehensive and empirically substantiated vision of humanity. Specifically, the psychological construct to which respondents' numerical ratings point (as a tour guide points to a monument) gets entered into statistical relations with other constructs researchers similarly assess. These, then, get documented in professional presentations and publications. If received favorably, and if the work continues to be productive, presentations and publications increase in number. Collaborations follow. Colleagues cite the body of work and begin taking up the "established" methods for their purposes. Chapters and talks are invited; books ensue,

and possibly media appearances. Each of these activities, and hundreds more that never see the light of day, express researchers' passionate striving to bring to fruition a project they have accepted as their personal duty to a comprehensive conception of reality (e.g., Comte, 1830/1988, Mill, 1843/2009). These activities are laid down by researchers in records of accomplishments that only they know intimately as not just ink and paper, but as symbols of their life's work, symbols that cohere their myriad and extended labors to honor a vision of reality that deserves accrediting by all.

Yet, and as already suggested, the course of life taken by the social psychologist—literally, his or her curriculum vitae—is directed toward serving a framework which respondents may not share or, in fact, know anything of. It is a symbol to the psychologist's mind, not to respondents. To them, the construct their numerical responses contribute to is, at best, a token of their lives; and it is just *their* lives that get overshadowed by the service the psychologist pays to his or her own framework. By no means is this intended to say that social psychologists are unique for advocating and advancing their field's outlook through their research, nor that they are wrong to experience personal satisfaction in doing so. But among academic disciplines, they may be uniquely prone to forget this is the part they play because of their objectivist ideals. They may also be uniquely dangerous because of this. As Polanyi (1963) says regarding psychology and the social sciences, “[o]nly the blessed inconsistency of its expositors prevents them from rendering man, and all the sufferings and works of man, quite meaningless” (11). Below we press this conclusion further by showing how psychologists' models of others' minds, grounded in pseudo-substitutions, are sustained by a peculiar faith in the interchangeability of word-meanings and numerical operations.

Holding Words and Numbers Together

An important feature of social psychologists' interpretative scheme manifests in the assumption that the words included on Likert-scales have vastly more in common with numbers than they actually do in the eyes of respondents. How is it that numbers and words come to be interchangeable for psychologists such that their respective meanings have so intimate a relationship that arithmetic operations can be performed on the former while focally not attending to the latter? Answering this question requires us to turn to a classic paper by S.S. Stevens (1946) whose taxonomy of scales of measurement is taught to virtually all students desirous of becoming psychologists. His explanation for how numbers get assigned to objects in research, including the words and phrases of Likert-scale instruments, needs special attention.

“Scales are possible in the first place,” Stevens (1946) says, “only because there is a certain isomorphism between what we can do with the aspects of objects and the properties of the numeral series” (677). We can, for instance, order runners just as we can order numbers, and we can find the middle-ranked runner just as we can locate the median of a group of numbers. It is such “isomorphism between ... the numeral series and certain empirical operations which we perform with objects [that] permits the use of the series as a *model* to represent aspects of the empirical world” (677). Yet even though we can order both runners and numbers, it seems insensible to apply an average to ranks because the “empirical operations” we followed do not ensure equal intervals between the runners. Taking the average of 1st, 2nd, and 3rd is akin to trying to average “Gold,” “Silver,” and “Bronze” or “Best,” “Better,” and “Good.” Although reflecting our graded respect for different achievements, these indicators, whether numerical or verbal, do nothing more than flag runners' positions; they convey no *quantitative* information beyond this. Appreciating this reveals that it is important to know how a 1, 2, and 3 were assigned to a set of observations in order to judge whether averaging is a fitting operation to apply.

Knowledge of “the various rules for the assignment of numerals” (677) to the objects of interest, therefore, stand for Stevens (1946) as a kind of prerequisite to modeling observations with numbers. We saw above, however, that the indeterminant meaning of words and the precise selection of numbers to endorse or dissent from scale statements is resolved by an unspecifiable act of personal discernment—a “6” *feels* more satisfying to the respondent than a “5” or “7” for reasons they cannot say, in the same way that they cannot, as Polanyi observes, tell how they ride a bicycle or recognize their apple among twenty others at the grocer (*PK*, 88). The rule they follow, if indeed it can be called such, is unformalizable. Accordingly, Stevens (1946) teaches, the mathematical operations applicable to the Likert-scale cannot be determined! This problem, however, is overcome when the researcher *assumes* Likert-ratings follow an interval scale of measurement—i.e., one in which intervals of equal magnitude exist between adjacent numbers. This assumption is well known to the point of being ignored among psychologists, but Polanyi’s thought reveals that in making it the researcher is, in fact, overshadowing the individual’s personal contribution with his or her own judgment that the assumption is warranted, inconsequential, pragmatic or the like. Stevens, in fact, licenses exactly this move when he effectively announces, “Let us proceed anyway.”

In the strictest propriety the ordinary statistics involving means and standard deviations ought not to be used with these scales, for these statistics imply a knowledge of something more than the relative rank-order of data. On the other hand, for this ‘illegal’ statisticizing there can be invoked a kind of pragmatic sanction: In numerous instances *it leads to fruitful results* (1946, 679; emphasis added).

Complicating the matter further, consider that the prerequisite that appears so essential in Stevens’ (1946) taxonomy of measurement (i.e., knowing what rules were followed in assigning numbers to observations), rather than be gotten around by a “pragmatic sanction,” can, according to at least some statisticians, be utterly ignored so far as the math is concerned. As Lord (1953) so powerfully put it, “the numbers don’t remember where they came from, they always behave the same way, regardless [of any rule connecting them to observations]” (751). A dataset could be organized containing hundreds of numerical responses to survey questions. Were the questionnaires burned, destroying all knowledge of the statements that elicited these responses, we could still perform whatever statistical operation we wished, just as we could proceed to speak in ordinary conversation without any concern for the computation of statistics. When the respondent indicates “4: Modestly agree” on a Likert-scale, for instance, he or she is employing the quantity as a word-proxy like shrugging the shoulders with upturned hands, not as a number, nor as an affirmation of the arithmetic operations that could be performed on the number.

In fact, the number could be taken or left by the respondent and, in many instances, his or her communication would not be the least impaired; but even where the number offers aid, as in the pain scale referenced earlier, it does so as a supporting clue to a graded experience that is hard to put into words, not for any superiority it has *as a number* for representing the respondent’s meaning. The researcher, however, grants this superiority for the purpose of statistical modeling. Numbers permit of aggregation and the display of patterns that serve the generalizing aims of social science. Because words and numbers qua word-proxies are stubborn for this purpose, their meanings are kept in mind during data analysis much as errands as we go about our day: “back there,” so to speak, but hardly pressing for attention. When analysis is complete and the words’ and word-proxies’ meanings are focally recollected, they stand even further from where they originally did with respondents. They have been shaped by operations domestic to the researcher’s framework,

but foreign to and largely disregarding of respondents' own. And noting this, we may feel compelled to extend Polanyi's assessment of "the behaviorist vocabulary of learning, intelligence, etc." to social psychologists' vocabulary of statistically modeled psychological constructs: It "would be unintelligible to us but for our convivial understanding of the [persons] under observation. It is a mere pseudo-substitution, which relies for its meaning entirely on our familiarity with the conceptions it is trying to replace" (372).

Still, and again, what holds together numbers and meanings for the researcher, or on what is the "certain isomorphism" that Stevens (1946) speaks of based? Above we said it was grounded in an assumption adopted according to the researcher's personal judgment, but now its truer nature can be stated. Its basis remains a judgment, yes, but a judgment that reflects the researcher's desire to act on the intuition that word-meanings and numbers are more alike than not because doing so licenses the treatment of indeterminate phenomena as though they were abundantly clear. As Howell (2013) says in his widely used and multi-edition textbook on the use of statistics in psychological research: "[O]ur results are ultimately only the numbers we obtain and *our faith* in the relationship between those numbers and the underlying objects or events" (8; emphasis added). That belief holds word-meanings and numbers together for researchers to answer the "vital question" raised in the previous section and clarifies with respect to psychology an important observation Polanyi makes about neurology. He observes that neurologists employ their powers of personal knowing to the fullest possible measure in research while denying the same to subjects whose minds and purposes they endeavor to apprehend (*PK*, 263). In psychology the situation is parallel. Psychologists' models reflect their surrender to Stevens' understanding of isomorphism and they attribute their models to subjects while never genuinely entering into the accounts subjects would give of themselves according to the frameworks that hold their allegiances. We see this clearly by taking the "tripartite structure" Polanyi ascribes to neurologists and adapting it to psychologists and their subjects (*PK*, 262):

I Mind (of psychologist)	II Model of relationships between quantities taken from subjects	III Cognitions, emotions, and motivations attributed by psychologist to subjects
I Mind (of subject)	II Subject's interpretative framework	III Self-ascribed cognitions, emotions, and motivations

Everything follows in social psychology from playing up the first component of this structure for psychologists and playing it down for subjects. Respecting individuals' powers of personal knowledge so far as it permits them to put down ratings on Likert-scales fosters the appearance of extending genuine respect to others' minds while never actually doing so. As Polanyi says, "to acknowledge someone as a sane person is to establish a reciprocal relationship with him," and "[t]his manner of knowing a person qualifies him fully for the functions of a mind in position I of a tripartite system controlled by a mind" (*PK*, 263). How would following Polanyi change the situation in social psychology? Answering this question requires us to appreciate the following lesson: "[A]s we rise stage by stage from morphology to animal psychology, our convivial participation in the living organism becomes increasingly richer, more intimate and less unequal. So, arriving finally at the study of human thought, conviviality becomes mutual" (*PK*, 379). In such mutual relationship, "the logical category of an observer facing an object placed on a lower logical level becomes altogether inapplicable. The I-It situation has been gradually transformed into an I-Thou relation" (*PK*, 346).

Here Polanyi has in mind persons “on an equal footing” (*PK*, 375) holding themselves and each other accountable to common standards of judgment, without which no fertile exchange of ideas could unfold. Two scientists debating the strengths of a new theory or artists discussing the tradition of surrealism are examples of this. Polanyi refers to such relationships as encounters, and they may issue in partnerships or, in the case of disagreement, rivalries of perspective (*PK*, 327), but conviviality nevertheless prevails so long as discussants remain mutually aligned to the same framework as the terms of any dispute. When terms are not shared, the possibility of a “responsible encounter” (*PK*, 378) diminishes, if it does not vanish entirely. This situation is particularly interesting because it sets us on the path to reimagining social psychology in a Polanyian fashion. Here we are confronted with the possibility of two modes of an I-Thou relation, that of master-to-pupil mentoring and that of pupil-to-master apprenticing, both of which have as their goal the fostering of conviviality where it is either nascent or absent. Properly understood within Polanyi’s framework, then, social psychology’s task becomes not the objective and rational mapping of empirical relations conducive to predicting and controlling human behavior—the essence of a behaviorism that today’s psychology has supposedly gotten beyond (see Skinner, 1971)—but the liberal education of others and of oneself into a culture’s social lore for the sake of discovery and responsible navigation of life’s exigencies. This admittedly radical alteration of perspective will be taken up in a future essay for further consideration.

Conclusion

This paper has investigated the contribution Polanyi’s philosophy makes to our understanding of social psychology. Likert-scale assessments were taken as a special object of inquiry for their prominence in the field as an expression of objectivism in the study of persons’ attitudes and as a rather *prima facie* departure from the full-fledged respect Polanyi pays to other minds. The paper was not a demonstration of this departure so much as an investigation into *how*, using Polanyi’s insights, this departure manifests, and then as a clear justification for why one committed to his position may decline to participate in the enterprise and look for an alternative. Through this investigation we witnessed how the division that exists (and is even introduced) between respondent and researcher by Likert-scales constitutes a pseudo-substitution of numbers for words whose indeterminate meaning can only be resolved or made to mean anything whatsoever by a person. We saw too how these scales culminate in different experiences for respondents and researchers. In the latter case, they coalesce into symbols of researchers’ service to a framework that a-critically embraces the “isomorphism” between numbers and word-meanings and overshadows respondents’ place in their own tripartite structure of mind-to-self-ascribed purposes, meanings, etc. Taken as a whole, then, this inquiry recommends the following summary appraisal of Likert-scales in social psychological research. *They are pseudo-substitutions contributive to symbols for researchers of an interpretative framework that eclipses others’ powers of personal knowing and, in so doing, transmutes a meeting between potential or actual equals into what essentially is an I-It observation.* For the reader accustomed to Polanyi’s thought, the author wishes to affirm this as a responsible application of his philosophy to the subject at hand, one informed not just by the preceding inquiry, but by a nearly 20-year career in psychology, first as a student, then as a professional who created and used Likert-scales in research. For readers unaccustomed to Polanyi’s perspective, who perhaps hold an allegiance to social psychology and may, in consequence, judge the foregoing to be “biased, abstract and selective to the point of caricature,” the author wishes to affirm something different that may inspire deeper appreciation of the word “responsible” in the last sentence—namely, that even a so-called “biased” account can be “true ... illustrative, and ... revealing” when it is made in submission to standards believed

to be universal (Koch, 1999b, 128). The author claims this for the present essay, and he does so with the conviction that nothing better can be offered by others in relation to their work, including psychologists in relation to their own, however “objective” that work may be in appearance.

ENDNOTES

¹The author sincerely thanks Jon Fennell, Phil Mullins, and Meghan Barnes for their valuable feedback on an earlier draft of this paper.

²Interesting in light of the observations that follow is the fact that Likert (1932) did not present to his respondents the numerical values he later used for statistical analysis, only the verbal labels. The quantitative representations, thus, never even had the opportunity to enter his respondents’ subsidiary awareness.

³This paper endeavors to address Likert-scale assessment in a way that permits the broadest possible application, so it does not dwell on any single measure for very long. Should readers wish to see an extended treatment of a social psychological measure from Polanyi’s perspective, they are directed to one of the author’s earlier essays (Barnes, 2020). However, they should note that this earlier essay did not delve as deeply into Polanyi’s philosophy as the present piece.

⁴This refers to the sample variance: $s^2 = \frac{\sum(x-\bar{x})^2}{N-1}$

⁵See also Polanyi’s critique of objectivists’ appeal to “fruitfulness” as a desirable attribute of scientific theories (*PK*, 147).

⁶See also Polanyi (1967) for a related discussion of how subsidiary and focal awareness operate when we “create” (301; author’s emphasis) meaning through speech and recognize meaning in others’ communications.

⁷Two questions about this portrayal arise in view of Polanyi and Prosch’s remarks about indication and symbolization. First, if indications “integrate ... clues into entities that seem to be projected away from the self as center” (*M*, 74), is the term applicable to itemized Likert-scale responding where the *self*’s attitudes are the object of interest? Second, Polanyi and Prosch say that experiencing an object as a symbol “is a wholistic imaginative achievement of meaning, not a serialized mechanical one” in which “being carried away” comes after surrendering (*M*, 73). How is it, then, that serialized responding can culminate in the proto-symbol of a token without being mechanical? Regarding the first question, if we conceive of each scale item as an instrument indwelt by the respondent for probing his or her experience, there is a psychological distance between the self as observer (*I*) and the self as known (*Me*) that is reconcilable to Polanyi’s claim: the self as observer remains the center from which the items are taken up to explore the self as known (see James, 2001/1892). With respect to the second question, there is no alternative to presenting the statements of a Likert-scale survey except serially, and one cannot bar the possibility that the cumulative impression the items leave may be distinct from their individual impressions. This can be so without changing the fact that surrender and “being carried away” manifest together as an “achievement” of imagination (*M*, 73).

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POLANYI AND KAHNEMAN AND ON JUDGING AND DECIDING¹



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Keywords: heuristics, judgment, Polanyi, Kahneman, deciding, dual processing

ABSTRACT

Similarities between what Michael Polanyi and Daniel Kahneman wrote about the acts of judging and deciding are partly the result of taking seriously the findings of Gestalt psychology. Both men treat acts of judging and deciding as analogous to acts of perceiving. This similarity is the reason that the differences between Kahneman and Polanyi are mostly complementary, rather than contradictory. Among the things Polanyians can contribute to the interdisciplinary field of judgment and decision making are commitment, the from-to structure, and the image of leaping across a logical gap. Among the things Polanyians can learn from Kahneman is a pragmatic distinction between judging and deciding, a distinction between fast and slow thinking, and a heightened awareness of the many ways tacit heuristics and biases lead to mistaken judgments and bad decisions.

In their preface to the *Blackwell Handbook of Judgment and Decision Making*, the editors Derek Koehler and Nigel Harvey (2002, xiv) say:

Understanding how people make judgments and decisions is an enterprise of such importance that its study is spread across many disciplines. The recent Nobel Prize in Economics awarded to Daniel Kahneman, for work conducted with the late Amos Tversky, is a particularly vivid indication of the increasing recognition and impact of the field.²

In this essay, by “the field” I will mean the interdisciplinary effort to understand how people judge and decide. Kahneman is a psychologist, and his work with Tversky is considered to be the psychological foundation for behavioral economics, as well as for the study of how people judge and decide in law, medicine and business. The contributors to the *Blackwell Handbook* recognize the importance to the field of texts written by Kahneman—there are 196 entries following his name in the index. Michael Polanyi is mentioned just once, briefly, as having written about the distinction between tacit and explicit knowledge (Phillips,

Klein and Sieck 2002, 301). I believe that despite the limited attention given to Polanyi in the *Blackwell Handbook*, texts by and about Polanyi have significant bearing on the field.

I *decided* to study similarities and differences between Kahneman and Polanyi after I read in Michael Lewis' *The Undoing Project: The Friendship that Changed Our Minds* (2017, 70; hereinafter *UP*) that Kahneman, like Polanyi (*PK*, vii), takes Gestalt psychology seriously. That decision was based on my tentative *judgment* that both men used Gestalt psychology's findings about acts of perception as heuristic models for thinking and writing about acts of judging and deciding. The way I just used "decided" and "judgment" hints at what I call a "pragmatic distinction" between acts of judging and acts of deciding. My decision to explore similarities and differences between the ideas of these two men resulted in two fairly firm judgments, which I express in these two assertions: (1) Polanyians have much to contribute to the field, and (2) The field, as represented by Kahneman, can contribute to Polanyian studies.

What Polanyians Can Bring to the Field

Three things Polanyians can bring to this field are: (1) personal commitment, (2) the *from-to* model, and (3) the image of leaping across a logical gap.

Personal Commitment

The field can benefit from more attention to the state of commitment that makes a person's judging and deciding responsible. Much of the applied work in the field focuses on improving the quality of judgments and decisions. Jonathan Baron, a contributor to the *Blackwell Handbook*, distinguishes between three distinct, but interrelated, models for thinking and writing about judgments and decisions.

One task of our field is to compare judgments to normative models. We look for systematic deviations from the models. These are called biases. If no biases are found, we may try to explain why not. If biases are found, we try to understand and explain them by making descriptive models or theories. With normative and descriptive models in hand, we can try to find ways to correct the biases, that is, to improve judgments according to the normative standards. The prescriptions for such correction are called prescriptive models (Baron 2002, 19).

This is Baron's model. I will change his language a bit, saying that models of judging and deciding have three aspects or dimensions: normative, descriptive, and prescriptive. Baron's model is partly prescriptive. He is preaching to workers in the field, telling them what they *ought* to do. What he thinks researchers ought to do is the normative dimension of his model. This, however, is related to his descriptions of the actual behavior of workers in the field. His prescription is based on the normative and descriptive dimensions of his model. In writing these lines, Baron was practicing what he was preaching. It is "performative consistency" in that what he said is consistent with what he was doing by saying that.

Kahneman and Tversky called their collaborative work their "undoing project" and Lewis incorporated this phrase into the title of his book about their friendship. What Kahneman and Tversky "undid" was the prevailing model in economic theory, a model that is prescriptive, normative, and descriptive. The norm or rule that's at the heart of this model, expressed in popular terms, is "buy cheap; sell dear." But in economic theory, this norm wasn't simply pragmatic advice for how to maximize profits: it became a key

element in general descriptions of economic activity. Kahneman uses the term “Econ,” as coined by the behavioral economist Richard Thaler, to point to the model of a person in economic theory. Descriptively, an Econ is fully “rational,” completely selfish, and his preferences never change. Prescriptively, this is how an Econ *ought* to be and to act. Kahneman follows Thaler in contrasting Econs with “Humans,” who aren’t always rational, selfish, or consistent. Kahneman and Tversky sought to undo the model that had informed economic theory by looking for biases. Another way of putting this is that they put much more emphasis on descriptions of the judging and deciding of Humans, than they did on the normative dimension of the standard economic model.

This emphasis on subordinating the normative and prescriptive dimensions to descriptions of actual behavior of persons is one of the commonalities between the work of Polanyi and that of Kahneman. Personal commitment is, first, a descriptive element in Polanyi’s account of judging and deciding. To judge and to decide are both acts of personal commitment. There are over 80 references to “commitment” in the index to *Personal Knowledge*. There are none in the index of *Thinking, Fast and Slow*, and none in the index to *The Blackwell Handbook of Judging and Decision Making*. I consider this to be a major omission.

Polanyi didn’t use “undoing project” to describe his work, but I interpret his statement of intention in the preface to *Personal Knowledge* as an undoing project. He said (*PK*, xiii), “I start by rejecting the ideal of scientific detachment.” He also called this normative ideal “objectivism” and “impersonal knowing.” The message of *Personal Knowledge* is his attempt to establish a different ideal of knowing. Marjorie Grene (1995-96, 9) said that the message of *Personal Knowledge* is expressed “in a nutshell” in the following text:

It is the act of commitment in its full structure that saves personal knowledge from being merely subjective. Intellectual commitment is a responsible decision, in submission to the compelling claims of what in good conscience I conceive to be true. It is an act of hope, striving to fulfil an obligation within a personal situation for which I am not responsible and which therefore determines my calling. This hope and this obligation are expressed in the universal intent of personal knowledge (*PK*, 65).

This is a statement of Polanyi’s model. It is similar to Baron’s model in containing normative, descriptive, and prescriptive dimensions, but very different because of its emphasis on the act of commitment.

The meanings I attribute to Polanyi’s “nutshell text” depend upon making explicit an implicit distinction between acts of commitment in knowing and states of commitment. to knowledge that has already been achieved. By using the phrase “good conscience,” Polanyi asserts that in acts of knowing, he is able and willing to perform several acts of commitment: (1) to submit to what he conceives to be true, (2) to recognize that this act of submission is a personal obligation, (3) to respond to a calling for which he is not responsible, and (4) to hope that his acts and states are not “merely subjective.” These elements comprise the structure of commitment, justifying the normative ideal of personal knowledge: Polanyi’s alternative to the destructive normative ideal of impersonal, detached, “objectivist” knowledge.

In the introduction to *The Tacit Dimension*, Polanyi says that over the years since the publication of *Personal Knowledge* and *The Study of Man* in 1958, he has reduced his “reliance on the necessity of commitment” by working out the *from-to* structure of knowing and doing (*TD*, xvii).³ But there is a paragraph in the final chapter in which he re-emphasizes the importance of commitment in his model of judging and deciding. His description of the structure of commitment is a bit different from the language of Grene’s “nutshell” text, but the message has not changed. The first sentence suggests that the topic of the paragraph

is “responsible judgment,” but the final sentence returns to a statement about the how the structure of commitment makes acts of judging and deciding responsible.

I have shown how man can exercise responsible judgment when faced with a problem. His decisions when casting around for a solution are necessarily indeterminate, in the same sense that the solution of an unsolved problem is indeterminate; but his decisions are also responsible in being subject to the obligation to seek the predetermined solution of his problem. I have said that this is a commitment to the anticipation of a hidden reality, a commitment of the same kind as exemplified in the knowledge of scientific truth. Responsibility and truth are in fact but two aspects of such a commitment: the act of judgment is its personal pole and the independent reality on which it bears is its external pole (*TD*, 87).

I interpret the final sentence as suggesting that Polanyi now points to four dimensions to the structure of commitment: the two “aspects,” responsibility and truth, and the two “poles,” the act of judgment and the independent reality on which this act bears.

I consider the image of the two poles, one personal (and, I would add, “internal”) and one “external” to be an assertion by Polanyi of his commitment to realism, both epistemological and ontological. It is also an important illustration of *one* of the meanings he attributed to “judgment.” In what I regard as a definitive essay on Polanyi’s uses of the word “judgment,” D.M. Yeager (2008, 101) quotes the final sentence of this paragraph immediately before saying: “The act (and art) of personal judgment is, in fact, the core of his [Polanyi’s] distinctive conception of the nature of knowing as he develops it in interlocking texts over several decades.”

From-Via-To

Walter Gulick (1999-2000, 2012-2013) has added a *via* term to Polanyi’s *from-to* model, suggesting that a knower moves from a set of particulars *via* symbols to the skillful achievement. By contrast, I define *via* as the acts of judging or deciding. I move *from* a prior state *via* an act of judging or deciding *to* a subsequent state.

Polanyi describes the ideal state prior to judging responsibly both in the nutshell text and the poles text. To be responsible, I must be committed to discovering whether a sentence is true or false, or whether something other than a sentence is good or bad. One aspect of this commitment is my self-accreditation (*PK*, 265), my reasonable hope that I can rightly judge truth, falsity, goodness and badness.

The ideal state prior to deciding responsibly has the further dimension of a commitment to “performative consistency.” Polanyi doesn’t use this term, but I argue that it is implied in his frequent references to “good conscience.” It is also implied by his use of retortion, the argument from performative inconsistency, to refute positions to which he is opposed (Moleski 1987). It is the commitment that results from following the Jiminy Cricket prescription, “always let your conscience be your guide.” It is the commitment conspicuously absent in those who dwell in the pathological state Polanyi called “moral inversion” (Yeager 2002-2003).

The acts of judging and deciding that I treat as the *via* term are conscious acts, but they have a dimension that remains tacit. At the moment I judge or decide, I can’t phenomenologically distinguish between the act of judging and the act of deciding. I can distinguish phenomenologically between the prior states and the subsequent states, but not between the acts by which I undergo the changes in state.

In contrast to the *acts* of judging and deciding, I can describe the experiential differences between the *subsequent states*. After I judge, I'm in a new state of belief. After I decide, I'm in a new state of action, or in a new "intentional state" of being committed either to perform or to refuse to perform some action in the future.

Leaping a Logical Gap

Chapter seven of *Thinking, Fast and Slow* is "A Machine for Jumping to Conclusions." It made me question my belief that Polanyi's metaphor of leaping across a logical gap could bring something to the field that Kahneman had not. The reason I decided to include this is that Kahneman attributes jumping to conclusions to System 1 thinking, while Polanyi argues that leaping, or "plunging," across a logical gap is an inescapable moment in scientific work, which is primarily System 2 thinking.

I have said that Polanyi's reliance on Gestalt psychology is one source of a general model for all mental acts. In his last book, written with Harry Prosch, Polanyi said: "Our dwelling in the particulars, the subsidiary clues, results in a synthesis into a focal object only by means of an action of our imagination—a leap of a logical gap" (*M*, 62). This crossing of a logical gap is, according to Yeager (2008, 105) a feature of "every act of commitment, discovery, or assent." Acts of judging and deciding are acts of personal commitment. The image of leaping across a logical gap brings out the risks. What Polanyi wrote about discovery is also true of judging and deciding:

It follows that true discovery is not a strictly logical performance, and accordingly, we may describe the obstacle to be overcome in solving a problem as a 'logical gap,' and speak of the width of the logical gap as the measure of the ingenuity required for solving the problem. 'Illumination' is then the leap by which the logical gap is crossed. It is the plunge by which we gain a foothold at another shore of reality. On such plunges the scientist has to stake bit by bit his entire professional life (*PK*, 123).

This can be a very emotional process:

I have given evidence before of the emotional upheaval which accompanies the mental reorganization necessary for crossing the logical gap that separates a problem from its solution. I have pointed out that the depth of this upheaval corresponds to the force of personal judgment required to supplement the inadequate clues on which a decision is being based (*PK*, 367).

The image of an emotional leap or plunge across a gap is an essential metaphor contained in Polanyi's model of acts of judging and deciding, including those acts when they occur in the Slow thinking process demanded by scientific method.

What Kahneman Can Teach Polanyians

Three things I have learned from Kahneman might be useful to other Polanyians: (1) to treat the distinction between judging and deciding as pragmatic, (2) to try to discover situations in which heuristics and biases cause me to make mistakes, and (3) to make the distinction between Fast and Slow thinking explicit.

A Pragmatic Distinction

A rule that I have been trying to follow is to acknowledge that my distinction between the verbs “to judge” and “to decide” is pragmatic rather than ontological. A pragmatic distinction does not depend on the beliefs that (1) there is an ontological distinction between the faculties of intellect and will, (2) that judging is an act of the intellect, and (3) that deciding is an act of the will. This set of assumptions fails to convince those of us who have rejected their implied image of the human person. A pragmatic distinction between the act of judging and the act of deciding is useful because: (1) it corresponds to the commonsense distinction between believing something is true and actually doing something—“walking the walk,” rather than just “talking the talk,” and (2) it corresponds to a tradition in psychology. As William Goldstein (2002, 37) puts it: “Although the processes of judgment and choice are intricately interwoven, they have been pursued as separate fields of research by largely different groups of psychologists with different intellectual roots, metatheories, goals, and methods.”

Kahneman said of his collaboration with Tversky: “Immediately after completing our review of judgment, we switched our attention to decision making under uncertainty” (*TFS*, 10). In 1974 they published “Judgment Under Uncertainty: Heuristics and Biases” and in 1979, “Prospect Theory: An Analysis of Decision Under Risk.” Instead of trying to distinguish between the “essential natures” of acts of judging and deciding, they were following the consensus among psychologists that there have been two distinct research traditions. “The field” that was celebrated by the publication of *The Blackwell Handbook of Judgment and Decision Making* is an integration of what had been separate fields of research. The work of Kahneman and Tversky, and the later work of Kahneman, has contributed to that integration.

A person who either affirms or denies that there is an ontological distinction between judgment and decision must affirm, at least tacitly, the truth of her *essential definitions*. If she affirms that it’s an ontological distinction, she also affirms that her essential definition of “judgment” differs from her essential definition of “decision.” If she denies that it’s an ontological distinction, she affirms that her essential definition of “decision” is *identical* to her essential definition of “judgment.” Kahneman and Tversky didn’t try to formulate or test essential definitions but were satisfied with *nominal definitions*—the ways the men and women working in the formerly distinct subfields used “judge,” “decide,” and their nominalizations. A nominal definition isn’t an attempt to express the essential nature of the reality to which a word points; it’s just an explanation of how a researcher or writer uses, or intends to use, the word being defined. Baron, for example, is writing about his nominal definitions when he says (2002, 19), “I use the term ‘judgment’ to include decisions, which are judgments about what to do.” Other workers in the field relate the two terms in the opposite way, saying that a judgment is a kind of decision, a decision to believe—or to deny—that something is true or good (Yeager 2008, 97). By treating these as nominal, rather than essential definitions, we avoid useless, probably unresolvable, arguments.

Polanyi seems to have lacked interest in trying to formulate and test essential definitions of judgment and decision. In what I consider to be the definitive essay on Polanyi’s use of the word “judgment.” Yeager says that she had to “extrapolate” from his work: “He does not,” she says (2008, 100), “provide any definitive essay or chapter that explicitly situates his work in relation to this domain of inquiry.” She adds that he “does not even make heavy or frequent use of the terms ‘judgment’ and ‘judging.’” Her careful examination of texts in which Polanyi did use “judge,” “judging,” and “judgment” resulted in her saying that he attributed two distinct meanings to “judgment.” First, “Polanyi is one of those theorists who construe judgment to be

a fundamental power” (2008, 99). She also says of Polanyi that the “act (and art) of personal judgment is, in fact, the core of his distinctive conception of the nature of knowing” (2008, 101). I judge both assertions to be true. They are not, however, assertions about the essential nature of judgment. They are assertions about how Polanyi used the word “judgment.”

What Yeager says about Polanyi’s use of the forms of the verb “to judge,” I say is also true of his use of the forms of “to decide.” All the forms of these verbs are polysemantic. We attribute different, but related meanings to them, depending on the context.

Although Polanyi doesn’t have a definitive essay or chapter on the “nature” of judgment or the “nature” of decision, he does have a section of a chapter entitled “The Nature of Assertions” (*PK*, 27-30). In it, he makes a distinction that I do judge to be ontological. It’s between an asserted and an unasserted declarative sentence. He asserts: “in strict usage the same symbol should never represent the act of sincerely asserting something and the content of what is asserted” (*PK*, 27). He recommends using a “signpost” symbol in front of an asserted sentence, but (pragmatically) doesn’t follow that prescription throughout the rest of *Personal Knowledge*. He does, however, return to this distinction in the chapter that comes closest to being a “definitive” chapter about judgment, Chapter Eight, “The Logic of Affirmation.”

I have circled back from writing about what Kahneman can teach Polanyians to what Polanyians can teach other workers in “the field.” This is because Polanyi’s *essential* distinction between an asserted and unasserted sentence depends on his claim that personal commitment is at the heart of authentic acts of knowing. When I assert a sentence I am personally committed to its truth, even if I know that it might be false. Polanyi said that the purpose of *Personal Knowledge* “is to achieve a frame of mind in which I may hold firmly to what I believe to be true, even though I know that it might conceivably be false” (*PK*, 214). This “state of mind” is a state of personal commitment to all the things that, at a given time, Polanyi had judged to be true.

Heightened Awareness of Heuristics and Biases

Michael Lewis’ title, *The Undoing Project: The Friendship that Changed Our Minds* (2017), is taken from Kahneman and Tversky themselves, who called their work their “undoing project.” By devising experiments that demonstrated how pervasive heuristics and biases are in human judging and deciding, they sought to “undo” the overconfidence most of us have in our ability to judge correctly and decide wisely. It’s important to note that their negative use of “heuristic” as an intellectual shortcut differs from the positive connotation in Polanyi’s notion of “heuristic passion.” From the lists of biases and heuristics, I have selected confirmation bias, bias blind spot, and the representativeness heuristic to write about.

Polanyians might be especially liable to confirmation bias because of the effect upon us of Polanyi’s emphasis on being committed to what we have judged to be true or good, or to acts we have decided to perform or not to perform. Confirmation bias is the tendency to give too much weight to evidence that supports my existing commitments, combined with the tendency to put too little weight on evidence contrary to my commitments. Polanyi’s statement of the purpose of *Personal Knowledge* could be read as an invitation to confirmation bias.

My confirmation bias is augmented by my bias blind spot—an inability to see *my* biases, coupled with a cultivated ability to notice the biases of *others*. Kahneman says that despite his many years of studying these issues, “I have made much more progress in recognizing the errors of others than my own” (2011, 417). In “The Irony Effect: How the Man Who Founded the Science of Mistakes Ended Up Mistaken” (2016),

Daniel Engber reports that some of the experiments Kahneman writes about in *Thinking, Fast and Slow* suffer from the very statistical error Kahneman recognizes in the studies of others—relying on the fallacious “law of small numbers.” This is relying on the results of studies with too small a number of subjects (and perhaps not even a random sample) to make generalizations about the population from which the sample was drawn. However, Engber also reports that some of those studies have now been replicated and show really strong effects.

Recognizing that I am subject to a variety of biases, including a bias blind spot, does not mean that I embrace the Cartesian program of universal doubt. I agree with Polanyi (PK 294-98) that this program is psychologically impossible. Nor does it mean that I reject Polanyi’s fiduciary program, including his emphasis on self-accreditation. For me, it means that I put more emphasis on the ways that the things I believe “might conceivably be false.” Kahneman says that one result of his study of heuristics and biases is that he has improved in his “ability to recognize situations in which errors are likely” (2011, 417). I translate this into a personal prescription: try to become better at recognizing situations in which I am more likely to make bad judgments and decisions.⁴

The representativeness heuristic is illustrated by what Kahneman (2011, 156) calls his and Tversky’s “best-known and most controversial experiment.” It stars a fictitious person they called Linda. Keith Stanovich (2009, 147) points out that there is a huge literature devoted to the “Linda problem,” and provides a lengthy list of references. Kahneman warns us to remember that their description of Linda was written for experiments conducted in the early 1970s:

Linda is thirty-one years old, single, outspoken, and very bright. She majored in philosophy. As a student, she was deeply concerned with issues of discrimination and social justice, and also participated in antinuclear demonstrations (Kahneman 2011, 156).

Kahneman and Tversky gave this list to two groups of subjects. They gave the two groups slightly different lists of occupations and asked them to rank them in terms of probability, assigning 1 to the most probable and 7 to the least probable. For Group A, the list was

1. Linda is a teacher in elementary school
2. Linda works in a bookstore and takes yoga classes
3. Linda is active in the feminist movement
4. Linda is a psychiatric social worker
5. Linda is a member of the League of Women Voters
6. Linda is a bank teller
7. Linda is an insurance salesperson

The list given to Group B was identical, except for one item. They replaced “Linda is a bank teller” with “Linda is a bank teller and is active in the feminist movement.” Both groups agreed that Linda is a good fit with “active in the feminist movement” and “works in a bookstore and takes yoga classes” and a bad fit with “bank teller” and “insurance salesperson.” But Group B ranked “bank teller and active in the feminist movement” much higher than Group A ranked “bank teller” (Kahneman 2011, 156-157).

Group B committed a mistaken probability judgment that ought to be obvious but isn’t. “Bank teller” has to be more probable than “bank teller and active in the feminist movement.” There are many more bank tellers than there are bank tellers who are active feminists, and every *feminist* bank teller is also in the larger

category of bank teller. Kahneman and Tversky then modified the experiment so that they asked just one group of subjects to engage in ranking the items on a list in which the first six items were the same as the six non-crucial items in the first list. Number seven was “bank teller” and number eight was “bank teller and active in the feminist movement.” They thought that this organization of the list would make most respondents see that the larger category “bank teller” would include the smaller category. But 89% of the Stanford undergraduates in their sample ranked the smaller set, “bank teller and active in the feminist movement,” as more probable than “bank teller.” They then used a sample of doctoral students in the “decision-science” program in the Stanford Graduate School of Business. All had taken graduate-level courses in statistics, but 85% of this sample thought that it would be more likely that Linda would be in the smaller set than in the larger set.

They engaged in what Kahneman calls “increasingly desperate” attempts to eliminate the mistake of judging the less probable as more probable. They conducted a series of experiments in which they eliminated all options but the crucial pair. After describing Linda, they asked which alternative is more probable: Linda is a bank teller, or Linda is a bank teller and active in the feminist movement.

They sampled students in several universities, and at each one 85% to 90% of the answers were that the Linda was more likely to be a *feminist* bank teller than just a bank teller. They presented the problem to the naturalist Stephen Jay Gould, who, despite knowing the correct answer, struggled with it. He wrote: “a little homunculus in my head continues to jump up and down, shouting at me—’but she can’t be just a bank teller: read the description’” (Kahneman 2011, 158-159).

This “representativeness heuristic” is operative even in the thinking of statistically trained students and even in successful scientists. We bypass what should be a relatively easy estimation of relative probabilities in favor of a good story. Linda just “looks like” a person who, if she were a bank teller, would also be a bank teller who was active in the feminist movement.

Dual Processing

In *Thinking, Fast and Slow*, Kahneman not only reviews his collaborative work with Tversky, but also organizes the book around the distinction between Fast, “System 1,” and Slow, “System 2,” thinking. This is his way of bringing in the “dual processing” tradition of research. Stanovich (2009, 215, note 3) says that the distinction between Fast and Slow thinking was only implicit in Kahneman’s collaborative work with Tversky:

Evidence from cognitive neuroscience and cognitive psychology is converging on the conclusion that the functioning of the brain can be characterized by two different types of cognition having somewhat different functions and different strengths and weaknesses. That there is a wide variety of evidence converging on this conclusion is indicated by the fact that theorists in a diverse set of specialty areas (including cognitive psychology, social psychology, cognitive neuroscience and decision theory) have proposed that there are both Type 1 and Type 2 processes in the brain (Stanovich 2009, 21-22).

When I'm engaged in Fast thinking, I'm much more likely to allow biases to affect my judging and deciding, and much more likely to take the mental shortcuts Kahneman and Tversky call "heuristics." When I'm thinking more slowly, I'm more likely to be aware that there are heuristics and biases lurking in my tacit dimension, even though it's hard for me to bring them to focal awareness.

Stanovich (2009, 22) provides a useful list of contrasts between "Type 1" and "Type 2" processing, Type 1 processes

1. Are fast
2. Are mandatory when the triggering stimuli are encountered
3. Do not require conscious attention
4. Do not depend on high-level control systems
5. Can operate in parallel—more than one can be going on simultaneously

Type 1 processing is the "default" mode of cognitive processing. The characteristics of Type 2 processing are the opposites of each of the five characteristics of Type 1. Not only is it slower and dependent on conscious attention, it actually requires more physical energy (Kahneman 2011, 41-44).

Polanyi didn't distinguish between Type 1 and Type 2 processing, but, because of his emphasis on scientific thinking, he focused on what Kahneman would call "System 2" thinking. The frame of mind he described as the objective of his writing *Personal Knowledge* is a Type 2 frame of mind, and the self-accreditation by which a person achieves this frame of mind is a Type 2 process. What the experiments of Kahneman, Tversky and their successors in the field of judgment and decision making emphasize is the importance of that qualifying phrase in Polanyi's description of his idealized frame of mind: "I know that it might conceivably be false."

The distinction between Fast and Slow thinking is only analogous to the distinction between common sense and science. Much of our commonsense thinking is Fast thinking. As Kahneman says, "System 1 is indeed the origin of much that we do wrong, but it is also the origin of much that we do right—which is most of what we do." Fast thinking is necessary to our skillful navigation through the many different situations in which each of us has learned to live. System 1 draws on "the rich and detailed model of our world that is maintained in associative memory." Kahneman calls this a "marvel" of System 1 (2011, 416.)

Conclusion

I have modified Baron's assertion that normative, descriptive, and prescriptive modes of judging and deciding are interrelated. I say that workers in the field of judgment and decision making will have a model of judging (how people "make judgments") and a model of deciding (how people "make decisions"), and that that these models will have descriptive, normative, and prescriptive dimensions. Personal commitment is the most important thing Polanyians can add to the models of judging and deciding *from* which workers in the field attend *to* the acts of judging and deciding performed by people in different social positions. Polanyi taught that acts of judging and deciding are *acts* of personal commitment that result in personal *states* of commitment. When I judge, I commit myself to either affirming or denying the truth or goodness of something. When I decide, I commit myself to either doing or not doing something. The widespread failure of workers in the field to include personal commitment in their models of judging and deciding is a

serious weakness. By saying this, I am criticizing their descriptions and explanations of these acts, as well as the normative and prescriptive dimensions of their models.

I consider the distinction between Fast and Slow thinking to be the most important addition to *my* Polanyian models of judging and deciding. I emphasize that these are my models because I know that there are disagreements among Polanyians. The distinction between System 1 and System 2 has been made only after Polanyi's death, so it can't be incorporated into *his* models of judging and deciding. This distinction adds to the normative, descriptive, and prescriptive dimensions of my models. Descriptively, it is the case that most of a socially competent person's behavior results from the work of System 1. But it's also the case that most of a person's mistaken judgments and bad decisions result from the operation of System 1. The normative dimension is embedded in those descriptive assertions. It determines what I mean by "socially competent," "mistaken judgments," and "bad decisions." Another descriptive assertion in the model is that most of my definitions of how I ought to behave in different situations are tacit. I'm not consciously aware of them as objects of focal attention. As Kahneman points out, it's impossible to discover and correct most of the heuristics and biases that result in mistaken judgments and bad decisions. What it is possible to do is to learn which kinds of situations are the ones in which I have been most likely to have made these mistakes. This, then, is the main prescriptive dimension of this addition to my model. And it clearly is a prescription to engage in System 2 thinking.

Finally, I think that Kahneman's appreciation of Gestalt psychology made his thinking and writing about judgment and decision more like Polanyi's than would have been the case if that, like so many scientists, he had "run away from the philosophical implications of Gestalt" (*PK*, vii). But his failure to include personal commitment in his model of judging or his model of deciding is a big difference. Kahneman, Tversky, and many of the contributors to the Blackwell Handbook have not fully rejected the normative ideal of scientific detachment that was the object of Polanyi's "undoing project."

ENDNOTES

¹An earlier version of this paper was presented at the Polanyi Society Meeting in Nashotah, Wisconsin, June 2018.

²Had Tversky still been alive, he surely would have shared the Nobel Prize with Kahneman, but in this essay I focus on what Kahneman wrote about judging and deciding in *Thinking, Fast and Slow* (2011), published 15 years after Tversky's death in 1996. Hereinafter *TFS*.

³In a personal communication, Phil Mullins suggested that Polanyi might have written this as a response to accusations that the "fiduciary program" of *Personal Knowledge* was too "fideist."

⁴This strikes me as similar to a rule I learned as a child in my earliest religious instruction classes: avoid the occasions of sin.

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MICHAEL POLANYI AND BESSEL A. VAN DER KOLK ON THE HEALING POWER OF METAPHOR



Robert P. Hyatt

Keywords: metaphor, trauma, indwelling, embodiment, tacit dimension, imagination, intuition, emotional memory, subsidiary-focal, integration, metaphoric intentionalities

ABSTRACT

*In this essay, I contend that Polanyi's view of metaphor as outlined in *Meaning* (1975), has important heuristic implications for understanding the way metaphor functions in trauma therapy. I also contend that in his seminal book on trauma, *The Body Keeps the Score* (2014), Bessel van der Kolk, M.D., although he rarely uses the term, relies on metaphor as a vital element in his treatment of trauma victims. Analysis of Van der Kolk's practice further confirms and extends Polanyi's view of the bodily roots of all knowledge. Juxtaposing Polanyi's theory and Van der Kolk's practice demonstrates how unspeakable trauma can be overcome through the embodied metaphoric/linguistic matrix of human speech.*

Metaphor is the great human revolution, at least on a par
With the invention of the wheel...Metaphor is a weapon
In the hand-to-hand struggle with reality.
—Yehuda Amichai

In this paper, I probe the use of metaphor as illuminated by Polanyi and Prosch and as evident in virtually all of the cases cited by Van der Kolk. My aim is to show the fundamental importance of metaphor, especially in trauma where self/body awareness is only moment to moment, based primarily on the neural substrate of physical sensations connected to emotions.

Arnold Modell, a prominent psychiatrist who has written extensively on the subject, says, "Trauma degrades metaphor, and massive trauma degrades metaphor absolutely" (Modell 2003, 113). However, as Van der Kolk says, "if we feel safe and are not rushed, we can find words to communicate that experience (of trauma) as well" (Kolk 2014, 236). Kolk and his associates' brilliant body/mind work offers superb examples of how this can happen even though he rarely mentions metaphor as a subject. Metaphor, whether spoken or enacted, is an integral part of the gestalt of the therapeutic enterprise.

As an example of metaphor(s) both enacted and spoken, I cite Kolk's treatment of a patient named Kathy (Kolk 2014, 256). Kathy had been severely abused by her father who used her as a child prostitute both for himself and other men, resulting in massive trauma. Twenty-one year old Kathy was first referred to Kolk by a local university after three years in a trusting but unsuccessful therapy and a third suicide attempt. The fact that she has been in therapy for three years signifies to me that she is well aware of her problem which is to *integrate* her feelings and memories so that they no longer threaten to overwhelm her.

Following Polanyi, I would say that the self-destructive traumatic experience of her childhood, including her emotional memories, are in the *subsidiary* realm. My use of the term "emotional memories" comes from the psychoanalyst and philosopher Donna Orange, who cites various aspects of Polanyi's tacit dimension extensively as a prime source for the concept, saying "knowledge by personal participation in the known, is an important conceptual foundation for what I am calling emotional memory." For example,

A child learns to tie his or her shoes, to tell time or to ride a bicycle...in a particular emotional environment which may be intimate or distant, supportive or scornful. The accompanying emotional memories may become articulable, but most frequently they just continue to form the underlying emotional tone of much adult experience (Orange 1995, 108).¹

The focal realm consists of those metaphoric intentionalities that lead her to construct increasingly adequate healing metaphors that emerge from her bodymind during the course of treatment. I have borrowed the term "metaphoric intentionalities" and "bodymind" from William Poteat (Poteat 1985, 220f)² to suggest the purposive stretching forth of metaphoric activity into consciousness by means of which a person through imagination and intuition explores the "more than we can say that we know" (*TD*, 4).

Kolk begins Kathy's treatment using a process called EMDR (Eye Movement Desensitization and Reprocessing). Although not fully understood, EMDR seems to induce a dreamlike state similar to the dreaming which occurs in REM (Rapid Eye Movement) sleep. The EMDR dreamlike state is induced in a patient with the instruction, "Hold that image in your mind and just watch my fingers moving back and forth" According to Van der Kolk, the key element in REM sleep that EMDR appears to emulate is the activation of "more distant *associations* than either non-REM sleep or the normal waking state." He adds that "Seeing novel connections is... essential to healing." Further, he maintains that traumatic *memories* of patients who received EMDR were no longer embedded separately in mind and body but *integrated* as an event which happened in the past (Kolk 2014, 260ff). Such novel connections, associations, and the integration of memories is the essence of metaphor as I will indicate in what follows.

Kolk reports that the fourth session in which he used EMDR with Kathy began with him asking her to bring a particularly painful memory to mind, not to speak it, just to hold it in her mind. Then he encouraged her to recall what she had heard, thought, saw, internal sensations, and traumatic memories. I assume to "speak" it would be so painful it would risk triggering a traumatic response. Elsewhere Kolk says that "what has happened (the literal traumatic events) takes a back seat to exploring the physical sensations and discovering the location and shape of the imprints of past trauma on the body," thereby building up "internal resources that foster safe access" to otherwise overwhelming sensations and emotions (Kolk 2014, 217ff). Following Pete Levine, Kolk calls this process *pendulation*, the "gently moving in and out of accessing internal sensations and traumatic memories," thereby expanding the "window of tolerance" for dealing with emotionally triggering responses (ibid.218).

Next, Kolk asked Kathy if she was now “in the memory.” When she said yes, he asked her how it felt on a scale of 1 to 10. I assume that Kolk is asking about the intensity of the feelings in her body whatever they may be whether fright, terror, anxiety, etc. When she said about a nine, he asked her to follow his moving finger with her eyes. After a set of about twenty-five eye/finger movements, he asked her to take a deep breath and said, “What comes to mind now?” She then told Kolk what she was thinking. When her body movements, facial expression or breathing patterns indicated an emotionally significant theme he would say, “Notice that” and start another set of up to twenty-five eye movements, during which time she would not speak. Kolk said nothing for the next 45 minutes.

This 45-minute period is a time when the associative memory process which occurs in a dream, in this case a dreamlike state, begins to take place and out of which hopefully begin to emerge healing metaphors. It is important to note here that in Polanyian view the focal imaginative intent of Kathy’s devotion to overcoming the effects of her trauma is aimed at achieving self-integration and coherence. The formation of healing metaphors encompassing her experience will accomplish that goal.

After the first series of eye movements when asked what she was thinking, Kathy reported a horribly gruesome gang rape. Koch made no comment except to ask her to keep those memories in mind. After another thirty back and forth movements, Koch noticed that Kathy was smiling. When asked what she was thinking, metaphors began to emerge. “I was in a karate class kicking butt, it was great! They were backing off. Don’t you see you are hurting me! I’m not your girlfriend.” Kolk said, “Stay there.”

He began the next sequence of back-and-forth eye movements. After those ended Kathy said, “I have an image of two ME’s—this smart pretty little girl...and that little slut” (notice the metaphors). She then made reference to her mother and grandmother, “who couldn’t take care of me or themselves.” In the next sequence of eye movements, she began to sob and when the sequence stopped she said, “I saw how little I was—the brutalization of the little girl. It was not my fault.” Kolk said “That’s right—stay there.” Then as this round ends, a profoundly moving integrating metaphor/symbol emerges. Kathy said, “I’m picturing my life now—my big me holding my little me—saying, “You are safe now.” This metaphor is a vivid illustration of the self-giving movement in Polanyi’s words where the

symbol, as an object of our focal awareness, is...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 grasp of ourselves as a whole person, in spite of the manifold incompatibilities existing in our lives as lived (*M*, 75).

Kathy has “rescued” her traumatized self, giving herself back to herself! Metaphorically, she has become the mother who has recovered her child (hood). She has become her own caretaker! According to Polanyi, when a symbol/metaphor “fits” in the way I describe, a person may make significant discoveries by “indwelling” that metaphor as an instrument for further tacit exploration. It is interesting that one of Kolk’s associates has used a metaphor to describe the integrative process like Kathy has achieved as a “coming home to oneself,” *home* now as a safe, secure place in which to *dwell* and from which to explore further.³

Healing images keep coming. Kathy’s next metaphor is that of a bulldozer flattening the house she grew up in after which she says, “It’s over!” The images keep coming, although not without searing emotional turmoil and lapses into post-traumatic stress responses. Having established herself as her own caretaker and tacitly relying on that metaphor/symbol, Kathy’s images/metaphors turn next to interpersonal relationships

including a potential boyfriend, her father, her mother and grandmother. These metaphors tend to “fit” appropriate healing patterns.

Near the end of the session a wonderfully healing metaphor emerges of Kathy imagining her grandmother, whose husband, Kathy’s grandfather, had sexually abused Kathy’s mother, and Kathy saying, “I feel like it’s over. I felt my grandmother holding me at my current age—telling me that she’s sorry she married my grandfather. That she and my mom are making sure it stops here.”

Both Kolk and Polanyi agree that metaphor is not a mere figure of speech but a fundamental means of cognition and self-awareness. Based on his practice, Kolk links common metaphoric expressions such as “It made my skin crawl,” and “He makes me bristle” with strong emotions in the body (Kolk 2014, 87-102). He appears to agree with Modell that, “We unconsciously create metaphors from sensory inputs arising within the body. We form fundamental cognitive tools as a result of a metamorphic process that transfers meaning between different sensory domains” (Modell 2003, 76). Polanyi echoes this view when he says, “by elucidating the way our bodily processes participate in our perceptions we will throw light on the bodily roots of all thought” (*TD*, 15).

Although exclusively fixed on therapeutic outcomes, Kolk’s practice elucidates the way bodily processes participate in our perceptions for ill and good. After all, “the body keeps the score” between the two! Although not acknowledged as such, for Kolk metaphor is *the* means by which the unspeakable becomes spoken by transforming the embodied experience of trauma, which is concentrated in the literal aspects of the traumatizing event(s), into a new experience of the body/self by incorporating healthy, often unspoken, metaphoric experiences engendered within the therapeutic setting.

It is important to notice the way Kolk often initiates the use of metaphor(s) in the treatment process. For example, the “freeze” response (as in fight, flight or freeze) involves having the therapist’s nervous system “speak” to the client’s nervous system (notice this metaphor and others throughout). This means co-regulating the client’s nervous system by use of the therapist’s monitoring of her own nervous system concentrating on intonation, rhythm, melodic cadence, and breathing (a metaphorical and literal *bodily* reenactment of the soothing, calming, attuning aspects of the mother/child experience, the archaic natal matrix and infancy, appropriated anew by the client). Through this process the primitive, metaphorical/linguistic substratum of human *being*, vastly diminished by trauma, begins to be recovered. This is the genius of Kolk’s practice in which the prelinguistic body leads the way out of “unspeakable” trauma. As Poteat puts it, “language, our first formal system, has the sinews of our mindbodies which had them first; that the grammar, syntax, meaning, semantic and *metaphorical intentionality* of our language are preformed in that of our prelingual mindbodily *being* in the world...” (Poteat 1995, 220 italics mine). From here Polanyi’s “bodily roots of all knowledge” grow! For trauma victims recovering this ground brings language into *being* and *being* into language!

After a number of sessions, a narrative of the “freeze” response can be constructed by the client in which the client concentrates on the “freeze” response itself, not on the precipitating trauma. Metaphors are the essence of this kind of narrative beginning with the therapist saying to the client, “Ask your nervous system what you felt before the “freeze.” Then what do you and your nervous system feel when it happens? What is your nervous system’s response when coming out of freeze? Here begins a “new” story about the *body’s* response to freeze and how it comes about.

The next step is rewarding the narrative of this new story. The therapist may ask, “What do you detect in your memory of any intuitive preparatory response just moments before the trauma occurred when you

knew something was about to happen? What action did your body want to make?” One patient said that her body wanted to explode. A Kolk associate asked her to take two pillows, hold one in each arm tightly to her body while sitting on the therapist’s couch, then suddenly fling them away to each side (a metaphor of a body exploding). The client was then asked, “How does that feel?” For the client allowing herself to enact in metaphoric form what her body originally felt like doing brought a palpable sense of relief and pleasure that was appropriately affirmed by the therapist (Kolk 2014, 218 and endnote 3). In such a fashion, traumatized persons can begin again to “speak.”

With the bodymind approach outlined above, Kolk and associates have reached bedrock: the pre-verbal, unreflected metaphoric matrix out of which human speech and self-awareness emerge. Kolk’s recounting of Helen Keller’s awakening is telling (my paraphrase). With the tactual feeling of her teacher’s fingers spelling water in the one hand and Keller feeling a stream of water in the other, the moment she connected the two her mind awoke. Six months later she used the first person “I” (Kolk 2014, 334ff).

The eminent psychiatrist and psychoanalyst Robert Stolorow has said that “in the process of somatic-symbolic integration, the process through which emotional experience comes into language, the sense of *being* is born.” He quotes Heidegger: ‘language is the house of being. In its home man dwells’ (Stolorow 2007, 23). Stolorow calls the loss of the sense of being brought about by trauma, “ontological unconsciousness,” which in extreme instances of trauma can result in an experience of “personal annihilation” (ibid., 30ff).

Both Polanyi and Kolk emphasize the role of the imagination in similar ways. Polanyi says that “integration requires an increasing measure of imagination” (M, 84) by which he means the integration of the subsidiaries of a metaphor into a focal whole. Kolk says that “EMDR can unleash the imaginative powers of the mind” (Kolk 2014, 257) and “Seeing novel connections is the cardinal feature of *creativity*; as we’ve seen it is also *essential* to healing” (ibid. 261, Italics mine). Further Kolk says that “The process freed something in her (Kathy’s) mind/brain to activate new images, feelings and thoughts” (ibid. 259). It is clear to me that it was Kathy’s *imagination* that was freed so that the novel connections of creativity, i.e., metaphors, embodying “new images, feelings and thoughts” gradually emerged in her treatment. For Polanyi, the *emergence* of new “ideas” comes about as the result of the interaction of “creative” imagination in ...two moves: one deliberate, the other spontaneous...the deliberate thrust is the focal act of the imagination, while the spontaneous response to it, which brings discovery...deserves to be recognized pre-eminently as *creative intuition*.” (Polanyi 1966, 103; italics his)

By successfully *integrating* metaphors over time, victims of trauma are capable of transforming traumatic images that prompt sudden fight, flight, or freeze into non-threatening memories of things past. I say *successfully* integrating metaphors because, as Polanyi says, “...integration, because it is the tacit *act* of a person, can be either valid or mistaken” (M, 39).⁴ For Polanyi the search for a solution to a problem is a process of trial and error and takes time for intuition and imagination to accomplish their task.

That is true of Kolk as well. The length of Kathy’s therapy was eight sessions and even so was the shortest EMDR therapy Kolk had ever conducted. It is worth recalling that prior to her EMDR therapy with Kolk she had spent three years of unsuccessful, although trusting, therapy elsewhere. It seems plausible to me that Kathy’s emotional memories of traumatic origin were, during three years of “trusting” therapy, being reshaped by new emotional memories originating in therapy. Although not sufficient to secure an ideal outcome, nevertheless they formed part of the gestalt of Kathy’s subsequent EMDR therapy with Kolk. As Polanyi said, the quest for discovery can go on for years. And so can the quest for recovery.

Polanyi presents the inner movement of metaphor as a continual going back and forth from subsidiary awareness (vehicle) to focal awareness (tenor) and back again to find an adequate metaphor/symbol to convey a person's hopefully increasing sense of "fit" towards a solution/resolution of a problem (*PK*, 113). Modell, an exceptionally perceptive psychoanalytic observer of the way metaphor functions, says, "by means of novel recombinations metaphor can *transform* meaning and generate new perceptions" (Modell 2003, 27). Quoting Gerald Edelman, Modell goes on to say that "every active perception is to some degree an act of creation, every act of memory is to some degree an act of imagination" (Modell 2003, 37). Following Polanyi, I consider this continual recombining process involving perception and memories to be part of a gestalt which is "the outcome of an active *shaping of experience* performed in the pursuit of knowledge" (*TD*, 6 italics mine). As an important reminder, I would add that for Polanyi this is always an active shaping by a *person*.⁵

This shaping process is what was happening with Kathy. In the fourth session described here, she first recalled literal elements of her torture, then metaphorically a "kick butt karate artist" fending off her attackers (a valid, but inadequately integrating, metaphor of skill and agency), then a "smart pretty little girl and that little slut" (dual metaphor with a valid but inadequately integrating first part and a mistaken second part). In the next sequence, she begins to sob with the realization that her brutalization was not her fault (thereby moving toward a valid narrative understanding/insight). She finally sees "my big me holding my little me," a valid focal integrating metaphor which "fits" as described above. Specifically, "my little me" represents all the traumatized aspects of her childhood which heretofore have been the subsidiary elements that she has been tacitly reshaping with new perceptions gained in the therapeutic process gradually forming a target metaphor spoken as "My big me holding my little me," a much more fully integrated self.

The next image of a bulldozer flattening her childhood house followed by confirmation, "its over" is a metaphoric transfer of present moment trauma awareness—symbolized by *house*—to autobiographical memory. Her house, where "unspeakable" memories lived and tortured her into her adulthood, is now demolished. It has become a story of a terrible event in her past which no longer torments her. Fortunately, the memory of it has been integrated into the autobiography of her life. Still further valid metaphors emerge in subsequent sessions related to ongoing interpersonal relationships suggesting further resolution of long held traumatic conflicts.

Significantly, both writers strike a similar telic note. Looking back at the increasingly comprehensive and positive course of Kathy's recovery Kolk states that "it was as if her *life force emerged* to create new possibilities for her future" (Kolk 2014, 259, italics mine). Polanyi says that "the kind of emergence which I associate with comprehension is an action which creates new comprehensive entities. It resembles Bergson's *elan vital...*" (*TD*, 46, italics his). Such a purposive thrust is what I mean by the "metaphoric intentionality" mentioned throughout this essay. The therapy in which Kathy engaged resulted in emotional/intellectual self-understanding—the restoration of her sense of *being*, in short, the recovery of herself!

To assess more fully the unique contribution Polanyi has made to an understanding of metaphor, it is very important to note a passage in *Meaning* in which he says, regarding the functional structure of from-to knowing, the "pair is not linked together of its own accord. The relation of a subsidiary to a focus is formed by the *act of a person* who integrates one to the other. The from-to relation lasts only so long as a person, the knower, sustains this integration" (*M*, 38 italics his). It is this personal act of embodiment, of personal backing, of investing oneself in a metaphor or symbol that gives the symbol/metaphor its power and meaning, a

power propelled by the urgent intention to achieve coherence and meaning: Our mindbodies—resonating with metaphoric intentionalities acted or spoken—seek pattern, coherence, integration and meaning.

CODA

The foregoing discussion of Polanyi's view of metaphor flows directly from his understanding of "personal knowledge" as *stated* in his *magnum opus* by the same name: "Throughout this book I have persistently followed one single endeavor. I have tried to demonstrate that in every act of knowing there enters a tacit and passionate contribution of the person knowing what is being known, and that this coefficient is... a necessary component of all knowledge" (*PK*, 312). How passionate Polanyi understands this personal commitment to be is illustrated in his statement that "... we live in it as the garment of our own skin. Like love, to which it is akin, this commitment is a 'shirt of flame' blazing with passion..." (*PK*, 64). It is noteworthy that at this point in Polanyi's argument the age old philosophical opposition between emotion, understood as intuitive feeling and/or passion, and reason is overcome based not on some theoretical notion but on the experience and observation of his own and others' practice of the art and science of discovery.⁶

ENDNOTES

¹For a more extensive elaboration of Orange's use of Polanyi's concept of the tacit, see the entire chapter especially including her statement, "*such tacit memory continues to be the core of our knowing, not the precursor of representational, or symbolic, cognition.* I thus prefer Polanyi's 'inarticulate knowledge' or my 'emotional memory'..." (Orange 1995, 116 italics hers) and "My conception of emotional memory... intends to convey a positive regard for tacit knowledge as possessing its own truth and as sometimes diminished by our attempts to express it in words" (*ibid.* 122f; see also Orange's brilliant essay of 2011).

²These two pages are seminal as philosophical background for the presentation I make in this essay.

³From an internet presentation sponsored by the National Institute for the Clinical Application of Behavioral Medicine (2020).

⁴For an extended statement of great import, see Poteat on Polanyi's view of gestalt as "... *the outcome of an active shaping of experience performed in the pursuit of knowledge...*" an aspect Polanyi contends has been neglected by gestalt psychologists. (Poteat 1995, 314 n. 10). Polanyi goes on to say, "The structure of Gestalt is then recast into a logic of tacit thought, *and this changes the range and perspective of the whole subject*" (*ibid.*). This note is vital because the "active shaping of experience" implies an active agent of the shaping. As Poteat says, "The outcome of the dynamic process of *perception* is governed by an active, shaping experience, performed by the more fully realized *person* ..." or "*personal mindbody*" (*ibid.*). The logic of this assertion inevitably undercuts both materialistic and idealist philosophical reductionisms.

⁵Monroe Beardsley supports Polanyi's view on the truth and falsity of metaphoric statements when he says, "if many of the properties are there—those most important to the context—we may say the statement is 'largely true'—(the way we would with a complex historical narrative that includes some errors but is right about the main things)—or, if one likes, 'apt.'" (quoted in Gill, 1991, 112).

⁶I am grateful to Sietske Dijkstra and Walt Gulick for their critique of an earlier version of this paper. Sietske was especially helpful pointing out the pivotal importance of the concept of gestalt in Polanyi's thought and explaining several of Kolk's concepts with which I was unfamiliar. Walt pointed out aspects of the subsidiary-focal, vehicle-tenor in Polanyi's view which I might otherwise have misrepresented. Of course, whatever mistakes I may have made are solely my own.

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THE JOURNAL *HUMANITAS* AS AN INCUBATOR OF POLANYI'S IDEAS



Phil Mullins

Keywords: Michael Polanyi, Dorothy Emmet, *Humanitas*

ABSTRACT

Michael Polanyi, along with colleagues at University of Manchester, worked to produce the journal Humanitas, A University Quarterly for two years just after the end of World War II. This essay outlines how Polanyi's two articles in Humanitas and other work on the journal reflect Polanyi's developing philosophical perspective.

Introduction

Michael Polanyi, along with several other Manchester colleagues, worked, in the mid-forties, on the journal *Humanitas, A University Quarterly*. However, there were only a total of eight *Humanitas* issues published between the summer of 1946 and the autumn of 1948. Apparently, this journal project folded for lack of financial support.¹ The Scott and Moleski Polanyi biography says only a little about Polanyi's work on *Humanitas* and Nye's *Michael Polanyi and His Generation* does not mention this journal. However, Polanyi's work on *Humanitas* came in an important period in which Polanyi's ideas are developing and Polanyi's articles in the journal and other work on the journal reflect this, as my discussion in this essay will demonstrate.²

Polanyi's Interest in Academic Journals

Until about 1950, Michael Polanyi published many articles and letters in science journals. Polanyi's philosophical writings make clear that he held the process of reviewing articles and debating research results in such journals as part of the public conversation among scientists through which science progressed. But soon after he came to the UK, Polanyi's interests broadened and he also began to publish in a variety of non-scientific journals particularly on topics in economics, political philosophy, and politics. In some cases, such as that of the British weekly *Time and Tide* (discussed in detail in Mullins 2019), Polanyi developed special relationships with editors that apparently gave him opportunities to place articles and reviews. Polanyi seems to have regarded the lively discussions in non-scientific journals as functioning somewhat like the discourse

in scientific journals. Such discussions were a part of the public conversation about matters of importance to those who took on responsibilities for shaping the larger emerging culture.

Michael Polanyi also apparently was eager to play an active role in establishing and managing some new non-scientific journals. Polanyi was in correspondence with Hayek around 1940 about establishing a new journal focused on political liberalism (see the discussion in Jacobs and Mullins 2016, 112-114). Interest in such a journal apparently originated at or just after the Good Society Conference in 1938 where Polanyi presented a version of his economics education film. Hayek and others wanted to create a new international journal and, when Polanyi indicated interest, he was added to the group. He and Hayek discussed the appropriate name for the new journal and Polanyi tried to put Hayek in contact with a possible funding source. This journal project, however, never got off the ground.

In 1945, Polanyi put together his own proposal for a new journal focused on liberal political philosophy and circulated the proposal to several of his colleagues whom he anticipated might join him in putting together this journal (see Mullins 2021 forthcoming for an extended discussion of this journal project). This proposed journal was first called “Our Times” (Box 4, Folder 12, MPP) but apparently later was re-titled “Civitas” and Polanyi gave to Richard Gelwick a redacted copy of the “Civitas” proposal in the early sixties (see “Civitas 46:”). Polanyi seems at first to have mistakenly believed this journal could be funded by the Manchester Literary and Philosophy Society. Later he encouraged Karl Mannheim to seek support from Routledge but Routledge was not interested. This journal proposal is a particularly interesting mid-forties document since it outlines both weaknesses of and contemporary challenges to liberalism and Polanyi’s aspirations to reform liberalism. But this journal project, like the earlier project with Hayek, also never got off the ground.

In the forties, *Humanitas* was the only new journal project that Michael Polanyi worked on that did in fact at least for a short two years turn out diverse and interesting issues that included writing by Polanyi and others.

The Launching of *Humanitas*

The inaugural issue of *Humanitas* describes the journal as a “modest instrument” helping the university as a whole “face the task of reintegrating the material and spiritual aspects of society.”³ But this statement also affirms that, in the post-World War II environment, it was imperative to recognize “a crisis of values” before any constructive moves could be made to “arrest the drift to complete chaos.” It was noted that at that time what was needed was for human beings “to achieve some agreement concerning the ends they seek.” The universities were challenged steadfastly to stand for “super-material values” and to be places in which “tradition must be revitalized and developed, before being handed on.” In a word, *Humanitas* in its inception was a journal oriented toward supporting the university in its post-war mission as a vital institution cultivating sensitive, reasoned discourse about human life and human society. Under this broad rubric, the eight issues of *Humanitas* (the final publication was a double issue, numbers 7 and 8) published a strikingly diverse array of material, including reviews of publications in different areas, poems, and articles on art, literature, culture, politics, economics, science, philosophy, religion, and the role of the university.

Polanyi may not have had any direct connection with the production of the first Summer 1946 issue of *Humanitas* but he certainly was aware of the new journal and was a supporter. In a 25 June 1946 letter to Kathleen Bliss, Polanyi notified Bliss about *Humanitas* and says the new journal was started by a group of Manchester students which he praises as a “group which wants to re-conquer spiritual ground in secular

life” (Box 5, Folder 2, 0259, MPP). Bliss worked with J. H. Oldham and was, like Polanyi, a member of Oldham’s discussion group the Moot (Mullins 1997). Polanyi seems to have written this letter to Bliss to apologize for missing the last meeting of the Moot, but the focus of the letter is to encourage Bliss to support *Humanitas*.⁴

Polanyi knew and worked with some of those involved in putting together the inaugural Summer 1946 issue and he soon became directly involved in the new journal’s work. His essay “Why Profits?” was published in the second (Autumn 1946) issue. Six of the eleven contributors to the first issue are identified on the table of contents page as student contributors. *Humanitas* was, as Polanyi’s letter to Bliss suggested, a student-initiated project. Apparently, the launching of *Humanitas* was a project that sought broad support from the University of Manchester. Polanyi saved a flyer to the university from John Stopford, the Vice-Chancellor. This undated document (which apparently was written and circulated prior to the then anticipated Spring 1946 first issue) announced the forthcoming journal and included the anticipated editorial statement. Stopford identified this statement as “having gone to the heart of the sickness of our civilization” and to “have seen most clearly the role which the University can and must play in restoring a healthy society” (Stopford flyer, Box 5, Folder 4, 0518, MPP).

One of the students who wrote a review in the inaugural issue (and who apparently was among the core group of students who initiated the journal project), as well as material for later issues was Robert Marcus, who came from a Hungarian family and took a Manchester degree in chemistry in the mid-forties. Subsequently, Marcus continued his education, studying classics, philosophy, and theology, and eventually became an eminent Augustine scholar. Marcus remained a Polanyi contact at least until the mid-sixties. Brian Gowenlock reported that Marcus joined him and Michael Polanyi at an Oxford conference in the mid-sixties that featured a speech by a then-prominent Christian theologian, John A. T. Robinson; Marcus and Polanyi subsequently became engrossed in a discussion of matters germane to medieval theology and philosophy, which Gowenlock found beyond his reach. Gowenlock suggested that Marcus, after working with Polanyi and taking a chemistry degree, briefly worked in industry in part of 1946, but was soon doing graduate work with the philosopher Dorothy Emmet, Polanyi’s friend and sympathetic colleague (see the online obituaries and memorial articles on Marcus [listed in References, consulted 23 May 2021]).

Dorothy Emmet, Michael Polanyi, Karl Popper and *Humanitas*

Dorothy Emmet wrote a review of Karl Popper’s *The Open Society and Its Enemies* for the inaugural issue of *Humanitas*. Her careful discussion, titled “Totalitarian Philosophers?” (1946b, 30-34), is sharply critical of Popper’s book. She points out that Popper’s idea about open and closed societies takes and twists, for rather different purposes, an earlier distinction Bergson made between open and closed moral systems. She notes that the main purpose of the book seems to be to contend that “the teaching of certain great men of the past” (30)—and this includes Plato, Aristotle, and Hegel—have impeded the development of an open society in which “humaneness and reasonableness” (30) prevailed. Emmet argues that Popper’s case is a rather sloppy one that ignores what we know about history and the context in which these and other figures lived and wrote. Effectively, she contends Popper is unfair and unbalanced in his treatment of figures like Plato. She questions Popper’s notions about “historicism” which he seems to use as a term to castigate thinkers who make any claims about patterns in history (which Popper equates with a longing for a closed society), and which Popper tries to link to modern totalitarianism. It is a devastating review.

The Open Society and Its Enemies is a book about which Polanyi likely was also quite critical, although he was not as outspoken as Emmet. It seems most likely that Polanyi found Popper's form of liberalism, grounded in a recycled version of Bergson's ideas about open and closed societies, very inadequate. Their conceptions of totalitarianism differed, as did their conceptions of liberalism. Polanyi's liberalism has "public liberty" front and center, whereas this notion of liberty does not figure in Popper's liberalism (see the discussion in Jacobs and Mullins 2011-12, 68-69). A few years later in his Preface (likely written in 1949) to his 1951 book *The Logic of Liberty, Reflections and Rejoinders* (hereafter *LL*), Polanyi notes (but without a direct reference to Popper), "a free society is not an Open Society, but one fully dedicated to a distinctive set of beliefs" (*LL*, vii). This succinct statement, pointing to the centrality of beliefs, in fact echoes the ideas found in Polanyi's 1947 draft editorial statement for *Humanitas* (discussed below) as well as in other Polanyi publications such as Polanyi's Riddell Lectures published late in 1946 as *Science, Faith and Society* (1946/1964, hereafter *SFS*).

Dorothy Emmet was in fact Popper's host when he came to Manchester to make a presentation at a June 1946 meeting of the Manchester Literary and Philosophical Society focusing on the recently published *The Open Society and Its Enemies*. As Polanyi's correspondence with Popper shows, Polanyi set up this June presentation for the Society (Jacobs and Mullins 2011-12, 68-69). Emmet tells a humorous story (1996, 79-80) about her "personal encounter" with Popper in her role as Popper's host in this Manchester visit: when she met Popper after his lecture and introduced herself, "he launched into an attack on me for the review" [in *Humanitas*]. Later in the evening after dinner, he re-launched his attack but Emmet "told him that I thought he spoilt his case by overstatement. . . I took the liberty of telling him that I did not think he would find that this [overstatement] worked in England. Confronted by overstatement we tended to think of what could be said on the other side." Popper seemed surprised by this comment; he had very recently arrived in England (where he had never lived) from New Zealand to take his Reader in Philosophy position at the London School of Economics. He later became much more congenial and in subsequent meetings he behaved much better. Emmet concluded "A good row can be a bond."

Emmet, like Polanyi, was interested in and supported *Humanitas* and soon joined the editorial board (see discussion below), and she in fact collaborated with Michael Polanyi on several projects in the forties and early fifties. This collaboration is a larger topic than I can fully explore here, although I note one interesting incident that was perhaps a seedbed for their later cooperation on *Humanitas*. In November 1944, Emmet and Polanyi participated in a Manchester Literary and Philosophical Society symposium on "Science, the Universities and the Modern Crisis," in which Polanyi's paper "Science and the Modern Crisis" apparently was the opening address but Emmet also gave a paper, "Science and the 'Unity of Thought.'" Both papers were subsequently published in *Memoirs and Proceedings of the Manchester Literary and Philosophical Society* (Emmet 1943-45, 122-125 and Polanyi 1943-45b, 107-116). In her brief essay, Emmet contends that she participated in this symposium only because "she has been brought along here by the iron hand which Professor Polanyi conceals in his velvet glove" (1943-45, 122). Her essay proposes that different areas of inquiry (including different areas of science) should attend to the presuppositions of their form of inquiry since this is a prerequisite for discovering any common presuppositions. Polanyi liked Emmet's paper. And in his remarks in the questioning session after his presentation (published as "Postscript", Polanyi 1943-45a, 161-163), Polanyi noted his approval of "Miss Emmet's thesis—that truth is worth pursuing, the importance of justice and fairmindedness, respect for freedom of spirit, the conviction that we can to some extent recognize nonsense when we see it, and the recognition that man can interpret experience in more than one

way” (161-162). He goes on to say that his own paper takes Emmet’s claims as presuppositions representing the “minimum requirements of liberalism” (162), although he believes many contemporary Europeans no longer share such suppositions.

Other Emmet Writing for *Humanitas*

Emmet had three reviews and one article in *Humanitas* in its short life. In addition to her review of the Popper book, she reviewed a recent English translation of Kierkegaard’s *Works of Love* (Emmett 1947b, 37-38). Her circumspect conclusion proposes Kierkegaard was “a measured genius who seems to have felt the need to pour out his thoughts in many variations on the same theme. But those who are not deterred by his repetitiveness and occasional perversity will find some penetrating remarks in this book” (38). Emmet’s third review positively treated a collection of essays by her philosophy colleague A. D. Ritchie, a colleague who also had a science background (and an earlier appointment in science) and who she identifies as a “physiologist and a philosopher” (Emmet 1948, 62).

Emmet was a superbly and very broadly educated professional philosopher, and like Polanyi, she had interdisciplinary interests and she was often quite critical of much contemporary philosophy. She notes that her *Humanitas* article “Reflections on Logical Positivism” (Emmet 1947a 13-19) was intended to help non-philosophers understand Logical Positivism. It is perhaps worth noting that this Emmet article appears in the Autumn 1947 *Humanitas* (v. 2, no. 1) which is the first issue after Michael Polanyi becomes the chair of the editorial board. Emmet describes Logical Positivism as a kind of empiricism focused on method. She calls attention to the emphasis on propositions and their verifiability and logical positivism’s readiness to dismiss propositions as nonsense that are not verifiable. She describes this philosophical movement as an updated form of older positivism that draws on more recent work on logical foundations of mathematics. She points out that there has been much conflict among professional philosophers about what verification in experience is and that there has been great interest in problems of language and logical syntax. She emphasizes the ways positivism has attacked so-called “metaphysical” statements as statements whose truth cannot be empirically tested. On the whole, Emmet’s article is pedagogically oriented and describes and analyzes Logical Positivism from a broad angle of vision, but it is quite clear that Emmet is sharply critical of Logical Positivism and particularly its notions about empirical verification and its attack upon “metaphysics” which she holds to be misguided.⁵ I quote a lengthy passage near the end of her *Humanitas* essay because it suggests Emmet’s respect for “a ‘metaphysical’ element” in thinking, including scientific thinking. This respect was very likely a view she shared with Michael Polanyi whose first chapter in his 1946 *Science, Faith and Society*, titled “Science and Reality,” outlines Polanyi’s convictions about the fundamental beliefs of scientists:⁶

So the distinction [made by some Logical Positivists that emphasized a division] of all non-nonsensical propositions into tautologies and empirical hypotheses will not stand. We have to give an account of convictions and valuations. We also have to reckon with the fact that in the interpretation of experience we use certain very general ideas. These may not be absolute and may shift from time to time—it looks for instance as though ideas of Substance and Cause, which have served as such general ideas in the past, were undergoing a shift at present. In such conceptions there is a “metaphysical” element, not always easy to detect, but deeply imbedded in our thinking (Emmet 1947a, 19).

Polanyi's Writing and Recruiting for *Humanitas*

The Discussion of Profits

Polanyi had articles in the second and third issues of *Humanitas* (Autumn 1946 and February 1947). As noted above, Polanyi's article in the second issue was "Why Profits?" and this was an essay published almost simultaneously (July) in the Ethical Union's journal *The Plain View* (1946e, 197-208).⁷ There is a footnote in the Autumn 1946 *Humanitas* article indicating permission was given to reprint "Why Profits?" as a part of "a symposium on the profit motive in trade and industry" (Polanyi 1946d, 4). Polanyi's argument is a complex one that I cannot here review in any detail, but it is worth noting that he affirms that "a system of capitalistic enterprise can be made to conform to any standard of social justice on which society is sufficiently agreed. There is no necessary reason why profits should lead to economic injustice" (1946d, 8). He acknowledges that he does not develop this point in this essay, but it is a point that suggests the broadly philosophical perspective Polanyi takes. Polanyi essentially argues that "modern production and distribution can be organized only on commercial lines" but he is quick to add both that he has "said nothing to suggest that such a solution is perfect" and that his "outline of a money-making society" is incomplete and calls for elaboration of a "number of qualifications" and "supplementary points" (1946d, 10). Polanyi's discussion of capitalism thus needs to be seen in relation to his broad interest in problems of social organization and development in history.

"Why Profits?" is followed in the second issue of *Humanitas* by "Profit: A False Guide" by H. D. Dickinson (1946, 14-18), who was an articulate economist who Polanyi knew and who had written about market or commercial socialism. Dickinson contends that he agrees with Polanyi's account of money and the operation of price and cost, but he does not think Polanyi "proves the necessity of profit" (1946, 14). He introduces differences between static and dynamic market economies and some of the problems of monopoly. Dickinson is more sympathetic than Polanyi toward public ownership not obliged to make profits. But Dickinson's discussion, like that of Polanyi, is focused at a macroscopic level on the elaboration of possibilities and problems of social organization. The Polanyi and Dickinson articles fit together as a sophisticated discussion of one area of social concern debated in this post-War period in journals like *Humanitas*. It seems very likely that Polanyi arranged not only for the reprinting of his article but for including the counter perspective of Dickinson. In some archival material from a few years earlier (likely notes or lecture material) Polanyi mentions Dickinson's ideas and apparently in one setting was a speaker (perhaps in a debate) who was followed by Dickinson (see Polanyi 1940 [6 Dec], 13; Polanyi 1941a, 1-5; and Polanyi 1941b, 1-2). The "Why Profits?" discussion in *Humanitas*, like many other Polanyi materials in the forties, strongly suggests how engaged Michael Polanyi was with the issues of the day. And this includes matters concerned with economics, although it is clear that Polanyi's interest in economic matters is often at the macroscopic level concerned with possibilities for social organization.

Other Polanyi Interests and Connections

Some other materials that appeared in other issues of *Humanitas* also very likely owed something to Polanyi's current interests and connections. The minutes of an editorial board meeting (see the 16 June 1947 *Humanitas* Board Meeting Minutes noted in References), chaired by Polanyi, identify one of the

functions of Board members as soliciting contributions using personal contacts. The following list identifies *Humanitas* material that Polanyi likely helped solicit:

- “The Moral Implications of the Atomic Bomb” in the final Autumn 1948 double issue was written by the philosophical theologian D. M. Mackinnon (Mackinnon 1948, 26-29) who knew Polanyi in the Moot (from 1944) and also appeared with Polanyi on a BBC program in 1948.
- The discussion between Bertrand Russell and F. C. Copleston, S. J. about the existence of God (Russell and Copleston 1948, 2-17) in the same issue is a dialog that was apparently originally a broadcast on the same BBC program in which Polanyi and Mackinnon appeared.
- C. V. Wedgwood also contributed an article, “History and Politics,” to this same issue. Polanyi knew Wedgwood from her work with *Time and Tide*, and met her in 1947 at Mont Pelerin and corresponded with her (Mullins 2019. 3-19).
- Bertrand de Jouvenel has an article on total war in this final issue of *Humanitas* (de Jouvenel 1948, 18-25) as well as an essay “Revolt from Order,” an article on modern nihilism, in the earlier Autumn 1947 issue (de Jouvenel 1947, 24-26). He, like Wedgwood and Polanyi, was a member of Mont Pelerin.
- The German physicist and philosopher C. F. von Weizsacker’s essay “The Spirit of Natural Science” in volume 2, number 1 (von Weizsacker 1947, 2-12) essentially provides a sketch (treating Copernicus, Galileo, Kepler, Descartes, Pascal, Newton, and Laplace) of the development of modern scientific ideas (i.e., important territory for Polanyi).
- Polanyi invited Storm Jamison (pen name for Mrs. G. Chapman), a novelist he knew, to publish a conference address in *Humanitas* (see the September 1947 correspondence between Polanyi, Walter Stein [editor] and Chapman in References); she published “The Situation of the Writer To-day” in the Winter 1948 issue (Jameson 1948, 7-12).

“Science: Observation and Belief”

Polanyi’s article in the February 1947 *Humanitas*, “Science: Observation and Belief” (1947 [February], 10-15), is a very concise essay that recycles and expands some basic ideas in *Science, Faith and Society* published the previous year. This essay, apparently a university lecture which the editors of *Humanitas* asked to publish (see Walter Stein’s 12 October 1946 request letter to Polanyi),⁸ elaborates more fully than most other writing in this period some of Polanyi’s ideas about the significance of belief.

“Science: Observation and Belief” begins with Polanyi’s straightforward claim that science is rooted in “a personal act of faith” (10). He then moves on to suggest “this conclusion is not altered but only obscured by introducing the element of scientific prediction” (10). Further, those who contend scientific propositions are merely provisional or probable or simple statements are speaking nonsense. Science aims at discovering truth and any claims to the contrary (e.g., that science is a summary of data generated by observation) are misleading—otherwise objections to astrology are without merit. In a word, the opening section of “Science: Observation and Belief” bluntly disputes many popular notions about the nature of science.

The second section of this *Humanitas* article affirms that accepting science as a whole or particular scientific claims requires relying at least to some extent on personal conviction. And the source of some personal convictions is a person's upbringing which for modern people is an environment with naturalistic suppositions rather than the magical outlook of primitive cultures. More specific beliefs informing a scientific view are built upon more general naturalistic presuppositions. Polanyi's discussion, however, is careful to point out that prevailing scientific views change or grow as the scientific community continues to inquire. Copernicus and Kepler were Pythagoreans, but Galileo and his immediate successors were "dominated by the idea of a mechanical universe consisting of matter in motion" (13). Field theories modified the mechanical outlook before "an entirely new assumption" was imported into science by Einstein "in his discovery of relativity" (13) and this has more recently been succeeded by "a further fundamental modification of our outlook on nature by the acceptance of a purely statistical interpretation of atomic interactions" (13).

What Polanyi covers in precis in his essay's second section is some of the important things covered in parts of his opening chapter of *SFS* and in the *SFS* Appendix. In "Science: Observation and Belief," this leads to the conclusion that the beliefs of scientists held "on their own responsibility" underlie "methods of discovery" and inform scientists' "readiness to accept a certain type of evidence or to reject it as the case may be" (13). Thus "the whole activity of scientists is based on a set of surmises of different grades" and some of these are "quite unconscious beliefs" while others are "more or less definite assumptions" and still others are entertained as "personal hunches." These beliefs are not codified and are not taught in textbooks, and it is "impossible to formulate them in explicit terms" (14). Polanyi summarizes his views by saying "at all stages of consolidation science must ultimately rely on a set of beliefs derived mainly from the scientific tradition" (14). He also affirms "personal creative judgment is at the source of all discovery" but in the case of many great scientific discoveries "the evidence at first does not induce general approval among scientists" (14). Science, he concludes, "is based on experience selected and interpreted in the light of certain traditional, intuitive and conscientious beliefs" (14).

In the concluding section of "Science: Observation and Belief," Polanyi argues that misrepresentations of science open the door to "Marxist interpretations which would reduce science to ideology" (14). That is, Polanyi reviews his familiar case against State intervention to direct science to pursue "visible interests of society" (14). He contends that science can survive only if scientists recognize and affirm the true roots of science, its "groundwork of scientific beliefs" (14). He calls upon scientists to "profess their adherence to these beliefs by an explicit declaration of faith" (15). Polanyi suggests that human beings cannot suspend all judgment, but Descartes and the rationalist program of modernity have made the erroneous *de facto* choice of assuming "involuntary beliefs" (15) are to be preferred to deliberately professed beliefs. Fanaticism in modernity has, however, exceeded that in the era of professed creeds. Conscious acceptance of belief is to be preferred to holding "old instinctive and unconscious beliefs" (15). As an antidote, Polanyi thus proposes a twist on Descartes' famous motto:

Cogito ergo credo—I think, therefore I believe. Let us accept this fact and believe with open eyes. We have then a chance to hold our beliefs in mature consideration of alternative beliefs, and not merely to succumb to some uncontrolled residue of belief (15).

Positive belief, Polanyi contends, is required by many "essentials of our civilization" and thus emphasis upon positive belief in science "has close relations with other realms of truth" (15). All the developments in modern civilization which rely on positive belief—and Polanyi mentions "liberated art, literature, scholarship

and religious conscience” as well as modern tolerance and “a revolution in law”— “hang together” and are “rooted in the great traditions of our civilization” (15). These traditions “embody transcendent beliefs” that for centuries could be taken for granted but in fact can no longer be taken for granted today. Given pervasive doubt, Western culture has reached the end of the era of self-evidence. And thus, Polanyi ends his short essay calling for a “reformation by a positive profession of the beliefs which form its [i.e., our civilization’s] foundation” (15).

“Science: Observation and Belief” seems to take a step beyond the articulation of *SFS* in which Polanyi emphasizes belief as the metaphysical foundation of modern science. Although this essay is published less than a year after Polanyi delivered his Riddell Lectures, it reflects Polanyi’s interest in emphasizing not only the grounding function of belief but also the importance of acknowledging beliefs in a time in which corrosive doubt has undermined all statements of belief and anything that formerly was taken to be self-evident. There are other essays and unpublished writings in this period (e.g., see Polanyi 1950, 1947/2020, and 1945 [March]) that articulate similar ideas but “Science: Observation and Belief” is particularly straightforward in calling for an open profession of faith.⁹

The Reorganization of the *Humanitas* Editorial Board

An opening editorial titled “The Intelligent Layman” (signed only “The Editors”), in the June 1947 (1[4]: 1-2) issue of *Humanitas* indicates that Dorothy Emmet, Michael Polanyi, R. I. Marcus and two others had been invited to be components of the reconstituted “editorial mechanism of *Humanitas*” (1947 1[4]: 2). Although the opening editorial is somewhat vague, it appears that the editorial changes, which effected a “more even proportion of senior and younger members, and represent a wider variety of viewpoints,” were a response to some sharp criticisms of the journal’s “undiscriminating eclecticism” (1947 1[4]: 2). The following Autumn 1947 issue indicates Polanyi has become the “Chairman” of the editorial group that also includes Emmet and R. I. Marcus (1947, 2[1]: table of contents page) and Polanyi continued in this role as chair through the final Autumn 1948 double issue of the journal. As some of the discussion above of *Humanitas* contributors indicates, Polanyi seems particularly to have influenced the material published for some of the later issues of the journal.

Apparently, when Polanyi became chair of the editorial group, he also became the person who drafted the short introductory comment (usually noted as from the editors) that often was included at the beginning of issues of *Humanitas*. One interesting archival document, dated 17 June 1947 (Box 31, Folder 3, 0176-0177, MPP), is Polanyi’s draft editorial for the Autumn 1947 *Humanitas* (the published version is *Humanitas* 2[1]: 1). The document announces that the journal is on a quest to be a “home for things of the mind” (draft, 1 and final, 1—both documents are simply cited in parenthesis by page). The draft is perhaps more interesting than the final redacted published editorial, which was likely produced after some discussion with others, but the connection with the draft is clear. The final essay somewhat shifts the focus of the essay to the importance of “essential beliefs” (final, 1), their endangerment in contemporary culture, and to differences of belief, their adjudication, and the responsibilities of the university in these matters. But both drafts very pointedly, like “Science: Observation and Belief,” attack skepticism which has undermined the human capacity for holding beliefs. Polanyi notes the “pruning knife of scepticism” that has earlier excised error and released creative force has now “struck at our indispensable beliefs” and many want to “arrest its blade, but know not how” (draft, 1).¹⁰ In his draft, Polanyi suggests that *Humanitas* wants to focus on the “modern will to believe” (draft, 2, without any reference to James) and this requires training to “hold things

of the mind without soiling or breaking them” (draft, 2). As in other Polanyi writings in the mid and late forties, Polanyi is interested in restoring trust in belief. As in “Science: Observation and Belief,” Polanyi calls for openly stating “real beliefs” and learning to “apply them” (draft, 2). The draft concludes that finding a “home for things of the mind” will be coincident with the project of finding a “home for a free society” (draft, 2). When people “recover the capacity to hold firm the truths we believe in, we shall also know how to rebuild the house of political liberty in Europe” (draft, 2).

Conclusion

Perhaps because of his earlier experience reading and publishing in scientific journals, Michael Polanyi seems particularly in the forties and later to have believed non-scientific journals were important for ongoing social-political and cultural discussions. Polanyi published many things in many different journals, and he seems often to have had many helpful connections with journals like *Time and Tide*. Polanyi’s correspondence with Hayek around 1940 and his later effort to launch a new journal “Our Times”/ “Civitas,” show that Polanyi was particularly interested in stimulating academic discussions of liberal political philosophy. But the Polanyi-supported journal project that managed to get off the ground for a short life was the *Humanitas* project, which produced eight interesting and quite diverse issues. Polanyi seems not to have been involved in founding this journal, soon after World War Two, that focused on the role of the university in emerging culture. But he clearly was a supporter and worked closely with some people like his philosopher colleague, friend and collaborator Dorothy Emmet who also supported the journal. Both he and Emmet not only wrote for the journal but soon were members of the editorial group and Polanyi seems to have generously used his contacts to generate material for *Humanitas*. Polanyi’s publications in *Humanitas* were concerned with two topics of great interest to him in the forties. His “Why Profits?” is part of a broader *Humanitas* discussion of social order and how markets should be structured. Polanyi three times published versions of this essay, the last as a chapter in *LL*. “Science: Observation and Belief” summarizes and recasts some of the ideas in *SFS*. This essay like so many other Polanyi writings in this period focuses in on the importance of belief. This essay as well as some of the editorial material Polanyi drafted for *Humanitas* reflect both Polanyi’s early interest in thinking about the limits of the period of critical philosophy with its obsession with doubt and his early interest in what he later calls a fiduciary philosophy.

ENDNOTES

¹See the 10 May 1948 letter (Box 5, Folder 5, 0620, Michael Polanyi Papers, University of Chicago Library) from the editors of *Humanities, A Quarterly Review* to subscribers concerning the financial plight of the journal project. Parenthetical citations of archival materials are hereafter foreshortened to box, folder, digital number and MPP. Thanks to Paul Lewis and Walt Gulick for comments on an early draft of this essay, as well as comments from reviewers.

²Brian Gowenlock was one of Polanyi’s last chemistry students from the mid-forties and was a source of information about Polanyi’s life and work in the forties and later periods (see Tibor Frank, 2002-03, 6-7, and Marty Moleski, S.J. and Phil Mullins, 2019 [online only]). For a number of years, Gowenlock corresponded with Marty Moleski, S.J. and me and provided some details about *Humanitas*. This informative body of material is listed in References only as Gowenlock correspondence, variously dated. Thanks go to Marty Moleski, S.J. for his cooperation with my effort to sort out Gowenlock’s correspondence and some details about the *Humanitas* project.

³This statement is in the Summer 1946 *Humanitas* (1[1]) in the inside cover editorial titled “Objects.” Subsequent quotations in this paragraph are also from this editorial. When the discussion hereafter makes sources clear, subsequent quotations from

Humanitas issues are listed in parentheses by volume, number, and page or simply by page. The References list material in the standard way according to authors' names or (in the case of unsigned pieces) by the journal issue.

⁴See also the 1 and 3 October 1946 letters from Polanyi's secretary to Walter Stein, the *Humanitas* editor (in References, Polanyi 1946b), which make clear that Polanyi, in a visit to Princeton, has been successfully working to generate interest in *Humanitas*.

⁵The first published edition of Polanyi's March 1946 Riddell Lectures (i.e., *SFS*) was dedicated to Emmet, although this dedication is not included in the 1964 reprint. See the copy with a dedication to D. M. E. posted at <http://www.polanyisociety.org/essays.htm>. Emmet published *The Nature of Metaphysical Thinking* in February 1945 (Emmet 1949 [printing] is hereafter cited), a book that I suspect influenced Polanyi's Riddell Lectures, if not also earlier Emmet publications on metaphysical thinking. If Polanyi read, for example, "The Uses of Analogy in Metaphysics" (Emmet 1940-41, 27-46), he likely found Emmet's views quite provocative. Here she argues "when we come to metaphysical analogies, we are asking not only 'How can we make the nature of the physical world more intelligible?' (which might, as Kant says, only mean how can we find a rule for making a unity out of appearances), but 'What is real?'" (Emmet 1940-41, 30). *The Nature of Metaphysical Thinking* reflects that Emmet was attuned to both the history of Western philosophy and contemporary currents in British and American philosophy. She develops ideas about how metaphysical schemes (and she acknowledges her interest in robust schemes like those of Hegel or Whitehead) are generated analogically from the articulation of relationships taken to be constitutive of experience (Emmet 1949, v). Emmet notes in her opening discussion of "the problem of metaphysics" that "metaphysics is concerned not only with some pretentious or ambiguous system or theory of the universe, but, as the logical positivists have rightly seen, wherever questions of truth about 'reality' are raised at all . . ." (Emmet 1949, 3). In one section of her book, Emmet notes discussions with Polanyi about Gestalt (Emmet 1949, 203). *The Nature of Metaphysical Thinking* is a book that was in Polanyi's library when he died. Title pages are in Boxes 57 and 58 of MPP.

⁶Emmet in fact helps Polanyi, in 1946, re-publish a version of "Science and Reality" (Polanyi 1946c, 137-150, which simply omits section II [*SFS* 1964, 25-28]) in an issue of *Synthese* in which an Emmet essay (Emmet 1946a, 134-137) also was published. Emmet's letters to Polanyi outline how Polanyi can cut his first Riddell Lecture for this Dutch journal in which she is going to publish one of her essays; she also reports on the Dutch conference she attended by the journal's sponsoring organization. These letters, although dated only "Friday" and "Sept. 10th" are almost certainly 1946 letters (Emmet to Polanyi, Box 14, Folder 2, 0080 and Emmet to Polanyi, Box 14, Folder 2, 0077-0078, MPP). Her own essay in this July-August 1946 issue of *Synthese*, "Philosophy and 'the Unity of Knowledge,'" is akin to Emmet's earlier published essay "Science and the 'Unity of Thought'" that grew out of her November 1944 participation, with Polanyi, in the symposium "Science, the University and the Modern Crisis." (see the discussion above). In fact, Emmet's *Synthese* essay includes a footnote indicating parts of her essay were used in this earlier symposium (1946a, 137). In "Philosophy and 'the Unity of Knowledge,'" Emmet also interestingly suggests that "the relation between . . . schemes of interpretation and empirical enquiries may be the form in what used to be called metaphysical philosophy presents itself to our generation" (Emmet 1946a, 136).

⁷Polanyi later again republished "Why Profits?" as the ninth chapter of *LL* titled "Profits and Polycentricity" (*LL*, 138-153). There is an unclear footnote after the *LL* chapter title indicating that the essay was in *Humanitas*, 1946; the *LL* version of the essay has been slightly modified.

⁸Thanks to Eduardo Beira for providing this letter (and several others) relevant to Polanyi's work on *Humanitas*. Scott and Moleski (2005, 202) suggest this university lecture was originally intended for publication in *Humanitas*, but the Stein letter suggests the editor and others heard the lecture, liked it very much and asked if it could be published in *Humanitas*.

⁹After the forties, Polanyi, of course, develops ideas about subsidiary and focal awareness and, eventually, he works out his theory of tacit knowing. The later framework for thinking about knowing suggests that even in overt professions of faith (i.e., professions of belief) there will remain unarticulated and unarticulatable tacit elements. Polanyi likely thought this was the case in the forties, although he does not have his epistemological ideas clearly worked out yet.

¹⁰The note struck here is in harmony with a 1948 essay in which Polanyi asserts that we must examine the "foundations of modern thought" and "realise at last that skepticism cannot in itself ever discover anything new." Skepticism can release "powers of discovery, but the powers must always spring from belief" (Polanyi 1948, 100).

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BOOK REVIEW

Carlo Brentari. *Jakob von Uexküll: The Discovery of the Umwelt between Biosemiotics and Theoretical Biology.* Translation **Ca triona Graciet.** Springer: Biosemiotics 9. xi+249. ISBN 978-94-017-9687-3. ISBN 978-94-017-9688-0 (e-book). DOI 10.1007/978-94-017-9688-0.

Brentari is a philosopher whose book originally appeared in 2011 in Italian. This is a 2015 English translation. The book provides a solid, detailed analysis of the work of the Estonian-German biologist Jakob von Uexküll (1864-1944), who is one of the important figures shaping the interdisciplinary work in theoretical and empirical biology that is termed “biosemiotics.”

This book is No. 9 in the Springer Biosemiotics series; some volumes are already published with a number forthcoming. Indeed, this series is an extraordinarily interesting one with strong interdisciplinary appeal, but these books, including this volume, are, unfortunately, likely to remain largely unknown. The series is poorly advertised and volumes are pricey (\$149.99, for this volume). Springer graciously will sell you chapters (with separate DOI numbers) for a mere \$30 each. There is some overlap in the content of chapters so perhaps the idea is that one could purchase and read only a few, but Springer does not make this clear. Unfortunately, these days most academic publishing houses seem to focus primarily on generating revenue, and they often impede—rather than promote—the dissemination of good scholarship.

The opening chapter is an introduction by Morten Tønnessen, a contemporary Danish biosemiotician who provides a helpful, succinct introduction to Uexküll’s life and work. He also

discusses Brentari’s book in the context of international interest in and publications about Uexküll. He concisely summarizes the periods of Uexküll’s research and outlines how Brentari treats them. He notes Brentari’s extended discussion of Uexküll’s influence on a long list of philosophers and scientists. Tønnessen also has a section discussing Uexküll’s influence upon Norwegian ecophilosophy, and there is, finally, a section discussing some of his own work aimed at updating certain ideas about the Umwelt.

Brentari’s second chapter provides a more detailed overview of Uexküll’s life and work. There is enough biographical detail to portray vividly Uexküll’s interesting life negotiating the tumultuous political and cultural context of Europe in the first half of the twentieth century. There is also an account of Uexküll’s scientific education (including the influence of German biology and his reaction against Darwinism), and his varied work as both an experimental and a theoretical biologist. Particularly interesting is Brentari’s discussion of the links to the thought of Kant.

The third chapter treats the periods of Uexküll’s research and writing: early he focused on empirical work on the physiology of marine animals but later combines his physiological research with theoretical writing. Late in his life, Uexküll was primarily a theoretical biologist and in this period worked out his account of the Umwelt ideas, his account of animal subjectivity which essentially extends to non-human subjects the transcendental analysis of Kant’s first critique. Uexküll was a vitalist but, as Brentari construes it, one who treads very lightly insofar as he did not emphasize supermechanistic qualities. Brentari situates Uexküll’s changing

interests and research in the context of the evolving debate between the vitalists and mechanists both before and during Uexküll's life.

Brentari's next four chapters look in depth at Uexküll's basic biological ideas as they develop. First is an analysis of Uexküll's early account of the way each animal species sets up a subjective world composed of isolated and synthesized stimuli. Next, Brentari focuses on Uexküll's effort to show how different kinds of signs constitute the Umwelt or species-specific environment. Brentari works to show how Uexküll developed a Kantian-inspired account of how living things have "an interpretative relation" (111) with their environment, but at the same time Uexküll rejects Darwin. Uexküll has his own brand of vitalism which he combines with teleology. Uexküll's perspective is one that grew and this is reflected in his publications..

One of Brentari's most interesting middle chapters is "Environment and Meaning" which is a careful analysis of Uexküll's best known book, *A Foray into the Worlds of Animals and Humans* and his later, more theoretical *A Theory of Meaning*. The first of these was intended as a popular work organized to educate and it draws together some ideas from Uexküll's earlier work. Brentari discusses Uexküll's changing attitude toward Darwin, his opposition to behaviorist reading of animal actions, his interest in connections between human beings and other animals (also a Polanyi interest), and his collaboration with Konrad Lorenz. He explains Uexküll's claim that each species organizes its environment in terms of a different spatial and temporal network. Brentari is often incisively critical of Uexküll's views; he suggests, for example, that Uexküll's Kantianism led him to a kind of species-specific relativism, but that Uexküll was painfully aware of this. Uexküll's later writing was more and more theoretical and this included not only his *A Theory of Meaning* in which nature is a system of signifiers, but also his final dialogues (modeled on Plato) which are overtly philosophical reflections on biology.

Brentari's long seventh chapter is a "reasoned overview"(175) of the influence of Uexküll on later thinkers and he here draws out the main lines on which Uexküll's work has been interpreted. Brentari has clearly digested much literature to provide this most interesting account of the range and variety of Uexküll's influence on Scheler, Plessner, Gehlen, Cassirer, Langer, Heidegger, Lacan, Merleau-Ponty, Deleuze, Lorenz, Sebeok and contemporary biosemiotics. This chapter can serve scholars interested in particular figures as a starting point. The concluding eighth chapter is a useful summary of the major ideas about nature and life which Uexküll develops over the course of his own life. The focus here is on Uexküll's discussion of the Umwelt and his perspective as both a Kantian and a semiotic account.

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