AN ESSAY IN FORMAL ONTOLOGY

Barry Smith

§ 0. Introduction

The present paper may be conceived both as a working introduction to certain aspects of the ontological theory put forward by the Polish phenomenologist Roman Ingarden in his mammoth treatise *Der Streit um die Existenz der Welt*,[1] and also as a development of Ingarden's views in the light of current tendencies in analytic philosophical logic. The central theme of the paper – though one which does not become apparent until very near the end – is the ontological analysis of states of affairs, and in particular of negative states of affairs, a topic which is of some specific interest in forming a connecting link between the Brentano-Meinong-Husserl tradition to which Ingarden belonged, and the (Frege)-Russell-Wittgenstein tradition which gave rise to modern philosophical logic.

The first philosopher to have paid attention to the ontological problems raised by negative states of affairs was Adolf Reinach, a German disciple and colleague of Husserl, though one of many early

---

1. (Hereafter referred to as StEW.) Ingarden completed two volumes of this work before his death in 1970, and a further volume has since been compiled from manuscripts. Vol. I, *Existentialontologie* 1964; Vol. II, *Formalontologie*, Part 1, *Form und Wesen*, Part 2, *Welt und Bewußtsein*, 1965; Vol. III, *Über die kausale Struktur der realen Welt*, 1974; all published by Niemeyer, Tübingen. For a more general account of Ingarden's project see G. Küng, "Zum Lebenswerk von Roman Ingarden. Ontologie, Erkenntnistheorie und Metaphysik", in *Die Münchener Phänomenologie*, ed. H. Kuhn et al., Den Haag: Nijhoff, 1975, pp. 158–73.

phenomenologists who, with Ingarden, found themselves unable to follow Husserl's move to a transcendental idealist position. Reinach seems to have been highly regarded in his day, not least by Husserl himself, though his philosophical output was lamentably small, his life having been cut short by the First War. From the point of view of present-day philosophy, and in particular of philosophical logic, he recommends himself particularly because of the carefulness of his terminology and the clarity of his style, which is crystaline when set in comparison with that of other phenomenologists including, sadly, Husserl himself. Apart from monographs on legal phenomenology, including, for example, an analysis of the concept of criminal premeditation, Reinach has left us also an essay of some 60 pages "On the theory of the negative judgment",[2] and it is this essay which contains the first published discussion of negative states of affairs. It appeared in 1911, that is to say three years before Russell's lectures on negative facts in Harvard, and two to three years before Wittgenstein was beginning to move toward problems in this area in his logical notebooks. Wittgenstein's use of the German word *Sachverhalt* is interesting since, given the rather peculiar philosophical genesis of this term, it points to the existence of at least some connection between Wittgenstein and the tradition to which Reinach belonged, for it was in that tradition that the term arose. My interest in the possibility of a connection between Reinach and Wittgenstein was sparked by a remark made at the conference held two years ago in Warsaw to commemorate Ingarden's death by the co-author of the now standard English translation of the *Tractatus*, Mr. Brian McGuinness, pointing to the startling similarities which exist between the two philosopher's uses of this term. Whilst, in the present work, I come to no specific positive historical conclusions in

---

2. "Zur Theorie des negativen Urteils", *Münchener Philosophische Abhandlungen* (Lipps-Festschrift), Leipzig, 1911, cited according to the reprint in Reinach's *Gesammelte Schriften*, Halle: Niemeyer, 1921, (posthumously edited by H. Conrad-Martius), pp. 56–102.

this regard, I do hope to show that some awareness of the more general historical background is indispensible for the understanding of the purely philosophical analysis of states of affairs.

The term *Sachverhalt* was introduced into philosophy by Carl Stumpf (who was, with Husserl, Meinong, Twardowski and Marty, a pupil of Brentano) in the mimeographed logic lectures which Stumpf gave in Halle in 1888.[3] Its first important appearance in philosophical print was in 1900 in volume I of Husserl's *Logical Investigations*,[4] a work dedicated to Stumpf, with whom Husserl had worked in Halle. Husserl does not, however, flag the innovatory nature of this term, something which is explained partly by the nature of the German language as a kind of linguistic construction kit, partly by the vagaries of Husserl's prose, and finally by the fact that, 12 years after Stumpf's first use, the term was already beginning to acquire the naturalness and the familiarity which – given the ontological propriety of the underlying notion – it has since shown that it deserves. Stumpf himself first went into print with the term after he had left Halle and gone (through Munich) to Berlin, in a monograph for the Berlin Academy which appeared in 1907,[5] just about the time when Wittgenstein was settling himself in the Berlin Technische Hochschule.

Apart from Husserl, Reinach and Stumpf, other pre-Tractarian occurrences of *Sachverhalt* seem to be of less importance in the present

---

3. Cf. Stumpf, "Erscheinungen und psychische Funktionen", *Abhandlungen der Berliner Akademie*, 1907, p. 29, and Stumpf's contribution to *Philosophie der Gegenwart in Selbstdarstellungen*, 5, 1924, as trans. in C. Murchison, ed. *History of Psychology in Autobiography*, Vol. I, pp. 389–441, esp. p. 421. Cf. also Reinach's *Schriften*, p. 81, n. 1.

4. *Logische Untersuchungen*, 1st ed., Halle: Niemeyer, 2 vols, the 2nd in two parts, 1900/01, *passim*.

5. See note 3 above.

context.[6] But what of the possibility that Wittgenstein acquired the term from none of these authors; might he not have coined it himself, independently of their work? This suggestion must, I think, be rejected, and for reasons which may have some more general light to throw on the genesis of philosophical terminology, whether within a single language or by an absorption from a second laguage of the type which seems to have occurred with regard to the English term 'state of affairs'. It is difficult for philosophers working today to appreciate the extent to which their use of both *Sachverhalt* and *state of affairs* is a relatively modern innovation.[7] (The relevant volume of OED, for example, published in 1919, lists the joint catchword 'state of things, state of affairs' but provides, under this head, quotations of 'state of things' only). Perhaps we can convey the degree of innovation involved by means of an analogy with the word 'sake'. The occurrences of 'sake' in English are exclusively syncategorematic, bound up with the construction 'for X's sake'. 'State of affairs' also seems to have been bound up, though more loosely, with constructions such as 'this (the jumble in my office) is a pretty state of affairs'. The move to a philosophical use of 'state of affairs' not only as categorematic but further as denoting entities over which one can quantify, would, we suggest, at least parallel a move to quantification over sakes.[8] A parallel analogy holds, I believe, for the

6. Cf. my contribution to the proceedings of the 2nd international conference of the Austrian Ludwig Wittgenstein Society, Kirchberg/Wechsel, Aug.-Sept. 1977. ["Wittgenstein and the Background of Austrian Philosophy", in E. Leinfellner, *et al*., eds., *Wittgenstein and His Impact on Contemporary Thought*, Vienna: Hölder-Pichler-Tempsky, Dordrecht: Reidel, 1978, 31–35.]

7. For the case of 'state of affairs', in particular, I have been unable to find any occurrences in the philosophical-logical literature prior to the use by Ogden and Ramsey in their translation of Wittgenstein's *Tractatus*, London: Routledge, 1922, where it translates certain occurrences of '*Sachlage*'.

8. Interestingly the original use of 'sake' (supported in the OED by quotations from 1000 to 1590) was as an independent substantive. '*State of things*' in its present

4

German term *Sachverhalt*, and it seems that it would be an unreasonable hypothesis to suppose that a quantificational jump of this size was made independently by Stumpf and Wittgenstein within a short space of time, relative to one and the same term.

§ 1. From Ontology to Formal Ontology

The philosophical-logical tradition to which the early Brentano, the early Husserl, Meinong, Stumpf, Reinach and Ingarden belong has been virtually superseded by another, much looser tradition, inaugurated by Frege, Russell and Wittgenstein. But it might not be too late to reflect upon whether this supersession is in all respects justified, whether we have not accepted too readily the surface virtues of the new, throwing out with the bathwater of the old something which ought to be preserved.

The two traditions share a common realist approach to ontology, thereby standing in joint opposition to the Hegelian and Bradleyan idealism which went before them and to the excesses of subjectivist and linguistic idealism which have flourished since, especially in French phenomenological writings and in the works of some ordinary language philosophers. But they differ in their interpretation of the demands of an adequate 'realism': roughly speaking the adherents of Frege-Russell-Wittgenstein philosophical ontology suppose that their realism is compatible with reductionsm, that philosophical progress is to be measured, indeed, by the degree to which one can 'explain away' apparent philosophical givens in terms of less controversial entities; adherence to (early)Brentano-(early)Husserl-Ingarden philosophical

syncategorematic use outside philosophy may also be parasitic upon a former meaning, as *system of divine government during a particular era*, that is 'state [or government] of things' (OED, quotation for 1387). The parallel between these two uses of 'sake' and 'state of things or affairs' receives further support from the lack of a developed plural form for either, for the possibility of counting independent entities clearly goes hand in hand with quantification over those entities and with the presence of linguistic machinery for referring to them individually.

ontology on the other hand is characterized by the most painstaking faithfulness to all that is given in experience, on any ontological level; the members of this tradition can countenance 'reduction' only where this is motivated by reductive interconnections which are themselves given in experience.[9]

The presence of a reductivist-pragmatic attitude in Frege's work, his willingness to regard as *identical* entities which are merely *equivalent* for some specified purpose, has often been noted in the literature.[10] This tendency on Frege's part was so consolidated in post-Fregean writings that it came to be taken for granted by virtually all philosophers. Ockham's perfectly uncontroversial razor: thou shalt not multiply entities without necessity, was perverted into: thou shalt deny entities wherever possible, that is to say, wherever compatible with one's particular short-term philosophical purposes. This perversion was not without its motives. Simply put: certain huge successes of the Frege-Russell-Wittgenstein approach in its original conception led its adherents to countenance, and even to welcome, a certain blatant inadequacy in other areas, particularly in ontology. These successes lay all of them in the area of logic or, which is related to this, in the area of the philosophy of mathematics. They were first of all of a technical nature: with Frege's *Begriffsschrift* formal logic made its first substantial strides forward since the time of Aristotle, and further strides continued to be made throughout the first half of the present century. Secondly they concerned the application of formal-logical methods directly to ontology, and especially to the ontology of mathematics. Anyone who has studied these early, faltering applications will yet appreciate, I hope, that the formal logical methods invented by, say, Frege, Wittgenstein, Lesniewski and Carnap are indispensable to the practice of ontology. For with the aid of

---

9. (And even then nothing, ontologically speaking, gets lost.)

10. See especially I. Angelelli, *Studies on Gottlob Frege and Traditional Philosophy*, Dordrecht: Reidel, 1967, p. 53.

such methods it becomes possible to carry what had been a stumbling intuitive discipline to the level of a strict science: ontology is transformed into *formal* ontology.[11] It acquires a clearly delineated aim, that of constructing artifical languages whose syntax will mirror in some systematic way the structure of the universe, different syntactic types corresponding to different formal-ontological categories, the relations between the symbols of each type corresponding to relations between entitites of the corresponding categories.[12] Thus, trivially, if we use capital Roman letters with superscripts to denote properties and relations, lower case Roman letters to denote individual objects, then 'P^1a' might express the instantiation of the property P^1 in the object a, '$aR^2 b$' the holding of the relation R^2 between the objects a and b, and so on.

---

11. It is necessary to distinguish the use of the term 'formal ontology' on the part of analytic philosophical logicians such as Cocchiarella (see n. 17) from Ingarden's use in StEW, even though there is a welcome overlap between the two sets of activities. For Ingarden, ontology is divided into formal, existential and material ontology, according to the type of ontological moments on the side of the entities themselves which the philosopher is investigating: these may be *formal* (differences, e.g. between individual and higher-order objects, their properties and relations, and the states of affairs they co-constitute); *existential* (where we distinguish various modes of being, e.g. real, ideal or purely intentional being); or *material*, (a matter of temporality, causality, etc.). 'Formal ontology' as employed by analytic philosophers connotes the use of *formal methods*, i.e. of mathematical logic; however, there is nothing in Ingarden's project which would rule out the use of such methods in its detailed execution – the present author believes, indeed, that they will be seen to be indispensable.

12. This approach to (analytic) formal ontology is most cogently defended by N. B. Cocchiarella, who regards his work as a continuation of that of Frege, Russell and Gödel. See especially his "Existence Entailing Attributes, Modes of Copulation and Modes of Being in Second Order Logic", *Nous*, 3, 1969, pp. 33–48; "Properties as Individuals in Formal Ontology", *Nous*, 6, 1972, pp. 165–87; "Formal Ontology and the Foundations of Mathematics", in *Bertrand Russell's Philosophy*, ed. G. Nakhnikian, Duckworth Press, London, 1974, pp. 29–46.

Formal ontology, then, is to result in a Leibnizian *characteristica universalis*, a great mirror, which will reflect all of the various existential, formal and material moments possessed by all of the various different kinds of beings which there are in the universe.[13] This is too quick however. For what has not yet been made clear is what it is which will provide the basis for the construction of this universal language. Early formal ontologists were, I want to claim duped by the purely technical strides being taken contemporaneously with their first applications of logic to ontology, duped into the belief that the task of construction could be carried out systematically and completely on the basis of the solution of logical problems alone, problems, that is to say, in the logical grammar of particular languages. The old tradition of ontology had rested, in contrast, on a slowly growing storehouse of ontological intuitions, and had consisted in informal, often simply rhetorical arguments erected on these intuitions as basis. But it is an index of the damage done to philosophy by the early, ill-considered, and overspeedy introduction of formal-logical methods into philosophy that appeals to intuition are invariably met with blank stares of horror from the contemporary philosophical logical community. It is not my purpose to provide a complete defence of intuition here, but note that one branch of intuition which is perhaps more familiar than most is ordinary sensory perception: our perceptions *may* mislead us, but this is no reason to distrust every perception, nor to distrust the general model of perceptual-geographical space which our sensory experience determines for us.[14]

---

13. On the Leibnizian-Fregean notion of logic as a characteristica universalis see J. van Heijenoort, "Logic as calculus or logic as language", *Boston Studies in the Philosophy of Science*, 3, 1967, 440–46, C. Thiel, *Sense and Reference in Frege's Logic*, Dordrecht: Reidel, 1968, Ch. 1. Wittgenstein refers to logic as a 'great mirror' in *Notebooks 1914–16*, Oxford: Blackwell, 1961, p. 39, and *Tractatus* 5.511.

14. Cf. the discussions of categorical intuition in Husserl's *Logical Investigations*, especially Investigation VI, and the discussions of eidetic intuition in Husserl's *Ideas*, §§ 3–7, 21–23, 67–75, 136–145.

A still more damaging consequence of the too quick introduction of formal logic into philosophy was that the assumption that the logical great mirror would have a degree and a type of simplicity comparable to, say, the systems of *Grundgesetze* and *Principia*, led to a corresponding, indeed precisely coordinated, *simplification of the world*, that is to say of the subject-matter of the discipline of ontology. It has been easy for critics of formal logic to argue that the subsequent methodological Procrusteanisation perpetrated by, say, the logical positivists is an inevitable consequence of the employment of formal methods as such. I wish to claim, however, that this is not the case, that the two traditions of Brentano-Husserl-Ingarden and Frege-Russell-Wittgenstein may be re-united, in the construction of a truly adequate universal ontological language. The novelty of this claim lies in its being associated with a recognition – which cannot fail to be acquired by those who have absorbed Ingarden's works – of the fact that the logic involved in such a language would have a complexity of a degree and of a type hitherto wholly unfamiliar. For logicians have contented themselves with investigating systems having a merely 'mathematical' complexity, paying no attention to the unshapely kind of *empirical* complexity which is demanded by adequate ontology, as by every other descriptive science. Indeed, mathematical elegance and, correlatively, mathematical deviance, for their own sake, must be seen to have as little role to play in formal ontology as they do in, say, chemistry or microbiology.

For the sake of irritation I have sometimes defended the view that the foundational work which would be needed before this new great mirror could be produced, that is to say, the detailed investigations of the relationships between concrete and abstract individual and higher-order objects, their porperties, relations, states of affairs, events and processes, as well as between all of these and individual consciousnesses, their thoughts, ideas, associated meanings, concepts, theories and so on, would be of such complexity as to require several thousand years for its

fulfilment.[15] Three considerations may, perhaps, soften the effects of this remark upon those who, like myself, want to do *formal* philosophy already at this comparatively early stage. First of all, thanks to the work of Aristotle, and the scholastics, Leibniz, Wolff, Herbart, Bolzano, Lotze, Frege, Brentano, Meinong, Husserl, Mally Twardowski and Ingarden, we are already in the position of having 2000 years of product with which to begin. And secondly, precisely because logical theories of such complexity will, in the future, be demanded by philosophers, it is necessary that we push on with the work of producing and refining such theories. Further, since complex formal systems can be grasped and then correctly applied only by those who have interiorised principles of at least an equivalent degree of complexity, it follows that philosophers must continue to familiarise themselves with the best system that logic has to offer at any given stage.

The danger is, of course, that this will lead once more to the creation of an Ockhamist philosophical climate, that philosophers will once more allow logic of a still-manageable degree of complexity to solidify, and they will then fall into their old habits of reading off the contours of the surrogate world implicitly defined by that logic, imposing them, in Procrustean fashion, upon the world itself, which ought to form the exclusive subject-matter of their inquiries. One way in which we can ensure that this danger is avoided may be sketched as follows. Philosophical logicians have assumed, under the pressure of exaggerated Ockhamism, that they must compete with each other to produce theories which have the very least ontological complexity which is required for the solution of given problems or for the explanation of given

---

15. Even the fifteen hundred pages of StEW which Ingarden managed to complete contain only a very preliminary sketch of existential ontology, a developed formal ontology only of what below are called 'object entities', and an unfinished first contribution to the material-ontological analysis of causality. The necessary investigations of the relationships between these three disciplines (see E. Swiderski, "Some Salient Features of Ingarden's Ontology", *Journal of the British Society for Phenomenology*, 6, 1975, 81–90) are merely hinted at in passing.

phenomena. My suggestion is that this process ought more properly to be put into reverse, that philosophical logicians should be aiming rather always to surpass each other in the production of systems ontologically ever more complex, that the philosophical laurels should go not to he who can explain important categories of entities away, but to the philosopher who can provide convincing reasons for an extension of our ontology, or who can provide arguments cogent enough to rescue entities which have come to appear problematic, even though this will often lead to a diminution in the ontological status which those entities are to be conceived as possessing. We should adopt, that is to say, Bochenski's maxim: why make it simple, if it can be complicated?[16] Taken seriously this maxim would, of course, lead to an exaggeration as reprehensible as that of the old perverted Ockhamism. But then the Bochenskian and not the Ockhamist can appeal to the tailor's defence: it is much easier to fashion an acceptable suit of clothes from cloth which has been cut too large than from insufficient cloth, or from cloth which has been cut too quickly, and with greater attention to symmetry and rectilinearity than to the shape of the body it is intended to fit.

It now becomes clear that ontologically rich formal languages are of value precisely to the extent that they are developed on the basis of an appeal to ontological intuitions. But the relationship between the languages to be employed at any given stage and the battery of ontological intuitions current at that stage is not by any means a simple one. For intuitions divide themselves into secured intuitions, which are taken for granted by all workers in a given field; and unsecured intuitions, put forward tentatively as part of proposed solutions to specific ontological problems. Let us assume that a given formal ontological language, say L_n, is projected on the basis of the intuitions,

---

16. This 'principle of non-miserliness' is defended by G. Küng, "The World as Noema and as Referent", *Journal of the British Society for Phenomenology*, 3, 1972, pp. 15–26, esp. p. 25 and "Ingarden on Language and Ontology", *Analecta Husserliana*, 2, 1972, pp. 204–17, esp. p. 214.

whether secured or unsecured, which we have concerning a certain subject-matter at a given stage n. We then experiment in various ways with L_n, e.g. we attempt to express with formal precision ontological arguments hitherto developed pre-formally or we investigate how far L_n might suggest solutions to open ontological problems in the given area.[17] Such experiments, whether they result in relative failure or success, lead to a rejection of some of our initial intuitions and to a sharpening of others, and thereby to a new, more adequate language, L_{n+1}. Eventually we gain a familiarity with L_{n+1}, that is, we interiorise its associated underlying ontological theory, and thereby the secured intuitions, which had been explicitly and shamefacedly tentative at the nth stage, take their place as parts of the background of our new, more adequate ontology. The principles involved now come to be taken for granted; they determine a space within which new, once more tentative intuitions can be developed and tested, the procedure then repeating itself through future stages.

This account involves, of course, much that is oversimplification. There will be, in general not one, clear, evolving sequence of languages and associated formal-ontological theories, but branches and conflicts, illusions and setbacks of the type which we find in every science. Consideration of the history of formal ontology from the *Tractatus* through Carnap and Bermann to, say, Davidson[18] and Cocchiarella,

---

17. The great virtue of (analytic) formal ontology lies precisely here, that formal-logical languages are *determinate* – even though provisional – *objects of investigation* in a way in which (sometimes fragile) intuitions are not.

18. Davidson's essay on "The Logical Form of Action Sentences" in *The Logic of Decision and Action*, N. Rescher, ed., Pittsburgh, 1967 and the literature which has followed in its wake consists, in effect, in investigations in the ontology of *events*. Events (weddings, crap games, sneezings, splittings [of amoebae], etc.) fall into various distinct ontological categories (see StEW, I, Ch. V, II/1, § 54, II/2, Ch. XIV) and have various ontological relations between each other. In particular some events are constituted out of others: they exhibit the kind of stratificational ordering discussed in 3,4 in relation to object-entities in general. The question which we

suggests, however, that it embodies at least the kernel of what would be a correct account.

§ 2. Meaning-entities vs. object-entities

When Stumpf introduced the term *Sachverhalt* he gave it the same sense as Brentano's term *Urteilsinhalt* or 'judgment-content', and related it also to Bolzano's *Satz an sich*, a term which is customarily translated as 'proposition' by Bolzano scholars. It therefore seems that the term stands in close relation to the 'conceptual content' of Frege's *Begriffsschrift* and then also to the 'sentential sense' ('thought') of Frege's semantical writings. But it does not seem now to be possible to set *Sachverhalte* or states of affairs alongside propositions or thoughts, to consign them, that is to say, to what Frege called the 'realm of senses' as opposed to the realm of ordinary referents (including the real world and its objects, properties and relations). For the (surely by now well-justified) use of this term, not only in Wittgenstein, Husserl, Reinach and Ingarden, but also in standard analytic philosophical discussions of facts, is such as to treat existing states of affairs as dovetailed, with objects, properties, relations, events and processes, being that on the object side of things which, directly or indirectly, make assertative sentences true or false.

These remarks point to a fundamental dichotomy, both terminological and ontological, a dichotomy which was clearly seen for the first time by Husserl in the *Logical Investigations* and which was hinted at by Frege in his terminology of 'realms',[19] a dichotomy which is important because

---

would raise, is whether the *logical* analysis of event/action discourse ought not to be recognised as having a methodologically secondary role in relation to the direct *ontological* analysis of events/actions as such.

19. Frege frequently speaks, especially in his later works, of a 'realm of sense', a 'realm of reference', and even of a 'realm of word and sentence': see his essay on "The Thought" ("Der Gedanke"), *passim*, on "Negation" ("Die Vereinung"), esp. p. 130, and, for further references, Thiel, *Sense and Reference* (cf. n. 13 above), pp. 150f. For a discussion of Frege's ontology of realms and a rebuttal of Thiel's

it has led to certain important confusions on the part of those philosophers such as, we suggest, Meinong,[20] Russell,[21] and Chisholm,[22] who have failed to appreciate its full significance. This dichotomy may be expressed as follows:

Entities are divided into (at least) two categories, which we might call the category of meaning-entities and the category of object-entities, respectively.

Meaning Entities	Object Entities
Senses	Individual objects
Propositions (*Sätze an sich*) Thoughts Judgment-contents	Higher–order objects

---

criticism thereof see my "Frege and Husserl: The Ontology of Reference", *Journal of the British Society for Phenomenology*, 9, 1978.

20. Meinong's *objectives* are entities which seem to hover, according to the role which Meinong has in mind for them, from one side to the other of the meaning/object line which we are here attempting to delineate.

21. Cf. Dummett, *Frege: Philosophy of Language*, London: Duckworth, 1973, p. 153.

22. In his *Person and Object*, London: Allen and Unwin, 1976, Chisholm puts forward an account of states of affairs according to which propositions – in what seems to be the familiar sense – are regarded as a sub-category of states of affairs (see pp. 114–126).

Concepts (conceptual contents)[23]	Properties Relations
Theories (and other higher-order meaning-structures)	States of Affairs
Vorstellungen, ideas, images Husserlian *noemata*	Events Processes
...	...
= realm of senses	= realm of (ordinary) referents

Perhaps we can characterise the opposition involved here by saying that meaning-entities are actualised in and form the content of our conscious acts, especially conscious language-using acts, and that they thereby form the medium of significant access to object-entities.[24] The latter, on the other hand, radically exclude the possibility of actualisation by consciousness; object-entities can hold *only* the 'target' position for an act.

A marginal note which I might make here is that where valuable work on object-ontology has been done by analytic philosophers, this has been almost exclusively within the philosophy of mathematics, the solution of problems in this area having brought forth many of the techniques and insights which have shown themselves to be indispensable to formal ontology in general. My conjecture is that this same service might be provided for the theory of meaning-entities by considerations in the

---

23. 'Concept' here is not used in Frege's sense, for concepts are regarded as the senses, not the referents of predicate expressions. Note however that the kind of ontological dichotomy involved is wholly Fregean in spirit.

24. For a more detailed discussion see my "Frege and Husserl" (cf. n. 19 above).

philosophy of economics. For where mathematics provides a pocket ontology, an *object*-universe within which many of the relations between object-entities in general are mirrored in a controlled way, so economics may provide a relatively isolated sphere of *epistemic* interaction (i.e. between the beliefs, skills, habits, plans, desires and actions on the parts of different subjects), interaction of just the kind which gives birth to meaning-entities in general, wherever these may arise.

§ 3. The Stratification of the Universe of Objects

In the present paper we shall be concerned exclusively with object-entities; we have introduced meaning-entities at all only to forestall the possibility of certain kinds of ontological confusion which have hitherto bedevilled discussions of negative states of affairs. For the latter, if they exist at all, are certainly *object*-entities: they are that in the world to which we are related when we understand negative sentences and not, e.g. the meanings of those sentences. Before moving over to treat of this specific topic however it is necessary to spend some time in making clear to ourselves the scope of the category of object-entities as this is here intended. Object-entities, first of all, need not be exclusively real spatio-temporal physical things: numbers, at least those numbers which are dealt with by the positive science of arithmetic, are object-entities. Indeed, reflection on the notion of *reference to individual objects* reveals that even for this restricted class of object-entities the familiar identification of ontological status as real spatio-temporal existence is illegitimate: a much more complex situation presents itself.

There are, for example, individual objects such as Sherlock Holmes and the large cardinals of classical and non-classical set theories, which have ontological status as objects even though they have no real existence, are not embedded in the real world in the way in which, say, President Carter is so embedded. Ingarden, virtually the only distinguished pupil of Husserl to have survived both wars in the continued exploration of Husserl's original logical-philosophical problems, developed an extremely detailed theory of the ontological
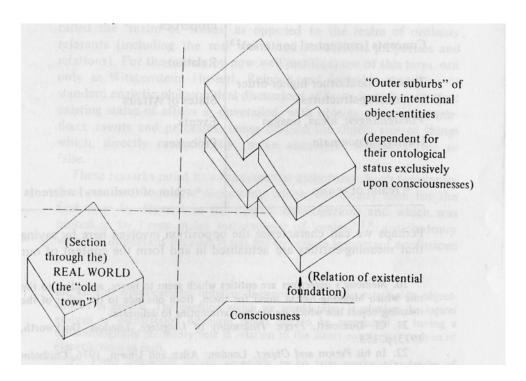
structure of literary works which involves, in particular, an analysis of the form of the non-real created objects of fiction, an analysis which provides the starting point for any account of the non-real regions of the universe of object-entities.[25] Ingarden points out that the individual objects of fiction exhibit a peculiar ontological dependence upon certain determinate networks of creative and re-creative acts of conscious subjects, e.g. of the authors and readers of literary works. Unfortunately precisely this 'dependence' upon consciousness has made it possible for philosophical ontologists to decline to take them seriously: those areas in which the clearest examples of non-existent individual objects occur, namely fiction and creative mathematics,[26] can both very easily be considered e.g. from a purely *linguistic* point of view – Hamlet, *et frères*, being explained away in terms of certain *façons de parler* – in a way in which, say, the objects of chemistry or of gastronomy, cannot. But the fact that we *can* provide satisfactory explanations of, say, the objectivity of fiction or of the truths of set theory without making a move of ontological ascent relative to the singular referring expressions of the underlying linguistic structures does not mean that we have to be content with such explanations. Indeed, once the move of ontological ascent is made, then it becomes clear that many crucial ontological and phenomenological features have been masked to linguistic philosophers through being unmarked in the languages which, in our everyday pre-ontological attitude, we have developed for the purposes of our intercourse with such linguistic structures.

---

25. The theory is presented in StEW, II/1, Ch. IX and also, in more detail, in Ingarden's *Das literarische Kunstwerk: Eine Untersuchung aus dem Grenzgebiet der Ontologie, Logik und Literaturwissenschaft*, Halle: Niemeyer, 1931, English translation as *The Literary Work of Art*, Evanston: Northwestern U.P., 1973.

26. I have defended an account of the mathematical work as a borderline case of the literary work of art in "The Ontogenesis of Mathematical Objects", *Journal of the British Society for Phenomenology*, 6, 1975, 91–101 and in "Historicity, Value and Mathematics", *Analecta Husserliana*, 4, 1976, 219–40.
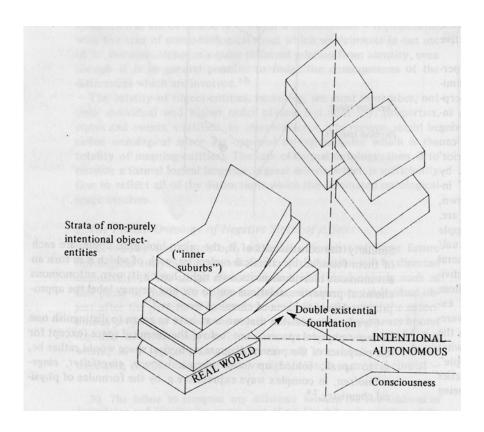
But the refusal of ontological ascent implies, even more importantly, a subsequent failure to apprehend an obvious generalisation of the ontological theory of non-real objects, a generalisation which would carry the kernel of the theory over into areas where a purely linguistic approach in terms of *façons de parler* is not at our disposal.

We have, on the one side, the real world with all its autonomous individual objects, properties, states and so on, and on the other side the purely intentional individual objects just discussed, objects whose ontological status consists entirely in their being projected in uniform ways by consciousnesses guided by linguistic structures of various types.

But now, besides these *purely* intentional objects there are also intentional object-entities of other types, entities which arise through certain operations of consciousness, in particular through various types of *demarcation*, and which therefore owe their ontological status, at least

18

in part, to appropriate networks of acts e.g. acts of classification or scientific theory-building. But because "demarcations" are, ultimately, demarcations *of* the autonomous real world, the entities which result depend for their ontological status also upon the precise determinations of that world – in a way in which Holmes, say, does not. These entities are intentional, but not purely intentional; they do not depend for their constitution purely upon the activities of consciousness but have a second existential foundation, namely in the real world itself.

Trivial examples of entities which belong in these strata would be higher order social, political and geographical entities such as universities, parishes, nation-states, armies, military alliances, the North Sea, and so on, all of them the reflections of conscious demarcations of various kinds, mediated, to a greater or lesser extent, by structures such as constitutions, treaties and admirality charts.

Consider the complex system of states and events which was the Franco-Prussian war. We are all familiar with the truism that all that *really* exists here, exists that is to say, on the level of autonomous reality, are the individual participants in and victims of the war, together with their weapons and fitments, clods of earth, horses, maps, order papers and so on, these participants undergoing various complex interrelated processes: issuing commands (causing certain vibrations in the air), dying by being trampled underfoot, and so on. In contrast to this the platoons, battalions, divisions, regiments and armies do not *really* exist, and nor *a fortiori* do the campaigns, battles, retreats and tactical manoeuvres, even though they are all entities about which not only later historians but also, from various points of view, the individual participants of the war were accustomed to speak. This is because all such object-entities have no place *alongside* the soldiers and their individual panics, the cannonballs and their individual trajectories, as these exist squarely embedded in the temporally unfolding world of autonomous reality. Certainly battles and battalions depend, ontologically, upon the existence of and upon the interrelationships between the various individual object-entities which are embedded in that world, but they depend also upon various demarcatory ordering principles and various knowledge-interests of participant conscious subjects either having been brought into play there already, in the thick of the battle, or being brought into play retrospectively, in historical texts.[27] Now it may be possible to show that all that can be said about

---

27. Thus F. A. Hayek writes: "The social complexes, the social wholes which the historian discusses, are never found ready given as are the persistent structures in the

these various higher-order object-entities taken ontologically seriously can be re-said in an ontologically reduced language in which reference is made only to certain *façons de parler* on the part of, say, military historians. Yet such a historian would justly complain if his discipline were crippled by the imposition of this reduced language as the proper medium of historical investigation.[28]
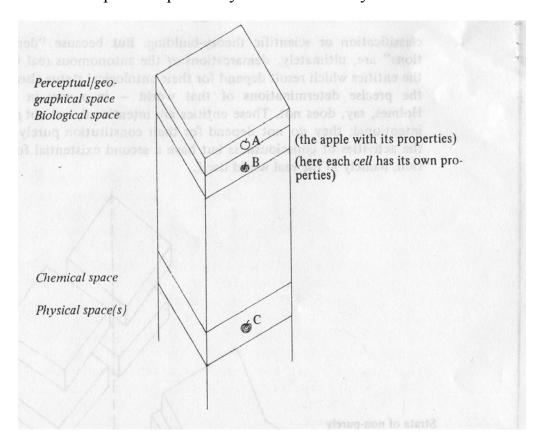
Unfortunately the military historian, like, say, the medical scientist and the literary theorist, has been little heard amongst philosophers, very few of whom have recognised the need for the kind of stratified ontology which would be needed to take his discipline and indeed *every conceivable discipline* ontologically seriously. Indeed, even the natural sciences, which take as their subject-matter the autonomous real world (thus far accepted here as being ontologically unproblematic), presuppose an intrinsic stratification of that world, the ill-consequences of which, in the form of massive theoretical complexities, are mitigated only by the fact that these sciences develop in relative isolation from each other.

Consider, say, a real apple which sits, *qua* apple, in the perceptual geographical space with which we are all of us familiar for the whole of our waking life. Still within the perceptual/geographical space we can distinguish either directly or by inference various properites of the apple: being red, being shiny, having such and such a mass, and so on. Now

---

organic (animal or vegetable) world. They are created by him by an act of construction or interpretation – a construction which for most purposes is done spontaneously and without any elaborate apparatus." ("The Facts of the Social Sciences", *Ethics*, 54, 1943, 1–13 as repr. in *Individualism and Economic Order*, London: Routledge, 1949, p. 72).

28. Note that since, as Ingarden points out (StEW, II/1, Ch. IX), intentional objects have no causal relationships, except insofar as these are acquired, derivatively, from the lower-order autonomous individual objects which support them, it follows that the ontology here presented is perfectly consistent with the principles of methodological individualism defended by Hayek, loc. cit. (cf. also Pt. I of his *The Counter-Revolution of Science*, 1955, Glencoe: The Free Press).

there is a division which can be made amongst such properties, between those which are 'exterior' to the apple in being open to immediate determination (e.g. by turning the apple in my hand), and those which are 'interior' including, e.g. the properties of its core, (being rotten, being brown, having four pips, and so on). All of these properties of the core are, so to speak, 'behind' the immediately visible properties of the apple as an apparently healthy, undissected whole, in a purely perceptual/geographical sense of 'behind'. But there is another, more general sense of 'behind' according to which e.g. the properties of the individual cells and cell-tissue which make up the apple are 'behind' those medium-scale properties so far discussed, whether interior or exterior. This deeper-going 'behindness' we can represent – in awareness of the metaphor imposed by the need always to work within the

Perceptual/geo-
graphical space —
Biological space

A — (the apple with its properties)

B — (here each *cell* has its own pro-
perties)

Chemical space

Physical space(s)

C

dimensions of perceptual/geographical space – by regarding what might be somewhat misleadingly called the micro-biological 'apple', that is, the relevant totality of individual cells with their properties and relations, as *below* the perceptual, edible apple, the latter being *founded by* or *constituted out of* the former.

Similarly the constituents of B, the micro-biological apple, are each of them founded by chemical molecules, each of which is in turn an autonomous individual in its own right, having its own autonomous chemical properties, relations and so on, and we may label the appropriately delineated area of chemical space as 'C'.

Clearly it is possible that we may have to go on to distinguish one or more physical spaces – not 'below' the chemical space (except for the purposes of the present diagram): physical space would rather be, so to speak, folded up inside chemical space, *eingefaltet, eingeschmolzen*, in complex ways expressed e.g. by the formulae of physical chemistry.[29]

There is an important temptation with respect to the autonomous strata which make up the real world, a temptation which lies at the root of Ockhamist reductionism. This is the temptation to suppose that A, B, C, and so on are *one and the same object*, conceived from different points of view, that 'A', 'B', 'C', ... are co-referential singular terms, *embedded in different vocabularies*. This ignores the fact that what we call, e.g. B, is in fact an *intentional* object created by our synthetic activity, with no autonomous status within micro-biological space itself at all. Of course A – which *is* autonomous – is coincident with the area

---

29. It might even be necessary to acknowledge, on the 'higher' intentional side of things now, a peculiar *pomological* space, founded by the totality of autonomous individual fruits which we encounter, horticulturally and gastronomically, as these are ordered by our conscious demarcatory acts of fruit classification, acts which are neither wholly arbitrary nor wholly non-arbitrary.

of micro-biological space which we delineate in our use of 'B', but coincidence is a quite different relation from identity, even though it is in general possible to fudge the consequences of the differences which are involved.[30]

The totality of object-entities, including, we must remember, not only individual and higher order objects but also, say, properties, states and events, stratified, in complex ways, into regions, might be called *ontological space* (as opposed to *logical space* which is the totality of meaning-entities). The task of formal ontology, then, is to provide a formal logical language, a great mirror, which is sufficiently fine to reflect all of the distinctions which this laminated ontological space involves.

§ 4. The Formal Ontology of Negative States of Affairs

What follows is a sketch only of certain elements of some future ontological analysis of states of affairs. Our attention will be directed exclusively to the states of autonomous individual objects such as this piece of chalk. We might imagine an autonomous individual object after the pattern of an autonomous individual orange; the autonomous *properties* of such an object play the role of *segments* bound together in diverse ways to constitute the object as a whole.[31] But where, in a typical orange, there is only *one* bank of separable segments, each an object in its own right, objects in general consist – from the point of view of property theory – of myriads of systems of inseparable 'segments', ranged together or folded inside each other in the complex ways hinted

---

30. The failure to recognise any difference between the two relations of coincidence and identity lies at the root of e.g. Geach's early rejection of the notion of absolute identity in favour of various non-absolute identities relativised either to 'sorts' or to what are, in our terms, ontological strata. See Geach, *Reference and Generality*, Emended edition, Ithaca: Cornell University Press, 1968, p. 34.

31. Cf. StEW, II/1, §§ 39–42.

at in our discussion, above, of the various autonomous strata of the real world. Whenever, in approaching a piece of chalk, I ascertain that it has some property or other, say of being white, I unfold in my mind, as it were, one of its property-segments, and this possibility of unfolding an autonomous property of the piece of chalk corresponds to the subsistence, in the ontological orbit of the chalk, of a particular positive state of affairs, the being-white of the chalk. This state of affairs is an object-entity which subsists autonomously, that is to say, with the same objectivity as the chalk and its property of being white; it subsists, in particular, independently of any acts of recognition or apprehension on the parts of conscious subjects.

The interest of modern analytic philosophers in states of affairs has generally been motivated by *semantic* considerations. States of affairs are introduced as truth-makers having a status which is derivative relative to that of the sentences which they make true. For certain states of affairs this account has, as we shall see, much to recommend it. But I want to argue that for the case of an autonomously subsisting, positive, predicatively formed state of affairs such as *this chalk is white*, the statal entity involved *exists*, purely and simply, prior to any sentence-forming operations on our part, and that states of affairs of this type would still exist even in a world which was wholly denuded of intellects, language-using or otherwise.

One reservation has to be made concerning such a claim, however. For consider a typical group of such positive autonomous states of affairs, say:

this chalk is white
this chalk is pearly white
this chalk is creamy white
this chalk is lactescent.[32]

---

32. Here italicisation of sentences corresponds to the execution of a process of statal abstraction which turns sentences into names (of states of affairs) as, e.g. class

What must be noted is that we do not have four distinct states of affairs side-by-side, like matches in a box. To suppose that there were four, separately existing states, would be simply to be misled by the separateness of the four sentences; for whilst the sentences are strictly demarcated from each other, the corresponding 'states' are rather fused together, in complex ways.[33] As Ingarden puts it:

> ... the states subsisting in an object itself are not demarcated from each other in the way that they seem to be when we consider them as the correlates of a manifold of different types of assertative sentences involving reference to that object. The relative self-containedness of the sentences – even when these are connected together – carries with it an intentional demarcation of the individual states of affairs.[34]

But whilst the *demarcation* of states imposed by our sentences is intentional, the *underlying positive statal fabric* is still autonomous. This yields an answer to certain initially very tempting arguments against the possibility of an ontology of autonomous states of affairs. Strawson, for example, claimed that since, if you peel the statements off the world you thereby also peel the fact off it too, it must follow that facts are to be regarded as enjoying a merely secondary existence as reflections of our sentences.[35] Strawson's error was to mistake the dependence of the

---

abstraction turns predicates into names (of classes of objects which belong to the extensions of the given predicates).

33. (Which it would be one of the tasks of the future ontological theory to determine more precisely).

34. StEW, II/1, p. 284, my translation.

35. P.F. Strawson, "Truth", *Proceedings of the Aristotelian Society*, Supplementary volume,, 1950, as repr. in *Logico-Linguistic Papers*, London: Methuen, 1971, p. 197.

demarcation of states upon sentential grammar and upon the conscious meaning-acts in which sentences are constructed, for a dependent *existence* of the underlying statal fabric.

From our point of view, then, positive states of affairs *exist* autonomously, even though they are bundled together as fabrics or *Verbände*, having a structure which our individual sentences do not yet succeed in reproducing. Such autonomous states subsist as constituents of the real spatio-temporal world; they are determinately formed 'wholes' consisting of the objects, properties and relations – concrete properties and relations[36] – which are their underlying ontological material. What, now, of negative states of affairs? Reinach adopted the view that negative states of affairs too must subsist, with precisely the same objectivity as positive states, for their subsistence seems to be irreducibly tied to that of positive states through logical laws.

> The judged negative state of affairs corresponding to "3 is not smaller than 2" stands [Reinach tells us] in a relationship of necessary amalgamation with that which corresponds to "3 is greater than 2", an amalgamation of such a type that with the subsistence of the one is immediately given the subsistence of the other.[37]

Similarly the negative state of affairs *this chalk is not black* appears to be bound up in a relationship of necessary amalgamation with *this chalk is white*, and parallel relationships can be found for every true predication, positive or negative, which can be made about the chalk.

There is something worrying about Reinach's claim, however. Indeed Russell tells us that when, in his lectures in Harvard, he defended this same view, that negative facts subsist with the same objectivity as

---

36. See Küng, "Concrete and Abstract Properties", *Notre Dame Journal of Formal Logic*, 5, 1964, 31–36.

37. *Schriften*, p. 96, my trans.

positive facts, this 'nearly caused a riot.'[38] The members of Russell's audience reveal, in this, that they have healthy ontological intuitions. What I want to do is to try to show how such intuitions can be secured when appeal is made to the ontological theory which is put forward by Ingarden.

It is right to say that the positive state of affairs *this chalk is white* subsists autonomously, Ingarden argues, because here all of the constituents of the state, that is, the chalk, its property of being white, and the nexus of instantiation between the two, themselves subsist autonomously within the ontological orbit of the object in question, capable of being 'unfolded' by any subject who has experience of the chalk.[39] Consider, now, the negative state of affairs *this chalk is not vermillion*. Here whilst the chalk itself exists autonomously, the property involved is only thought or intended, it is *carried into the situation from outside* as an intentional projection e.g. of our acts of questioning or surmising about the colour of the chalk.[40] Thus the state of affairs which consists of the chalk and its not being vermillion is the result of a certain kind of intentional demarcation by a given subject. All of this goes to show that that negative state belongs to the strata, considered above, of those intentional object-entities which, whilst corresponding to autonomous determinations of the real spatio-temporal world which underlie them, are yet not constituents of that world, but intentional projections laid over it by consciousness as a result of the various cognitive interests which it brings into play. Negative states of affairs,

---

38. "The Philosophy of Logical Atomism", *The Monist*, 28, 29, 1918–19, as repr. in R.C. Marsh, ed., *Logic and Knowledge. Essays 1901–1950*, London: Allen and Unwin, 1956, p. 211.

39. Cf. StEW, II/1, § 53, esp. e.g. pp. 295 f.

40. StEW, II/1, *loc. cit.*

Ingarden suggests, may perhaps be compared to *shadows*, which so to speak lie behind an object as soon as a source of light is cast upon it:

> Their direction, size and form are co-determined by this source of light and then also of course by the form of the object itself. In just this fashion negative states of affairs are called forth and determined, on the one hand by the subsistence of corresponding positive states of affairs in the given object and on the other hand by the interests which a given cognitive subject has in a particular range of determinations of that object ... The subject makes up the deficiency which he finds in the object intentionally, by means of negative states in which the separation from the object of certain material determinations is brought into light.[41]

Negative states of affairs are not the only object-entities which have this kind of double existential foundation in belonging to 'extensions', brought about by particular conscious activities, of the ontological orbits of given individual objects. Consider, for example, disjunctive and conjunctive, conditional and counterfactual states of affairs, states of affairs projected into the future, and states corresponding to empirical possibilities of a given object (in so far as these are reflections of our current knowledge of what is possible for that object).[42] And consider further the various parallel categories of properties, events, processes, relations and so on which also belong in our 'non-purely-intentional strata', in being projections of various types of intellectual concerns relative to particular autonomous object-domains. In each case we have certain 'penumbra' which, as a result of our knowledge and interests and of the linguistic machinery which we have to hand at any given stage, are projected intentionally around the individual objects which we encounter. It has been the contribution of Ingarden that he has uncovered

---

41. StEW, II/1, p. 308, my trans.

42. Cf. StEW, II/1, pp. 314 f, *et passim*.

something of the structure of these penumbral fabrics of janus-faced entities, and that he has taken seriously the fact that we are all of us, all the time, related to such entities in our intellectual dealings with the world.