

WITTGENSTEIN AND THE LIFE OF SIGNS

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1. The life of signs: two opposed accounts

We can gain a perspicuous view of Wittgenstein's philosophical development and its bearing on contemporary philosophy by concentrating on what he calls the 'life' of signs. He introduces this notion in the *Investigations* by saying

432 Every sign *by itself* seems dead. *What* gives it life? In use it is *alive*. Is life breathed into it there? – Or is the *use* its life?

Speaking of the life of signs is a particular way of speaking of meaning. Meaningful words and sentences are *animated* in use: they are not mere marks or sounds, but represent or refer to things, and so can be true or false. Here Wittgenstein opposes two accounts of this. The first is that life is 'breathed into' the sign, as it were from outside, as the sign is used; the second is that the use itself *constitutes* the life.

In *The Blue Book* Wittgenstein puts the same contrast in a way which makes explicit what he means by life 'breathed into' the sign:

It seems that there are *certain definite* mental processes bound up with the working of language, processes through which alone language can function. I mean the processes of understanding and meaning. The signs of our language seem dead without these mental processes; and it might seem that the only function of the signs is to induce such processes, and that these are the things we ought really to be interested in ... But if we had to name anything which is the life of the sign, we should have to say that it was its *use*.

(3–4)

The idea that signs owe their life to mental processes such as meaning, understanding or intending can seem obvious. Thus take a speaker who uses 'Napoleon

died in Elba' to mean that Napoleon died in Elba. We understand this speaker to mean by 'Napoleon' the particular man Napoleon, to mean by 'died' the act of dying, to mean by 'in' the relation of being in a place, and to mean by 'Elba' the place Elba. Also we understand the speaker to use that particular ordering of words to mean that the man designated by 'Napoleon' performed the act designated by 'died' with the relation designated by 'in' to the place designated by 'Elba' – that is, again, to mean (or say) that Napoleon died in Elba. As the speaker means or intends the words in this way, so the hearer understands them in this way. Indeed, in meaning or intending his words in this way, the speaker also means or intends that the hearer understand them in this way as well. If either the speaker meant something different by the words, or the hearer understood something different by them, communication would fail. So to deny that these processes give meaning to signs is to deny something which seems so natural as almost to be truistic; and this indicates part of the significance of Wittgenstein's contrasting emphasis on use.

Clearly this contrast holds between the accounts of meaning in the *Tractatus* and the *Investigations*. According to the *Tractatus*, the user of language imparts significance to signs by a mental process which Wittgenstein describes as 'thinking the sense' or 'thinking the proposition'. As he says, the speaker/hearer 'use[s] the perceptible sign of a proposition (spoken or written, etc.) as a projection of a possible situation', where 'the method of projection is to think the sense of the proposition' (3.11). This mental process is that by which, as above, the user means (designates, etc.) particular things by words, and by the order in which they are used in sentences, and so links language with things and situations in the world. So, as Wittgenstein says, this process yields a sentence which has been 'applied and thought out' (4), and which is therefore 'meaningful' (3.5). By contrast, in the *Investigations* Wittgenstein constantly criticizes the idea that meaning could be conferred in this way. In his remarks on following a rule, for example, he speaks derisively of 'the *mean*-ing you then put into that sentence, whatever that may have consisted in' (186); and throughout he stresses that the use of signs, as opposed to such mental processes, constitutes their meaning, and hence the life of which he speaks in 432.

2. Fregean sense and the life of signs

Wittgenstein also takes it that thinking in terms of what gives life to signs is useful for understanding other approaches to meaning. In *The Blue Book* he says:

Frege ridiculed the formalist account of mathematics by saying that the formalists confused the unimportant thing, the sign, with the important thing, the meaning. Surely, one wishes to say, mathematics does not treat of dashes on a bit of paper. Frege's idea could be expressed thus: the propositions of mathematics, if they were just complexes of dashes, would be dead and utterly uninteresting, whereas they obviously have a kind of life. And the same, of course, could be said of any proposition:

Without a sense, without the thought, a proposition would be an utterly dead and trivial thing. And further it seems clear that no adding of inorganic signs can make the proposition live.

(4; cf. *Philosophical Grammar* 106)

Thus in Wittgenstein's view Frege's account of sense (or of grasping a sense) can also be taken as an account of the life of signs. When we grasp the sense of a word or sound, we do what 'no adding of inorganic signs' could do. The sign is no longer for us a mere sound or mark on paper, as can be seen in the way we subsequently use it. Such acts of grasping sense and thought are coordinated as between speakers and hearers, and apparently determine what people take words to refer to, and the conditions in which they regard sentences as true.

3. Mental representation and the life of signs

As is well known, the *Tractatus* is built around a particular conception of representation. As Wittgenstein says, 'we make to ourselves pictures of facts' (2.1ff.), and he describes these pictures as what we might call element–element:combination–combination representations. That is, each picture consists of certain representing elements in a significant combination. The elements stand for things in the domain represented (e.g. the constituents of states of affairs), and the way these elements are combined stands for the way the represented things are combined in this domain (e.g. the way the constituents of states of affairs are configured in particular facts). Linguistic representation involves rules of combination which relate signs to one another, and rules of projection which relate them to the things and situations they are about.

Wittgenstein made clear in a letter to Russell that took this account of representation to apply to tokens of thoughts (*Gedanke*) themselves. These consisted of real and psychologically investigable elements in the mind (or brain) of the thinker. He quotes Russell's questions and replies to them as follows:

'But a *Gedanke* [thought] is a *Tatsache* [fact]: what are its constituents and components, and what are their relation to the pictured *Tatsache*?' I don't know *what* the constituents of a thought are but I know *that* it must have such constituents which correspond to the words of language. Again the kind of relation to the constituents of the thought and of the pictured fact is irrelevant. It would be a matter of psychology to find out. 'Does a *Gedanke* [thought] consist of words?' No! But of psychical constituents that have the same sort of relation to reality as words. What those constituents are I don't know.

(*Notebooks 1914–16* 156–7)

As with other aspects of Wittgenstein's philosophy, this can be seen as a naturalistic advance on Frege. In order to contrast the objective character of

thought with the subjectivity of mental items themselves, Frege had construed the thought as a kind of non-psychological abstract object, somehow grasped by the mind. This anti-psychologism left it a mystery how thought could actually take place – that is, how the mind could actually grasp or implement thought. By contrast Wittgenstein offered an account which was psychologically real. A person who thinks that P does so by forming an actual mental representation of the fact or state of affairs that P, and the same applies to a person who believes that P, hopes that P, intends that P, etc. As Wittgenstein says generally,

I only use the terms the expectation, thought, wish, etc., that p will be the case, for processes having the multiplicity that finds expression in p , and thus only if they are articulated. But in that case they are what I call the interpretation of signs.

I call only an articulated process a thought: you could therefore say ‘only what has an articulated expression’.

(Salivation – no matter how precisely measured – is *not* what I call expecting.)

(1975a: 70)

Wittgenstein makes this psychological aspect of the picture theory more explicit in later works. Thus in *Philosophical Remarks* he says that ‘What is essential to intention is the picture: the picture of what is intended’ (1975a: 63), and he treats expectation in the same way. ‘Our expectation anticipates the event. In this sense, it makes a model of the event’ so that ‘intention reaches up to the paradigm, and contains a general rule’ (1975a: 70) Or again in *Philosophical Grammar*, reflecting on the ideas of the *Tractatus*: ‘If I try to describe the process of intention, I feel first and foremost that it can do what it is supposed to only by containing an extremely faithful picture of what it intends’ (1974: 148). The essential feature of these states of mind – that which gives them the multiplicity which is reflected in their linguistic description, and which distinguishes them from such primitive processes as salivation – is the way they involve mental representation.

This applies also to the thinking by which we learn and use language. As Augustine describes in *Investigations* 1, the infant learning language can already ‘make to itself pictures of facts’, and so can think about the sounds the adults make, the intentions they display when they speak, and the things these intentions are related to. This enables the infant to learn which objects the adults mean by which sounds, and which states of affairs by which combination of sounds. Having learned this the infant can use these sounds meaningfully as well. Thus the Tractarian or Augustinian infant can ‘already *think*, only not yet speak’ (32) and uses this ability to learn language and give life to signs. And then when a person comes to think *in language* she uses sentences to which at the same time she gives sense or life. So overall the mental representations which realize belief, desire and other propositional attitudes constitute a system of the same general

kind as spoken language, not less powerful, and apparently more basic; for evidently the learning and use of language itself depends upon prior representation in thought.

4. Mental representation and rule-following in the *Tractatus*

Above, Wittgenstein speaks of the mental representation involved in intention as ‘containing a general rule’. This is the ‘rule of projection’ which links the intention to the intended situation. Wittgenstein discusses this in a particularly pregnant series of remarks, indicating both the full account of representation which underpins the *Tractatus*, and also how this is connected with the notion of following a rule.

4.14 A gramophone record, the musical thought, the written notes, and the sound-waves, all stand to one another in the same internal relation of depicting that holds between language and the world.

They are all constructed according to a common logical pattern.

(Like the two youths in the fairy-tale, their two horses, and their lilies. They are all in a certain sense one.)

4.0141 There is a general rule by means of which the musician can obtain the symphony from the score, and which makes it possible to derive the symphony from the groove on the gramophone record, and, using the first rule, to derive the score again. That is what constitutes the inner similarity between these things which seem to be constructed in such entirely different ways. And that rule is the law of projection which projects the symphony into the language of musical notation. It is the rule for translating this language into the language of gramophone records.

4.015 The possibility of all imagery, of all our pictorial modes of expression, is contained in the logic of depiction.

Here Wittgenstein takes a series of representations of the kind he has been discussing as pictures – the musical thought, the written notes, and the groove in a gramophone record – and indicates how he takes them to be related to one another by the concept of a ‘general rule’. Since he has just previously compared musical notation with natural language, he clearly means what he says about the one to apply to the other as well. He is concerned with ‘rules of projection’, or semantic rules, and since he is considering the musical *thought* (*Gedanke*), he is considering the semantics of mind as well as language.

We can spell out the example as follows: the composer is able to have a musical thought – to represent music in her mind – in virtue of the way the

elements of her musical thought are connected with the elements of music itself: that is, with the patterns of sound (and hence with patterns of sound-waves in the air) which are the objects of a musical thought. Just as the elements of linguistic thought are not words but are connected with the world in the way words are, so the elements of musical thought are not written notes but are connected with sounds in the way notes are. (Cf. the 'I don't know *what* the constituents of a thought are but I know *that* it must have such constituents which correspond to the words of language' quoted above. For the musical thought the analogue would be psychic constituents 'which correspond to the notes of musical notation.')

So, for example, if the series of sounds is ABCD, the composer will be able to think of this series via a combination of thought-elements, say abcd, where 'a' stands for A, 'b' stands for B, 'c' stands for C, 'd' stands for D and 'abcd' (in that combination) for the series ABCD. The capacity to think, and hence to form 'rules of projection' of this sort, is natural to the mind; so these connections will have been set up as the composer heard music and came to be capable of remembering and thinking of it, say in childhood. Later, when she came to learn musical notation, she will have come to represent the written notes and rules of combination as well. Then she will have used her representations of the sounds and of the written notes to correlate the two, in accord with the conventions of her musical community.

Thus for the written notes 'A', 'B', 'C', etc., the composer will have formed additional thought-elements a*, b*, c*, d*, etc., and used these to learn that 'A' stands for A, 'B' for B, 'AB' in that order for the sequence AB, and so on. These are rules of projection linking language and the world which are agreed among people, and established via prior rules of projection which link these people's thought to both language and the world. They are analogous to the rules in accord with which a person comes to use words in the course of learning a natural language. (In this, like the infant described by Augustine in the quotation in *Investigations* 1, the composer will have also had to make use of thought-elements standing for the relation of one thing standing for another, etc.) Having learned this notation, the composer can use the series of written notes 'ABCD' to give her musical thought abcd 'an expression which can be perceived through the senses', as Wittgenstein says at 3.11. And in this she uses the written notes as 'the projection of a possible situation', namely that in which there occurs the particular sequence of sounds ABCD which she has composed in her mind.

Both the musical thought and the written notes are thus linked by 'rules of projection' to this possible sequence of sounds, and these are also the rules which the musician must *follow out* in order to play the written notes correctly: that is, 'to obtain the symphony from the score'. The musician must first form in his mind a representation of the sounds which constitute the composer's musical thought, and will do this when he reads the notes and follows the same rules of projection as the composer does, and thus assigns the same sounds to written notes. Then he must use this mental representation to guide his action, by forming an intention

to play those notes and fulfilling this intention. In fulfilling the intention he follows out the rule of projection which links his thought-elements – those in the mental representation which is part of his intention – to a sequence of sounds; and he does this by actually producing that sequence of sounds: that is, making it actual. This, again, is parallel to what someone does in following a spoken or written instruction, rule or order, and is an instance of the way our minds and actions are linked by a rule of projection in intentional action.

5. Rules of projection and the mind as an information-processing mechanism

But now we come to the gramophone. Even to a reader familiar with more recent thinking about the mind it may come as a shock that Wittgenstein should speak here in the same breath of human language and ‘the language of gramophone records’, and that he should compare the process of derivation in accord with a rule involved in the human activities of writing or playing music to the mechanistic inscription or derivation of sound via the groove in a gramophone. Still part of his conception is clearly that, just as there is a rule of projection by which the musician can derive the symphony from the score, so there is a rule ‘which makes it possible to derive the symphony from the groove on the gramophone record’. This rule is evidently embodied in the gramophone itself; and this example is the first of a series – including the player piano, the Jacquard loom, and the human ‘reading machines’ of the *Investigations* – in which Wittgenstein considers mechanical embodiments of the kind of rules of projection described in the *Tractatus*.

And even in this discussion he writes as if to suggest that we might regard the rules of combination and projection of human thought and language as embodied in physical structures, and human mental representation as achieving its effects, including intentional action, by processes of physical causality. For, as he says:

4.002 Man possesses the ability to construct languages capable of expressing every sense, without having any idea how each word has meaning or what its meaning is – just as people speak without knowing how the individual sounds are produced.

Everyday language is a part of the human organism and no less complicated than it.

It is not humanly possible to gather immediately from language what the logic of language is ... the tacit conventions on which the understanding of everyday language depends are enormously complicated.

The complex rules of combination (syntax) and projection (semantics) of natural language need not be *known by us* because they are *embodied in us*; like the rules of phonetics, they are ‘part of the human organism’. The same presumably

holds for the rules of combination and projection of thought itself. But if such rules are ‘part of the human organism’, how are they realized there? Insofar as we have no idea of these rules, it is difficult to regard them as operating ‘in our minds’. But then the only way they can be ‘part of the organism’ is to operate within the body. So on this view, as it seems, the body (presumably the brain) *must* contain structures which govern thought and action in accord with these rules, and hence structures which realize the rules themselves. (These things must lie, as he says in *Blue Book* 120, ‘if not in their conscious states, then in their brains’. This ‘must’, as we shall see, is later examined in *Philosophical Grammar* 62, and finally dismissed in *Investigations* 156–8.)

This would mean that according to the *Tractatus* the non-conscious aspects of human thinking are realized by an embodied organic symbol system, which can be construed as a set of mental models, or again as a language of thought. (Since for Wittgenstein a language is just a particularly abstract kind of element–element:combination–combination model, the distinction between mental model and internal language is at best one of degree.) Since the symbols in question bear information about how the world is or is intended to be, such a physical symbol system is also an information-processing device; and Wittgenstein’s description seems intended to convey the idea that the working of the mind (or brain), like that of a gramophone, is to be understood in terms of the storage, transformation and transmission of information. How far Wittgenstein actually espoused this view is uncertain, but he gave it interesting consideration.

6. Mental mechanism and the unanswered question of the *Tractatus*

Wittgenstein’s interest in the mind (or brain) as an information-processing device was also connected with a fundamental philosophical omission in the *Tractatus*. In assuming that we make ourselves pictures of facts, Wittgenstein presupposes that the elements of thought are *referentially correlated with* (i.e. *stand for*, or *refer to*) things in the world. Clearly we can ask how such mental reference is constituted. What makes it the case that a thought, or an element of thought, refers to one object rather than another, and how are we to establish that this is so? This question is not addressed in the *Tractatus*; but it is one upon which in his post-*Tractatus* writing Wittgenstein came increasingly to focus.

More recently this has become the central question of psychosemantics. As Fodor says, ‘We must now face what has always been the problem for representational theories to solve: what relates internal representations to the world? ... I take it that this problem is now the main content of the philosophy of mind’ (1981: 61).¹ Although Wittgenstein proposed no answer to this question in the *Tractatus*, he seems then to have thought of it as admitting empirical study. For as we saw above, he held that the relation to the constituents of the thought of the pictured fact – that is, the psychosemantic relations, including mental reference,

with which we are concerned – ‘would be a matter of psychology to find out’. He thus seems to have supposed that once the abstract structure of his account of representations as element–element:combination–combination pictures was in place, the question of the actual nature of various particular representations could proceed by straightforward empirical investigation. Just as a linguist seeks to discover the actual sounds used as words in a given language, and how they are related to things, so a psychologist might (someday) seek to discover the actual representing elements used in thought, and how they are related to things.

In the cases upon which Wittgenstein concentrates – those in which a person follows a written or spoken rule, a musician plays from a score, etc. – there is a series of derivations from input to output which accord with rules of projection. As described above, these run from written representation (the musician sees the written notes) to mental representation (the musician understands the notes to be played), and from mental representation through action to reality (the notes are played). In such cases the human organism actually produces the concrete internal representation which corresponds to the external representation upon which the agent acts, and the concrete external situation which both the external and internal representation depict. So it seems that studying this process of acting in accord with a rule would enable us to trace the links between representation and reality – to follow out the rules of projection as they are actually realized – and thereby to find both what the elements of thought are, and how they relate to the things for which they stand.

This has been a starting point for many approaches to psychosemantics, either on the input or the output side. Still – and as recent work has come to stress – there is a clear reason to regard it as unsatisfactory. For on accounts of this kind mental representation actually manifests its semantic character only in instances of thought and action which are *correct*. Thus a musician whose inner representation refers to a certain note – and so is correlated by a ‘rule of projection’ with the note – will in fact play this particular note only if he *fulfils* his intention to play it: that is, if he plays (and so follows out the rule of projection linking his thought-element to that note) *correctly*. So in seeking to understand representation by studying its causal production, we must be able to determine when the causal processes in question are unfolding correctly. If not, then the connections which we observe between inner and outer items may not be those of mental reference which we wish to study; but if so, we are already presupposing a grasp of the notion of correct accord between representation and represented which we wish to investigate.

7. Wittgenstein’s turning point: psychosemantics and the notion of correctness

The idea of mental reference left unexplained in the *Tractatus* thus presupposes that of correctness in rule-governed thought or action, and so cannot be explicated apart from an account of these notions as well. And we can see

Wittgenstein coming to stress this and related points, as he considers how far internal representation can be understood in terms of causal or functional role. Thus take the following from *Philosophical Grammar*:

But one might say something like this. The sentences that we utter have a particular purpose, they are to produce certain effects. They are parts of a mechanism, perhaps a psychological mechanism, and the words of the sentences are also parts of the mechanism (levers, cogwheels, and so on.) The example that seems to illustrate what we're thinking of here is an automatic music player, a pianola. It contains a roll, rollers, etc., on which the piece of music is written in some kind of notation (the position of holes, pegs, and so on). It's as if these written signs gave orders which are carried out by the keys and hammer. And so shouldn't we say that the sense of the sign is in its effect? But suppose the pianola is in bad condition and the signs on the roll produce hisses and bangs instead of the notes. – Perhaps you will say that the sense of the sign is their effect on a mechanism in good condition, and correspondingly that the sense of an order is its effect on an obedient man. But what is regarded as a criterion of obedience here?

(1974: 69–70)

As stressed above, Wittgenstein has no objection to regarding a human being as a representation-driven mechanism of this kind. The idea that the mind/brain works in such a way is an empirical hypothesis, but one which we are liable to espouse prematurely, as 'a form of account which is very appealing to us' (*Investigations* 159). His point in the above passage – as in others in which he pursues the same line of thought – is not that this kind of account is false, but rather that it does not after all explicate the idea which is woven throughout his *Tractatus* conception of mental processes and language, namely what it is to think or act in accord with a rule. In particular, accounts of this kind do not explain what it is for such action to be *correct* ('the signs on the roll produce hisses and bangs instead of notes ... what is ... the criterion of obedience here?') and so for an internal sign to be *rightly* correlated with one thing or another in the world. An account in terms of the causal role of internal signs fails to address the central question of correctness.

Wittgenstein continues this theme in more detail in a passage in *Philosophical Grammar* which brings together a number of the ideas we have been discussing, and illustrates this point of contrast between the approaches of the *Tractatus* and the *Investigations* fairly clearly.

62 'That's *him*' (this picture represents him) – that contains the whole problem of representation ...

I have the intention of carrying out a particular task and I make a plan. The plan in my mind is supposed to consist in my seeing myself

acting thus and so. But how do I know, that it is myself I am seeing? Well, it isn't myself, but a kind of picture. But why do I call it a picture of me? ...

'I thought Napoleon was crowned in the year 1805.' What connection is there between your thought and Napoleon? It may be, for example, that the word 'Napoleon' occurs in the expression of my thought, plus the connection that word has with its bearer; e.g. that was the way he signed his name, that was how he was spoken to, and so on.

'But when you utter the word "Napoleon", you designate that man and no other.' How does this act of designating work, in your view? Is it instantaneous, or does it take time? 'But after all if someone asks you 'did you mean the very man who won the battle of Austerlitz' you will say 'yes'. So you meant that man *when you uttered the sentence*. Yes, but only in the kind of way that I then knew also that $6 \times 6 = 36$.

The answer 'I meant the victor of Austerlitz' is a new step in our calculus. The past tense is deceptive, because it looks as if it was giving a description of what went on 'inside me' while I was uttering the sentence.

('But I meant *him*.' A strange process, this meaning! Can you mean in Europe someone who's in America? Even if he no longer exists?)

63 Misled by our grammar we are tempted to ask '*How* does one think a proposition, *how* does one expect such-and-such to happen? (how does one do that?)

'How does thought work, how does it use its expression?' This question looks like 'How does a Jacquard loom work, how does it use the cards?'

In the proposition 'I believe that p is the case' we feel that the essential thing, the real process of belief, isn't expressed but only hinted at; we feel it must be possible to replace this hint by a description of the mechanism of belief, a description in which the series of words 'p' would occur in the description as the cards occur in the description of the loom. This description, we feel, would at last be the full expression of the thought.

Let's compare belief with the utterance of a sentence; there too very complicated processes take place in the larynx, the speech muscles, the nerves, etc. These are *accompaniments* of the spoken sentence. And the sentence itself remains the only thing that interests us – not as part of a mechanism, but as part of a calculus.

'How does thought manage to represent?' – the answer might be 'Don't you really know? You certainly see it when you think!' For nothing is concealed.

How does a sentence do it? Nothing is hidden ...

We ask: 'What is a thought? What kind of thing must something be

to perform the function of thought? This question is like: ‘What is a sewing machine, how does it work? – And the answer which would be like ours would be ‘Look at the stitch it is meant to sew; you can see from that what is essential in the machine, everything else is optional.

So what is the function, that makes thought what it is? –

If it is its *effect*, then we are not interested in it.

We are not in the realm of causal explanations, and every such explanation sounds trivial for our purposes.

(1974: 102–5)

These remarks are concerned with both mental representation and the question of mental reference. (Thus in 62 we have ‘the whole problem of representation ... what connection is there with your between your thought and Napoleon’ and in 63 ‘How does one think a proposition ... How does thought manage to represent’.) It is clear from 62 that there is a basic question, namely how a thought manages to represent someone (or something). This question can be raised even when the thought is a picture constituting an intention in my own mind and represents myself. In this we see one of the main ideas of the *Tractatus*, as explicated above: the idea that an intention is to be understood in terms of a mental representation of the intended action – an action to be performed by oneself. But here the connection between the elements of the representation and what it represents (e.g. between my image of myself and me) is no longer taken for granted, but rather seen as constituting the problem which requires to be addressed. So the problem is now precisely that of understanding the relation which was presupposed but not explicated in the *Tractatus*: that is, the relation of reference which holds between thought and its objects.

To make the problem vivid, Wittgenstein here takes a case in which the relation of thought and its referent can seem mysterious because the referent is remote in time and space, and indeed no longer alive. (‘Can you mean in Europe someone who’s in America? Even if he no longer exists?’) And he now makes clear that, in his view, this problem requires to be approached by consideration of the use of language. The ability mentally to refer to Napoleon does not precede language, but rather is bound up with the capacity to use the word ‘Napoleon’.

The relevant use has two aspects: in the ascription and expression of thought (‘the word “Napoleon” occurs in the expression of my thought’), and in other contexts, including non-psychological ones (‘the connection that word has with its bearer; e.g. that was the way he signed his name, that was how he was spoken to, and so on’). And Wittgenstein also stresses that the connection between the use of language and what it represents is not to be understood as made by an act or process of meaning something by a word. We do, of course, say that we meant such-and-such a person by a word, and this is true; but this way of speaking misleads us into thinking that there is a process of meaning someone or something by a word which goes on ‘inside us’, such as the process of ‘projection’, the mental linking signs with things, which was at the core of the *Tractatus* account.

This argument is continued by 63 explaining how we are misled when we think that meaning something by a word is a process ‘inside us’. We think that this – or the related *Tractatus* process of thinking the sense of a sentence (thinking a proposition) – is something we could explicate by an account of symbolic and causal mechanisms which realize thought. In these mechanisms there would be organic signs: internal surrogates of the words by which we mean things working as part of a mechanism which both represents the situations we think about and can be linked to them causally. Then, among other things, just as we can understand the process by which the punched cards which drive a Jacquard loom both represent the pattern to be woven and also cause the weaving of it, so we could understand the process by which a plan in my mind both represents what I am to do and causes my actions in doing it.

In this we should see realized the links between the sentence which describes my action, my mental representation of the action, and the action itself. So we should see ‘the kind of relation [which holds between] the constituents of the thought and of the pictured fact’, as Wittgenstein described the psychosemantic relation in his letter to Russell, when he held that these constituents and relations were a matter for psychological investigation. This, however, is an error. The study of causal and functional role cannot yield the understanding which is required, partly because, as remarked earlier, the relation of correctness cannot be explicated in these terms.

8. Language and the representational power of thought

In these passages Wittgenstein is replacing the *Tractatus* view that thought breathes life into signs by one in which the use of language is required to explain the representational power of thought. In this he is also perforce rejecting the *Tractatus* conception according to which thought has the full semantic content (reference and truth-conditions) ascribed to and by sentences in use, but independently of language and prior to it. This rejection is carried out in more detail in the *Investigations*, where Wittgenstein particularly focuses on two manifestations of this suspect notion of thought. The first is Augustine’s account of the role of thought in the learning of language (‘as if the child ... already had a language, only not this one ... as if the child could *think*, only not yet speak’; 32). The second is the Fregean notion of an act (grasping) of thought, which fixes the reference and truth-conditions of sentences in use.

As we can now see, these two suspect conceptions are linked and combined in the mechanistic explication of thought associated with the *Tractatus*. For according to this explication a natural system of organic signs serves both to realize thought prior to and independently of the acquisition of spoken language, and also to implement mental acts of understanding and meaning which assign reference and truth-conditions to sentences as they are used. (These same connections also appear in the work of Fodor, as well as elsewhere in linguistics and cognitive science.) This is why Wittgenstein takes these various

conceptions of thought to stand or fall together, and why he rejects the priority of thought together with claims about its internal symbolic realization in the successive remarks we have just considered.

9. Reformulation of the basic question and the role of consciousness

These remarks – which we have only partly discussed – indicate a complex transformation in Wittgenstein's post-*Tractatus* views. In *Philosophical Grammar* he examines the basic question of the referential character of thought, which he failed to address in the *Tractatus*. In doing this, however, he also changes the terms in which he poses the question. He turns his back on the view that thought is realized in an inner system of elements and combinations analogous to language, such as he described in his letter to Russell, and such as he compared to the punched cards which drive a Jacquard loom. Since this is not a mandatory account of thought, but rather a potentially misleading picture which we are inclined to form, the question of understanding the referential character of thought is not well addressed in these terms.

Before considering Wittgenstein's reformulation in the *Investigations* we may note two things about the question of mental reference. First, it is very general: it applies to anything which can be thought about, including abstract entities such as the property of being red as well as concrete particulars such as Napoleon. Second, the question seems particularly related to conscious awareness. We think of such awareness as awareness *of* things, so that consciousness seems a locus of mental reference which is particularly clear and unproblematic. In view of this it is worth noting that we can arrange a variety of items to which this question applies in a rough order by their relation to consciousness. Thus we have:

- i Items which are parts or aspects of consciousness itself: e.g. pains and other sensations, and their phenomenological properties.
- ii Items which are explicitly represented in consciousness, such as things perceived in the immediate environment, or (to take Wittgenstein's example above) myself and the things I intend to do, as represented in my intentions.
- iii Items which are not explicitly represented in consciousness, but which are somehow mentally meant or referred to along with others which are. Thus, to take an example we shall consider shortly, if I tell someone to add two repeatedly to a given number, I may explicitly think of some instances of what I mean him to do; but my request also encompasses – and in this sense also means, refers to, or is about – further instances which I do not think of.
- iv Items such as Napoleon, which may be thought about but which cannot directly impinge upon consciousness because they are remote in space or time, or no longer exist.

While it is clear that the general question of the relation of thought to its objects applies to all these kinds of items, we can see that differences among them are important for Wittgenstein's discussion. Thus in the remark considered above he uses the fact that Napoleon no longer exists to make it seem problematic that we should simply be able to mean or refer to him in thought. More background might be required to enable us to regard it as problematic that we should simply be able to mean, or mentally refer to, a content of consciousness such as a pain. These differences also play a role in Wittgenstein's argument.

10. The question of representation in the *Investigations*: rule following and the constitution of correctness

In the *Tractatus* Wittgenstein took the referential character of thought for granted, and used his account of thought to explain how words and sentences mapped to things and situations in the world. In *Philosophical Grammar*, as we have seen, he pressed his enquiry further, and asked how thought itself manages to represent or refer to things. In the *Investigations*, as we shall now see, he pursues these questions still further, and in a way which is continuous with *Tractatus* 4.0141 discussed above: that is, by considering how both thought and language relate to things via the notion of a rule .

Wittgenstein discusses this notion of a rule in the *Investigations* together with the now familiar opposition between acts of meaning and use as providing the life of signs. In 138 he relates these as follows:

138 But can't the meaning of a word that I understand fit the sense of a sentence that I understand? Or the meaning of one word fit the meaning of another? – Of course, if the meaning is the *use* we make of the word, it makes no sense to speak of such 'fitting'. But we *understand* the meaning of a word when we hear or say it; we grasp it in a flash, and what we grasp in this way is surely something different from the 'use' which is extended in time.

Here Wittgenstein's 'but we *understand* the meaning of a word when we hear or say it; we grasp it in a flash' introduces the acts of understanding and meaning which, as we have seen, he takes us to hypostasize as giving life to signs. And although he is discussing what he regards as a philosophical error, it is important that the sentence he uses to introduce the error is true. Just as we really do mean or understand things by our words, so we really do sometimes grasp the meaning of a word in a flash. What happens in such a case, as Wittgenstein supposes, is just that in a flash of understanding we acquire the capacity to use the word correctly; and since this includes the practical ability to relate the word to the things to which it refers, this is also part of the capacity we acquire. But according to Wittgenstein we are liable to misconstrue this, by

assuming (i) that the grasping is of something distinct from the use – such as the concept, meaning or Fregean sense (thought) introduced in the first sentences of this remark – and (ii) that this distinct thing, or our grasping of it, determines the reference of the word, and hence how we use it.

11. Intermediaries and correctness: the explanatory priority of correct use

The first of these misconstructions is expressed here in the claim that ‘what we grasp in this way is surely something different from the “use” which is extended in time’. To accept this is to take the verb ‘to grasp’ as having an object – e.g. a sense – distinct from the use of the sign in question, and hence, in Wittgenstein’s terms, ‘to assume a pure intermediary between the propositional *signs* and the facts’ (94). This, as Wittgenstein expects, will go with the idea that this intermediary somehow determines reference and truth-conditions, and hence use. So this idea – part of many standard expositions of the notion of sense – is one topic of the remarks which follow.

We have seen that in his work prior to the *Investigations* Wittgenstein focused on explicating the notion of correctness. Accordingly, we find that in these remarks he is concerned with two questions: whether the supposed grasping of distinct intermediaries can explain correctness in the use of signs; and if not, how such correctness is to be explained. Thus in the case of sense, if what is required to explain use is a *correct* grasping of sense (or a grasping of the *correct* sense), we must ask how such correctness is determined. Wittgenstein carries this argument forward, and illustrates its connection with the *Tractatus*, by considering the idea that what is grasped in a flash is a picture. Thus he takes the example of the word ‘cube’ and a mental picture of a cube (139), or such a picture together with a ‘method of projection’ (140). (The question as to what relates my mental picture of a cube to actual cubes is comparable to that as to what relates my image of me to myself or my thought of Napoleon to Napoleon.) Wittgenstein treats these examples by observing that the correctness of the grasping of the picture (or sense), or the method of projection which accompanies it, is answerable to that of the use made of the sign, and not vice versa.

We can see that this dialectic would apply to any intermediary, and Wittgenstein at once extends it to the case of someone learning to write series of numerals or numbers. Here, for example, what is grasped in a flash may be an algebraic formula from which the series can be derived. But again what counts as a correct grasping, or a correct application of the formula, is determined by the use made of it: ‘The application is still a criterion of understanding’ (146). Thus the Fregean idea that the grasp of sense (meaning, etc.) is explanatorily prior to that of correct use (or practice) is shown to be mistaken. A comparable argument extends to the state of understanding more generally (147), and the ‘state of a mental apparatus (perhaps of the brain)’ which might be supposed to underlie it (149). This last argument continues the argument from *Philosophical Grammar*

discussed above, for the ‘mental apparatus’ here is a symbolic/causal mechanism understood on the model of the pianola (157) and realized by ‘what goes on in the brain and nervous system’ (158). So according to these arguments nothing in our understanding of meaning is explanatorily prior to that of correct use (or practice); for we determine the correctness of the mental acts, states or mechanisms which we associate with meaning by reference to this.

12. Determining the correctness of use

This establishes the basic role of correct use, but leaves us with the question as to what constitutes such correctness and how we recognize it. This Wittgenstein starts to address in the next phase of his argument. As before, he considers a pupil being taught the use of a simple arithmetic rule, such as that for adding two. This pupil is supposed, among other things, to learn to continue the series 2, 4, 6, 8 ... and so on indefinitely. The question then is, in what circumstances are we to interpret the pupil as having learned to follow the rule *correctly*? He addresses this question, as it will be important to note, by linking the notion of correctness with that of *interpretation*.

Wittgenstein notes that a learner might continue the series correctly (as we should say) up to 1,000, but then go on to write 1,004, 1,008 ... We should regard this as incorrect, but it would not necessarily show lack of an understanding (some understanding) on the pupil’s part. It might be that going on in this different way was natural to the pupil, and we might find an interpretation which explained this, and according to which it was indeed the correct thing for him to do.

185 We say to him: ‘Look what you’ve done!’ – He doesn’t understand. We say: ‘You were meant to add two: look how you began the series!’ – He answers ‘Yes, isn’t it right? I thought that was how I was *meant* to do it.’ Or suppose he pointed at the series and said: ‘But I went on in the same way.’ It would now be no use to say: ‘But can’t you see ...?’ – and repeat the old examples and explanations. – In such a case we might say, perhaps: It comes naturally to this person to understand our order and our explanations as we should understand the order ‘Add 2 up to 1000, 4 up to 2000, 6 up to 3000 and so on.’

Such a case would present similarities with one in which a person naturally reacted to the gesture of pointing with the hand by looking in the direction of the line from finger-tip to wrist, not from wrist to finger-tip.

This illustrates, as Wittgenstein says later, that ‘there are criteria for his “thinking he understands”, attaching some meaning to the word, but not the right one’ (269). He has so far assumed that the right use is the one we are attempting to impart: that is, our own. (‘[H]e continues the series correctly, that is, as we do it’ (145).). He now extends his enquiry, to ask how this correctness –

which includes the correctness of our own use – is itself determined. And since he is raising this question about the notion which is most basic for the explanation of correctness generally, he is in effect asking what determines the correctness of all the other notions he has considered. Hence, as we shall see, he is in effect asking what makes it the case that we are able to think, judge or use words in accords with rules or norms at all.

So we are immediately faced with a deeper question. How do *we* know that *we* are supposed to follow the rule for adding two in the particular way that we do – how do we know that our practice, as opposed to that of the person we treat as deviant, is actually *correct*? This is the topic which Wittgenstein makes explicit in the next remark, by raising what is now the fundamental question of correctness: ‘To carry it out correctly! How is it decided what is the right step to take at any particular stage?’

186 What you are saying, then, comes to this: a new insight – intuition – is needed at every step to carry out the order ‘+ n’ correctly. – To carry it out correctly! How is it decided what is the right step to take at any stage? – ‘The right step is the one that corresponds with the order – as it was *meant*’ – So when you gave the order +2 you meant that he was to write 1002 after 1000 – and did you also mean that he should write 1868 after 1866, and 100036 after 100034, and so on – an infinite number of such propositions? ‘No: what I meant was, that he should write the next but one number after *every* number that he wrote; and from these all those propositions follow in turn.’ But that is just what is in question: what, at any stage, does follow from that sentence. Or again, what, at any stage, are we to call ‘being in accord’ with that sentence (and with the *mean*-ing you then put into that sentences – whatever that may have consisted in). It would almost be more correct to say, not that an intuition was needed at every stage, but that a new decision was needed at every stage.

And this question, as Wittgenstein makes clear, seems exceedingly difficult to answer. Clearly no answer can be based on the acts or states of understanding or grasping a sense, or the mental or physiological mechanisms assumed to underpin them, which have been considered in the argument so far; for the status of these things as correct depends upon the use to which they are related, and it is the correctness of this which is now in question. Wittgenstein has his interlocutor turn again to the idea that this question is answered by reference to acts of meaning (‘The right step is the one that accords with the order – as it was *meant*’), but this fails to extend to the indefinitely large number of cases covered by the rule (‘and did you also mean that he should write 1868 after 1866, and 100036 after 100034, and so on – an infinite number of such propositions?’) Nor is it to the point to say that this further reach of the rule is determined by what *follows from* the rule, for this is equally in question. The question as to what

accords with a rule is that of what accords with a sentence (or sense or meaning) generally, and this includes deductive accord as well. (And the question concerns the constitution of correctness in applying rules generally, and so applies to the rule for *modus ponens* as much as to that for adding 2.)

13. Correct use and sentential accord generally

We thus seem faced with a deep and general problem, which Wittgenstein again puts in terms of the notion of interpretation as follows:

198 ‘But how can a rule show me what I have to do at *this* point? Whatever I do is, on some interpretation, in accord with the rule.’ That is not what we ought to say, but rather: any interpretation still hangs in the air along with what it interprets, and cannot give it any support. Interpretations by themselves do not determine meaning.

As this applies to sentences which express rules, so it applies to the states of mind which we describe by such sentences. For it is clear, for example, that a question as to which action really accords with the mathematical rule expressed by the sentence ‘Add 2’ is also a question as to which action really accords with the intention or desire described by the use of the same sentence: that is, the intention or desire to add 2. Wittgenstein makes this explicit in 197, when he turns from the case of rules to that of intentions, and hence to sententially articulated mental states in general.

[W]e say that there isn’t any doubt that we understand the word, and on the other hand its meaning is in its use. There is no doubt that I now want to play chess, but chess is the game it is in virtue of its rules (and so on). Don’t I know, then, which game I want to play until I *have* played it? or are all the rules contained in my act of intending? Is it experience that tells me that this sort of game is the usual consequence of such an act of intending? so is it impossible for me to be certain what I am intending to do? And if that is nonsense – what kind of super-strong connexion exists between the act of intending and the thing intended?

We can now see that the question of correctness which has now been raised by consideration of following a rule relates to everything previously encompassed by the rule or ‘law of projection’ linking thought, language and reality in *Tractatus* 4.0141 above. The question relates to the link between ‘the act of intending and the thing intended’, and so to all items or states which have *sentential content* – content *that P*, which is assigned by the use of a sentence ‘P’ – and any of the actions or items in the world which are supposed (or meant) to *accord with* these bearers of content.

Thus consider any sentence ‘P’ which can be used to specify something a person can do. (‘P’ might be ‘Take the square root’, ‘Turn left’, ‘Find something *this* colour’, ‘Create a diversion’ or whatever.) For each such ‘P’ we have the same questions: what makes it the case that it is correct to act in accord with ‘P’ in one way rather than another; and how do we know that this is so? And again we have corresponding questions about intention, belief, desire and other states of mind. What makes it the case, and how do we know, that one action rather than another fulfils the desire or intention that P, or renders the belief that someone has done this true? These questions concern both the constitution of the norms we take to govern these phenomena and our knowledge of these norms. So, in Wittgenstein’s terms, they are also questions about ‘the hardness of the logical must’ – questions as to what constitutes this ‘super-strong connection’, and how we can know about it. So as he puts the question for propositional attitudes more generally,

437 A wish seems already to know what will or would satisfy it; a proposition, a thought, what makes it true – even when that thing is not there at all. Whence this determining of what is not yet there? This despotic demand? (‘The hardness of the logical must.’)

In the *Tractatus* Wittgenstein followed the tradition of Descartes and Kant, in taking the first-person perspective – the ‘I think’ – and with it first-person authority about one’s own thoughts, as philosophically basic. To assume that we know what our thoughts are about, however, is to presuppose the connection between thought and world which he now seeks to explicate. So now he considers the topic via questions which encompass first-person authority about both mind and meaning. We take both our sentences (‘Add 2’) and our thoughts (the intention to add 2) to relate to our actions, and to the world more generally, in ways we describe in terms of *normative accord* – that is, accord which can be regarded in one way or another as correct or incorrect. As illustrated, we describe this accord in many different ways: in terms of the *truth* of sentences or thoughts, the *fulfilment* of intentions, the *satisfaction* of desires or wishes, the *realization* of hopes and fears, the fact that a step *follows from* a premise, or *according to* a logical or mathematical rule, and so on. So we can ask: what makes such descriptions true, and how do we come to know them?

This question, in turn, is central to our sense of ourselves as agents who can knowingly think, speak and act. Knowing the contents of our thoughts, intentions or sentences is knowing the actions, objects or states of affairs which are supposed to accord with them in this sort of way. Yet although such knowledge seems absolutely fundamental to us, we also seem quite unable to give any account of it, or to describe any justification for it. We acknowledge the normative requirements of thought and language spontaneously and without reflection, and we take them for granted in what we say, think and do. Trying to answer Wittgenstein’s explicit questions, however, we can seem quite unable to elucidate either the basis of these requirements or our knowledge of them.

Hence, as Saul Kripke (1982) puts the point in his celebrated exposition, if we take Wittgenstein's remarks as sceptical, 'It seems that the entire idea of meaning vanishes into thin air' (1982: 22). In this case scepticism would represent '*all* language, *all* concept formation, to be impossible, even unintelligible' (1982: 62), so that 'assertions that anyone ever means anything are meaningless' (1982: 77). Such scepticism is thus 'insane and intolerable' (1982: 60).

14. Wittgenstein's solution: an approach via radical interpretation, focusing on 'regular connection' between verbal and non-verbal actions

We saw that Wittgenstein raised this question by reference to interpretation – by citing the possibility of an interpretation which represents an intuitively mistaken way of following a rule as correct in some different or unexpected sense, and by stressing that interpretations alone do not determine meaning. Also I think he solves the problem by reference to interpretation; this emerges in the following remarks, which are, even for him, unusually difficult to understand.

206 Following a rule is analogous to obeying an order. We are trained to do so; we react to an order in a particular way. But what if one person reacts in one way and another in another to the order and the training? Which one is right?

Suppose you came as an explorer into an unknown country with a language quite strange to you. In what circumstances would you say that the people there gave orders, understood them, obeyed them, rebelled against them, and so on?

The common behaviour of mankind is the system of reference by means of which we interpret an unknown language.

207 Let us imagine that the people in that country carried on the usual human activities and in the course of them employed, apparently, an articulate language. If we watch their behaviour we find it intelligible, it seems 'logical'. But when we try to learn their language we find it impossible to do. For there is no regular connection between what they say, the sounds they make, and their actions; but still the sounds are not superfluous, for if we gag one of their people, it has the same consequences as with us; without the sounds their actions fall into confusion – as I feel like putting it.

Are we to say that these people have a language: orders, reports, and the rest?

There is not enough regularity for us to call it 'language'.

In these remarks Wittgenstein at first explicitly states the question of accord which he has been raising, using the examples of rules and orders, and people who

respond to these in different ways ('Which one is right?'). He then replies to his own question indirectly, by describing an hypothetical radical interpreter, similar to the figure considered later by Quine and Davidson, who seeks to make sense of both the interpretees' utterances and actions, without prior knowledge of either. And here he makes a series of claims about the finding of empirical regularities ('regular connection') between sounds and actions which make interpretation possible.

What are we to make of these claims, and how do they constitute an answer to the general questions about correctness or normative accord which Wittgenstein has raised? Without going further into exegetical detail, I think we can take Wittgenstein here to be making a series of related points which we can partly bring out as follows. We are concerned with the interpretation of speech, and speech is a kind of behaviour which has a marked and complex (syntactic) order, in virtue of which we can understand it with particular clarity and precision. But as 207 suggests, speech is also a kind of behaviour which cannot be understood in isolation from the rest of the behavioural order of which it is a part. (To see this, consider trying to work out the meaning of radio broadcasts in a foreign language on the basis of their syntax alone, in the absence of any clue which might provide information as to what the broadcasts were about.)

Despite the order in people's productions of sounds or marks, if these were not a co-ordinated part of a larger pattern of action we could not interpret such sounds or marks, or regard them as language at all. By contrast, we can understand the order in much non-linguistic behaviour without relying on speech, at least up to a point. We can generally see the purposive patterns in people's behaviour in terms of their performance of commonplace intentional actions, and their being engaged in various everyday projects: 'the usual human activities' which constitute 'the common behaviour of mankind'. But as Wittgenstein has previously stressed, unless we can link such actions with speech, we cannot, in many cases, know what people think; and in the absence of speech it would be doubtful how far we could ascribe precise thoughts or motives to people at all (cf. 25, 32; and also 342).

So we have a general claim about interpretation and understanding. Words without relation to deeds are unintelligible, and deeds without relation to words are inarticulate. It follows that the kind of understanding of people which we actually attain, in which we take deeds to spring from motives with precise and determinate content, requires that we integrate our understanding of verbal and non-verbal action, and hence that we correlate and co-ordinate the two. In this we tie the complex order in utterance to particular points in the framework of action and context, so as to interpret language; and this in turn enables us to interpret the rest of behaviour as informed by thought which, like that expressed in language, has fully articulate content.

15. Regular connection, intention, and rule

Wittgenstein makes this conception of the relation of interpretation, utterance and action clearer in further remarks. Thus in 243 he writes:

A human being can encourage himself, give himself orders, obey, blame, and punish himself; he can ask himself a question, and answer it. We could even imagine human beings who spoke only in monologue; who accompanied their activities by talking to themselves. – An explorer who watched them and listened to their talk might succeed in translating their language into ours. (This would enable him to predict these people's actions correctly, for he also hears them making resolutions and decisions.)

But could we also imagine a language ... the individual words of [which] are to refer to what can only be known to the person speaking; to his immediate private sensations[?]

This again involves the figure of the explorer/interpreter, in what is clearly a variation on the theme of 206–7. As before, according to Wittgenstein, we find meaning where we find a kind of correlation between utterance and action which a radical interpreter can specify. Here the idea is applied to 'resolutions and decisions': that is, to utterances which express the interpreter's intentions in the actions with which they can be correlated. Just as in 206–7 the radical interpreter is required to find regular connections between utterances of orders and actions which are obeyings of those orders, so in 243 the radical interpreter is required to find regular connections between expressions of intention and actions which are fulfillings of those intentions. In the earlier remarks Wittgenstein claimed that such correlations are necessary for interpretation, and here he adds that they also suffice for it. For given such correlations the explorer–interpreter can both 'predict these people's actions correctly' and 'succeed in translating their language into ours'.

This remark also makes more explicit how Wittgenstein takes the specification of this kind of regularity to bear upon mental states like intention and desire. In correlating sentences expressing 'resolutions and decisions' with actions in this way, an interpreter is relating specifications of intention to the actions which fulfil them. This is particularly obvious in the case of resolutions and decisions, but it also applies to the rules and orders which Wittgenstein considers in other remarks; for in general the linguistic expression of a rule or order can also be regarded as a specification of the intention with which the person who follows the rule or executes the order thereby acts.

As Wittgenstein stresses, 'when we interpret [another], we make hypotheses, which may prove false' (*Investigations* Pt II, xi); and to frame hypotheses about such utterance/action correlations, the interpreter must make use of his or her own language (32). So we can say that in specifying an interpretive regularity of the kind with which Wittgenstein is concerned, his interpreter/explorer seeks to map a single sentence of her or her own idiolect (i) to the interpreter's verbal behaviour, construed as an utterance of a sentence expressing a rule or order, or again a decision, resolution or the like; and (ii) to the interpreter's non-verbal behaviour, construed as an action in accord with the rule, order, decision, etc.;

and so (iii) to the interpretee's intention in acting, which is taken as expressed by the sentence in (i) and therefore fulfilled by the action in (ii). So an interpretive understanding of a single regular connection of this kind represents these three elements – the interpretee's utterance, intention and action – as at once empirically correlated and in normative accord. (So this interpretive mapping is, as it were, the final shadow of 'the general rule' of the *Tractatus*, which links the written notes, the musical thought and playing of music; and hence shows 'the harmony between thought and reality' which that rule embodies.)

This does not mean that in understanding one another we explicitly frame the same kinds of hypothesis as Wittgenstein's interpreter/explorer. The claim of 206–7 is rather that our mutual understanding depends upon the regularities which such hypotheses would specify, if an interpreter were to frame them. In interpreting one another, therefore, we are sensitive to these regularities – e.g. in linking expressions of intention with the actions which fulfil these intentions, and describing both by the same sentences – while our understanding of the regularities themselves remains tacit. As we have seen, Wittgenstein stressed from the *Tractatus* that responses to such regularities are 'part of the human organism' so that it is 'not humanly possible' to gather immediately from language what the logic of language is (4.002). Wittgenstein's consideration of the interpreter/explorer serves as a way of bringing this logic to the fore. For it enables us to locate and give preliminary characterization to some of the complex regularities to which we respond in understanding one another, and which are constitutive of meaning itself.

16. Interpretation is both empirical and normative, and so provides the kind of account of correctness which is required

Thus in 206–7 and 243 Wittgenstein sketches a conception of interpretation which is at once empirical and normative. Interpretation is based upon a natural order in behaviour, which includes regular connections between utterances and other actions, and so can be considered as a form of empirical enquiry. The empirical order we detect in interpretation, however, is also a normative order. In interpreting even non-verbal actions we find them to be, as Wittgenstein says, intelligible or 'logical': that is, to accord with standards of intelligibility and logic; and in discerning the regular connections between verbal and non-verbal action which are required for language we find the non-verbal actions to occur in normative accord with the verbal ones, for example as followings of rules or orders which are expressed in utterances.

Interpretation thus discerns a kind of regularity which is genuine and which can be objectively characterized; and interpretive characterizations of this order are in terms of the norms and rules about which Wittgenstein has raised his constitutive and epistemic questions. So as 206–7 implies, these questions can be answered by reference to interpretation. Correctness is constituted as a form of

natural order, and this kind of order is understood in interpretation. Roughly, what makes it the case that some particular thing I do is correct or incorrect is that my behaviour manifests the kind of order which renders it interpretable, so that there are objectively ascribable but normative regularities in terms of which it can be understood; and this particular thing coincides or fails to coincide with one of these regularities. So reference to interpretation provides an answer to Wittgenstein's general questions: that is, an account as to how these normative connections are both constituted and known.

The instances of 'regular connection' of which Wittgenstein speaks in 207 thus have a triple status: they obtain; we interpret them in normative terms; and they sustain interpretation of this kind. Hence we can see them not only as causal regularities, but as regularities which correctness demands, and which support the kind of interpretation in which correctness or the lack of it is ascribed. This status explains the apparently 'superstrong connection' or the 'despotic demand for what is not yet there' which hold between the act of intending and the thing intended, or other elements of interpretive regularity generally. And it emerges clearly in the examples with which Wittgenstein both illustrates the questions and attempts to dissolve them.

198 'But how can a rule show me what I have to do at *this* point? Whatever I do is, on some interpretation, in accord with the rule' – That is not what we ought to say, but rather: any interpretation still hangs in the air along with what it interprets, and cannot give it any support. Interpretations by themselves do not determine meaning.

'Then can whatever I do be brought into accord with the rule?' – Let me ask this: what has the expression of a rule – say a sign-post – got to do with my actions? What sort of connection is there here? – Well, perhaps this one: I have been trained to react to this sign in a particular way, and now I do so react to it.

But that is only to give a causal connection; to tell how it has come about that we now go by the sign-post; not what this going-by-the-sign really consists in. On the contrary: I have further indicated that a person goes by a sign-post only in so far as there exists a regular use of sign-posts, a custom.

The notion of 'regular use' or 'practice' here introduces the notion of interpretable regularity which we have been considering above. Wittgenstein's example is the practice of going by a sign-post, in which there is a regular connection, brought about by training, between the sign and actions which accord with it. (The sign-post is of course not an utterance of an interpreter; but still it can be regarded as a concrete instance (token) of one of an interpreter's sentences, and so as involving the kind of sign/action regularity described above.) Thus an interpreter could use observation of behaviour connected with the sign-post to work out that the sign meant, say, 'turn left'; and also a person

who used such a sign could point to the sign-post itself as part of specifying a rule or giving an order, or as specifying his or her desire or intention to act accordingly: that is, to turn left.

To interpret the sign this way is perforce to hold that a person trying to act in accord with it by turning right would not be acting in accord with it, and so in that sense would be behaving incorrectly. The sign–action regularity thus covers behaviour which both has a causal explanation and can also be assessed for correctness. The regularity of which the sign is part is also essential to this potential for correctness, since, as 207 makes explicit, a degree of regularity in persons’ behaviour in relation to sign-posts (use of the sign) is required for the cogent assignment of an interpretation to the sign, and hence also to the ascription of the desire or intention which agents link with the sign; and such an interpretation also specifies the norm against which correct use of the sign is assessed. So, in Wittgenstein’s terms, we begin to understand ‘what this going-by-the-sign really consists in’ when we see the matter both as one of causal connection and also in terms of the linked notions of practice, interpretation and correctness.

17. The interpretive discernment of regularity can be compared to the framing of empirical hypotheses and the finding of natural laws

The question of determining the right way to follow a sign-post, or a rule in general, is thus an empirical one: that of charting a ‘regular connection’ and so finding the right characterization of a certain regularity. In this case, however, the regularity is that of behaviour related to a norm or standard of correctness. This also yields answers to the specific questions Wittgenstein poses. Consider first the analogue of that in 206: what should we say if one person responds in one way and another in another to the sign-post and the training connected with it – which one is right? On the exegesis so far this is straightforward. If the best interpretive explanation we can give of the role of the sign in the lives of those who use it is that it means ‘turn left’, then someone who responds to the training and the sign by turning right is so far responding incorrectly. This, indeed, is comparable to the case with which the enquiry began, of the learner who responds to our training with ‘+2’ by going on ‘1,004, 1,008 ...’ As in that case, misinterpreting the sign can be also compared with misinterpreting the gesture of pointing; and indeed if we take the kind of sign-post Wittgenstein actually describes in his argument [85 ‘A rule stands there like a sign-post ... But where is it said which way I am to follow it; whether in the direction of its finger or (e.g.) in the opposite one?’] we see that the comparison is nearly exact.

As before, someone who is acting incorrectly may yet have what deserves to be called his own understanding of the training and the rule. As Wittgenstein holds, this should also show in regular behaviour on his part, which we should be able to interpret. If we succeed in formulating the way this person understands

‘turn left’, then there will also be the possibility that he will fail to act in accord with the rule as he understands it. Thus someone might regularly turn right at the sign, leading us to suppose that he understood it this way; then on occasion he might encounter the sign (or in another case hear the order ‘turn left’) and turn left, but then correct himself and turn right. This too we could interpret, for as Wittgenstein emphasizes, self-correction – and other kinds of behaviour which show sensitivity to norms – are also observable aspects of our natural history, and hence material for radical interpretation.

54 Let us recall the kinds of case where we say that a game is played according to a definite rule.

The rule may be an aid in teaching the game. The learner is told it and given practice in applying it. – Or it is an instrument of the game itself. – Or the rule is employed neither in the teaching nor in the game itself; nor is it set down in the list of rules. One learns the game by watching how others play. But we say that it is played according to such-and-such rules because an observer can read these rules off from the practice of the game – like a natural law governing the play. – But how does the observer distinguish in this case between player’s mistakes and correct play? – There are characteristic signs of it in the players’ behaviour. Think of the behaviour characteristic of someone correcting a slip of the tongue. It would be possible to recognise that someone was doing so even without knowing his language.

Although this remark is an early one, it has a clear bearing on the themes we have been considering, made fully explicit only later in the book. Since Wittgenstein compares games and language, his focus on a game learnt solely by observing the behaviour of others anticipates his remarks about the explorer/interpreter, who learns the language of the monologue people through observation in precisely this way. We may suppose, moreover, that such an interpreter would be aided in this work by attending to the ‘characteristic signs’, stressed here, of people’s awareness of the relation of their own behaviour to their own norms, which can be recognized ‘even without knowing [their] language’. We can thus see this early remark as ending with a reference to the idea of radical interpretation which Wittgenstein takes up more explicitly via the role of the explorer in 207 and 243.

Also we can see that in this early remark, too, Wittgenstein is considering interpretable regularities, which in this case can be ‘read off from the practice of the game – like a natural law governing the play’. Here again Wittgenstein indicates that these are at once natural regularities subject to disciplined empirical study (‘like a natural law’), and also regularities which have the further status of activity in accord with rules or norms; and that this is reflected in further observable behaviour relating to them. Wittgenstein thus sketches his views repeatedly. Indeed, in remarks plainly continuous with this, but applied explicitly to

language, Wittgenstein constructs nearly the same argument for the case of rules in the home language as he will deploy in the case of radical interpretation considered in 207.

82 What do I call ‘the rule by which he proceeds’? The hypothesis that satisfactorily describes his use of words, which we observe; or the rule which he looks up when he uses signs; or the one which he gives us in reply if we ask him what his rule is? – But what if observation does not enable us to see any clear rule, and the question brings none to light? ... What meaning is the expression ‘the rule by which he proceeds’ supposed to have left to it here?

An interpreter trying to discern rules of language can construct hypotheses to account for the linguistic behaviour she observes, and can also make use of the interpretee’s own expressive or self-ascriptive account. Interpretive hypotheses will naturally enjoy a maximum of support when these sources of information coincide, as they do in instances of interpretive regularity. If, however, no such hypothesis is satisfactory, then the notion of rule may be inapplicable to the data of observation; there is, as he says in 207, ‘not enough regularity’ in the data for us to describe it in terms of the concept of a linguistic rule.

18. Interpretation ratifies the first-person perspective on mind and meaning

This clearly also applies to the alternative formulation of Wittgenstein’s question above: namely, what makes it the case, and how am I to know, that the sentences of my idiolect relate to my own activities and to the rest of the world as I take them to? It is clear that I cannot answer this by *saying* how my sentences relate to these things, for this ‘still hangs in the air along with what it interprets, and cannot give it any support’ (198). In this context my interpretations of my own rules are no more than ‘the substitution of one expression of the rule for another’, and do not determine what they mean. Rather, this is determined by the *use* I make of my sentences, which manifests ‘a way of grasping a rule which is *not* an *interpretation*, but which is exhibited in what we call ‘obeying the rule’ and ‘going against it’ in actual cases’ (201). This is my linguistic practice, which another can interpret as in regular connection with my non-verbal actions, and thereby understand in terms of my fulfilling intentions, following rules and other forms of normative accord. And although I do not (and could not) interpret myself in this way, this also constitutes my first-person expressions of my own meanings and motives as correct and authoritative. Objectivity is thus linked with the possibility of intersubjectivity: each person’s first-person or subjective perspective is rendered objective by the possibility of understanding by, and so co-ordination with, that of another.

So Wittgenstein's point is not that we face a problem in justifying our assignments of meaning, or the way we follow rules. It is only that we are bound to *think* that there is such a problem (and indeed an insoluble one) so long as we do not acknowledge the asymmetric role of interpretation, and hence suppose that what can be cited in justification of the ways we think and act must somehow be employed or available to each of us in the Cartesian perspective of our own case. Hence according to Wittgenstein the first-person perspective – that in which we are authoritative about mind and meaning, and in which we find no doubt or indeterminacy – does not contain within itself the materials required for its own justification. Like Descartes, we tend to assume that where clarity and certainty are, there ground and justification must also be, and this is an error. The beliefs which characterize the first-person perspective are constituted as knowledge by a possible relation to others, which consists in our being such as to be interpretable by them.

19. Expression, interpretable regularity, and further propositional attitudes

The *Investigations* thus replaces the first-person perspective on mind and meaning of the *Tractatus* with an account grounded in the interpretive apprehension of the natural regularities which, in his terms, constitute our 'form of life' (241). These regularities, however, also relate to the first-person perspective, for they encompass utterances which express intentions and other sentimentally described motives upon which non-verbal actions are based. Thus according to Wittgenstein, in the verbal expression of pain 'words are connected with the primitive, the natural, expressions of the sensation and used in their place' (244); and something similar holds for wishing, expecting and the like. As he says,

441 By nature and by a particular training, a particular education, we are disposed to give spontaneous expression to wishes in certain circumstances. (A *wish* is, of course, not such a 'circumstance'.) In this game the question whether I know what I wish before my wish is fulfilled cannot arise at all. And the fact that some event stops my wishing does not mean that it fulfils it. Perhaps I should not have been satisfied if my wish had been satisfied ... Supposed it were asked 'Do I know what I long for before I get it?' If I have learned to talk, then I do know.

We can see how this relates to such remarks as 206–7 and 243. The natural capacity for self-expression cited here ('By nature ... we are disposed') is one which yields a kind of regular connection between utterance and other action, and so the kind of regularity which makes interpretation possible. (The expression of wishes or expectations, for example, might be part of the behaviour which enabled an interpreter observing someone speaking in monologue to work out what he meant, as in 243.) That I spontaneously express my wishes, and that

‘some event stops my wishing does not mean that it fulfils it’ are aspects of the same ‘regular connection’: one according to which a wish is satisfied just by an event described by the same sentence as that in which the wish is expressed, and therefore just by an event in normative accord with the wish itself. Hence the interpretable regularities which fix the semantic character of sentences also serve to fix those of states of mind which we use sentences to articulate and express.

This holds for all the propositional attitudes which have this kind of first-person ascriptive expression; so all can be regarded as bound to their objects in the same linguistically mediated way. Thus Wittgenstein puts the point in a way which admits of generalization:

444 One may have the feeling that in the sentence ‘I expect he is coming’ one is using the words ‘he is coming’ in a different sense from the one they have in the assertion ‘he is coming’. But if it were so how could I say that my expectation had been fulfilled? If I wanted to explain the words ‘he’ and ‘is coming’, say by means of ostensive definitions, the same definitions of these words would go for both sentences.

But it might now be asked: what’s it like for him to come. – The door opens, someone walks in, and so on. – What’s it like for me to expect him to come? – I walk up and down the room, look at the clock now and then, and so on. – But the one set of events has not the smallest similarity to the other! So how can one use the same words in describing them? – But perhaps I say as I walk up and down: ‘I expect he’ll come in’ – Now there is a similarity somewhere. But of what kind?!

445 It is in language that an expectation and its fulfilment make contact.

20. Thought, practice, and the fixing of reference

This should, I think, be seen as a claim about the representational or semantic character of states of mind which have a sentential (*that P*) articulation generally, and hence about ‘the whole question of representation’ as this was raised in *Philosophical Grammar*. The referents of thoughts and other linguistically articulated states of mind, and the conditions in which these are satisfied, fulfilled, etc., are those of the sentences by which we articulate them. Hence these referential and truth-conditional relations are to be seen as determined by the practice of using these sentences, where this includes the kind of interpretive comprehension of ‘regular connections’ between utterance and action considered from 206–7.

As noted above, this reverses the *Tractatus* conception of thought (understood in this way) as independent of language and explanatory prior to it. So this remark is continuous with *Philosophical Grammar* 63–4. The claim there was that it was not via an internal symbol system, but rather in linguistic practice, that a

thought about Napoleon made contact with Napoleon himself. And like the argument in 441–5, this turned on the way the same words are used both in the expression of a thought and in the practice of describing and referring to its objects. (Cf. ‘the word “Napoleon” occurs in the expression of my thought, plus the connection that word has with its bearer; e.g. that was the way he signed his name, that was how he was spoken to, and so on.’) My uses of ‘Napoleon’ in expressing my thoughts link these thoughts to the referent of that term, as I use it in other contexts; and my uses also enjoy interpretable connections with those of others, which ultimately reach back to Napoleon himself. So what enables me to speak of Napoleon also enables me to think of him. The interpretable order of which my linguistic expressions of thought are a part actually encompasses the object of my thought, despite its remoteness in time and space from my activity of thinking; and this enables us to see how thought and object are related.

We can see how this line of thought is carried into the fuller argument of the *Investigations*. In 437 Wittgenstein had posed a question: ‘A wish seems already to know what will or would satisfy it; a proposition, a thought, what makes it true ... Whence this determining of what is not yet there?’ This again is a version of ‘the whole question of representation’, and raised in terms which span language and mind. Through 206–7 and 243, we can see that we fix the conditions in which sentences are true via the regular connections manifest in interpretable practice, and through 243 and 441–4 that these connections include sentential expressions of motives (expectations, wishes, etc.) which specify the conditions in which these motives are fulfilled, satisfied, etc., and hence the things which they are about. So the same regularities as secure the references of sentences also and thereby secure those of thoughts which sentences express. Thus 445 answers the question of 437 and hence fills the lacuna about the reference of thought left in the *Tractatus*: the ‘determining of what is not yet there’, by which ‘an expectation and its fulfilment make contact’ is effected by the use of language. Hence it is this use – spontaneous, expressive and interpretable – which we should see as constituting the life of signs.

21. Practice and consciousness

The idea that the intentionality of thought is to be explained via linguistic practice also contradicts the idea that mental reference is simply given to us in consciousness itself. Thus in 205 – just before indicating the role of interpretable regularity in 206–7 – Wittgenstein has his interlocutor urge that the existence of a custom or technique (interpretable practice) is not necessary for an intention to play chess. The idea is apparently that one can simply *intend* or *mean* to play chess, as one can simply intend to designate or *mean* Napoleon: the relation of intention or thought to its objects is prior to that of linguistic practice.

Wittgenstein indicates the inadequacy of this by asking how the rules which define chess are ‘present in the mind’ of someone intending to play. This is a reminder of the point, stressed also in 186, that what someone intends, means,

expects, etc., may go beyond anything which could plausibly be said to be a content of that person's conscious mind at the time. (This is clear also in the case of such an intention as that to add 2, or again my expectation that I will do so correctly in any instance if asked; and something similar holds for the variety of instances of some descriptive word, for these too are characteristically not 'present to the mind' in use.) Such consciousness-transcending mental reference, Wittgenstein implies, requires to be explained by reference to linguistic practice. Thus Wittgenstein answers his own question about the reference of intention in 197:

Where is the connection effected between the sense of the expression 'Let's play a game of chess' and all the rules of the game? – Well, in the list of the rules of the game, in the teaching of it, in the day-to-day practice of playing.

Here Wittgenstein again returns to the idea of the sense of a sentence: that is, the thought expressed by it. So this again is a remark about how such a sense or thought – that expressed by 'Let's play a game of chess' – relates to the things it is about. The answer again is in terms of use or practice. The verbal expression of a desire or intention to play chess is part of an interpretable practice; and other parts of that same practice include the spoken and written expressions of the rules of chess, the many co-ordinate actions which constitute the teaching and learning of chess, the playing of actual games, and so forth. In understanding such a practice we relate speakers to things in their immediate environment, and also to things beyond it [(ii)–(iv) in section 9 above]. For the parts of such a practice admit any degree of spatial and temporal distance from one another, as the case of adding 2 already illustrates. Interpretation links the disparate parts of such a practice as elements of interpretable regularities, and so binds them together in an intelligible (and causally connected) whole. What *cannot* be present to consciousness *can* be a part of such a practice. So intention and other sentimentally described states – including thoughts – refer beyond consciousness, via the practices in terms of which they are expressed and described.

Finally, as Wittgenstein argues in 243ff., what holds for mental reference which goes beyond consciousness in this way also holds for mental reference within consciousness itself [(i) in section 9 above]. Just as interpretable practice seems unnecessary for us to mean chess by 'chess', so it seems unnecessary for us to mean pain by 'pain'. It seems that we can simply associate words with sensations, and could do so even if there were nothing which could enable another person to judge what sensations we had, and so to interpret these words (256). But it is a corollary of the arguments above that someone could not lay down the meaning of a word in this purely first-person way.

This establishing of meaning is supposed to bring it about that the speaker can use the word correctly: that is, as in accord with a rule. We have seen, however, that what makes it the case that someone follows such a rule correctly – as opposed to merely seeming to himself to do so – is that his performance is

such as to admit of assessment as part of an interpretable practice. So if this supposed inner ostensive definition really were beyond the scope of interpretation, it would also be beyond the scope of correctness. In the case of such an imagined, purely first-person conception of sensation, there would be no standard of correctness (258). It is natural to think that even so one would still *believe* that one was associating word and sensation correctly (260). But this is to presume that in the imaginary situation one *thinks* or forms *beliefs* about the sensation correctly, and this is equally unwarranted. For thought and belief are also not purely first-person matters, but subject to interpretive assessment, and rendered objective by the possibility of intersubjective interpretive agreement. So the intentionality of consciousness – consciousness as permeated by conceptual or sententially articulable thought – requires to be understood in terms of language and practice as well.

22. Summary and conclusion

As presented here, Wittgenstein's argument has both a conceptual and an empirical aspect. The conceptual claim is that we should regard sentential content – and hence the assignment of both propositional attitudes to persons and propositions to their sentences – as having a particular place in our 'form of life': that is, as constituted via the interaction of human behaviour and our activity of making sense of it. We can cast light on this, in turn, by considering the activity of a radical interpreter, who is set the task of understanding the speech and actions of people unfamiliar to him. This enables us to see that our natural but disciplined practice of ascribing sentential content requires the tacit discerning of regularities which hold between linguistic and non-linguistic behaviour (practice). Given these regularities, we can characterize both utterances and non-verbal activities as the product of motives which have the same kind of sententially ascribed contents as the utterances themselves; and this is the kind of content which we ascribe to our own thoughts. In the absence of such regularities, however, this kind of content could not be ascribed in an empirically disciplined way; and so far as we understand such content as constituted via the explanatory practice in which it is assigned, this is to say that such content would not exist.

This conception, we should note, is consistent both with the claim that thinking and intending are (or are realized by) events in the brain, and that such events are causes of – and in this sense explanatorily prior to – behaviour and practice. Ascribing a causal priority to events in the brain should be no barrier to recognizing that our ability to conceive these events in the particular sentential ways we do depends upon our capacity to relate them to behaviour and the environment, and via the discernment of regularity, in the way Wittgenstein indicates. On Wittgenstein's account the assignment of content is like a kind of measurement, which presupposes that the objects to be measured (the forms of verbal and non-verbal behaviour to be assigned motive- and content-specifying

sentences) can be related in certain ways. In particular, the sentential measurement of intentionality can be compared with that of weight (142). Just as the assignment of weights to objects by balancing them against standards would lose its point if these balancings did not correlate with the weight-related behaviour of objects generally, so assigning contents (and hence motives) to behaviour via sentences would lose its point if the utterance of sentences failed to correlate with motivated behaviour generally. Without the order required for the imposition of a metric, assignments of measurement lapse; and this applies to our natural measuring of intentionality and so psychological causal role by the assignment of sentential content to states or events in the brain.

What Wittgenstein offers as against the *Tractatus* (Augustine/Frege/Fodor) idea of thought is thus a series of proposals about the nature of sentential content itself. The order which sustains the ascription of such content is manifest in linguistic practice, which is why such practice (use) constitutes the life of signs. Since assignments of content to thought presuppose this order, we cannot take the content of thought to be independent of that of language. So the idea that our thoughts have determinate and meaning-constituting content prior to language can be seen as another form of the Cartesian illusion characterized above. Attending to the contents of our thoughts as these seem immediately given to us in consciousness, we fail to apprehend the full range of conditions involved in their attribution. We take as simply given (or given by some sort of invisible underlying mechanism) what is in fact constituted via our intersubjective understanding of a behavioural order in which an essentially salient role is occupied by language and practice.

We have seen that in arriving at this conception Wittgenstein put aside the idea of an inner code. As re-enacted in the *Investigations*, this rejection was prompted not only by the realization that such a code could not be semantically self-sufficient, but also by empirical ignorance. (158 ‘Now ask yourself: what do you really *know* about these things?’) So it is worth observing that an advocate of such a code could accept, in the spirit of the *Investigations*, that the code could be assigned sentential content only via the kind of order shown in linguistic practice, while also holding, in the spirit of Augustine or Fodor, that it nonetheless has such content before language is acquired. The idea would be that the elements of the code might already (innately) be such as to have a determinate explanatory relation to behaviour, including future speech, even before such behaviour actually develops. The structure of the code – to take one of Wittgenstein’s own examples – might be compared to that inside a seed, which is already such as to specify the nature of the future plant (linguistic and non-linguistic behaviour) which will develop from it, and so could be preliminarily assigned content on the basis of this innate and order-determining power. Wittgenstein was inclined to reject such a picture, and indicates an alternative in which thought acquires sentential focus only together with the behaviour to which it relates. Such a view, which could not be justified by philosophical argument alone, seems also to be gaining support in cognitive science.

Notes

- 1 See also the lucid exposition in Fodor (1987) and (1990).

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