

Criteria of Abstractness

The Ontologies of Husserl, Frege and Strawson against the Background of Classical Metaphysics

In analytic philosophy someone tends to be called a Platonist if he assumes that there are abstract objects. It has been asked what conditions must be fulfilled for someone to be correctly called a Platonist, or for a theory to be Platonistic in this sense. In the ontological discussion devoted to this question, a discussion which has sometimes resembled shadow-boxing, the question '*what is an abstract object?*' has been almost completely neglected. It is this question which will occupy us in the present essay.

We begin with a rather unassuming answer. That abstract entities at least include those entities designated by the italicised portions of the following sentences:

(a) Properties (Attributes)

Bravery is a virtue.

Being courageous is something different from *being foolhardy*.

(b) Relations

How does *friendship* differ from *love*?

(c) Propositions

Given that *the Earth* is smaller than *the Sun*, it follows that *the Sun* is bigger than *the Earth*.

Did Pythagoras prove *Pythagoras' Theorem*?

Xanthippe doubted *the courage of Socrates*.

What you just asserted is not true.

(d) Genera and Species

The whale is a species of *the genus mammal*.

(e) Types

The word 'is' occurs more than once on this page.

The St. Matthew Passion is performed every year in many places.

(f) Numbers

4 is an even number.

(g) Classes

The class of centaurs is empty.

We wish to call expressions like those italicized in (a) to (g) – so long as they are used in the way there exemplified – *abstract singular terms*. That the caveat is needed is easily shown by an example like ‘The whale has just rammed the ship’ where, unlike in (d), the expression ‘the whale’ is not used to designate an abstract entity. *Abstract singular terms* are distinguished from other singular terms in that they stand for abstract objects.¹ Thus we do not know what an abstract singular term is until we know what an abstract object is.

We have presented a list and said: These and their like are called abstract entities. This answer naturally does not determine what is peculiar to all abstract entities, does not determine what they have in common. Plato’s Socrates would therefore hardly have been pleased by it. We wish in this essay to investigate some more exacting answers: those of Plato, Husserl, Frege and Strawson.

§ 1 Non-perceptibility (First Platonic Demarcation-Proposal)

Two answers were put into the mouth of the ‘Friends of Forms’ by Plato in his characterisation of their position in the ‘Battle of Gods and Giants’²:

Str: You make a distinction between becoming and being, do you not?

Th: Yes, we do.

Str: And you say that with the body, by means of perception, we are in touch with [χοινωνεῖν] becoming and with the soul, by means of thought, we are in touch with being. And being, you say, is always unchanged and the same, whereas becoming is different at different times.

Th: Yes, that is what we say.

Can we not simply follow the ‘Friends of Forms’ and ascribe non-perceptibility³ as well as unchangingness to all and only the abstract entities? We shall divide this question into sub-questions and begin with

the discussion of the proposal to define abstractness by means of non-perceptibility. (This Platonic demarcation-proposal was, incidentally, accepted by Husserl in the *Logical Investigations*: the disjunction 'ideal/real' is there put forward as exhaustive, it being asserted of real objects that they are defined directly as possible objects of a simple [i.e. sensual] perception.⁴) If this criterion is to be acceptable then non-perceptibility must be something which all abstract entities have in common, but it must also be something peculiar to such entities alone. Thus we might once more sub-divide our problem and ask first of all:

Does it hold for all abstract entities that they are not perceptible?

Is non-perceptibility a *necessary* condition of abstractness?

Some abstract entities do indeed seem to be perceptible. When someone says he has heard the word 'sympathiser' a great deal recently, it is not that he wants to say of a single utterance of the word that he has often heard it. He could of course have this in mind if, for example, he were continually to replay the tape-recording of a particular speech and if the word 'sympathiser' were to be used precisely once in the speech in question. If we exclude such cases from consideration, however, then we would appear to have to interpret such a statement in such a way that in it a word-type, that is, an abstract entity, is described as perceptible. This would then leave us with a great number of counter-examples which would prohibit an affirmative answer to the question above.

Of course there is an objection that suggests itself immediately at this point:

(a) NN. has often heard the word/work *a*
means, after all, nothing more than

(a') NN. has heard many utterances/performances of *a*.

Thus the property of perceptibility is really only ascribed to concrete objects: to occurrences (tokens) of a type. But in this form the objection is still not convincing. If it is correct that (a) has the same sense as (a'), then this of course also holds the other way round: (a') means nothing other than (a). The paraphraseability of a sentence by another sentence does not prove that the one, rather than the other, is a mere *façon de parler*. If, then, we want to show that the advocate of the thesis of the non-perceptibility of abstract entities is not refuted by examples like (a), it is not enough to refer to their paraphraseability by (a').

Consideration of a number of analogous cases will help us to move a little further forward here. What could be objected to someone who, by appeal to sentences like

(b) The lion has 4 legs,
thinks he can show that at least one abstract entity (a species) has 4 legs? How is the hypothesis to be refuted that, according to 1 Corinthians, 13, 4–7:

- (c) Love is patient and kind ... it trusts in everything, it endures everything,

at least one abstract entity (a virtue) has moral properties? Here too it would not be enough to point out that (b) and (c) amount to

- (b') All (well-formed) lions are four-legged,
(c') Whoever (really) loves is trusting and patient.

We can however ask our fictitious opponent what the expressions 'patient' and 'four-legged' in (b) and (c) mean. It is certainly not the case that an animal species is just another simply four-legged thing alongside Leo and Lenny and that love is simply something that is patient alongside Jesus of Nazareth and Francis of Assisi; for otherwise it would have to be possible to amputate a leg of a species or cause a virtue to explode in rage. So the terms 'four-legged' and 'patient' in (b) and (c) have to have a different sense than the sense they have in 'Leo is four-legged' and 'St. Francis is patient'. But what then, is the sense that they have when they are used not as concrete but as abstract general terms? The expressions 'four-legged' and 'patient' are not simply equivocal like 'tenor' and 'taste'; for the sense they have in (b) and (c) is systematically related to the sense they have in sentences about Leo and St. Francis. Our opponent could therefore argue that these terms are used neither unequivocally nor equivocally but analogically,⁵ and he could meet our request for an explanation of their meaning as follows:

'has four legs' in (b) means nothing other than 'is a species whose well-formed exemplars have four legs'; 'is patient' in (c) means nothing other than 'is a virtue such that the people who possess it are patient'. If he answers in this vein he removes the sting from his claim that there are patient or four-legged abstract entities; and indeed if we had known that this was what he meant we would not have considered him an opponent.

The same can be said *mutatis mutandis* for (a). Examples like this do not refute the assumption of the non-perceptibility of all abstract entities. The type α is not one noise among others; it would otherwise have to be possible to measure e.g. its phonetic intensity. The term 'is perceived' must therefore have a different sense from the sense that it

has in sentences like 'the explosion was perceived also in the surrounding districts'. Its mode of use is analogical: it must mean in such sentences as much as: 'is a word/work of which at least one utterance/performance is perceived'. Understood in this way (a) turns out to be no more than an apparent counter-example. As long as we meet with no objection more cogent than this against the thesis that non-perceptibility is a necessary condition for abstractness then we can confidently hold on to it.

For this reason, then, we proceed to the second sub-question associated with the proposed criterion:

Does it hold for all non-perceptible entities that they are abstract?

Is non-perceptibility a *sufficient* condition of abstractness?

Here everything now depends upon how the determination

(P) X is not perceptible

is to be understood. Let us assume for the moment that what is meant is nothing other than:

(P 1) X can be perceived by no human being.

The question now immediately arises whether those things whose presence we discover with the aid of, say, a microscope or some other instrument, can be designated as perceptible? If not, then (P 1) quite certainly does not offer a sufficient condition for abstractness, for we do not want to classify viruses as abstract entities. If however instruments are admissible, how powerful are they allowed to be? It seems that any drawing of boundaries here must be arbitrary. We can however avoid the problem of arbitrariness if we admit all physically possible instruments and interpret (P) as signifying

(P 2) X can be perceived by no human being, irrespective of the instrument he may have at his disposal.

But (P 2) does not give us a sufficient condition of abstractness either. Why should there not be concrete objects which cannot be perceived by any *human* being, whatever instrument he might make use of, — perhaps because they are too small or too distant or both? Here one might object that it is at least conceivable that such entities are perceptible by some sensory being or other, and that they are, for this reason, not abstract. This objection understands (P) in the following way: (P 3) X cannot be perceived by any conceivable sensory being, irrespective of the instruments he might have at his disposal.

If an entity fulfills this condition, then this can only mean that it is incapable of occasioning any changes at all. For otherwise a sensual being

would be conceivable of which it were true that the entity in question were responsible for the occurrence of certain sensory experiences on the part of this being (as my hand, say, is responsible for the fact that it appears to me, when I observe it in daylight, as though I were seeing a hand). (P 3) is in fact a condition in which the concept of perception no longer essentially occurs, for it can be re-expressed as:

(C) *X* is incapable of occasioning changes in other objects.

If non-perceptibility is to be more than a mere pseudonym for the criterion (C), then it has to be understood in the sense of either (P 1) or (P 2). It follows that non-perceptibility is not a sufficient condition for abstractness and thus *a fortiori* is not a defining characteristic of the concept 'abstract'.

In (C) we have already reached what is fundamentally a proposal for delineation put forward by Frege. Before discussing Frege's proposal however, we wish to consider the second basic concept of the 'Friends of Forms', the concept of unchangeability. It has in specific circumstances the same extension as (C), namely when precisely those entities which are capable of occasioning changes in other entities are themselves changeable.

§ 2 Unchangeability (Second Platonic Demarcation-Proposal)

Can we align ourselves with the 'Friends of Forms' at least to this extent, that we define abstractness by means of unchangeability? We begin once more with a subsidiary question:

Does it hold of all abstract entities that they are unchangeable?

Is unchangeableness a *necessary* condition for abstractness?

In what follows we want to use the concept of 'change' in the wide sense of the Aristotelian and Thomistic concept 'μεταβολή' ('[*trans-mutatio*]', i.e. it is to cover processes of the following kinds:

- 'substantial' changes (coming to be and passing away, γένεσις καὶ φθορά, *generatio et corruptio*),
- quantitative changes (αύξησις καὶ φθίσις, *augmentum et diminutio*),
- qualitative changes (αλλοίωσις, *alteratio*)
- movements (φορά, *loci mutatio*).

It now begins to seem as if the above question is to be answered in the negative: biologists, for example, are accustomed to speaking of the origin of species, of their development, of their division, of their regres-

sive development and of their becoming extinct. Does this imply that a negative answer has to be given to the question above? An example will again help us to focus our attention:

(d) The species A will soon become extinct.

Here too the temptation has to be resisted to argue that since (d) means the same as:

(d) The last specimen of the species A will soon die

the property of changeableness is really only to be ascribed to concrete objects (the exemplars of a species). We have shown above that such arguments are inadequate. For one can after all turn them against their proponents and say that with (d') one predicts an early end for the species.

Nor, however, can we invalidate (d) as a counter-example by pointing to the difference in the use of 'become extinct' (or 'die out') in (d) and in sentences about individual animals. For this general term cannot be used meaningfully of individual animals. We – and in particular the biologists amongst us – have at our disposal a *system of specific predicates* with which to species and other biological relationship-groups we ascribe a history, predicates which cannot meaningfully be applied to *members* of the species. For this reason (d) should count as a genuine counter-example and the question above should receive a negative answer: some abstract objects are not unchangeable. If, however, unchangeableness is not a necessary condition of abstractness then the latter can of course not be defined by means of unchangeableness.

That we take seriously talk about the change of a natural species, does not mean that we want to deny that such change is logically dependent on change in at least one member of the species. It is logically impossible that the species A should become extinct without a change occurring in one or more of its members. This logical dependence is one-sided; for one does not contradict oneself when one says: 'This member of the species A has just quenched its thirst; it belongs to a species which has not changed at all in the last 100 years.'

Husserl did not adhere to his initial answer to the above question. In the *Logical Investigations* he still speaks without any qualification of "the atemporal 'being' of the ideal"⁶, implicitly rejecting the view that there could be 'ideal entities' which change. One of his most important students, Roman Ingarden, then pointed out that a literary work such as e.g. Goethe's *Römische Elegien*, in contrast to this or that copy of the work, are neither 'real' nor 'ideal' entities:

If the literary work were to be an ideal object ... it would be inconceivable for it to come into being at a given time ... as is actually the case. In this respect the literary work differs radically from such ideal objectivities as, for example ... the number five or ... the essence 'redness'.⁷

In *Experience and Judgment* Husserl then confirms⁸

the distinction between *free idealities* (such as logico-mathematical formations and pure essential structures of every kind) and *bound idealities*, which in the sense of their being, carry reality with them and hence belong to the real world.

We will return to this distinction and the peculiar terminological twist given to it by Husserl in § 5 below.

In making such a distinction we lend support to the idea that there exist abstract entities that are unchangeable. But is this justified? Is the concept of 'free ideality' not in fact empty? In our talk about properties ('essences') and numbers ('mathematical formations') we do after all use sentences such as:

- (e) The colour of these gloves will soon turn dark grey.
- (f) As of this morning the number of Philip's children is no longer two but three.

Because of the symmetry of the relation of paraphraseability (pointed out many times already), we cannot counter these apparent examples of changes in qualities and numbers by reference to their paraphraseability by:

- (e') These gloves will soon be dark grey.
- (f') As of this morning Philip has not two but three children.

Consider first the example (e). Let us assume that Joanna has white hair and wears white gloves. Then we may assert that Joanna's hair colour is identical with the colour of her gloves. Does it follow from this and (e) that

Joanna's hair colour will soon turn dark grey?

Since such an astonishing prognosis certainly does not follow from these premisses, this inference does not have the same form as, for example:

Lenin will soon return to Russia,

Lenin is identical to Ulianov,

So Ulianov will soon return to Russia,

which is of course a valid inference. Thus (e) does not attribute a change in the same entity of which it is said in the second premiss that it

is identical with Joanna's hair colour. We can make our statement about this entity more precise in the following way:

Joanna's hair colour at T is identical with the colour of her gloves at T.

The entity identified in this way – a property – cannot possibly be the entity of which it is said in (e) that it will change. But what, then, is it? The answer is contained in (e'). We are therefore allowed to affirm that sentences like (e) do not falsify the assumption of the unchangeability of properties.⁹

Example (f) will cause us still more difficulty. From

The number of Alexander's girl friends is the same as the number of Philip's children

and (f) it does not of course follow that

As of this morning the number of Alexander's girl friends is no longer two but three.

Frege has shown that a statement such as (f) just as little contains a report about the *growth* of a number as the statement 'Ten years ago the King of Sweden was an old man; now the King of Sweden is a young man,' forces us to assume that an old man has become a young man. In the same way in which we speak here about the past and the present monarch as of two different people, so in (f) we speak about two different numbers:

(The number of Philip's children at T) is two,

(The number of Philip's children at T') is three.

On this interpretation the temporal indication is a component of the singular term with which the number in question is specified.¹⁰ The number so specified cannot possibly be the entity which in (f) is said to have changed. But what, then, is the entity of which this is said in (f)? The corresponding question for (e) was easily answered, for in (e) that entity is named in the subject-place which must change qualitatively if (e) is to be counted as correct. In the case at present under discussion however the paraphrase (f') does not help us at all; for no contradiction is involved in assuming that Philip did not change this morning with respect to *any* of the modes of change distinguished (following Aristotle and Thomas) above, yet (f) is true.

If one holds this assumption to be consistent then one must clearly reject the following explication of the concept of change, that

(*) If one makes a true assertion with the sentence '*Fm* at T' and a false assertion with '*Fm* at T'', then *m* has changed.

For, if we substitute ‘has two children’ for ‘*F*’ and ‘Philip’ for ‘*m*’, we get a true proposition when we substitute yesterday’s date for ‘*T*’ and a false proposition when we substitute today’s date for ‘*T*’; all the same we do not want to say that Philip has changed.

That this explanation (*) is not acceptable¹¹ can be seen from an example discussed by Plato and Aristotle. Let us assume that Socrates is as tall as Theaetetus at *T*. Now if Theaetetus grows between *T* and *T'*, whoever states at *T'* that Socrates is as tall as Theaetetus will make a false assertion. Does it follow that Socrates has changed? Hardly.¹² What is first said and then denied of Socrates is a *relational* determination. From a change in such a determination it follows – we might say – only that one of the relata of the relation must have changed. Which one of the two has changed is not something that can be determined from the change in the relation alone. This suggests the following (partial) explication of change:

- (CH) If one makes a true assertion with the sentence ‘*Fm* at *T*’ and a false assertion with the sentence ‘*Fm* at *T'* and if with *F* one ascribes to object *m* a particular relation to one or several other objects, then at least one object has changed.

Before drawing any conclusions from these remarks in regard to our example (f), we should like to present some further observations on the contrast between our explication of the concept of change and the formula (*). Is this formula valid when restricted to non-relational substituends for ‘*F*’? This question, too, is to be answered in the negative, if such ‘purely temporal’ terms as ‘past’, ‘present’ and ‘future’ (McTaggart’s A Series) are non-relational predicates. We apply these determinations to events. Events can change: if we say that a controversy is ever more passionate, then we ascribe to this event a (qualitative) change. Is this the case also when we say of an event that it was first of all present and then past? The condition specified in (*) is here fulfilled: for if one replaces ‘*T*’ in

m is present at *T*

with ‘*T'*’, then (for a sufficiently large interval between the two instants) one obtains a false from a true assertion. In cases of this kind ‘*Fm* at *T*’ is true and ‘*Fm* at *T'*’, false independently of what happens between *T* and *T'*. And for this reason one is scarcely inclined to speak of a change in *m*.

Are purely temporal terms one-place predicates? The thesis has been propounded that such terms express temporal relations to a psychical or

linguistic event (the occurrence of a sense-datum, according to Russell, or the utterance of a sentence according to Reichenbach and others). The implication of such views is that the sentence taken as our example would say of m that it takes place *simultaneously with* some specific psychical or linguistic process.¹³ One who accepts this thesis may no longer, for example, assert that everything that is past was at some time or other present; for events that have come about before the development of life are certainly past, but they were never contemporaneous with the appearance of a sense-datum or with the utterance of a sentence. This is not the place to investigate whether consequences of this sort refute the thesis of the (covert) relational character of purely temporal determinations.¹⁴ What is certain (and this is all that matters here) is that with a predicate of the form 'is contemporaneous with (earlier than, later than) n ' one does not correctly ascribe to an event m at T a determination that can correctly be denied to the same event at T' (in one and the same reference-system). And consequently our formula (CH) is not applicable at all.

It is now important to note in regard to this formula that the entity that, under the conditions given in the antecedent of (CH), must have changed, need not be amongst those entities that are explicitly mentioned in the sentence in question. If, for example, it is true that Phaidon is at T sitting immediately next to Socrates, and if it is false that he is sitting immediately next to Socrates at T' , then it does not follow from this that either of the two named persons has changed: for it could of course be the case that Simmias has interposed himself between them. And correspondingly for all determinations with which one refers implicitly to some third relatum (cf. also say 'A is more popular than B'): one of the relata of the relation must have changed if such a determination alters; but it need not be one of those elements of the relation mentioned *expressis verbis*.

Our discussion of the concept 'change' makes it understandable why the Aristotelian-Thomistic classification does not make room amongst the modes of change for any *mutatio* in the category of relatives: if at one time but not at another a relational determination pertains to an object, then this object need not *itself* have changed.¹⁵

Let us return now to the example that provoked our reflections of the sense of the term 'change'. What, on the basis of (CH), can we counter to anyone who takes the following position with respect to (f)?:

If, since this morning, the general term 'is identical with the number of Philip's children' no longer applies to the number two, then the latter must have changed – even if this change is not a quantitative one.

This claim cannot, be it noted, be invalidated by putting a temporal specification into the general term:

'is the number of Philip's children at T'

and saying that this term does indeed always apply to the number two. For this would allow us to transform *every* predicate which holds of a particular object into a term which would always apply to it: Philip is not always ill, he changes in this respect; but by suitable substitution for 'T' we can make out of 'is ill at T' a general term which is at all times applicable to Philip.¹⁶ Now however we can point to the fact that the determination whose change is asserted by (f) is a relational one: being the number of something. And along the lines of our explication of the concept of change we can again put the question: what is it that has changed if as of this morning it is no longer true of two that it is identical with the number of Philip's children (or if, as of this morning, it is no longer true of Philip that he has two children)?

It would be possible to use a sign with the inscription 'Philip's children' as a nameplate; the bearer of this nameplate would not be any of Philip's children but a discontinuous concrete object whose parts might from time to time gather behind the sign but are normally dispersed. (The fact that the parts of the bearer of the name 'The Milky Way' are separated by huge distances does not affect the expression's status as a name.) The object bearing that name, then, is not to be confused with the abstract object for which the singular term ' $\langle x : x \text{ is a child of Philip's} \rangle$ ' stands, i.e. with the class of Philip's children.¹⁷ The *elements* of this class are persons only; *parts* of the concrete object, however, are not only persons but arms and legs and so on.¹⁸

We can now say that the discontinuous object called 'Philip's children' increased in size this morning, that it used to consist of two children and now consists of three children. What has changed here is not a number (and nor, either, is it Philip).

Thus the concept of 'free ideality'¹⁹ is not empty: abstract entities of certain categories are unchangeable, for example properties and numbers.

At the beginning of this section we convinced ourselves that unchangeability was not a necessary condition of abstractness; 'bound

'idealities' - natural kinds (species), for example are changeable. The question which still remains:

Does it hold of all unchangeable entities that they are abstract? Is unchangeableness a *sufficient* condition for abstractness?

can now be given an affirmative answer. Thanks to the foregoing discussion of the concept of change we can make this thesis more precise. An entity m is always an abstract entity when it satisfies for every substitution of a general term for ' F ', the following condition:

If an assertion of the form ' Fm at T ' is true and an assertion of the form ' Fm at T' false, then ' F ' ascribes to m a relation to another object which changes between T and T' .

Let us summarize the result of the discussion so far. We have not succeeded in specifying what holds of all and only abstract entities. We therefore have at our disposal no *definition* of the concept 'abstract' explained at the beginning of our essay by means of a list. We have however obtained a standpoint from which we can group the various categories of abstract entities there presented: the distinction between 'free' and 'bound idealities', a distinction which we shall seek to state more precisely at the end of the present essay.

§ 3 Non-Reality (Frege's Criterion and the Category of Individual Moments)

In Frege's ontology the totality of all objects²⁰ is subdivided into three 'realms', of which the third embraces at least some categories of what we have called abstract entities. The three realms are:²¹

- (I) what is subjective and real,
- (II) what is objective and real,
- (III) what is objective but not real.

The term 'objective' in this table (which may have been inspired by Lotze's *Metaphysics*)²² is to mean as much as 'capable of being the common property of several thinkers'.²³ Frege's definition of realm (I) and with it his conception of the opposition 'subjective/objective' is something which, in the present context, we can afford to neglect. It is based on the assumption going back to Descartes and Locke that states of consciousness are epistemically private: only I can *know* that the pre-

sent state of my consciousness is of such and such a kind. (Wittgenstein has shown in the *Philosophical Investigations* how questionable this assumption is.)²⁴

Let us concentrate instead on Frege's conception of the opposition 'real/unreal'. Frege explains the term 'real' (*wirklich*) in the introduction to the *Grundgesetze* as follows:²⁵

Def. 1. "fähig, unmittelbar oder mittelbar auf die Sinne zu wirken" (capable of directly or indirectly acting upon [bringing about effects in] the senses).

This explanation echoes Kant's *Critique of Pure Reason*²⁶:

"...Whatever is connected with perception in accordance with empirical laws is actual (*wirklich*), even though it is not immediately perceived";

"everything is real (*wirklich*) which stands in connection with a perception in accordance with the laws of empirical advance".²⁷

The field of what we can 'immediately' perceive is defined by Kant – one looks in vain for an explanation of the notion of immediate perception in Frege – in terms of the 'constitution of our sense organs'. If our senses were 'finer' then this realm would have a larger extension.²⁸

A further explication of 'real' is to be found in Frege's article 'Le Nombre Entier':

Def. 2. "kann eine Wirkung hervorrufen und erleiden" (can bring about and undergo an effect) (Frege, 1895, p. 212).

If we take this as our basis then it will come about that realm (I) will contain more entities than it would on the basis of Def. 1. For why should there not be something which can bring about and undergo an effect but have neither a mediate nor an immediate effect on our sense organs?

We shall, in any case, remain with Def. 2.²⁹ What is it that belongs, in Frege's eyes, to realm (III), understood according to this definition? Numbers, of course, which are over and over again expressly characterised as elements of this realm.³⁰ Propositions, too, (which in Frege are called 'thoughts') are consigned to realm (III).³¹ But Frege lists as exemplary elements of (III) also objects which, at first sight at least, do not seem to fall under the concept 'abstract' in the sense of our initial list. In § 26 of the *Foundations of Arithmetic* Frege writes:³²

I distinguish what I call objective from what is handleable or spatial or actual. The axis of the earth is objective, so is the centre of mass of the solar system,

but I should not call them actual in the way the earth itself is so. We often speak of the equator as an *imaginary* (*gedachte*) line; but it would be wrong to call it a *fabricated* or *invented* (*erdachte*) line; it is not a creature of thought, the product of a psychological process, but is only recognized or apprehended by thought. If to be recognized were to be created, then we should be able to say nothing positive about the equator for any period earlier than the date of its alleged creation.

We should bear in mind first of all that it makes sense to say of the objects here put forward as examples that they are subject to change. The axis of the Earth moves relative to the Sun, for the planet of which this is the axis is after all not always at the same distance from the centre of the Sun. Since the latter, in which the centre of the solar system lies, is moving towards the constellation Hercules, this point too changes its position. And even if thinking about the equator is not an excitation or generation of this line it is still true that before the origin of our planet there was no equator that could be 'grasped by thinking'; to this extent it too came into being.

Now the fact that we ascribe changes to these entities in the ways specified is still not an argument against their being classified as abstract. For it will be remembered that we did not accept unchangeability as a necessary condition of abstractness, but preferred rather to take e.g. talk about changes in natural species, at its face value. But let us look more closely at the cases in question here. The changes described are in each case *logically dependent* on the change of *one particular object*; in the terms of Aristotelian-Thomistic metaphysics, we have to do with changes '*per accidens*' (χατὰ συμβεβηκός). In regard to the change in position of e.g. a centre of a mass one could say with Aristotle:³³ "something that is without parts can move at most *per accidens*, as when, for example, the body moves ... to which it belongs ... As the man who sits in a ship it cannot however move *per se* (χαθ' αὐτό)". And the origin of the equator could also have been characterised by Aristotle as a '*generatio per accidens*'.³⁴ It is a peculiarity of the class of entities to which Frege's examples belong that the changes described are in each case logically dependent on the change '*per se*' of a particular object: as a first approximation one can say that their *identity* stands and falls with the identity of a specific non-abstract object. Frege did not draw attention to this trait of his examples, though it is of great interest for the working out of an ontology within the framework of linguistic analysis.

We now wish to arrange Frege's examples in three concentric circles: only with the innermost of these will we reach that peculiarity of them with which Frege himself is concerned. The region bounded by the outermost circle we have just described (roughly) by means of the thesis of dependence of identity: we might call it the region of *individual moments*. With the aid of this expression (borrowed from Husserl³⁵) we can formulate our thesis thus: that Frege's examples

the axis of the Earth

the centre of mass of the Solar System

the equator of the Earth

all fall under the category of individual moments.

We can begin the discussion and justification of this thesis with a characterisation of the just-mentioned singular terms: each is the result of the composition of a functor 'the Φ of ()' – i.e. of an unsaturated expression that becomes a singular term through saturation by a singular term – with a non-abstract singular term. (It will become clear in the course of this section why we have been careful to use this latter expression rather than merely 'singular term' or 'concrete singular term'.)

The singular terms that interest us here share the property of being composed of a functor and a designation of a non-abstract object with:

(A) many descriptions that clearly serve to refer to concrete objects, e.g. 'the highest mountain on Earth', 'the mother of Abel'.

And they share this semantic property also with

(B) many descriptions which unquestionably stand for abstract objects in the sense of our original list,

e.g. for

- *properties*, such as 'the magnitude of the Earth', 'the direction of the Champs-Elysées', 'the colour of this dustjacket',
- *propositions*, such as 'that which Philip has proved',
- *species and genera*, such as 'the breed of dog to which Fido belongs',
- *and types*, such as 'Otto's' favourite poem'.

When is it, now, that we use a description of the form 'the Φ of (non-abstract object)' to make reference to an individual moment? Precisely then, according to our demarcation proposal, when the following condition is fulfilled:

- (M) If the Φ of some non-abstract object x is identical with the Φ of some non-abstract object y , then either
- (1) x is identical with y ,
 - or (2) x circumcludes (a part of) y ,

- or (3) y circumcludes (a part of) x ,
- or (4) x is continuously adjoined to y .

Ignoring, for the moment, the conditions (2), (3) and (4), which certainly stand in need of comment, it is clear how the limitation of the range of values of the variables ' x ' and ' y ' is motivated. From the fact that the predecessor of $(7 + 2)$ is identical with the predecessor of 9 it follows that $(7 + 2)$ is identical with 9. But we do not want to say that the predecessor of $(7 + 2)$ or, in other words, that the *number* 8, is an individual moment.

It is now easily seen that the entities designated by the terms in groups (A) and (B) do not fall under the concept of individual moment explicated by means of (M): Abel's mother is identical with the mother of Cain, but it is clear that none of the consequences presented under (M) follow from this. And the magnitude (direction, colour) of m can be identical with that of n ; that which has been proved by m can be identical with that which has been proved by n ; the breed of dog to which m belongs can be the same as that to which n belongs; and finally the favourite poem of m can be the same as that of n , — even though m and n fulfil none of the conditions presented in the consequent of (M).³⁶

Thus the functional descriptions given under (A) and (B) do not refer to individual moments. But it is precisely to entities of this sort that we do in fact refer by means of the three examples of descriptions given by Frege.

Let us make clear to ourselves why we could not have been satisfied in (M) merely with condition (1). We want to conceive the centre of gravity of a solid body categorially as an individual moment. Now the middle point of a body m can be identical with that of a body n even though m and n are different, provided m is a constituent within n or conversely. Reason enough to take account, via conditions (2) and (3), of the possibility of circumclusion ($\pi\epsilon\varrho\lambda\chi\epsilon\iota\nu$).³⁷ Further we want to conceive the equator categorially as an individual moment. One can refer to the equator by means of the functional descriptions 'the boundary of the Northern hemisphere' and 'the boundary of the Southern hemisphere': the boundary of the Northern hemisphere is therefore identical with that of the Southern, and yet we have to deal here with two hemispheres. Which is why we have included in clause (4) of our definition the possibility of 'continual adjunction' ($\sigma\upsilon\psi\chi\acute{\epsilon}\varsigma$).³⁸

The logico-semantic difference worked out here, between the de-

scriptions in groups (A) and (B) on the one hand and the terms presented by Frege in § 26 of the *Grundlagen* on the other, now suggests (though it does not, of course, compel) a terminological decision, that *individual moments* are *neither abstract* (in the sense of the usage exemplified by our list) *nor concrete entities*. What is important is not the terminology decided upon; but only the avoidance of conceptual confusion, a danger which is reduced if we accept the categorial *trichotomy* (abstract, concrete, neither abstract nor concrete).

One consequence of our decision is that the opposition between abstract and concrete singular terms can now no longer be accepted as exhaustive: some singular terms ('the axis of the Earth', for example) are neither abstract nor concrete. This consequence is unavoidable since in our classification of terms we have been following Quine in his view that 'the division of terms into concrete and abstract is a distinction only in the kinds of objects referred to'.³⁹ A further consequence of deciding in favour of the trichotomy is that the extension of the concept 'abstract object' can now no longer coincide with the extension of Frege's concept 'objective but non-real object'. This is not, of course, an objection, either against our choice of terminology or against Frege's conception of his realm (III).

It now becomes clear that we were right to select as the range of variables in (M) not concrete but 'non-abstract' entities. The functor 'the length of ()', for example, can just as well be saturated by means of the concrete singular term 'the Champs-Elysées', as by the non-abstract singular term 'the equator of the Earth'. The description which results stands for an individual moment neither in the first case, nor in the second, for whether our variables take concrete objects or individual moments as values, the length of m can be identical with the length of n even when m and n are separate. This is taken account of in our determination of the value-range in (M).

In the next section we shall discuss the origin of the term 'individual moment' and at the same time criticise its traditional application. Before this however we must implement a further circumscription of Frege's example. For it is certain that there are individual moments which Frege would not count as belonging to realm (III). The headache of m can be identical with the headache of n only when m and n are identical. Thus m 's headache is an individual moment. But according to Frege it clearly belongs to realm (I): i.e. to that which is subjective and real.⁴⁰

The second of the three concentric circles in which we want to ar-

range Frege's examples comprises a class of entities which can be designated as *boundaries*. The concept *boundary* we wish to have so understood that under it there fall not only the boundaries of solid bodies, that is surfaces, but also boundaries of boundaries of solid bodies, i.e. lines and also boundaries of boundaries of boundaries of solid bodies, i.e. points.⁴¹

Even with this concept, however, we have not yet succeeded in comprehending that peculiarity which motivates Frege's choice of examples. Obviously, entities like the surface of the Earth are perceptible. But so too – in opposition to a widely held prejudice – are lines (as distinct from stripes) and even points (as distinct from spots): the boundaries of coloured surfaces are such perceptible lines; and if a square area is divided into four differently coloured squares then one sees a point at the centre. One cannot, of course, see lines and points without also seeing the coloured surface whose boundaries they are. (They are to this extent only *per accidens* perceptible.⁴²) But those objects by means of which Frege illustrates his conception of realm (III) in the *Grundlagen* are in principle non-perceptible: in calling the equator an 'imaginary' line we give to understand that it is not possible to speak sensibly of a perception of such an entity, or in other words that its non-perceptibility is not something resulting from the crudeness of our sense-organs or from shortcomings in our instruments.⁴³ In this there does in fact lie a similarity between abstract entities such as numbers and those individual moments that might be designated as *intelligible boundaries*.⁴⁴

§ 4 Individual Moments and Properties: Husserl's Aristotelianism

In the foregoing section we have employed a Husserlian term, attempting to give it a precise sense by means of (M). From the point of view of conceptual history it is noteworthy that in the *Logical Investigations* Husserl designates the individual moments of an object as 'abstract parts':⁴⁵ an individual moment has this in common with the 'concrete parts' or 'pieces' of an object, that it is 'as precisely and individually singular as the whole object';⁴⁶ it is distinguished from the pieces through its 'non-self-sufficiency' (*Unselbständigkeit* or dependence). Husserl is clearly employing the term 'abstract' in a way quite different from that in which we – in conformity with Quine and other analytic philosophers

— have so far used it. The number 9, for example, is *not* whilst the surface of the earth is an abstract entity in the terminology of the *Logical Investigations*.⁴⁷ This usage has a long prehistory, reaching back as far as late antiquity: Boethius translates by means of the word 'abstractum' the expression 'εξ ἀφαιρέσεως' which Aristotle used to designate logically (dependent) entities.⁴⁸

In order to avoid confusion however we shall now revert to our previous usage. Still we wish to remain for a while with Husserl's theory (and the Aristotelian tradition in which it stands). For it is a theory that departs at one important point not merely terminologically but also substantially from that which has so far been affirmed in the course of this essay. Our assertion, that the colour of an object *m* can be identical with the colour of another object *n*,⁴⁹ Husserl would not have been able to accept. He argued, that if we survey a plurality of red objects comparing them amongst themselves we can judge with self-evidence:

In all these cases individual aspects differ, but in each the same species is realised: This red is the same as that — specifically is treated as the same colour — and yet again this red differs from that one — i.e. individually treated, it is a different objective, individual feature.⁵⁰

Comparison of two concrete, separated phenomena of the same quality, e.g. green, evidently shows that each has its own green ... The green of the one is ... as much separated from the green of the other, as are the concrete wholes in which these 'greens' are.⁵¹

In Husserl's eyes, then, an expression such as 'the red of this book-cover' satisfies condition (M), since this red is necessarily numerically different from the red of another, separate object, and this is true even where it is the same nuance of red which is involved in each case. On this theory, exemplars of the species 'red' are not red objects (things) *m*, *n*, etc., but individual moments of these objects: the red of *m*, the red of *n*, etc. Only on this basis is it understandable why Husserl calls properties species. A proposition of the form

m is red

is accordingly more complex than it seems:

There is something which is an individual moment of *m* and which is an exemplar of the species red

would be its explication within Husserl's theory.

This theory is indebted, even in its choice of examples, to the second

chapter of Aristotle's *Categories*.⁵² With the help of the characterisations:

- (A) said of a subject
- (B) in a subject

Aristotle makes there a distinction between objects in which the opposition between 1. 'Man' and 2. 'Socrates' (*ο τις ἀνθρωπός*) corresponds to a similar opposition between 3. 'the colour white' and 4. 'the white of this manuscript page' (*τὸ τὶ λευκόν*). That is to say, by means of the characteristics (A) and (B), Aristotle distinguishes between

1. Species and genera of objects in the category 'substance' (second substances): Combination of characteristics A and non-B.
2. Instances of 1. (first substances): Combination of characteristics non-A and non-B.
3. Species and genera of objects in other categories, e.g. in the category 'quality': Combination of characteristics A and B.
4. Instances of 3.: Combination of characteristics non-A and B.

The characteristic (B), which is of most importance here, is explained by Aristotle as follows: 'By "in a subject" I mean what (a) is in something not as a part, and (b) cannot exist separately from what it is in'.⁵³

We can paraphrase this with the help of Husserl's theory of part and whole:⁵⁴ that by 'in a subject' is meant what is (a') not in something as a piece (concrete part) but (b') as a moment (abstract part). The objects which fall under 4. are then just those that Husserl designates as individual moments.

When the distinction between 3. and 4. is understood in this way it normally reminds Anglo-Saxon interpreters of Aristotle not of Husserl but of Stout. In his essay "The Nature of Universals and Propositions" he asserts:

Of two billiard balls, each has its own particular roundness separate and distinct from that of the other, just as the billiard balls themselves are distinct and separate. As Jones is separate and distinct from Robinson, so the particular happiness of Jones is separate and distinct from that of Robinson.⁵⁵

Is the just described conception of individual moments plausible? Are there really such things as 'individualised qualities' or 'quality-individuals'?

G.E.M. Anscombe in her essay on the Aristotelian concept of substance interprets the second chapter of the *Categories* in precisely the way just presented here. But she does not seem to find the assumption

of 'individualised properties' to be an illuminating one, describing Aristotle's example as 'slightly obscure to us', and she therefore substitutes for it one of her own: 'the surface of my wedding-ring',⁵⁶ i.e. a functional description standing for a *boundary*.

Particularly illuminating in this context is something Wittgenstein said in the *Blue Book*:

We use the phrase 'two books have the same colour' but we could perfectly well say: 'They can't have the *same* colour, because, after all, this book has its own colour, and the other book has its own colour too'. This ... would be stating a grammatical rule – a rule, incidentally, not in accordance with our ordinary usage.⁵⁷

To this the advocates of individualised properties could of course say: Certainly, we use sentences such as 'These two books have the same colour'; but that only shows that everyday language admits a lax use of 'the same'. Strictly speaking we only want to state with such a sentence the complete similarity of numerically different colours. We would after all never dream of inferring from the assertion that the two people in the next room are wearing the same pullover that we have there four arms in two sleeves.

Wittgenstein could also have reminded us of sentences such as 'This book has the colour I am thinking about for our new car'. But such examples do not refute the friends of individualised qualities either. Strictly speaking, they could say that we only have complete similarity of two colours in mind when using such sentences. And indeed we do not normally take the assertion that someone has got his father's nose as a reference to a transplantation.⁵⁸

But now there is one decisive disanalogy between the lax use of 'the same' in our talk about concrete objects and the application of this expression in our talk about colours. If, for cases of the first type we occasionally reject an interpretation of 'the same' in the sense of numerical identity, then we have *empirical* grounds for this. It is our eyes that tell us that the proposition '*m* and *n* are wearing the same pullover' interpreted according to the pattern 'the Φ of *m* = the Φ of *n*' is on occasion false. But in cases of the second type – that is, for example, in talk about colours – the advocate of the individualised properties thesis has to bring *a priori* reasons into play: for whether the colour of *m* is equal to, or is not equal to, the colour of *n* is not supposed to be a merely contingent matter. But what can be oppose to our claim, if we insist upon it,

that '*m* and *n* have the same colour' means just what it appears to mean at first sight, namely that the colour of *m* is (numerically) identical with the colour of *n*?

We do not need to be particularly impressed by Husserl's recourse to the testimony of self-evidence. Husserl himself knows only too well that this testimony, when appealed to, must be conceptually apprehended and asserted, and will thereby lose much authority and permit of well-founded doubts. Different people ... read different things into it or out of it.⁵⁹

In the *Logical Investigations* there is indeed also an (indirect) argument for the thesis in question: what sense would talk about the spread of colour over a whole surface have,⁶⁰ if the thesis were false? But is such talk only understandable when one assumes that there are things such as colour-individuals? It needs to be noticed first of all that even if an affirmative answer were to be given to this question this would not amount to a defence of the general assumption of individualised qualities: we do not speak about the spread of a form, e.g. of squareness, over the whole of a surface, Husserl however accepts 'individual forms' as instances of 'geometrical species'.⁶¹

Consider more closely the contrast just hinted at between properties such as red on the one hand and those such as squareness on the other. Frege already saw what is decisive here:

We can, for example, divide up something falling under the concept 'red' into parts in a variety of ways, without the parts thereby ceasing to fall under the same concept 'red';

the concept of square in contrast is a

concept which isolates what falls under it in a definitive manner, and which does not permit any arbitrary division into parts.⁶²

(Thus e.g. some parts of a square book cover that has been torn up by a child might be triangular.) In the same way the property of, say, being rough differs from the property of being 20cm² in size: those things that exemplify the first attribute can, those that exemplify the second cannot, be divided into parts in a variety of ways without the resulting parts ceasing to possess the property in question. Thus to say that the colour red is extended across a whole surface is to say that all perceptible parts of this surface are red. And it is not at all clear why, for the interpreta-

tion of such modes of speech, the assumption of individualised qualities is required.

There is of course something which is spread over the surface of a body and which is just as individual as the object on which it is to be seen. It is what in Latin is called '*pigmentum*' (not: '*colour*') and is bought at a paint-dealer's ('*pigmentarius*'). In usages such as "A bit more red here!" we use 'red' as a mass-noun.⁶³ Such a mass is naturally not a moment of the thing, which it is to be made out, but a *piece* of the thing – that is, a part which is just as concrete as the thing as a whole.⁶⁴

In the absence, now, of a more convincing argument for the conception of individualised qualities,⁶⁵ we can safely stick to the strict interpretation of 'the same' (in the sense of '=') in sentences like '*m* has the same colour as *n*'.

We began our explication of the concept 'individual moment' in the last paragraph with entities which we have classified as boundaries. That boundaries *also* fall under this concept was expressly acknowledged by Husserl in *Experience and Judgment*, § 32 a:

Up to now, as examples ... of determination by dependent moments, we have always chosen qualitative moments ... But are there also dependent moments of other kinds?

Let us consider, for example, the edge of a material thing or the total surface by which it is circumscribed as a spatial *Gestalt*; these are certainly dependent moments and not pieces: we cannot take away the surface or the edge from a thing so that it falls into two independent parts. On the other hand, the circumscribing surface is certainly not a quality of the thing. It follows that not every dependent moment of a thing belongs to the thing as a quality.

We have sought in this section to show that Husserl (like Aristotle before him and Stout after him) developed an *indispensable* concept – the concept of a class of entities that are neither concrete nor abstract – on the basis of a *dubious* model, i.e. the construction 'individualised quality' of whose analytical usefulness we have not been able to convince ourselves.⁶⁶

§ 5 Sense-Determinate Singular Terms (Strawson's Demarcation-Proposal)

With this, the final attempt at demarcation of abstract entities to be considered in this essay, the concept of reference, and of its vehicle, the

singular term, will come into the centre of our attention. For Strawson believes⁶⁷ that he is able to give a criterion for abstractness by means of the separation of a specific type of singular term. Since he employs, in this attempt, a terminology different from that used here, we shall have to provide some preliminary lexicographical remarks.

The most important distinction, for us, in the Strawsonian ontology, is that between *particulars* and *non-particulars*. As exemplary particulars Strawson puts forward material bodies and persons.⁶⁸ But individual moments, too, are in his eyes particulars, – more precisely: dependent particulars.⁶⁹ All the entities that fall under the various categories presented in our initial list are conceived by Strawson as non-particulars.⁷⁰

We shall therefore use the expression '*individual entity*' as an equivalent within our framework of Strawson's '*particular*'. An entity can be designated '*individual*' if and only if it is either a concrete object or an individual moment or, more briefly, if it is a non-abstract object.

Strawson's term '*non-particular*' we shall therefore reproduce as '*non-individual entity*', a determination which may be ascribed to an entity if and only if it is abstract.

So much for nomenclature, now to matters of substance. If a speaker makes a statement with a simple assertoric sentence involving a singular and a general term, then with the aid of the singular term he indicates *which* entity it is that he characterises, correctly or incorrectly, with the aid of the general term. The singular term, we can say, describing its role in an abbreviated way, serves the function of reference. That an unequivocal answer to the question '*which?*' should be forthcoming, the sense of the singular term involved usually operates *in conjunction with* the context in which the assertion is made. Occasionally however we make the reference unequivocal by explicitly mentioning the spatio-temporal position of the intended referent.⁷¹

Are there singular terms which do not contain any such localising component and whose sense *alone* guarantees unique reference? Let us call singular terms which fulfil this condition '*sense-determinate*'; then an abbreviated form of our question would be: are there sense-determinate singular terms? Since this question is decisive for the further course of our discussion we must keep distinctly before our eyes the conditions under which a singular term deserves the title '*sense-determinate*':

- A it contains no mention of the spatio-temporal position of the referent;
- B one cannot use it in different situations to make reference to different entities without the sense of the term being a different one in each case;
- C an attempt to use the term to make a unique reference cannot miscarry for the reason that there is more than one equally admissible candidate for the status of referent.

Our question is, therefore: do we have expressions at our disposal which fulfil these conditions?

Let us make clear, first of all by means of examples, why this question is to be answered positively. (In each case we have included in parenthesis an alternative designation of the same object that is not sense-determinate, because it fails to satisfy at least one of the requirements A to C). One can refer by means of a sense-determinate singular term to, amongst other things:

- properties, e.g.
 wisdom
 (* the property for which King Solomon is famous)
- propositions, e.g.
 that the sum of the angles of a triangle is equal to two right angles
 (* the theorem whose proof Philip has known since yesterday)
- types, e.g.
 'Schmidt'
 (* the name of the current Chancellor of West Germany)
- numbers e.g.
 Nine
 5 + 4
 (* the number of member-countries of the E.E.C.).

Is it now perhaps true that one can refer *only* to abstract entities by means of sense-determinate singular terms? Is the possibility of a reference of this kind perhaps a sufficient condition of abstractness? The thesis runs, more formally as follows: that

- (i) if we can refer to an entity with a sense-determinate singular term, then the entity in question is abstract.

Do not superlative terms such as 'the quickest 100 meter-runner of all time' constitute a counter-instance? Such a term contains no spatio-temporal specifications, one cannot use it at different times to make

(correct) reference to different objects; and yet it does not designate an abstract entity. This is all certainly true, but it does not by any means refute (i). For condition C is not fulfilled. There could after all be two persons of whom it was true that, had the one not existed, then the other would have been *the* fastest runner of all time.

(i) is logically equivalent to Strawson's claim that if an entity is non-abstract ('individual') then we *cannot* refer to it with a sense-determinate singular term.

In Strawson's own words:⁷²

It is a necessary condition of a thing's being a particular thing that it cannot be referred to by a singular substantival expression, a unique reference for which is determined solely by the meaning of the words making up that expression.

This is first of all manifestly true for concrete entities. If one makes reference to such an entity by means of a singular term containing no mention of a spatio-temporal position, then it is always possible either that another entity may be denoted by the same expression (with the same sense) but employed in a different spatio-temporal context, or that the existence of a number of different entities competing for the title of this term should cause the reference to miscarry. And because this is true of concrete entities, then it must also be true of individual moments. For of course they too can only be identified unambiguously when the concrete objects are designated whose moments they are. Thesis (i) can therefore be accepted.

But is its converse also correct? That is, is it true that:

if an entity is abstract, then we can refer to it by means of a sense-determinate singular term?

Should this thesis also hold, then we would finally have discovered a sufficient *and* necessary condition for abstractness. But is the converse of thesis (i) really true?

We often refer to propositions by means of nominalised sentences. Sometimes these nominalised sentences contain no singular terms at all ('that all swans are white'), or they contain only a sense-determinate singular term ('that 2 is a prime number'). Sometimes however a singular term occurs in such a nominalisation which is *not* sense-determinate. An example would be: 'that all letters on this page are legible'. This nominalised sentence is itself a singular term that is not sense-determinate; for we can use it in different contexts to refer to different proposi-

tions without its sense being in each case different. Referring to the proposition that is meant by a particular speaker (or author) in a particular situation is something we cannot do by means of an expression fulfilling conditions *A*, *B* and *C*. Anyone who wanted to accept the converse of (i) would therefore have to classify *this* proposition as a non-abstract entity. Some propositions would then be counted as abstract, others not, and this consequence is sufficient reason to reject the converse of (i), as indeed does Strawson himself.

Strawson does not in fact give a necessary condition of *abstractness*; he says rather that⁷³

it is a necessary condition for a thing's being a general thing that it can be referred to by a singular substantival expression, a unique reference for which is determined solely by the meaning of the words making up that expression.

Thus instead of the converse of (i) Strawson advocates the thesis that (ii) if an entity is general, then we can use a sense-determinate singular term to refer to it.

The German expression which fits most closely in our framework with Strawson's term '*general thing*' is Husserl's '*allgemeiner Gegenstand*'.⁷⁴ This can be explicated as follows: *Y* is a general entity if and only if another entity *X* can stand to it in the ('unreal')⁷⁵ relation '*X* is an instance (an exemplar, occurrence, case) of *Y*'. (ii) allows us to avoid the awkward consequence yielded by the converse of (i) of having to classify certain propositions as non-abstract entities. For we can now say that whilst certainly all general entities are abstract ('non-individual'), not all abstract entities are general – propositions, for example, are not so.⁷⁶ Is this suggestion plausible when our explication of 'general entity' is taken as basis?

This question will be answered by the author of the *Logical Investigations* with a clear 'No.' For Husserl in this work classifies propositions or, as he puts it, 'judgements in the ideal, logical sense'⁷⁷ – as 'general entities' ('species'), conceived there as properties of acts (of asserting, surmising, etc.)⁷⁸ This conception is hardly plausible. If someone asserts that *p*, then his act exemplifies the property of being an assertion: it exemplifies also the property of being oriented towards the proposition that *p*; but this proposition itself is surely not a property of his act. Husserl himself later went on to reject this conception. In *Experience and Judgment* he writes:⁷⁹

Since any number of affirmative acts, of no matter how many subjects, can affirm one and the same proposition,⁸⁰ so it is a great temptation to think that the proposition belongs to the various acts ... as their general species, just as, say, the general essence redness belongs to the many red things ... Against this one has to say that certainly the proposition is general insofar as it points to an infinite number of positing acts in which it is intended;⁸¹ but it is not general in the sense of the generality of a species, i.e. the generality of an extension ... It has nothing individual falling under it.

Propositions are accordingly abstract entities ('idealities' in the terminology of *Experience and Judgment*); but they are not general entities. And, if numbers are classes of classes, then propositions are the only abstract entities from our list that are not also general entities.

With this it would have been shown that the objection that we brought against the converse of (i) does not refute Strawson's thesis (ii). But the latter might still be false, and we shall see that it is in fact so.

Musical and literary works are (as *types*) general entities.⁸² Now we normally refer to them by means of singular terms that are not at all sense-determinate, - e.g. with a designation such as 'Chopin's Funeral March'. More than one person might be called Chopin and have composed one or more funeral marches. Strawson nevertheless sees no serious difficulty for his conception:

We have ... an easy remedy here. We can regard the pattern of sounds in question as a general thing for which there might (perhaps does) exist a general description the meaning of which uniquely determines its reference.⁸³

But would such a description really achieve what Strawson expects from it? A description of the sequence of sounds made audible by every pianist who correctly plays Chopin's Funeral March in no way designates precisely one *work*. It could be that a work composed yesterday by a Martian (living in a cultural community that has never come into contact with our own) consists of the same sequence of sounds. Would it not be legitimate in such circumstances to speak of two works? Each of these works would, despite being indistinguishable *qua* sequence of sounds, be a different general entity, for the first was, after all, composed more than 100 years before the other.⁸⁴

Since it is always logically possible that a work is not qualitatively distinguished from another work but only through the positional property of having originated in this particular place and time, we cannot refer to such an entity by means of a sense-determinate singular term. Certain⁸⁵

general entities in the category *type* are therefore counterexamples to thesis (ii).

And these are not the only counterexamples. *Natural kinds* are general entities.⁸⁶ Now it could be that a certain species has a *Doppelgänger* somewhere in another corner of the universe. Let us suppose for example that there exists on Mars a species which, after an interval of a few thousand years, recapitulates the entire history of mankind, from the creation of Adam to the last judgment, with personnel qualitatively indistinguishable from Adam and his descendants. Then this species, assuming an absence of antideluvian contact between Mars and Earth, is not mankind: only Adam and his descendants are men.⁸⁷

Once more, therefore, we can say that since it is always (logically) possible that a species be qualitatively indistinguishable from another species, but only through the positional property of having originated at this particular time and place, then we cannot refer to such an entity with a sense-determinate singular term. Natural kinds, too, are counter-examples to thesis (ii).

Our criticism of (ii) can now however be given a positive application. Those instances counting against it are 'bound idealities'. Already in § 2 we introduced this concept, taken from Husserl's *Experience and Judgment*, fixing its extension to the class of changeable abstract entities. There we left open what the 'boundedness' of literary and musical works and of natural kinds and the 'freedom' of, say, properties and numbers amounts to. We can now say that:

An entity is a *free* ideality if and only if we can refer to it by means of a sense-determinate singular term. An entity is a *bound* ideality if and only if it is abstract and we cannot refer to it by means of a sense-determinate singular term.

The boundedness of bound idealities is a boundedness to spatiotemporal regions: their position in space and time is essential to their identity.⁸⁸ This reminds us of Husserl, when he says:⁸⁹

Free idealities ... are bound to no territory. Bound idealities are bound to earth, to mars, etc.

Let us look back at what has been achieved in this section. Our altercation with Strawson, too, has brought to light no definition which would apply to all and only abstract entities. But still, thesis (i) gives a sufficient condition of abstractness, and the concept of sense-determinate

singular terms has allowed us to clarify the ontologically significant difference between 'free' and 'bound' abstract entities. But there is a shadow falling even over this partial result:⁹⁰ for we understand properly what a sense-determinate singular term is only if we understand the expression 'sense'. That it is capable of a sufficiently clear explication has simply been presupposed in the present essay.⁹¹

But even if this explication should be provided, we would still have achieved no *definition* of abstractness either in the present or in the previous sections. This does not however signify that we do not at bottom know what it is about which we are speaking when we employ the expression 'abstract entity'. For who would say that a correct answer to the question 'what is an abstract entity?' can be given only by means of a statement of what is common and peculiar to all abstract entities? Who would say that the provision of examples and their classification into groups (e.g. under a heading such as 'freedom vs. boundedness'⁹²) is not an acceptable conceptual clarification?

In fact it is no one less than Socrates (as depicted by Plato) who would make such a claim. He employs definitions such as 'bachelor = *at.* unmarried man'⁹³ or 'square = *at.* equilinear rectangle'⁹⁴ as prototypes of every conceptual clarification. And so it is that Wittgenstein, in his first attempts to break the hold of this prototype, in each case uses a specific Platonic text as his foil. He is alluding to the *Theaetetus* when he says:

The idea that in order to get clear about the meaning of a general term one had to find the common element in all its applications has shackled philosophical investigation; for it has not only led to no result, but also made the philosopher dismiss as irrelevant the concrete cases, which alone could have helped him to understand the usage of the general term. When Socrates asks the question, 'What is knowledge?' he does not even regard it as a preliminary answer to enumerate cases of knowledge.⁹⁵

The considerations put forward in the present essay seem to suggest that the same thing holds of abstract entities which Wittgenstein in the *Investigations* says of languages, games, and numbers:

that these phenomena have not even one thing in common which makes us use the same word for all, – but that they are *related* to one another in many different ways.⁹⁶

If this supposition is correct, then our rather modest answer to the question 'what is an abstract entity?' would yet remain fully adequate to

the subject-matter. The listing of examples was therefore not at all merely an instrumental aid, properly to be replaced by the specification of necessary and sufficient conditions for the application of the concept 'abstract entity'.

Notes

- ¹ Thus Quine, whose classification of terms we adopt, writes (1974, § 39, p. 218): "The division of terms into concrete and abstract is a distinction only in the kinds of objects referred to."
- ² Plato, *Sophistes*, 248A and cf. e.g. *Phaedo*, 78Cff.; *Parmenides*, 130A, 135A; *Timaeus*, 27Dff., 48Ef.
- ³ See ch. 4 of Künne, 1979 (from which the present essay is adapted) for a discussion of the positive notion of 'access to the Forms' at issue here.
- ⁴ 'Perception', in the present essay, always means the same thing as 'sensual perception'. But this supplement is perhaps completely superfluous: see ch. 4 of Künne, 1979.
- ⁵ Cf. Aristotle, *Metaphysics*, IV 2, 1002b 32ff. If one calls the skin colour of a man healthy – this is Aristotle's favourite example – one means that it is a symptom/sign of a healthy organism; if one calls a meal healthy one means that it keeps the organism healthy; but it is the organism which, in the central meaning of the word, is called healthy. Thomas of Aquinas speaks in such cases of an '*analogia multorum ad unum*'. Cf. *Summa Theologica*, Ia, q. 13 a 5; *Summa Contra Gentiles*, I, Ch. 34. The Aristotle-scholar G.E.L. Owen employs in his 1960 the expression 'focal meaning'.
- ⁶ Husserl, 1913/22, vol. II/1, P. 123f. Eng. trans. vol. I, p. 351f.
- ⁷ Ingarden, 1931, p. 11 of Eng. trans. See also the remarks on the category type in § 5 below.
- ⁸ Husserl, 1948, § 65 (cf. Eng. trans., p. 267).
- ⁹ To this extent we can agree with Aristotle when he says (in *Categories* V, 4a 10–21): "One and the same colour cannot be at one time dark and at another time pale; ... one and the same man can however become at one time dark and at another time pale."
- ¹⁰ Frege, 1884, § 46; 1904, p. 108 of English trans.; 1898/99, p. 173f.
- ¹¹ Cf. Russell, 1903, § 442: "Change is the difference, in respect of truth and falsehood, between a proposition concerning an entity and a time T, and a proposition concerning the same entity and another time T', provided that these two propositions differ only by the fact that T occurs in the one where T' occurs in the other." See on this also Geach, 1969, p. 71f.
- ¹² Plato, *Theaetetus* 155BC; Aristotle, *Metaphysics* XIV 1, 1088a 34–5: "... without changing, a thing will be now greater and now less or equal if that with which it is compared has changed in quantity."
- ¹³ See on this Gale, 1968, pp. 16–22 and the literature there given.
- ¹⁴ Künne, 1979, ch. 6 contains some further discussion of Reichenbach's theory.
- ¹⁵ Cf. Aristotle, *Metaphysics* XIV 1, 1088a 29–35; XI 12, 1068a 11–13. We cannot at this point go into the consequences of the above investigations for the problems associated with the Aristotelian category of place.
- ¹⁶ See Dummett, 1973, p. 492.
- ¹⁷ Cf. ch. 1 of Künne, 1979.
- ¹⁸ In Leśniewski's Mereology and in the 'Calculus of Individuals' developed by Leonard and Goodman, the part-whole relation is employed in place of the set-theoretic 'ε'. Cf. Goodman, 1972, pp 178ff., and the references there given.

- ¹⁹ Cf. our discussion of Husserl's *Experience and Judgment* at the beginning of this section.
- ²⁰ Thus we are here excluding from consideration functions in the Fregean sense (and thus also Frege's 'concepts'). Cf. ch. 3, § 4 of Künne 1979 for a discussion of the question of how one can talk about non-objects without objectualising them.
- ²¹ Cf. Thiel, 1968, Ch. 8.
- ²² Cf. e.g. Lotze, 1879, p. 209. The 'being' of something is either (I) its 'becoming presented by us', (II) its 'being able to bring about an effect', or (III) the 'mere validity of a truth'.
- ²³ 1892, Eng. trans., p. 62, n.
- ²⁴ On this see Peter Hacker's valuable 1972.
- ²⁵ Frege, 1893, p. xviii, Eng. trans., p. 66.
- ²⁶ A 231 = B 284 (2nd Postulate of Empirical Thought).
- ²⁷ A 493 = B 521.
- ²⁸ A 226 = B 273.
- ²⁹ But cf. ch. 4, § 2 of Künne, 1979, on a modification of this definition in Frege's 1918/19.
- ³⁰ Cf., besides the passage already cited: 1884, 26f.; 1894, p. 321 of Eng. trans.; 1903, p. 56.
- ³¹ 1897, p. 149.
- ³² Frege, 1884, Eng. trans. (slightly amended), p. 35.
- ³³ Aristotle, *Physics* VI, 10, 240b 8–10, 18–20.
- ³⁴ Cf. on this also *Metaphysics*, VII, 8, esp. 1033a 29–31.
- ³⁵ On this see the section to follow.
- ³⁶ As an abbreviation for 'm and n fulfil neither (1) nor (2) nor (3) nor (4)' we can say: 'm and n are separate'.
- ³⁷ Cf. Plato, *Parmenides* 138 AB *et passim*.
- ³⁸ In the sense of Aristotle's relational explication of the concept of the continuous: συνεχὴ μὲν ὁν τὰ εὐχαρά εν (*Physics* VI, 1, 231a 22).
- ³⁹ See n. 1 above, and Ch. 1, esp. § 3 of Künne, 1979.
- ⁴⁰ Cf. e.g. 1918/19, p. 17 of Eng. trans.
- ⁴¹ Aristotle, *Topics* 141b 20ff; Euclid, *Elements* I, Def. 3, 6; XI, Def. 2. On the significance of the category of boundary in Plato and Hegel see the appendix to Künne, 1975.
- ⁴² The thesis which suggests itself at this point – that surfaces, too, are not *per se* perceptible – is, in the light of the phenomenon of visual after-images, at least questionable. (After-images are of course not 'objective' entities in Frege's sense).
- ⁴³ If someone on a journey were to puzzle over the fact that although he can find the rivers and streets corresponding to certain lines on a map but nothing (however much attention he pays) that would correspond to the line designated as 'equator', then he betrays a misunderstanding of a cartographical symbol.
- ⁴⁴ Entities of this type are not, we might note, captured within the conceptual framework of Husserl's *Logical Investigations*: they are not 'real' because they cannot be perceived, and they are not 'ideal' since they are no kind of 'species'.
- ⁴⁵ Husserl, 1913/22, Vol. II/1, p. 266, Eng. trans., vol. 2, p. 467.
- ⁴⁶ *Ibid.* p. 154, Eng. trans., vol. 1, p. 376.
- ⁴⁷ *Ibid.*, pp. 218f, Eng. trans., vol. 1, pp. 428f, vol. 2, pp. 435ff.
- ⁴⁸ Cf. Aubenque, 1971.
- ⁴⁹ See above, pp. 408ff.
- ⁵⁰ Husserl, 1913/22, p. 109, Eng. trans., vol. I, p. 340.
- ⁵¹ *Ibid.*, p. 155, Eng. trans., vol. I, p. 377.
- ⁵² Cf. also Plato, *Phaedo*, 102 B–D.

- ⁵³ *Categories*, Ia 24–5.
- ⁵⁴ *Logical Investigation* III.
- ⁵⁵ Stout, 1921, p. 386. D. Ross alludes to this passage in his 1923, p. 24, n. 1. The just-presented interpretation of cb. 2 of the *Categories* is no longer free from controversy: cf. Owen, 1965, Allen, 1969, and Jones, 1972.
- ⁵⁶ Anscombe and Geach, 1961, pp. 7–10.
- ⁵⁷ Wittgenstein, 1958, p. 55.
- ⁵⁸ Stout says of this distinction between quality-species and quality-individual that "for the most part it is neither needful nor useful to take note of the distinction in ordinary thought or express it in ordinary language." (op. cit.) Cf. also Williams, 1953, pp. 5–6; Wolterstorff, 1960, pp. 95–7 of reprint.
- ⁵⁹ Husserl, 1913/22, vol. II/I, p. 439, Eng. trans., vol. II, p. 606.
- ⁶⁰ Ibid., p. 155, Eng. trans., vol. I, pp. 376f.
- ⁶¹ Loc. cit.
- ⁶² 1884, § 54, p. 66.
- ⁶³ On the manifold uses of colour-names see Künne, 1979, ch. 1, § 1.
- ⁶⁴ Seen from this point of view the language in which Stout's theory is defended by J. R. Jones appears suspicious: the 'red color spread over the surface' (1951, p. 556), 'patch of colour', 'extent of red' (1949, pp. 159, 162).
- ⁶⁵ That Stout's arguments for this conception (op. cit.) are not conclusive has been shown by G. E. Moore, 1923, pp. 25–30 of reprint.
- ⁶⁶ Thus my conclusion is in agreement with that of David Armstrong: "Every consideration of economy seems to plead for the elimination of the Particularist properties. They are a useless intermediary between ordinary particulars and their universal properties" (*Nominalism and Realism*, p. 86). Armstrong believes however that he can also demonstrate the 'incoherence of particularism'. His argument suffers from the fact that he does not clearly separate the following three assumptions:
- (A) There exist individualised properties ('Particularist properties', 'Stoutian particulars', 'Husserlian individual moments').
 - (B) The properties of concrete objects are not abstract entities ('universals'), but individual moments; abstract entities which would also be properties (of the first level) do not exist (op. cit., pp. 79, 138).
 - (C) Concrete objects are bundles of individualised properties (pp. 81, 86).
- Armstrong's official characterisation of particularism is (B). Yet he asserts also that 'Particularism could ... be combined with Realism' (p. 85) and Realism is for him the doctrine that there exist abstract objects, in particular properties (of the first level) (p. 139 *et passim*). Such a realism could not however be combined with a particularism in the sense of (B). Armstrong admits that he knows of no philosopher who defends such a combination (p. 85). It may be that it is shyness of contradiction that has held philosophers back from it. Husserl, who seems to be unknown to Armstrong, combines Realism with (A). Aristotle would, with Armstrong, deny (C), in my opinion correctly.
- ⁶⁷ The most important works of Strawson for our purposes are his 1953/4, 1957, and 1959, Part II.
- ⁶⁸ 1959, Part I. Cf. on this Künne, 1975a.
- ⁶⁹ 1959, pp. 168–70. Stout, too, in perfect correspondence, calls them 'abstract particulars' (where 'abstract' is used in the Husserlian sense). Cf. Stout, 1921, p. 178.
- ⁷⁰ Strawson, 1959, p. 227.
- ⁷¹ Not every unambiguous reply to the question 'which?' is a definitive answer. The hearer can e.g. always go on sensibly to ask: 'and who is this *F* who was at place *P* at time *T*?'. On the concept of 'definitive answer' see Künne, 1979, ch. 4, § 7.
- ⁷² 1953/54, p. 49.

- ⁷³ 1953/54, p. 49.
- ⁷⁴ Husserl 1913/22, vol. II/1, pp. 108ff, Eng. trans., Vol. I pp 339ff.
- ⁷⁵ Cf. Künne, 1979, ch. I, § 2 on μέτεξις.
- ⁷⁶ On the opposition 'particular vs. general' Strawson remarks: "In the case of propositions ... we may feel a very strong reluctance to classify in this way at all." (1953/54, p. 51).
- ⁷⁷ Cf. e.g. Husserl, 1913/22, Vol. II/1, p. 99, Eng. trans., Vol. I, p. 329.
- ⁷⁸ Husserl, 1913/22, Vol. II/1, pp. 100f. Here Husserl applies his conception of 'individualised properties' criticised in the last section. Nevertheless the thesis that propositions are properties of acts could still be to the point even if, as we believe, this conception is itself insupportable.
- ⁷⁹ 1948, § 64 d; cf. 262 of Eng. trans.
- ⁸⁰ Husserl uses the term 'Satz', but it is clear from the context that this is to be understood as in 'der Satz des Pythagoras' (Pythagoras' theorem) i.e. to mean the same thing as 'proposition'.
- ⁸¹ In this (very peculiar) sense every entity is general; even the Eiffel Tower can after all be intended in infinitely many acts. Thus Husserl's usage here implies that the attribute of generality loses all its sharpness.
- ⁸² In his 1953/54, p. 50, Strawson himself admits of this.
- ⁸³ 1953/54, p. 50.
- ⁸⁴ See our discussion of the identity of the literary work in Künne, 1979, Ch. 6, § 2.
- ⁸⁵ That certain types (e.g. words) are the referents of sense-determinate singular terms has been claimed already above. Cf. also Strawson, 1953/54, p. 51, n. 1.
- ⁸⁶ Cf. Strawson, 1952, p. 231.
- ⁸⁷ Cf. Dummett, 1973, pp. 143–44.
- ⁸⁸ In opposition to Strawson, 1953/54, p. 51, and 1957, pp. 443–4.
- ⁸⁹ Husserl, 1948, § 65, cf. p. 267 of Eng. trans.
- ⁹⁰ It is the shadow of Quine: see on this his 1960, p. 233, n. 2.
- ⁹¹ The assumption is defended in chs. 5 and 6 of my 1979. In the absence of this defence the result of the present essay must remain uncertain.
- ⁹² Or (see Künne, op. cit., ch 6) under the heading 'extensionality vs. non-extensionality'.
- ⁹³ Cf. Plato, *Laches* 192 AB; *Theaetetus*, 147C.
- ⁹⁴ Cf. *Theaetetus*, 147C ff. (and on this Wittgenstein, 1958, p. 27). *Meno*, 75 Eff.
- ⁹⁵ Wittgenstein, 1958, pp. 19–20, cf. pp. 26f, and 1967, pp. 75f, 120f.
- ⁹⁶ 1953, § 65.

Bibliography

- Allen, R. E. 1969: "Individual properties in Aristotle's *Categories*", *Phronesis*, 14, 31–39.
- Anscombe, G. E. M., and Geach, P. T. 1961: *Three Philosophers*, Oxford: Blackwell.
- Armstrong, D. M. 1978: *Universals and Scientific Realism*, Cambridge: Cambridge University Press, 2 vols., vol. I, *Nominalism and Realism*, vol. II, *A Theory of Universals*.
- Aubenque, P. 1971: Article: "Abstrakt/Konkret", in *Historisches Wörterbuch der Philosophie*, vol. I, Basel: Schwabe, 33f.
- Dummett, M. 1973: *Frege. Philosophy of Language*, London: Duckworth.
- Frege, F. L. G. 1884: *Die Grundlagen der Arithmetik*, Breslau (German/English ed., Oxford: Blackwell, 1950).

- 1892: "Über Sinn und Bedeutung", English trans., "On sense and reference" in Frege, 1959, 56–78.
 - 1893: *Grundgesetze der Arithmetik. Begriffsschriftlich abgeleitet*, I, Jena, (partial Eng. trans., *The Basic Laws of Arithmetic*, University of California Press, 1964.)
 - 1894: Review of Husserl, *Philosophie der Arithmetik*, Eng. trans. in *Mind*, 81, 1972, as repr. in Elliston and McCormick, eds., *Husserl. Exposition and Appraisals*, Notre Dame University Press, 1977, 314–24.
 - 1895: "Le nombre entier", *Revue de Metaphysique et de Morale*, 3, as repr. in L. Angelelli, ed., *Kleine Schriften*, Darmstadt: Wissenschaftliche Buchgesellschaft, 1965.
 - 1897: "Logik", in Frege, 1969, 137–63.
 - 1898/99: "Logische Mängel in der Mathematik", in Frege, 1969, 171–81.
 - 1903: *Grundgesetze der Arithmetik*, II, Jena.
 - 1904: "Was ist eine Funktion?" Eng. trans., "What is a function?" in Frege, 1959, 107–16.
 - 1918/19: "Der Gedanke", Eng. trans., "The Thought", in Frege, 1977, 1–30.
 - 1959: *Philosophical Writings of Gottlob Frege*, ed. P. T. Geach and M. Black, Oxford: Blackwell.
 - 1969: *Nachgelassene Schriften*, H. Hermes et al., eds., Hamburg: Meiner.
 - 1977: *Logical Investigations*, ed. P. T. Geach, Oxford: Blackwell.
- Gale, R. M. 1968: *The Philosophy of Time*, London: Macmillan.
- Geach, P. T. 1969: "What actually exists", in Geach's *God and the Soul*, London: Routledge.
- Goodman, N. 1972: *Problems and Projects*, Indianapolis: Bobbs-Merrill; pt. IV, "Individuals" comprises "Forward" (149–54), "A World of Individuals" (155–72), "Steps towards a Constructive Nominalism" (with W. v. O. Quine) (173–98), "A Revision in The Structure of Appearance" (199–202).
- Hacker, P. M. S. 1972: "Frege and the Private Language Argument", *Idealistic Studies*, 2, 265–87.
- Husserl, E. 1913/22: *Logische Untersuchungen*, 2nd ed., Eng. trans. by J. N. Findlay, London: Routledge, 1970.
- 1948: *Erfahrung und Urteil*, Eng. trans. by J. S. Churchill and K. Ameriks, London: Routledge, 1972.
- Ingarden, R. 1931: *Das literarische Kunstwerk*, Eng. trans. of 3rd. ed. by G. G. Grabowicz, Evanston: Northwestern University Press, 1973.
- Jones, B. 1972: "Individuals in Aristotle's *Categories*", *Phronesis*, 17, 107–23.
- Jones, J. R. 1949: "Are the Qualities of Particular Things Universal or Particular?", *Philosophical Review*, 58, 152–70.
- 1951: "Characters and Resemblances", *Philosophical Review*, 60, 551–62.
- Küne, W. 1975: *Dialektik und Ideenlehre in Platons 'Parmenides'*, Dissertation, Heidelberg.
- 1975a: "Deskriptive Metaphysik" in *Grundprobleme der großen Philosophen*, vol. I of *Philosophie der Gegenwart*, J. Speck, ed., Göttingen: Vandenhoeck and Ruprecht.
 - 1979: *Abstraktheit und Sinn*, Habilitationsschrift, Hamburg, to appear.
- Lotze, H. 1879: *Metaphysik*, Eng. trans. of 2nd ed., Oxford: Clarendon, 1887.
- Moore, G. E. 1923: "Are the Characteristics of Particular Things Universal or Particular?", as repr. in Moore's *Philosophical Papers*, London: Allen and Unwin, 1959, 17–31.
- Owen, G. E. L. 1960: "Logic and Metaphysics in some earlier works of Aristotle", in During and Owen, eds., *Aristotle and Plato in the Mid-fourth Century*, Göteborg: Almqvist and Wiksell.
- 1965: "Inherence", *Phronesis*, 10, 97–105.
- Quine, W.v.O. 1960: *Word and Object*, Massachusetts: Technology Press.

- 1974: *Methods of Logic*, 3rd ed., London: Routledge.
- Ross, D. 1923: *Aristotle*, London: Methuen.
- Russell, B. A. W. 1903: *The Principles of Mathematics*, 2nd ed., London: Allen and Unwin, 1937.
- Stout, G. 1921: "The nature of universals and propositions", as repr. in Stout, *Studies in Philosophy and Psychology*, London: Macmillan, 1930, 384–403.
- Strawson, P. F. 1953/54: "Particular and General", as repr. in *Logico-Linguistic Papers*, London: Methuen.
- 1957: "Logical Subjects and Physical Objects", in *Philosophy and Phenomenological Research*, 17, 443–57.
- 1959: *Individuals*, London: Methuen.
- Thiel, C. 1968: *Sense and Reference in Frege's Logic*, Dordrecht: Reidel (original German ed., 1965).
- Williams, D. C. 1953: "The elements of being", *Review of Metaphysics*, 6, 3–18, 171–93.
- Wittgenstein, L. 1953: *Philosophical Investigations*, Oxford: Blackwell.
- 1958: *The Blue and Brown Books*, Oxford: Blackwell.
- 1969: *Philosophische Grammatik*, Oxford: Blackwell.
- Wolterstorff, N. 1960: "Qualities", as repr. in M. Loux, ed., *Universals and Particulars*, Notre Dame: Notre Dame University Press, 1976, 87–105.