

genuinely innocuous by means of analysis. So it may be that his worries (in *NB*) over the fuzziness of ordinary language were merely a spill-over, so to speak, from his legitimate concern at the indefiniteness of many ordinary statements. We would then be free to suppose the requirement of sharpness to have been dropped by the time of writing *TLP*, since it receives no explicit mention in that work.

### (B) The principles of logic

A second explanation may be that Wittgenstein inherited his worries concerning the fuzziness of ordinary language from Frege, who believed that in a properly constructed language no fuzziness could occur at all. Thus at *The Basic Laws of Arithmetic* section 56 Frege writes:

The law of excluded middle is really just another form of the requirement that a concept should have a sharp boundary. Any object A that you choose to take either falls under the concept  $\phi$  or does not fall under it; *tertium non datur*.

Clearly Frege thinks that the existence of fuzzy concepts would conflict with a fundamental principle of logic. However, it is not entirely clear which, since he does not distinguish between the Principle of Excluded Third ('No proposition can be neither true nor false') and the Principle of Bivalence ('Every proposition must be determinately either true or false'). The reference to Excluded Middle suggests that it is Bivalence which he has in mind; but the phrase '*tertium non datur*' suggests Excluded Third. Of course, since Bivalence entails Excluded Third (on any conception of entailment),<sup>1</sup> he may have believed that fuzzy propositions would fail to satisfy Bivalence *because* they conflict with Excluded Third. Or he may have believed that there would be a conflict with Bivalence in its own right. Both possibilities will be investigated later.

If Wittgenstein, too, believed fuzziness to be in conflict with logic, then from here on their paths would have diverged considerably. Frege takes the view that since the propositions of ordinary language are in fact fuzzy, ordinary language is thereby revealed to be radically defective. The only remedy is reconstruction, replacing natural language with a language suitable for use in strict science (by which he means 'suitable for use in any systematic enquiry after truth'), in which no fuzziness would occur.<sup>2</sup> Wittgenstein, on the other hand, believes that the propositions of ordinary language are in perfect logical order as they stand (5.5563). For him there is no question of anything being radically wrong with sentences which we

## 6 Vagueness

Our task in this chapter is to see what could have tempted Wittgenstein into trying to eradicate the vagueness of ordinary language by analysis. Why should he have wished to show it to be illusory? Part of the point of the investigation will be to see whether there is any reason for thinking that the requirement of sharpness of *Simm* survives from *NB* into *TLP* itself.

### (A) Fuzziness versus indefiniteness

One suggestion is that Wittgenstein's concerns may have resulted partly from confusion over the different senses of 'vague' (also reflected in the corresponding German '*Vagheit*'). For on the one hand the term can be used to characterise concepts with fuzzy boundaries (such as *green*) or sentences with blurred truth-conditions (such as 'Joan is still young'). But on the other hand it can describe sentences whose truth-conditions are merely unspecific or indefinite. Thus a sentence such as 'Joan married someone sometime last year' could correctly be described as 'vague' relative to a more specific sentence such as 'Joan married John on 16 June last year.' And this despite the fact that it may have been defined as sharply as you like what is to constitute a marriage, and what it is for a marriage to take place in one year rather than the next. Nor is it merely the presence of the existential quantifier which renders sentences vague in this second sense either. For 'The watch is lying on the table' is similarly unspecific in relation to sentences describing the particular position of the watch, such as 'It is lying at a point eight centimetres from the right edge of the table and four from the front.'

Now, as we shall see in Chapter 7, the unspecificness of most ordinary propositions was something which Wittgenstein could be, and was, legitimately concerned about. (In fact it raises a threat to the requirement of determinacy-in-advance.) It is also something which can be rendered

good reason to believe, with Frege, that such fuzziness would bring ordinary language into conflict with logic.

Would a proposition's possessing a fuzzy sense entail that it fails to satisfy Excluded Third? It is certainly tempting to think so. For then we should apparently have to acknowledge the existence of a third possibility alongside the possibilities of truth and falsity for that proposition — namely 'indeterminate' — which would be the fuzzy area between the cases where it would be determinately true and the cases where it would be determinately false. But in fact this would be a mistake. We cannot take indeterminate to be a third possibility alongside truth and falsity, since it would not really be mutually exclusive of either of them. For if a state of affairs falls within the fuzzy area between the clear truth and the clear falsity of a vague proposition, this does not mean that the proposition is not true, or that it is not false. It only means that we cannot say either that it is true or that it is not true, or either that it is false or that it is not false.

Consider the example of the statement 'The table is green.' What are we to say if the actual colour of the table is indeterminate between green and yellow? Would it be correct to say 'It is not true that the table is green'? Obviously not, any more than it would be correct to say 'It is true that the table is green.' Neither would it be correct to say 'It is not false that the table is green', unless this means that it is not clearly false. But there is nothing in the principle of Excluded Third to suggest that 'false' should be equated with 'clearly false', or 'true' with 'clearly true'. (In fact what we should say, of course, is that the table is greenish-yellow. This suggests a strategy for dealing with vagueness using a notion of degrees of truth, which will be discussed below.)

The fact of the matter is that the statement 'It is true that the table is green' has a sense no more and no less fuzzy than the statement 'The table is green' itself. And this is just what we might have expected had we realised that the notion of truth is governed by the Same Sense Principle, the sentence 'It is true that P' always having the very same sense as the sentence 'P' itself. (This follows from the criterion of sense-identity as cognitive content, together with the fact that it is surely impossible for anyone to enquire whether P without enquiring whether it is true that P, and vice versa; and so on for all propositional attitudes — believing, doubting, etc.)<sup>4</sup> For this principle implies that the predicate 'true' will always take on exactly the fuzziness of the proposition which it governs. So you could say that the reason why indeterminate cannot be a third truth-value — and so the reason why fuzziness fails to conflict with Excluded Third — is that the fuzzy borderline itself becomes absorbed into the vague area between this

use, and use successfully, every day. He would then be committed to showing the fuzziness of ordinary language to be merely apparent.

This divergence in response would reflect different perspectives on the nature of logic itself. Frege seems to have regarded the principles of logic as prescriptions, telling us how a language should be constructed and used if it is to be fit to serve in the systematic pursuit of truth. On this view, if ordinary language fails to live up to these prescriptions, then that only shows it is not entirely suitable for use in strict science. Wittgenstein, on the other hand, views logic as the structure — the 'inner scaffolding' (4.023) — of all language and thought, regarding it as necessarily governing all representation, no matter whether as part of a systematic enquiry or of a casual conversation. On this view, an illogical language would be one which was incapable of expressing thoughts at all (5.4731).

Wittgenstein's position appears to be the stronger (though we shall return to the matter in Chapter 11 below). For does not Excluded Third say, for example, 'No proposition can be neither true nor false'? In which case, if a sentence like 'The table is green' really does have a fuzzy truth-condition, and as a result conflicts with Excluded Third, then this could only show that it does not express a proposition. Yet how can this be, since that sentence may, after all, be determinately true? For how can a sentence express a truth unless it expresses a proposition? Frege might try to respond by restricting the scope of Excluded Third to the form 'No proposition suitable for use in strict science can be neither true nor false.' But this would be to let go of the unrestricted generality and subject-independence which are supposed to be the distinctive mark of a principle of logic.

There may perhaps be rather more subtle ways in which ordinary language could be shown to be incoherent. For example, it could conceivably turn out that there is no consistent description which can be given of our normative practice in the use of our language, rather as there would be no coherent description to be given of the norms governing a game whose rules contain a contradiction, even though the players themselves may manage to play the game quite successfully through failing to notice it.<sup>3</sup> But what surely stands firm is that if we believe, as both Wittgenstein and Frege did, that the principles of logic express objective constraints, then those principles must be supposed to govern all of our propositions; and whatever else may be the case, 'The table is green' does express a proposition. It would thus have been no mere thoughtlessness on Wittgenstein's part which set him off down the blind-alley of trying to show the fuzziness of ordinary language to be merely apparent, if we suppose that he had

particular application of the concepts of truth and falsity themselves. Thus 'indeterminate' does not name a third possibility because the vagueness in this use of the terms 'true' and 'false' itself covers that possibility.

If fuzziness does not conflict with Excluded Third, then is there any reason to think that it conflicts with the stronger principle of Bivalence? Here the appearance of conflict is, if anything, even greater. For it may be difficult to see how every proposition can be determinately either true or false, if there exist circumstances in which fuzzy-sensed propositions are neither clearly the one nor the other.

It is not open to us to reply that 'The table is green' might in fact be clearly true (or clearly false), although we mere mortals are incapable of establishing it. (Compare the way in which someone might say that 'A city will never be built on this spot' might really be determinately true, although we could never live long enough to know it.<sup>5</sup>) For we might easily be in the best imaginable position for judging the truth-value of 'The table is green' (that is, standing in front of the table in white light, etc.). Our inability to establish its truth-value results not from any obstacle being placed in our path – on the contrary, everything is, so to speak, laid out before us for our inspection – but rather from the kind of sense which we associate with it. So if we really were to insist that its sense is such as to determine a clear truth-value in cases where we cannot do so, then we should be forced to draw the conclusion that none of us in fact knows its sense, which would be absurd.

Nevertheless, it is a mistake to think that Bivalence either has to be, or should be, construed in such a way as to rule out the possibility of fuzziness. Suppose we distinguish between two different senses of 'determinate', in one of which it means 'clear' and in the other of which it means 'objective'. Then we could understand Bivalence to say that all propositions are objectively either true or false. In which case, so long as fuzziness does not conflict with Excluded Third, there would be no conflict with Bivalence either. We could insist that 'The table is green' is either objectively true or objectively false – insisting that its truth-value is in no way dependent upon us and our capacities – while allowing, as before, the fuzzy borderline to become absorbed into the application of the terms 'true' and 'false'. For when we say that 'The table is green' need not have a determinate truth-value, all we mean is that it need not be *clearly* true or *clearly* false. But this in no way compromises the thesis of objectivity.<sup>6</sup>

As we shall see in Chapter 11, Bivalence not only can but should be understood in this way. For what it contains, over and above what is involved in Excluded Third, is nothing other than a commitment to a

certain conception of the objectivity of truth (indeed, the very same conception as was involved in the final argument for logical objectivism presented in Chapter 4). Anyone espousing this principle must be thinking of the truth-value of a proposition as being entirely independent of anything which we may believe about the matter; independent, indeed, of whether or not we are capable – either in practice or in principle – of establishing it. They must then apparently picture the sense of the proposition as 'reaching out' to the world in a mind-independent way, so as to fix, in conjunction with the facts, a determinate (that is, objective, not necessarily clear) truth-value.

I conclude then, that there is no reason to think that the existence of fuzzy-sensed propositions raises any threat to the principles of logic. Frege and (perhaps) Wittgenstein were sent chasing a will-o'-the-wisp, the one in believing himself required by logic to undertake a reconstructive programme to eradicate vagueness, the other in believing (if he did) that logic required him to show it to be illusory.

### (C) The programme of analysis

The third, and perhaps the most important, reason why Wittgenstein might have felt himself compelled to deny the fuzziness of ordinary language is that there is no way of finding a place for fuzzy truth-conditions within the constraints imposed by his programme of analysis. As we shall see in Chapter 7, he felt himself obliged on other grounds to adopt such a programme, and to regard it, not as a kind of Fregean reconstruction, but as uncovering what is already implicit in ordinary discourse. Then if a fully analysed language would necessarily have to be fuzziness-free, he would have had no option but to treat the apparent fuzziness of ordinary statements as being somehow illusory.

The *TLP* doctrine is that all propositions may be analysed into truth-functions of elementary propositions, which are the most detailed possible descriptions of states of affairs (3.2–3.261, 4.2–4.2211, 5). Now, if we were correct in arguing above that 'indeterminate' cannot be regarded as the name of a third truth-value, then there can be no question of introducing the vagueness of ordinary propositions by means of a truth-function of elementary propositions which are not themselves vague. But then on the other hand, any proposition which is vague cannot be elementary. For suppose that a proposition P is true under just one circumstance s, is indeterminate under just one circumstance t, and is false on any other condition. Then consider the possible propositions Q (which is true on

condition  $s$ , false on any other) and  $R$  (which is true on condition  $t$ , false on any other). Clearly if any of  $P$ ,  $Q$  and  $R$  is elementary then it must be  $Q$  and  $R$  rather than  $P$ , since they are more detailed and specific. In short: any proposition which is vague could be subjected to further analysis, and so cannot be elementary.

Even if 'indeterminate' could be regarded as a third truth-value we would not be able to introduce fuzziness by means of a truth-function of sharply defined elementary propositions. For the borderlines between 'true', 'indeterminate' and 'false' would themselves be vague. Thus suppose we tried to capture the vagueness of 'The table is green' by means of an analysis having the following sort of form: the sentence is true if and only if the table has any of the shades  $u$  or  $v$  or  $w$ , and it is indeterminate if and only if the table has either of the shades  $x$  or  $y$ , and it is false otherwise. This would still leave us with a sharp boundary between the cases in which the proposition is true and those in which it is indeterminate, since the propositions ascribing particular shades are, by hypothesis, themselves sharply defined. So the analysis must fail to capture the sort of fuzziness which the proposition actually has, since for us there is no sharp line between the circumstances in which it is correct to say 'It is clearly true' and those in which we should say 'It is no longer clearly true.' Moreover, the lack of a sharp boundary here must be regarded as an essential feature of the proposition, for reasons similar to those advanced in Chapter 5: namely that we want the conditions for the use of colour predicates to be memorable.

Perhaps the most promising strategy for introducing fuzziness into an analysis employing only sharply defined elementary propositions would be to use a function which maps the elementary propositions on to *degrees* of truth. (But note that this would mean Wittgenstein having to give up his idea that analysis may be conducted using ordinary truth-functions.) We could then represent the truth-condition of a sentence like 'The table is green' by means of a *graph* (see Figure 1), in such a way that there will be a range of shades where we say 'Certainly green', a range where we say 'Green with a touch of yellow', and so on. But one immediate difficulty with this idea is that the lines in the graph would need to have thickness, and indeed blurred edges. For there is no precise shade at which we begin to say 'Green with a touch of yellow', or at which we say 'just as much yellow as green'. So we would need, not just a function mapping shades of colour on to degrees of truth, but a *vaguely defined* function. In which case we would still be left with the same problem of how to introduce vagueness by means of notions which are not themselves vague.

Another difficulty for the proposal is as follows. Either the shades

described by the elementary propositions can be discriminated from their nearest neighbours or they cannot. Yet either way we shall run into trouble with the familiar fact of the non-transitivity of discriminability. Thus consider three distinct objects  $A$ ,  $B$  and  $C$ , such that object  $A$  is indiscriminable in shade from  $B$ , and  $B$  indiscriminable from  $C$ , and yet  $A$  can be discriminated from  $C$ . If atoms of colour are to be always discriminable, then  $A$  and  $B$  (being indiscriminable from one another) will possess the very same shade; and so the propositions 'A is green' and 'B is green' will have to be assigned the very same degree of truth, as will the propositions 'B is green' and 'C is green.' But then since  $A$  and  $C$  possess distinct shades, it will be possible for 'A is green' and 'C is green' to be assigned distinct degrees of truth, and we will have a contradiction. If, on the other hand, distinct atoms can be indiscriminable from one another, then  $A$  and  $B$  may possess distinct shades, and the propositions 'A is green' and 'B is green' may be assigned distinct degrees of truth, despite the fact that their colours are indistinguishable. But this would be absurd. If a sense were fixed for 'green' such that its correct application may vary in cases where we are incapable of seeing a difference, then that would only show that we do not know any such sense.

It might be replied that  $A$  and  $B$  can be indistinguishable from one another while yet coherently giving distinct degrees of truth to substitution-instances of 'x is green', by virtue of the fact that  $A$  is, whereas  $B$  is not, distinguishable from  $C$ . We merely have to allow that degrees of truth may depend, not just upon the immediate look of a shade of colour, but upon its relationship with other shades. This is indeed a formally adequate response to the second horn of our dilemma. But it means that the analysis must here lose touch with our ordinary concept of colour. For suppose that I am faced with two objects — a lemon and a lime — which are

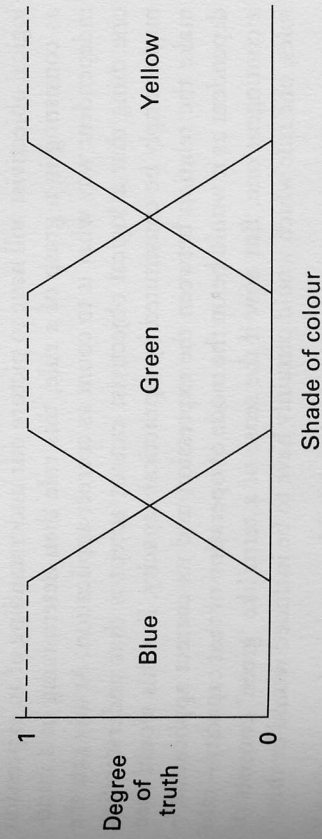


Figure 1

an indistinguishable shade of yellowish-green. If you now show me a grapefruit which is indistinguishable from the lime but slightly more green than the lemon, would it be correct for me to say that the lime had been more green than the lemon after all? Surely not. For if you had given me the order 'Bring me something which is no more and no less green than this lime', then I would not have failed you had I come back with the lemon. Similarly if you had previously asserted 'The lemon is exactly as green as the lime', you would not have said something false. Once again the point is that for the purposes for which we require colour-concepts, we want exact sameness of colour to be something which can be established by a single visual comparison.<sup>7</sup>

I conclude that there can be no question of the fuzziness of ordinary propositions being retained under analysis, at least if we attempt to present the truth-conditions of ordinary-language sentences by means of some sort of truth-function (or degree-of-truth-function) on sentences whose truth-conditions are as specific as possible. So here we have a deep incoherence in the philosophy of *TLP*, in that the programme of analysis which Wittgenstein adopts commits him to removing the fuzziness of ordinary-language propositions, and yet he thinks of it as genuinely a programme of analysis and not of reconstruction. The only way out for him would be to declare that the fuzziness of ordinary language is illusory. Yet as we saw in the last chapter, this itself is unacceptable.

#### (D) Logical objectivism again

Arguably the real source of Wittgenstein's difficulties concerning the fuzziness of ordinary statements is not his programme of analysis as such, but rather his logical objectivism (and not just because it is this which lies behind the programme of analysis, as we shall see in Chapter 7). For a logical objectivist will have to picture our understanding of an expression as consisting in a grasp of a rule, this rule then determining in a mind-independent way what is to count as correct application. At any rate the one thing that a logical objectivist cannot accept is that understanding might simply be constituted by a practical capacity. For this would then make the relation between the expression and its correct application – dependent as it would be on the mode of operation of that capacity – into a contingent one. But now if the sense of a term like 'green' consists of rules, one rule which would certainly have to be included would be this:

$\forall x \forall y$  (if  $x$  is green, and  $y$  is indistinguishable in colour from  $x$ , then  $y$  must also be green).

For as we noted above, a rule which allowed distinct judgements about indistinguishable shades is not one that we use, or want to use. But then successive applications of this rule across a long series of shades, each member of which is indistinguishable from its neighbours, will give the absurd conclusion that a red post-box is also green.

The above is a version of that form of paradox known as 'Sorites', parallel versions of which can be developed in connection with all fuzzy concepts. It has been convincingly argued by Wright in his (1975) that the only adequate solution to these paradoxes is to give up the idea that all uses of terms are governed by rules (hence giving up logical objectivism also). Rather we should think of our understanding of words like 'red' as being constituted by a simple recognitional capacity, thus allowing for the fact that on being presented in sequence with such a series of shades of colour, there will come a point (perhaps different on different occasions) where a speaker will dig their heels in and refuse to go any further. If this is correct, then it turns out that Wittgenstein's logical objectivism alone leads directly to an absurdity: either we say that all colours are in reality the same colour (everything is red and blue and green, etc.), or we insist that our colour-terms are really (and despite appearances to the contrary) sharply defined.

#### Summary

Although some of Wittgenstein's possible motives for insisting on the requirement of sharpness of *Sinn* may have been weak, some at least are very deeply grounded in his philosophy as a whole. Both his programme of analysis and his logical objectivism commit him to denying that there are actually any fuzzy senses.