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The background features a dark blue gradient with a starry space pattern. Overlaid on this are several technical diagrams, including circular gauges with numerical scales (e.g., 40, 150, 160, 180, 190, 200, 210, 220, 230, 240, 250, 260) and various circular paths with arrows indicating direction. The text is centered in a large, white, sans-serif font.

THE PHILOSOPHY OF MICHAEL POLANYI: FROM THE DISCOVERIES OF SCIENCE TO THE CONTEMPLATION OF GOD

Vincent M. Smiles

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Thursday Forum – Dec 5th, 2019

An Explanation of my Title

“...Personal knowledge establishes a continuous ascent from our less personal knowing of inanimate matter to our convivial knowing of living beings ... Such I believe is the true transition from the sciences to the humanities and also from our knowing the laws of nature to our knowing the person of God.”

Polanyi, “Faith and Reason”, 244 (emphasis added).

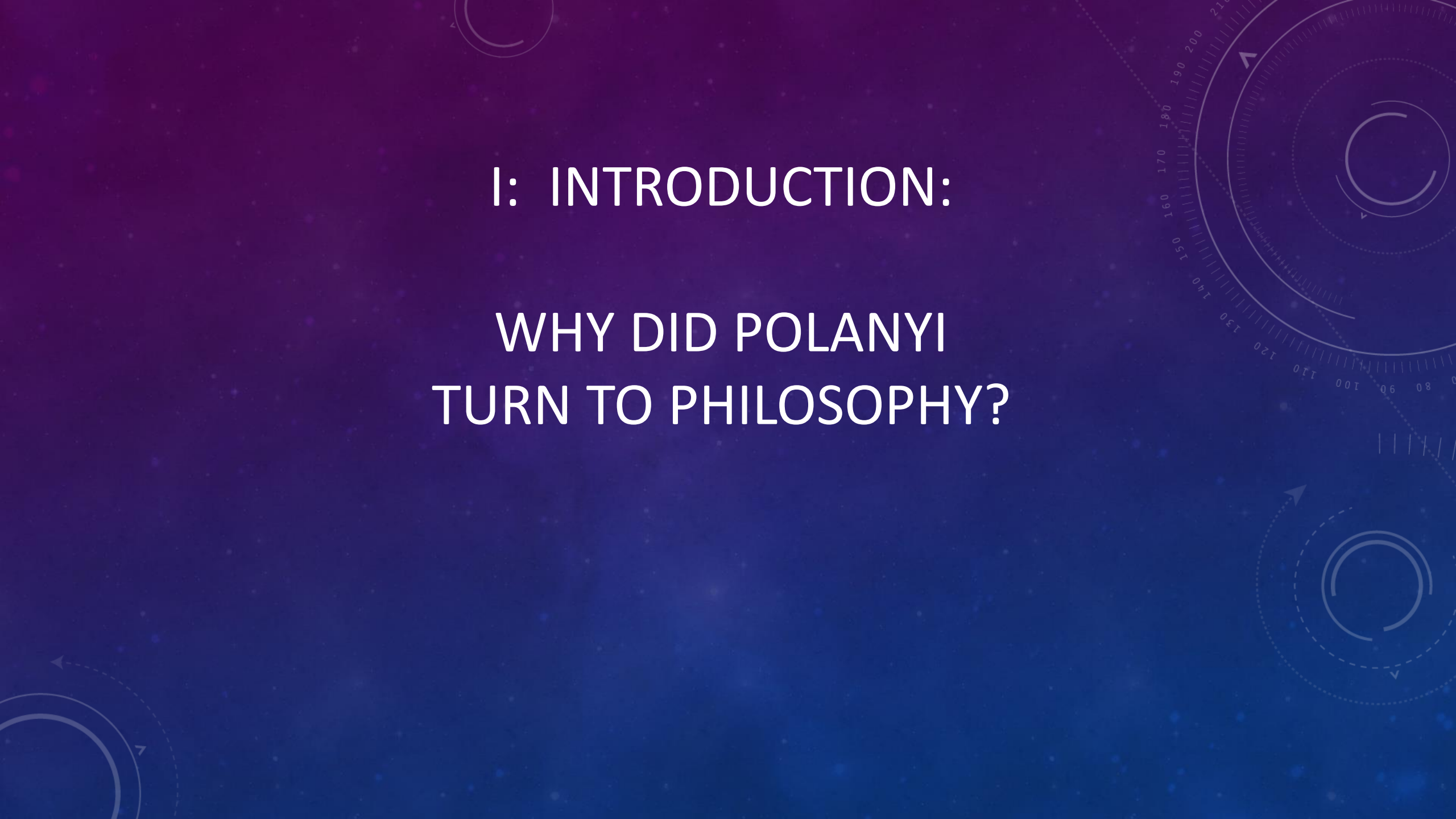
MY AIM:

To vindicate two major aspects of the philosophy of Michael Polanyi:

1. His concept of tacit knowing (epistemology), and
2. His concept of the multi-levelled character of reality (emergence).

These notions provide a foundation for the claim that all varieties of human knowledge, like all levels of reality, are intimately connected.

Therefore, *when it comes to understanding persons, and most especially the human mind, science and religion have to meet on the common ground of the transcendent capacities of human beings, which are pointers to the transcendent character of the universe.*

The background features a dark blue gradient with a subtle pattern of white stars and faint technical diagrams. On the right side, there are several circular diagrams resembling gauges or dials with numerical scales (e.g., 100, 110, 120, 130, 140, 150, 160, 170, 180, 190, 200, 210) and arrows. On the left, there are partial circular diagrams with arrows. The text is centered in a clean, white, sans-serif font.

I: INTRODUCTION:

WHY DID POLANYI TURN TO PHILOSOPHY?



Born in Budapest, Hungary –
1891 (Jewish)

Died in Oxford, England –
1976

Polymath – Art history & Physics.

Doctorate in Physical Chemistry.

Medic during 1st World War.

Kaiser Wilhelm Institute, Berlin in early 1930s

Escaped to Manchester, England in 1933

Taught chemistry there until 1948.

Chair of Social Studies – turned to philosophy.

WHY DID HE TURN TO PHILOSOPHY?

The Problem of “Logical Positivism”:-

“Toward the end of the nineteenth century a new positivist theory arose, denying to the scientific theories of physics any claim to inherent rationality, a claim which it condemned as metaphysical and mystical [= led by Ernst Mach, *Die Mechanik*, 1883]. ... Scientific theory, according to Mach, is merely a convenient summary of experience. Its purpose is to save time and trouble in recording observations. It is ... just as external to the facts as a map, a timetable, or a telephone directory; indeed this conception of scientific theory would include ... a telephone directory among scientific theories” Polanyi, *Personal Knowledge*, 9.

Logical Positivism required “a completely precise and strictly logical representation of knowledge” Polanyi, *The Study of Man*, 18.

In Polanyi’s view, ... “this strict empiricism ... [is a] violent & inefficient despotism” (*Study of Man*, 21).

IDEAS DERIVING FROM LOGICAL POSITIVISM:

Life reducible to physics and chemistry – “a mechanical conception of [human beings]” Polanyi, *Tacit Dimension*, 3.

Behaviorism: Denial of consciousness & free will –

Science is “the sole path by which we can attain to knowledge” – Karl Pearson, *Grammar of Science* (1896) 77.

Rejecting “metaphysics and mysticism,” it confined human knowing to that which can be verified empirically (science’s measures & tests) –

Metaphysics as a whole was rejected (Claims about ‘reality’ & ‘truth’ are seen as meaningless)

What is “reality” and can humans detect the truth about it?

Karl Pearson (logical positivist):

“There is more meaning in the statement that [humans] give laws to Nature than in its converse that Nature gives laws to [humans].”

“The logic [humans] find in the universe is but the reflection of [their] own reasoning faculty.”

Grammar of Science (1937) 77, 81.

Against this, Polanyi:

“I declare myself committed to the belief in an external reality gradually accessible to knowing, and I regard all true understanding as an intimation of such a reality which, being real, may yet reveal itself to our deepened understanding in an indefinite range of unexpected manifestations.”

Knowing and Being, 133.

The background is a dark blue gradient with a field of small white stars. Overlaid on this are several technical diagrams. In the top right, there is a large circular gauge with concentric rings and numerical markings from 80 to 210. In the bottom right, there is a smaller circular diagram with dashed lines and arrows. In the bottom left, there is another circular diagram with solid lines and arrows. In the top left, there is a small circular diagram with a dashed line and an arrow.

II

THE MULTI-LEVELLED CHARACTER OF REALITY

PROBLEM OF ONTOLOGICAL REDUCTIONISM

v.

METHODOLOGICAL REDUCTIONISM.

Pierre Laplace (1749-1827): “An intelligence which possessed at one moment of time knowledge of the ultimate particles of the universe, their velocities and the forces acting between them, could calculate any future topography of the same particles. Such a topography ... would give universal knowledge.”

Polanyi, “Transcendence & Self-Transcendence,” 1.

Steven Weinberg, “*All the explanatory arrows point downward.*”

As though everything can be explained in terms of physics and chemistry.

THE CONCEPT OF “EMERGENCE”:-

“Emergent properties” are “novelties that follow from the system rules but [they] cannot be predicted from properties of the components that make up the system.”

Harold J. Morowitz, *The Emergence of Everything*, 13.

E.g. Water from ‘H₂’ + ‘O’

“Chemistry” from “Physics”

“Life” from “Phys-Chem”

“Ethics” from “Intelligence”

“Mind” from “Matter”

... “The explosive creativity” of the universe –

Stuart Kauffman, *Reinventing the Sacred*, 5.

MICHAEL POLANYI: “HIERARCHICAL LEVELS”

For example, a machine “cannot be explained in terms of physics and chemistry” [phys-chem]

“[Phys-chem] cannot reveal the practical principles of design or the coordination which are the structure of the machine.”

E.g. Physics and chemistry can account for why a watch *fails*, they cannot account for its *success* – why it functions as a watch.

Phys-chem “cannot reveal the practical principles embodied in a machine, any more than the physical chemical testing of a printed page can tell the content of its text.”

Polanyi, “On the Modern Mind,” 1965: 14.

MEANING

WORDS

INK

PAPER

It is the higher levels (the machine – the content on the page) that explain the lower; in other words, the explanatory arrows *also* point *upwards*.

Roger Sperry calls this “emergent interactionism.” (“Powerful Paradigm...” 1064-65).

“... a multiple level [***top-down***] hierarchy. The lowest level is **voice** production, sounds which leave open all kinds of uses to which the voice may be put. The next lowest levels are vocabulary and phonetics which restrict the manner in which the voice is used while leaving open the many forms of order which are supplied by the next level, the rules of grammar and syntax. Grammar and syntax restrict the use of vocabulary by making sentences while leaving the content of sentences open. The highest level in this hierarchy is the level of content or meaning. Meaning or content exercises control over the construction of sentences and the relations among them.”

Polanyi, “Transcendence ...” 2.

THE WHOLE IS MORE THAN THE SUM OF THE PARTS

“Consequently, ... the meaning of the higher level cannot be accounted for by reductive analysis of the elements forming the lower levels. No one can derive a machine from the laws of physics and chemistry, a vocabulary from phonetics, ...”

The higher level is an “emergence” from the lower level

“At each consecutive level there is a state which can be said to be **less tangible** than the one below it. ... The **more intangible** the matter in the range of these hierarchies, the **more meaningful** it is.”

An idea or problem is “more real than a cobblestone.”

Polanyi, “Transcendence,” 2, & See *Tacit Dimension*, 32-36.

III:

TACIT KNOWING

(Knowing corresponds to Being)

SUBCEPTION

A subject is presented with “a large number of nonsense syllables” and, after certain of them, is administered an electric shock. After a while, the person was able to anticipate the shock-syllables and take the prescribed step to prevent the shock. But when asked how he recognized the syllables, he could not tell. ... Why?

“[T]he subject was riveting his attention on the electric shock. He was relying on his awareness of the shock-producing particulars only in their bearing on the electric shock ... [and] he learned to rely on his awareness of these particulars for the purpose of attending to the electric shock.”

Polanyi, *Tacit Dimension*, 9.

“I shall reconsider human knowledge by starting from the fact that
we can know more than we can tell.”

Tacit Dimension, 4.

-- *Face at the airport* –

-- *Diagnose an illness* –

-- *How to ride a bike/swim/play piano* –

-- *Understand speech* –

We ‘know’ the particulars *without* being able to *identify* them;

“We know [the particulars] only by relying on our
awareness of [them] for attending to
the focus of our attention.”

Tacit Dimension, 10.

Given that all knowing is tacit:

1. “Objectivism”

(“completely precise and logical representation of knowledge”)

is impossible

(“a fit subject for derision”)

2. All Knowing requires

INDWELLING:

As we study an object, we appropriate its particulars by an internal process of integration.

We come to dwell in the particulars, and they in us.

Our own bodies, and their internal processes of perception, are also a part of tacit knowing. Not only do we attend from the particulars of a thing that is external to us, we also – in our knowing of the world – attend from our bodies “to the qualities of things outside.”

INDWELLING cont.

And, as we are only tacitly aware of the features of an external thing, so also we have only a tacit (subsidiary) awareness of bodily processes that enable us to know the world, even though “**our body is the ultimate instrument of all our external knowledge.**” We can nevertheless appreciate its instrumental power when we extend its capacities through the use of instruments, like a probe for exploring a cavity or by the use of microscopes etc. By such instruments, we extend our bodies into the world, and increase our capacity to know.

Polanyi, *Tacit Dimension*, 14—16.

INDWELLING cont.

Just as we “indwell” our bodies, and from them contemplate the world around us, so we indwell instruments, and the particulars of the things we investigate. What **“this brings home to us [is] that it is not by looking at things, but by dwelling in them, that we understand their joint [integral] meaning.”**

Polanyi, *Tacit Dimension*, 16—20.

“... I regard all true understanding as an intimation of such a reality which, being real, may yet reveal itself to our deepened understanding in an indefinite range of unexpected manifestations.”

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IV:

FROM THE DISCOVERIES OF
SCIENCE TO THE
CONTEMPLATION OF GOD

Carl Sagan: “starstuff,” and more than that, we are “the universe becoming aware of itself”! ‘Human Being’ reflects all of the levels of existence that have given rise to us, from amoeba to apes & hominin forebears:

“[Humanity] has emerged, but [humans] still have [their] history in [them], in their slowly evolved powers of understanding as in [their] physical body. Our own urge to know is traceable right back to the urge to get about and grasp and deal with their world that was shown by the earliest forms of life. Our quest, certainly, is pursued with immeasurably more powerful and accurate instruments ... all this is a tremendous achievement. But, at the same time, it is only a tool-kit. It cannot work on its own, [people] have to use the tools, and they still rely basically on the powers that grew in the swamp.”

Drusilla Scott, *Everyman Revived: Common Sense of Michael Polanyi*, 48.

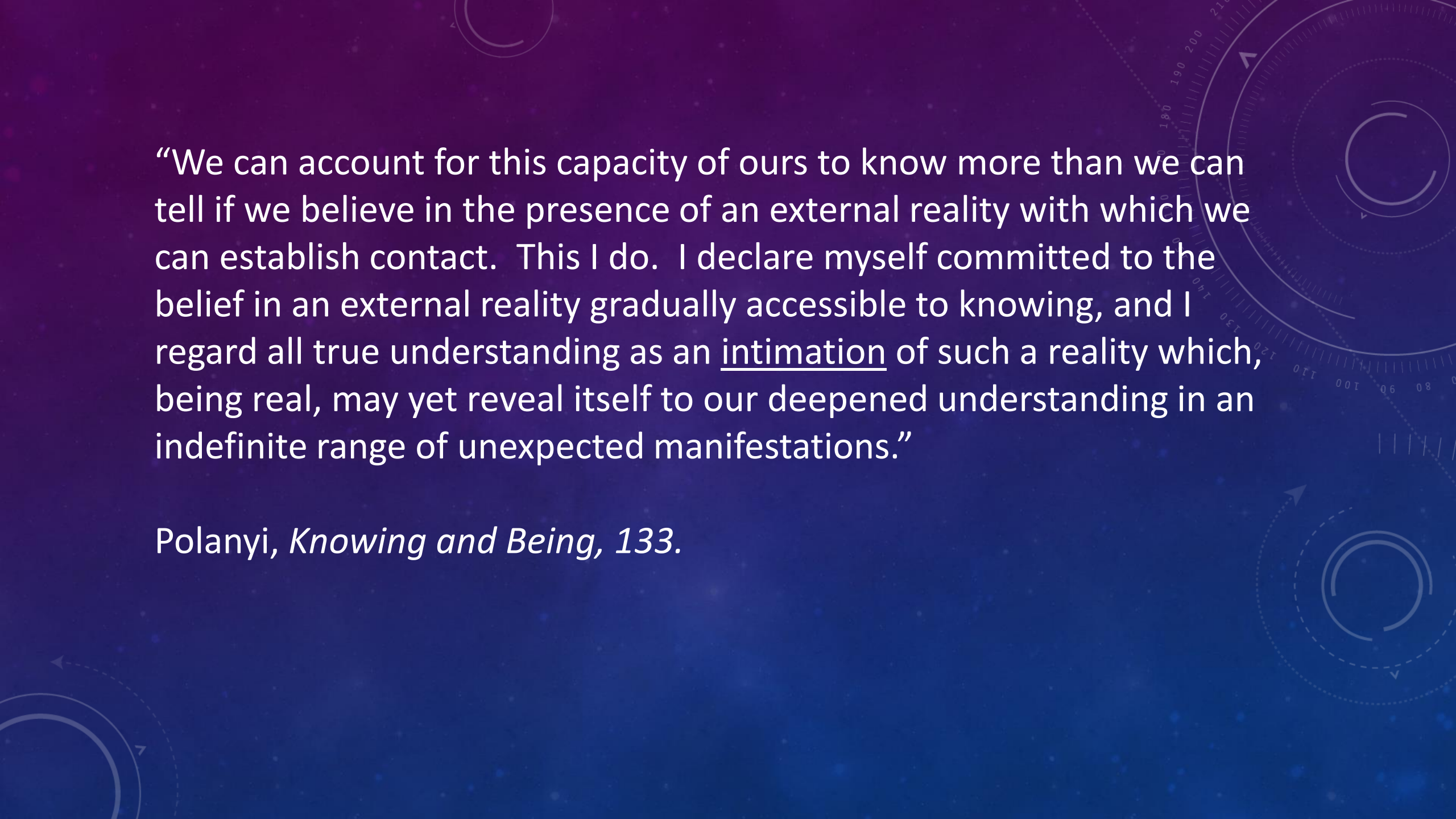
“I have elaborated in schematic fashion a multiple hierarchy which leads on to ever more meaningful levels. Each higher level is more intangible than the one below it and also enriched in subtlety. And as these more intangible levels are understood a steadily deeper understanding of life and man is gained. These understandings constitute transcendence in the world.”

BUT, “how do we know transcendence ...?”

By the INDWELLING of TACIT KNOWING ...

“We know more than we can tell.”

Polanyi, “Transcendence,” 3.



“We can account for this capacity of ours to know more than we can tell if we believe in the presence of an external reality with which we can establish contact. This I do. I declare myself committed to the belief in an external reality gradually accessible to knowing, and I regard all true understanding as an intimation of such a reality which, being real, may yet reveal itself to our deepened understanding in an indefinite range of unexpected manifestations.”

Polanyi, *Knowing and Being*, 133.

MAX PLANCK:

“I can tell you as a result of my research about atoms this much: There is no matter as such. All matter originates and exists only by virtue of a force which brings the particle of an atom to vibration and holds this most minute solar system of the atom together. We must assume behind this force the existence of a conscious and intelligent mind. This mind is the matrix of all matter.”

Max Planck, “The Nature of Matter,” Florence, Italy (1944 – emphasis added). The quote and full reference are available @ https://en.wikiquote.org/wiki/Max_Planck

CONCLUSION:

All knowing (perception, recognition, appreciation) has to rely on “subsidiary [tacit] awareness” of the particulars for its knowledge of the thing as a whole. This structure of knowing leads to the insight that we “know more than we can tell,” and this insight, in turn, corresponds to the fact (recognized since Aristotle) that “the whole is more than the sum of the parts.”

This means that knowing corresponds in its structure to the structure of the reality we seek to know – just as being invites knowing, so knowing reflects being. Further, just as the parts of a thing represent different levels of being, from elementary particles (e.g. an alphabet), through more complex entities (e.g. words and sentences) to complex wholes (e.g. a Shakespeare sonnet), so also knowing rises from the inanimate (physics and chemistry) through the biological, intelligent and ethical, and ultimately to “the person of God.”

The background is a dark blue gradient with a field of small white stars. On the right side, there are several technical diagrams: a large circular scale with numbers from 0 to 210, a smaller circular scale with numbers from 0 to 100, and various dashed and solid lines with arrows indicating directions. In the bottom left corner, there are more circular diagrams with arrows.

Thank You

Questions?