

The Tacit Dimension

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'Without symbolism the life of man would be like that of the prisoners in the cave of Plato's simile...confined within the limits of his biological needs and practical interests; it could find no access to the "ideal world" which is opened to him from different sides by religion, art, philosophy, science.'

Ernst Cassirer¹

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ABSTRACT

I begin by outlining some of the positions that have been taken by those who have reflected upon the nature of language. In his early work Wittgenstein asserts that language becomes meaningful when we tacitly adhere to the rules of logic. In his later work he claims that languages become meaningful when they are situated within forms of life. Polanyi describes language as a toolbox for deploying our tacit awareness. A meaning is generated when a point of view attends from a subsidiary to a focal awareness. Languages re-present these meanings. Although all languages rely upon rules, what it is to be a meaning is not reducible to rules. Nor is there a universal grammar. Because it renders abstract reflection possible, language renders minds possible. A mind is not the product of an innate language of thought; it is a consequence of indwelling within a natural language. Indwelling within languages enables us to access new realities. Languages however do not supply us with the boundaries of the world. Not only do we know more than we can say, we can also say more than we know. The ultimate context of our linguistic meanings is not our social practices; it is our embodied awareness of the world. A representationalist account is in accordance with the view that minds are Turing machines. But the symbols processed by a Turing machine derive their meaning from the agents that use them to achieve their purposes. Only if the processing of symbolic representations is related to the tacit context within which they become meaningful, does a semantic engine become possible.

¹ Cassirer (1944) p.41.



precise universal language, would secure intellectual clarity.⁶ Aristotle distinguished between essential and accidental characteristics, but Leibniz claimed that it is possible to derive every characteristic of an object can be derived from its concept. God created our universe in accordance with the principles of pure reason. In his *Essay Concerning Human Understanding* Locke also sought to defend the need for clear linguistic definitions. Berkeley declared that philosophy ought to begin with a critique of language.⁷ But although they both sought to defend the assumption that words designate Ideas, they gave them a psychological interpretation and traced their origin back to sensations.⁸ Locke observed that it is not always possible to supply exact translations between languages.⁹ By drawing attention to the way in which our minds combine Ideas in ways that do not correspond with our experience, the Empiricists undermined the quest for a universal grammar.¹⁰ The focus began to shift towards the formative capacities of language.¹¹

Condillac follows Locke in declaring that language that is not derived from our experience is idle and frivolous. But he amends Locke by arguing that words are the origin of our mental life, and are the product of our natural tendency to react to expressions of emotion.¹² Herder extends this into the claim that thoughts rely upon language, and that in order to comprehend a language we have to situate it within a specific culture. Words become meaningful within a context.¹³ Humboldt claims that languages are not simply a diversity of sounds and signs, but also a diversity of worldviews:

‘Men do not understand one another by relying on signs for things, nor by causing one another to produce exactly the same concepts, but by touching the same link in each others spiritual instrument.’¹⁴

In 1786 Sir William Jones, while serving as a judge in India, discovered similarities between Sanskrit and Greek and Latin. Schlegel argued that a

⁶ See Descartes (1991) p.13. See also Leibniz (1973) pp.10-17.

⁷ Berkeley (1988) pp.37-51.

⁸ See Locke (1977) pp.205-57.

⁹ Ibid p.226.

¹⁰ Such as can be found in the Port-Royal Grammar (1660).

¹¹ Cassirer (1955) Volume 1 p.141.

¹² Condillac (2001).

¹³ See Taylor (1995) pp.79-99.

¹⁴ Quoted by Cassirer (1955) p.153.

comparative grammar of different languages would reveal their genetic relationships. Extending this insight Schleicher set out languages in family trees. Inspired by Darwinism he claimed that phonetic changes exhibit predictable patterns. His aim was to establish linguistics as a science with general laws. He believed this task would be achieved by empirical inquiry.¹⁵

II. WITTGENSTEIN ON LANGUAGE

At the turn of the last century various thinkers attempted to establish a science of meaning. Husserl for example combines the assumption (derived from Brentano) that intentionality is the defining attribute of consciousness, with the assumption (derived from Frege) that we ought to distinguish between the sense of a word and its reference, and declared that philosophy has the critical task of explicating the way in which a consciousness generates meanings.¹⁶ In his posthumously published lectures Saussure asserts that linguistics should not simply be a diachronic study of language change, but ought to describe the synchronic laws or underlying structure ('langue') by which everyday language ('parole') becomes meaningful.¹⁷ He claims that words are arbitrary signs, whose meaning derives from their relationship with other signs. Both Husserl and Saussure view their task as exposing the structures that determine when something is meaningful. Neither comprehends this as a psychological inquiry. Husserl attempts to explicate the 'logical grammar' of language, and Saussure describes language as a social construction. The thinker who I am going to use to elucidate the contribution that Polanyi makes to the role played by language is his contemporary Ludwig Wittgenstein. Both focus upon the tacit context that underlies the meaningful use of language. In the *Tractatus*¹⁸ Wittgenstein declares that we can show but not state how it is possible for language to represent the world, and in the *Philosophical Investigations*¹⁹ he asserts that language becomes meaningful within an interpretative context.

¹⁵ The attempt to supply a genealogy of languages has been enriched in recent years by the findings supplied by genetic studies. See Cavalli-Sforza (2000).

¹⁶ Husserl (1970).

¹⁷ Saussure (1983).

¹⁸ Wittgenstein (1961).

¹⁹ Wittgenstein (1953).

In the *Tractatus* Wittgenstein claims that it is language that enables us to have thoughts about the world. Our thoughts become meaningful when they picture states of affairs in the world. A proposition is able to picture a state of affairs in the world when a correspondence exists between the structure of its elements, and the structure of a state of affairs in the world. That which a picture represents is its sense. The correspondence or disagreement of a sense with a state of affairs in the world determines its truth or falsity. Every assertion about a state of affairs has a logical structure. Logic is able to function as the scaffolding of all possible meaning because its truths exist prior to every possible experience. But if the only meaningful thoughts are about possible states of affairs in the world, what is the status of the logical claims that underlie the possibility of a link between language and the world? Wittgenstein declares that the truths of logic, like ethical and aesthetic responses, cannot be stated they can only be shown. Although the *Tractatus* makes various philosophical assumptions, for example it assumes the validity of solipsism and an atomistic ontology,²⁰ Wittgenstein denies that we can speak about such matters. Once we comprehend that language is only meaningful when we limit ourselves to factual statements, all other questions vanish, because neither the question nor any answer can be put into words. In its own terms the *Tractatus* shows us that which transcends the limits of language, and that which we cannot talk about ought to be passed over in silence.²¹

In his preface to the *Tractatus* Russell declares that if we create a language that expresses the logical truths that underlie any possible object

²⁰ In a 1930 list of those who had exerted a major influence upon him Wittgenstein mentions Schopenhauer, who in *The World as Will and Representation* claims that the world is my representation, with the subject itself not represented. In the *Tractatus* Wittgenstein follows a similar line of thought:

'The subject does not belong to the world: rather it is the limit of the world. Where in the world is a metaphysical subject to be found? You will say this is exactly like the case of the eye and the visual field. But really you do not see the eye.' Ibid 5:623-5:633.

As far as solipsism is concerned Wittgenstein claims:

'We cannot think what we cannot think; so what we cannot think we cannot say either. This remark provides the key to the problem, how much truth there is in solipsism. For what the solipsist means is quite correct, only it cannot be said, but makes itself manifest.' Ibid 5:61.

Wittgenstein relies upon an atomistic ontology because he seeks to explain how false but meaningful statements are possible:

'In outline, the Tractarian answer is that when one imagines something that does not exist, one does so not by imagining a non-existent object, but rather by imagining that certain simpler objects are arranged one way when they are actually arranged differently. In order to avoid an infinite regress, one is forced to conclude that there must be some simple terms that refer to things that exist.' Hacker (1986)

p.54.

²¹ Ibid Preface.

language, we can avoid the mysticism of asserting that what determines propositional meaning can be shown but not stated.²² But if it is only fact stating language that has sense, logical truths must be inexpressible. In the *Philosophical Investigations* Wittgenstein abandons some of the claims made in the *Tractatus*.²³ While he maintains his conviction that philosophy is a critique of language, and that meaning relies upon a context that lies beyond description; instead of viewing philosophical puzzlement as the product of failing to understand the logic which underlies our everyday language, he asserts that the ‘bumps’ which our thought receives when it runs up against the ‘limits of our language’ can be avoided by situating language within the context of a practice. To comprehend the meaning of a word it has to be situated within the context of its use within an actual practice. He rejects the assumption that words gain their meaning by being correlated with objects. Such a connection is supposed to take place via a process of ostensive definition i.e. indicating an object and then uttering its name. But in order to comprehend that an object is being named, we have to be already familiar with the practice of naming. Wittgenstein calls these practices ‘language games’²⁴ and he situates them within ‘forms of life’.²⁵ He denies that we can talk in absolute terms about parts of an object, because parts are only recognised as such within the context of a practice.

Can such practices be described using rules? Using the example of a game he declares that the practice that underlies what it is to be a game lacks any common property:

Don’t say “There must be something in common, or they would not be called games” – but look and see whether there is anything in common to all – For if you look at them you will not see something that is common to all.²⁶

All we discover is what he describes as a ‘family resemblance’. In response to the objection that in the absence of explicit rules meanings would become arbitrary, and thus impossible, he observes that although it is the case that we cannot define what it is to be a game:

It is not everywhere circumscribed by rules; but no more are there rules for how high one throws the ball in tennis, or how hard; yet tennis is a game for all that and has rules too.²⁷

²² Ibid p.xxii.

²³ Wittgenstein (1953) p.viii.

²⁴ Ibid Paragraph 7.

²⁵ Ibid 23.

²⁶ Ibid 66.

²⁷ Ibid 68.

But how is it possible to know something, such as what it is to be a game, and yet not be able to describe it? He declares that if you are surprised that you can know something and yet not put it into words this is because you are thinking of cases such as 'How many feet high is Mont Blanc?' rather than questions such as 'How does a clarinet sound?'²⁸

III. RULE FOLLOWING

If all meaningful thoughts are determined by rules, this implies that their application is determined by rules:

But then how does an explanation help me understand, if after all it is not the final one? In that case the explanation is never completed; so I don't understand what he means, and never shall! – As though an explanation as it were hung in the air unless supported by another one'²⁹

Wittgenstein denies that intentional states are wholly private affairs. Our thoughts about the world derive their meaning from the way in which words are used within shared practices. Meaning is not something that can be reduced to a process going on inside our heads. What determines the content of an intentional state is the shared practice within which it takes place. The 'criteria' that determine when languages are meaningful are derived from linguistic practices. What grounds a linguistic practice is a form of life: "If I have exhausted the justification I have reached bedrock, and my spade is turned. Then I am inclined to say, this is simply what I do."³⁰ Thoughts about the world occur within language, and all linguistic understanding is reliant upon an intransitive comprehension that it is not possible to capture using rules.³¹

In support of the assumption that meanings can be formalised, some postulate that language obeys rules that are hardwired into our nervous system. Chomsky declares that we possess a 'language organ' that supplies human languages with the 'deep structure' of a universal grammar, which 'transformational rules' convert into less abstract 'surface structures'.

²⁸ Ibid 78.

²⁹ Ibid 87.

³⁰ Ibid 217.

³¹ Wittgenstein describes our understanding of a picture or a melody as 'intransitive' (1974 p.79) and this term helps us to understand what he means when he claims that 'When I obey a rule I obey it blindly' (1953) Paragraph 219. Interpretation of rules is not arbitrary; it is rooted in an intransitive tacit awareness. See Bell (1987).

Chomsky declares that knowing a language is a competence not a skill.³² On the grounds that it does not count as knowledge, he uses the term ‘cognize’:

Cognizing is tacit or implicit knowledge...[it]...has the structure and character of knowledge, but may be, and in interesting cases is, inaccessible to consciousness.³³

While accepting that knowing how to do something is not the same as knowing how to explain it, Fodor denies that this undermines the attempt to provide a formal account of knowing:

[I]f X is something an organism knows how to do but is unable to explain how to do, and if S is some sequence of operations, the specification of which would constitute an answer to the question “How do you X”...then the organism tacitly knows the answer to the question “How do you X” and S is a formulation of the organism’s tacit knowledge.³⁴

Evans asserts that to tacitly know a theory of meaning is to have dispositions that correspond with expressions that are derivable from a set of meaning delivering axioms.³⁵

Wittgenstein rejects any attempt to derive linguistic meanings from unconscious mechanisms:

Nothing would be more confusing here to use the words “conscious” and “unconscious” for the contrast between states of consciousness and dispositions. For this pair of terms covers up a grammatical difference.³⁶

The grammatical difference ignored by a dispositional analysis is the normative character of rules.³⁷ All rule following relies upon interpretative practices. In Part II of the *Philosophical Investigations* Wittgenstein discusses the phenomena of changing aspects. When presented with a triangle, not only can we view it as a geometrical figure, we can also view it as a mountain or an arrow. How we see the world is rooted in practices: “It is only if someone can do, has learnt, is master of, such-and-such, that it makes sense to say he has had this experience.”³⁸ The ‘forms of life’ we acquire serve to determine the way in which we interpret our experience.

³² Chomsky (1980) p.102.

³³ Ibid pp.69-70.

³⁴ Fodor (1968) p.638.

³⁵ Evans (1981) p.24.

³⁶ Wittgenstein (1953) Paragraph 149.

³⁷ Ibid 220.

³⁸ Ibid II xi (209e).

In *On Certainty*³⁹ Wittgenstein situates our comprehension of the world within an inherited context:

I did not get my picture of the world by satisfying myself of its correctness; nor do I have it because I am satisfied of its correctness. No, it is the inherited background against which I distinguish between true and false.⁴⁰

Doubting only makes sense by relying upon a background that is not itself subject to doubt. The banks of our 'stream of life' are not fixed; they are formed by ever changing practices: "Am I not getting closer and closer to saying that in the end logic cannot be described? You must look at the practice of language, then you will see it."⁴¹ But what happens when practices conflict? Wittgenstein uses the example of a conversion: "At the end of reasons comes persuasion. Think of what happens when missionaries convert natives."⁴² For Polanyi however the meanings upon which a missionary relies when seeking to convert natives to their beliefs about the universe are not simply reducible to social practices.

IV. POLANYI ON LANGUAGE

In *Personal Knowledge* Polanyi attributes our intellectual superiority over other animals almost entirely to our capacity for language.⁴³ In the absence of language, our experience of the world is similar to other primates. Language enhances our capacity for abstract reflection:

The enormous increase of mental powers derived from the acquisition of formal instruments of thought stands...in a peculiar contrast with the facts collected in the first part of the book, which demonstrates the pervasive participation of the knowing person in the act of knowing by virtue of an act which is essentially inarticulate. The two conflicting aspects...may be reconciled by assuming that articulation always remains incomplete.⁴⁴

All attempts to formalise meaning rely upon an unformalized context. There is no wholly explicit knowledge. Deprived of their tacit context, all spoken words, all formula, all maps and graphs, are strictly meaning-

³⁹ Wittgenstein (1969).

⁴⁰ Ibid p.15.

⁴¹ Ibid p.66.

⁴² Ibid p.81.

⁴³ Polanyi (1958) p.70.

⁴⁴ Ibid p.70.

less.⁴⁵ Language is a toolbox for deploying our tacit awareness.⁴⁶ When we give words a meaning we rely upon more than we can say. This is not to say that meaning can be reduced to intention. Language means more than the person who uses it knows if it is to mean anything at all.⁴⁷ Not only do we know more than we can say, we also say more than we know.⁴⁸ We accept this semantic indeterminacy because only words with an indeterminate meaning can have a bearing upon the real.⁴⁹

In order to use a language we need to be able to contrive symbols, observe their fitness, and interpret unfamiliar situations. Such capacities are not the product of some as yet undiscovered linguistic organ. They are linked with three sorts of animal intelligence

Type A Trick Learning – Contriving e.g. pressing a lever to escape

Type B Sign Learning – Recognising e.g. that a green light indicates food

Type C Latent Learning – Interpreting e.g. finding your way around a maze

All higher animals possess these capacities. Within the human nervous system however they are exceptionally integrated.⁵⁰ Language use relies upon two key operational principles

1) **Law of Poverty** – To be manageable languages must be finite enough to allow the same words to be used a number of times.

2) **Law of Grammar** – To cope with its complexity language must be ordered by grammatical rules.

As the scale of a map increases unity, its accuracy increases, but if it were to approach unity it would become useless.

⁴⁵ Polanyi (1969) p.195.

⁴⁶ Polanyi (1959) p.25.

⁴⁷ Polanyi (1958) p.252.

⁴⁸ Ibid p.95.

⁴⁹ Polanyi (1958) p.251. When our language exceeds our tacit awareness we have to decide which of the two we are going to rely upon "The mind which entrusts itself to the operation of symbols acquires an intellectual tool of boundless power; but its use makes the mind liable to perils the range of which seem also unlimited. The gap between the tacit and the articulate tends to produce everywhere a cleavage between sound common sense and dubious sophistication, from which the animal is quite free." Ibid p.94.

⁵⁰ Ibid p.82.

Language enhances our intellectual powers only to the extent that it facilitates our contemplation of that which it denotes.⁵¹ The Laws of Poverty and Grammar relate to words, but to function as words they have to be identifiably repeated and used consistently.

- 3) **Law of Iteration** i.e. the need for repetition
- 4) **Law of Consistency** i.e. the need for consistency.

The distinctiveness of a word is bound up with an identifiable form. Since the world never exactly repeats itself, consistency is sustained by identifying common features in different situations:

First, we must decide what variations of our experience are irrelevant to the identification of this recurrent feature, as forming no part of it i.e. we must discriminate against its random background. Secondly, we must decide what variations should be accepted as normal changes in the appearance of this identifiable feature, or should be taken, on the contrary, to discredit this feature altogether as a recurrent element of experience.⁵²

Each time we use a word we accredit an act of generalisation. This creates a theory of the universe.⁵³

Polanyi claims that to rely upon a language is to indwell within the idiom of a specific cultural inheritance. There is a non-trivial difference in the ways in which languages describe the world. Language not only articulates, it also enriches our tacit awareness:

We may say that when we learn to use language, or probe, or a tool, and thus make ourselves aware of these things as we are of our body, we interiorise these things and make ourselves dwell in them...our whole education operates in this way; as each of us interiorise our cultural heritage, he grows into a person seeing the world and experiencing life in terms of this outlook.⁵⁴

But although objects do not wholly determine how they are linguistically interpreted, it is also the case that linguistic interpretations do not wholly determine what it is to be an object. Polanyi rejects the claim that disagreements about realities are reducible to disagreements about the use of words. Declaring that words are no more than conventions is as misleading as asserting that a heliocentric model of planetary orbits is

⁵¹ Polanyi (1958) p.81. Polanyi notes that in his Book III Chapter 3 Section 2-4 of his *Essay Concerning Human Understanding* Locke explains our use of universal terms by using a similar argument. Ibid p.78.

⁵² Polanyi (1958) p.80.

⁵³ Ibid p.80

⁵⁴ Ibid p.148.

nothing more than a useful theory. It leaves the question of why it is useful unanswered. A debate about whether or not justice means 'the command of the sovereign' or 'the will of God' is not going to be settled by examining linguistic practices.⁵⁵

In response to the claim that when using a language we draw upon an unconscious knowledge of rules, Polanyi writes that our awareness of grammatical rules is subsidiary:

To say that we are subsidiarily aware of a thing or action is to attribute to it a particular function, namely a bearing on its meaning, which is at the focus of our attention. The level of consciousness at which we are aware of a subsidiary particular may vary over the whole range of possible levels.⁵⁶

Polanyi accounts for how we can know complex grammatical rules, which only a few experts have described, by using the example of how we learn to keep our balance when riding a bicycle.⁵⁷ We do not obtain this skill by following explicit rules; we acquire it within the context of a practice. Once you can ride a bicycle, you may feel this qualifies you to ride an infinite number of other bicycles, but this is not the same as concluding that you can ride a bicycle because this skill is hardwired into your nervous system. Even if there is a 'universal grammar' whose formal structure is hardwired into our nervous system, it is not the case that grammatical structure is able in itself to render a sentence meaningful. We can construct a device that is able to generate an infinite number of grammatical sentences, without it knowing what such sentences mean.

V. SEMANTIC ENGINES

After asking the question whether or not it is possible for a machine, following a definite procedure, to settle the question of whether or not a mathematical proposition is provable, Turing concluded that such a machine could model any process that can be reduced into a finite series of discrete steps.⁵⁸ In 1948 Polanyi encouraged Turing, who was a friend and colleague at Manchester University, to address the question whether or

⁵⁵ Ibid p.114.

⁵⁶ Polanyi (1969) p.200.

⁵⁷ Ibid pp.200-1.

⁵⁸ Turing (1936).

not such a machine could reproduce a human mind.⁵⁹ Turing responded that one way of judging the success of any such attempt would be to find out if an interrogator could detect any difference between a human subject and a machine if their only link with them was via a Teletype.⁶⁰ Polanyi replied that if this were to become our test of whether or not something has a mental state, our belief that something was experiencing pain would be all that is required for it to be in pain.⁶¹ But behaving as if you are in pain is not the same thing as being in pain. At the seminar at which Turing suggested his test, Polanyi declared that in order for a symbol to be meaningful, it is not enough for them to be manipulated in accordance with algorithms.⁶² A symbol becomes meaningful when it is used within the context of a tacit awareness. The informal dimension that supplements the operations of the formal system instantiated by a Turing machine is brought to it by its user. A symbol is a tool for deploying a tacit awareness.

To accept an undefined term implies that we know its proper use. This knowledge is not formally described. To accept a statement as an axiom is to express an unformalized belief that we know what does and does not satisfy it. To process symbols in accordance with the rules of a formal proof requires us to accredit these operations as proof:

To believe that I understand and correctly operate a formal system implies that I know how to operate its unformalized functions. Since a formal system will always require supplementation by unformalized operations, it follows that none can ever function without a person who performs these operations.⁶³

Gödel demonstrates that within any deductive system that is capable of generating arithmetic claims, it is possible to construct formulae that are demonstrably undecidable in that system. Increasing the number of axioms can eliminate this problem, but the consistency of this wider system will remain undecidable. This indicates to Polanyi that we can know more than a logical inference machine can demonstrate.⁶⁴ Lucas, and more recently Penrose, rely upon this argument when seeking to defend their assertion that a computer fails to capture what it is to be a mind.⁶⁵ Good attempts to solve this problem by declaring that an infinite hierarchy of ma-

⁵⁹ Hodge (1983) pp.414-5.

⁶⁰ Turing (1950).

⁶¹ Polanyi (1964) pp.85-6.

⁶² See Mays (2000).

⁶³ Polanyi (1998) p.313.

⁶⁴ Polanyi (1958) p.261.

⁶⁵ See Lucas (1961) and Penrose (1989).

chines is possible, each proving that which is left unformalized by a lower level system.⁶⁶

According to Fodor the aboutness or intentionality of our cognitive states is a product of a tacit 'Language of Thought' [which he designates as 'Mentalese'] in which innate representations are processed in accordance with rules.⁶⁷ We acquire a natural language by unconsciously encoding it into Mentalese, and formulating hypotheses about the extension of its intensions. Because our cognitive states are the product of processing symbolic representations, they can be replicated by a digital computer. Although the physical symbols of a digital computer are not in themselves meaningful, the syntax of their manipulation can mirror the semantics that is ascribed to them by a programmer. Doede notes that Fodor is implicitly endorsing a thesis of disembodiment, in which meaning is wholly formal, and has no essential relation to any mode of being in the world.⁶⁸ For Polanyi however meanings are the informal product of a tacit integration in which an embodied point of view attends from subsidiary clues to a focal whole. The triad of tacit knowing consists of a conscious agent (A) who relies upon their awareness of subsidiary items (B) while integrating them into a focus (C).⁶⁹ We indwell within our subsidiary awareness as we do our own body. All conscious agents rely upon a body.⁷⁰ To a disembodied intellect, that has no experience of pain, or lust, or comfort, the words of most natural languages would be incomprehensible.⁷¹ A subsidiary item bears upon the focus that is their meaning. A symbol becomes meaningful when a point of view uses it to represent a tacit integration.

In order to demonstrate that a Turing machine has a 'derived' rather than an 'intrinsic' intentionality, Searle uses the example of a person sealed up in a room, who by following a set of instructions in a manual, is able to respond in Chinese to questions in Chinese without knowing any Chinese.⁷² You could argue that that it is the Turing machine as a whole,

⁶⁶ Good (1967).

⁶⁷ Fodor (1975).

⁶⁸ Doede (1993-94) p.34.

⁶⁹ Polanyi (1969) p.182.

⁷⁰ Polanyi (1966b) p.x.

⁷¹ Polanyi (1958) p.99.

⁷² See Searle (1980).

not any part of it, which supplies the meaning.⁷³ But Searle asserts that even if we memorised the rules of Chinese grammar, and acted in accordance with them, this would still not render what we say meaningful, because semantics is not reducible to syntax. A language becomes meaningful when a consciousness uses it to represent an intentional state. He rejects the argument [which he attributes to Polanyi] that acquiring a skill, such as a language, requires you to internalise explicit rules.⁷⁴ A background is not a set of rules.⁷⁵ Polanyi however does not claim that skills must be formalisable.⁷⁶ It is Dreyfus who declares that Polanyi defends the assumption that all skills are reducible to rules,⁷⁷ and Searle compounds this error by assuming that tacit awareness is unconscious. Although Searle situates intentional states within a non-representational and non-intentional background; and distinguishes between a deep background of biological capacities, and a local background of acquired cultural practices,⁷⁸ he also assumes that meanings can be formalised into 'conditions of satisfaction' rules. Polanyi however rejects the assumption that what Searle describes as 'background' has no constitutive role in semantics.⁷⁹

VI. SECOND-GENERATION COGNITIVE SCIENCE

One of the problems with the claim that our minds are reducible to representations is that vast amounts of background information have to be programmed into a computer before they can mimic our behaviour. This is called the frame problem. Dreyfus links the assumption that mind is a process in which symbolic representations are manipulated in accordance with rules, to the Socratic quest to supply an exhaustive description of re-

⁷³ Anticipating this objection Searle responds that even if the occupant of the room memorised all the rules in their rulebook, Chinese symbols would still be meaningless for them.

⁷⁴ Ibid p.150.

⁷⁵ Searle (1992) p.193.

⁷⁶ „If I know how to ride a bicycle or how to swim, this does not mean that I can tell how I manage to keep my balance on a bicycle or keep afloat when swimming. I may not have the slightest idea how I do this or even an entirely wrong or grossly imperfect idea of how I do this, and yet I go on cycling or swimming merrily.” Polanyi (1969) p.145.

⁷⁷ „Polanyi, like Plato, fails to distinguish between...the rule one is following and the rule which can be used to describe what is happening.” Dreyfus (1992) pp.300-1.

⁷⁸ Searle (1983) pp.143-4.

⁷⁹ Searle (1992) p.28.

ality.⁸⁰ Socrates, as presented by Plato, argues that all knowledge claims ought to be explicitly justified. Galileo assumes that the universe can be wholly described using mathematical formulas. Hobbes declares that thought is nothing but calculation. All rules however rely upon a *ceteris paribus* condition i.e. they apply given the same conditions.⁸¹ This background can never be fully described. Dreyfus describes this background [in accordance with the terminology used by Dewey] as 'knowing-how' not 'knowing-that'. Following Heidegger he reminds us that our usual encounter with a hammer is not as an independent subject with abstract properties, but as a tool. Like Merleau-Ponty he asserts that it is not the 'transcendental ego' but our body that is the context of our experience of the world.⁸² Although he denies that our thoughts are reducible to a language of thought, Dreyfus leaves open the possibility of other forms of representation. Maybe a neural net will one day be able to replicate every human skill.⁸³ Advocates of embodied cognition however seek to ease the demands made upon processors by rejecting the need for representations linking perception and action.

Gibson claims that organisms are already structured to detect possibilities for action in their environment i.e. affordances.⁸⁴ Brooks asserts that cognitive states are not representations; they are emergent behaviours deriving from interactions with a local environment.⁸⁵ Like Polanyi they both reject a disembodied account of what it is to be a mind. But unlike Heidegger, who seems content to reduce comprehension to unreflective practices, Polanyi is keen to endorse the role that symbolic representations play in our understanding of the universe. Polanyi describes Merleau-Ponty as rich in insights, but he notes that he never quite manages to elucidate the structure of tacit knowing, nor does he explain how levels of being are possible.⁸⁶ Polanyi claims that when living beings emerge they introduce meaning into the universe by generating centres of subjective interest.⁸⁷ Meanings occur when a point of view attends from a

⁸⁰ Dreyfus (1992) p.67

⁸¹ „*Ceteris paribus* conditions and incompleteness are not merely annoyances...these problems point to something taken for granted: namely a shared, human background that alone makes possible all rule-like activity.” Dreyfus & Dreyfus (1986) p.81.

⁸² Dreyfus (1992) pp.252-3.

⁸³ Dreyfus & Dreyfus (1988) p.39.

⁸⁴ Gibson (1979).

⁸⁵ Brooks (1993).

⁸⁶ Polanyi (1969) p.222.

⁸⁷ Polanyi (1958) p.389.

subsidiary to a focal awareness. When representations are used to designate these meanings, practices structured by universal intent become possible.⁸⁸ Although Polanyi denies that meanings are reducible to symbolic representations manipulated in accordance with rules [the symbolic representations that humans generate become meaningful when they designate a focal awareness] indwelling within symbolic representations enhances our capacity for reflection. What it is to be a mind is rendered possible by language.⁸⁹ In the absence of language points of view are trapped within our immediate experience. Symbolic representations enable us to dwell in a new level of reality.

Lakoff and Johnson claims that three key assumptions have led to a revolution within cognitive science:⁹⁰

- 1) The mind is inherently embodied.
- 2) Thought is mostly unconscious.
- 3) Abstract concepts are largely metaphorical.

Within 'second-generation' cognitive science it is accepted that it is not only the users of a language that categorise the world. It is important for its survival for example that an antelope can distinguish between a lion and a zebra. Lakoff and Johnson claim that when we make use of symbolic representations we rely upon prototypes that are derived from experiential gestalts. Meanings are not reducible to rules. They arise within the context of interactions between embodied points of view and external realities. Metaphors, by enabling one domain (the vehicle), to be linked with another domain (the tenor), render abstract reflection meaningful by relating it to an embodied awareness. Although Polanyi views the tacit as a form of awareness, while Lakoff and Johnson maintain that our dependence upon our bodies implies that thought is mostly unconscious, there is little in their account that he would dispute. In the area of linguistics his work, as in so many other areas, foreshadowed the direction of future inquiry.

⁸⁸ Polanyi Ibid p.344.

⁸⁹ Hall (1968) p.67.

⁹⁰ Lakoff and Johnson (1999) p.3.

VII. TRANS-NATURAL INTEGRATIONS

Polanyi asserts that when using a descriptive term, such as a frog, we are attempting to comprehend an independent reality.⁹¹ But do the meanings we discern in a work of art exist in our absence?

The meanings – the coherent entities – which we know as Michelangelo's Moses, Beethoven's Ninth Symphony, the virtue of justice, and the Christian God are not only intangibles; they are regarded by contemporary men as free human creations – not subject to correction by nature.⁹²

Polanyi thus attempts to supply an account of what he describes as **trans-natural integrations**.⁹³ When subsidiaries (S) bear upon (→) their focal meaning (F) this generates a meaning:

$$S \rightarrow F$$

When items direct us to the integration upon which they bear, they function as subsidiary indicators. Within indication it is the focal object that possesses the intrinsic interest:

$$-ii \quad +ii$$

$$S \rightarrow F$$

Polanyi describes this as a **self-centred integration**, because it is made from the self (which includes all the subsidiary clues in which we dwell) to the object of our focal attention. But what about meanings where it is the subsidiary clues that possess the intrinsic interest?

When we look at a country's flag on a solemn occasion, this otherwise meaningless piece of cloth becomes for us a moving spectacle, and to some people even a sacred object.⁹⁴

The structure of this integration is therefore:

⁹¹ Polanyi like Aristotle believes that we seek to identify universal features in our experience. But Grene notes that 'Aristotelian universals are safely housed in a limited Aristotelian world of individual substances and kinds of substances with their eternal, explicitly definable essential attributes. Polanyian general conceptions are conceptions out of a world of flux. They are moments in history, claiming universal validity, eternal rightness, yet always in danger of error, of the need for correction, because they are the achievements of living individuals within a world that is radically engaged in change.' Grene (1966) p.61.

⁹² Polanyi & Prosch (1975) p.67.

⁹³ Ibid p.125.

⁹⁴ Ibid p.72.

+ii – ii

S → F

Polanyi describes this integration as symbolisation; which he takes to be a process of self-giving. Instead of subsidiaries bearing upon a focal object, in a **self-giving integration** we are 'carried away' by a focal object:

That is, the symbol, as an object of our focal awareness, is not merely established by an integration of subsidiary clues directed from the self to a focal object; it is also established by surrendering the diffuse memories and experiences of the self into this object, thus giving them a visible embodiment.⁹⁵

When a symbol is intrinsically interesting, Polanyi describes this integration as a metaphor

+ii + ii

S → F

According to Polanyi metaphors, unlike other meanings, fuse incompatible elements into novel coherences. In a work of art metaphors are placed within the context of an artificial frame:

This is how we can watch a murder in a play...without either jumping up to rescue the victim, or feeling the action on the stage – the pretence of a murder – to be nonsensical. We accept the clues which the play offers to the imagination for sharing it's meaning, and we live in this meaning rather than the meaning these events would have for us in our ordinary "interested" lives. This is something of what Kant meant when he defined the aesthetic appreciation of art as a disinterested pleasure.⁹⁶

Polanyi asserts that the claim, which he attributes to Coleridge, that art requires us to suspend our disbelief is mistaken.⁹⁷ A work of art succeeds when it evokes real experiences.⁹⁸

A poet fashions metaphors that disturb the transparency of our everyday language in order to summon our tacit awareness. Polanyi

⁹⁵ Ibid pp.74-5.

⁹⁶ Polanyi & Prosch (1975) p.87.

⁹⁷ Scott (1985) pp.166-77 argues that it would be more accurate to describe Coleridge as defending a very similar conception of art to Polanyi i.e. poetry as trans-natural integrations which evoke our tacit awareness.

⁹⁸ A work of art, *qua* work of art, does not entertain or instruct, important as these are, but evoke disinterested emotions – it uses trans-natural integrations to confront us with the experience of what it is to be alive.

suggests that religions also rely upon metaphors.⁹⁹ Hall responds that it is unacceptable to comprehend religion in aesthetic terms:

There is a certain drift here that seems to head in the direction of the old positivistic assumptions concerning the relation of the sciences and the arts, assumptions Polanyi so wanted to defeat.¹⁰⁰

Haddox reminds us that use is made of symbols and metaphors in inquiries about realities: "Metaphors and symbols can be and are used to indicate aspects of the world. They are not simply art objects."¹⁰¹ Prosch responds by noting that for Polanyi the natural sciences, mathematics, and art and religion, are all concerned with realities. He makes a distinction however between the natural sciences, whose reality exists independently of our symbol systems, and domains such as mathematics, art, and religion, whose reality exists within symbol systems.¹⁰²

According to Polanyi to be religious is to indwell within a way of looking at the world:

[God] exists in the sense that He is to be obeyed, but not otherwise; not as a fact — any more than truth, beauty or justice exist as facts. All these, like God, are things which can only be appreciated by serving them.¹⁰³

Can religions survive their demise as factual accounts? Prosch recalls trying to convince Polanyi

[T]hat no religion could be founded without its including somewhere in its lore the notion of its own real supernatural origin...I was never able to succeed in getting him to admit this. He really had a difficult time understanding a belief in the factual reality of the religiously supernatural as anything much more than magic or superstition.¹⁰⁴

It is an error to say that Polanyi ignores the role that metaphor plays in the natural sciences. What he claims is that the use of metaphor in a poem forces us to exercise our imagination each time we seek to experience it, whereas the role which the imagination plays in science decreases as its metaphors are transformed into literal realities.¹⁰⁵

⁹⁹ Polanyi & Prosch p.153.

¹⁰⁰ Hall (1982) pp.14-15.

¹⁰¹ Haddox p.21.

¹⁰² Prosch (1982) pp.41-8.

¹⁰³ Polanyi (1958) p.279.

¹⁰⁴ Prosch (1982) p.46.

¹⁰⁵ Polanyi (1975) p.150.

CONCLUSION

Polanyi claims that meanings perplex those who attempt to formalise them for the same reason that universals puzzled earlier philosophers.¹⁰⁶ Seeking to capture meanings in terms of rules generates a semantic version of the 'Third Man' problem raised by Plato in the *Parmenidies* i.e. how are universals applied to an endless variety of different instances. If universals are taken to be nothing more than linguistic artefacts, the problem becomes even more acute. Polanyi accounts for how a plurality of encounters can bear upon a general conception by taking particulars to be clues within a tacit integration:

Our conception of a tree for example...arises by the tacit integration of countless experiences of different trees and pictures and reports of still others: deciduous and evergreen, straight and crooked, bare and leafy. All these encounters are included in forming the conception of a tree; they are all used subsidiarily with a bearing on the conception of a tree, which is what we mean by the word tree.¹⁰⁷

Fodor declares that thought is generated by language, and language is rendered possible by a language of thought hardwired into our nervous system. Polanyi agrees that minds are rendered possible by language. But he denies that minds are generated by an innate language, they arise as a consequence of indwelling within a natural language.¹⁰⁸

If Turing machines have to borrow meanings, this undermines a computational account of what it is to be a mind. But a Turing model may be a false account of what it is to be a computer. Smith argues that the theory of computing is distorted by its origins in the formal sciences. A computer has three elements, a program, a computational process, and a subject matter. While philosophers have tended to elide the first two elements, computer scientists have tended to elide the second two elements.¹⁰⁹ Intentionality is taken by Smith to be a registration process, with representation re-presenting the presentations that occur when an embodied agency detects an object.¹¹⁰ In computing 'in the wild' [i.e. Silicon Valley] intentionality takes place within embodied contexts. Smith ridicules the notion that there can be such a thing as a theory of computing, on the grounds that computers are no more a distinct subject matter than are mo-

¹⁰⁶ Polanyi (1969) pp.163-7.

¹⁰⁷ Ibid p.191.

¹⁰⁸ Polanyi (1969) p.148.

¹⁰⁹ Smith (1996) p.33.

¹¹⁰ Ibid p.351.

torcars.¹¹¹ When a registration process identifies something as an object, it is an intentional achievement — although what it is to be an object is not wholly reducible to intentional agency.¹¹² But how are points of view that register and re-present the world possible? We need a theory of reality. As usual Polanyi anticipated, and to some extent influenced, the direction of future research.

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¹¹¹ Ibid pp.73-6.

¹¹² Ibid p.114.

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KEY TERMS

Existential Meaning – That which a point of view finds meaningful.

Law of Consistency – The persistent use of a word that accredits an act of generalisation.

Law of Grammar – Rules that organise the way in which words are combined within a language.

Law of Iteration – To facilitate identification words must be distinctive.

Law of Poverty – Languages must be finite enough to allow the same words to be used a number of times.

Representative Meaning – That which denotes an existential meaning.

Self-Centred Integration – When an awareness becomes meaningful by being integrated into a focal object.

Self-Giving Integration – When an object becomes meaningful by symbolising a tacit awareness.

Trans-Natural Integration – An integration whose meaning is not intended to be a naturalistic description.

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