

2. P. F. Strawson, "Meaning and Truth," reprinted in Strawson's *Logico-Linguistic Papers* (London, 1971) pp. 188, 189.
3. Donald Davidson, "Truth and Meaning" in *Philosophical Logic*, ed. J. W. Davis, D. J. Hockney, and W. K. Wilson (Dordrecht, 1969) p. 7.
4. Samuel Guttenplan in his introduction to *Mind and Language* (Oxford, 1975) pp. 5, 6.
5. *Tractatus*, 4.024.
6. W. V. Quine, "Mind and Verbal Dispositions," in Guttenplan, *Mind and Language*, p. 88.
7. Rudolf Carnap, *Introduction to Semantics* (Cambridge, 1942) pp. 22, 23.
8. Rudolf Carnap, *Introduction to Symbolic Logic and Its Applications* (New York, 1958), p. 15.
9. Compare Gilbert Harman, "Meaning and Semantics" in M. K. Munitz and P. Unger, *Semantics and Philosophy* (New York, 1974), especially p. 4.
10. When I refer to the sentence ". . ." in this essay, the reader should imagine that I have referred to some token of that sentence written on a blackboard.
11. Most of these points were made years ago by G. E. Moore. Cf. *The Commonplace Book* (London, 1962), pp. 303-8 and "Russell's 'Theory of Descriptions,'" in Moore's *Philosophical Papers* (London, 1959), especially pp. 172-77; although they are still denied. Cf. Anthony Quinton, *The Nature of Things* (London, 1973), pp. 342-44.
12. John Searle, *Speech Acts*, (London, 1969), p. 29.
13. On the definition proposed, the sentence "John is a male and John is a sibling" expresses the proposition that John is a brother. It also expresses the proposition that John is a male and expresses the proposition that John is a sibling. If we wish to say, as I think we ought to, that "John is a male and John is a sibling" (strictly) expresses only the proposition that John is a brother, we could define "S strictly expresses *p*" as follows: S expresses *p* and for any proper part *S'* of S, if *S'* expresses *p* then S and *S'* express exactly the same propositions. And define "*S'* is a proper part of S" as: Necessarily, if anyone utters S, then he utters *S'* and not necessarily if anyone utters *S'*, then he utters S. We could then say "John is a male and John is a sibling" strictly expresses the proposition that John is a brother, but does not strictly express the proposition that John is a male nor strictly express the proposition that John is a sibling. And we could say that neither "John is a brother and John is a male" nor "John is a brother or John is a male" strictly expresses the proposition that John is a male. Henceforth, "expresses" should be taken to abbreviate "strictly expresses."
14. I have benefited from discussions with: David Austin, Roderick Chisholm, Earl Conee, Fred Feldman, Richard Feldman, Edmund Gettier, and M. B. Smith.

The Problem of the Many

PETER UNGER

It is my intention to propose a new philosophical problem which I call *the problem of the many*. This problem concerns the number of entities, if any, that exist in actual ordinary situations and in counterfactual or hypothetical situations. The problem concerns the number even at a given moment of time, and it becomes only yet more baffling when durations of time, and changes, inevitably complicate the issue.

It is a philosophical commonplace to note that, without any further specification, there is no definite finite answer to the question of how many entities a given ordinary situation contains. Considering my own present situation, for example, it might be said to contain a salt shaker, also each of the grains of salt in the shaker, also the atoms that compose the shaker, as well as each of those in the grains, and this is only to begin to enumerate what seems natural. Artificial or contrived entities, so to introduce them, greatly complicate the picture. There is the left half of the shaker, as viewed from right here, and also the right half; there is the scattered concrete entity whose salient parts are that left half of the shaker and the second largest grain of salt inside the shaker; perhaps, there is even relevantly in the situation, the abstract entity that is the set whose sole members are the two concrete items most recently specified; and so on, and so forth.

To illustrate this commonplace is of course nothing new. But it is not even to rehearse any philosophical problem, about numbers of things. For, what is the problem here? On the contrary, it is natural to suppose that once an available category or sort of entities is specified, a definite answer frequently can be given, often in the form of a small positive finite number. Thus, for example, if the question is how many *salt shakers* my present situation contains, the answer is *one*. And, for another example, if the question is how many *human hands* are in that situation, then the answer is *two*. Supposedly without any serious problem, this is what one is given to think. What is new, I believe, is to suggest that even here, with

such ordinary kinds purporting to delimit things, no such manageable answers are tenable. And, insofar as there is something to it, this suggestion does mean a problem.

Perhaps "the problem of the many" is a somewhat misleading name for the problem I mean to introduce. Perhaps it might better be called "the problem of the many or the none." For I shall not suggest that various considerations simply lead us to an extraordinarily high accounting, for example, to the idea that in my present situation, in what I take to be my dining area, there are millions of salt shakers. No; what these considerations lead to, I shall suggest, is a difficult *dilemma*: Either there really are no salt shakers at all, or else, in my dining area, there are millions of these things. Insofar as I find the latter of these alternatives rather absurd, I am that far inclined toward the first, to the nihilistic, or Parmenidian, option. But of course most philosophers will wish to avoid both these alternatives. So, insofar as it can be motivated, such a dilemma will be quite a problem for most philosophers.

In addition to informal discussion of it, I mean to motivate this problem in two main ways. First, I shall offer certain *arguments*, whose conclusion is our problematic dilemma, or else a proposition to the same effect. Along this line, I shall suggest that there are no adequate objections to these arguments. I shall try to support this suggestion, in part, by considering what appear the most plausible of objections and by showing that even these miss their mark. In part, also, I shall disarm any objections by examining the implications of my arguments' premises, by trying to understand what underlies them.

These arguments will be presented first in terms of clouds, those putative ordinary things which, so often, seem to be up in the sky. As our problem is one that concerns *vagueness*, beginning with clouds is natural; it should be helpful in promoting some initial understanding, and sympathy, for my argumentation. Later, I shall extend my arguments, in fairly obvious ways, from clouds to many other sorts of ordinary things: stones, tables, hands, and so on.

Although I think arguments are important in philosophy, my arguments here will be only the more assertive way for me to introduce the new problem, not the only way. To complement that reasoning, I shall ask certain *questions*. To avoid our problematic dilemma rationally, these questions must receive an adequate answer. But, it will be my suggestion, there really is no adequate answer to be given here.

Concerning vagueness, as it does, the problem of the many is a problem in *the philosophy of language* as much as in *metaphysics*. Once the problem itself is presented in detail, I shall sketch certain further problems that it implies. While these implied problems also concern the aforesaid two philosophic areas, they do not end there. Rather, they also concern, or give rise to, certain problems in *epistemology*. Accordingly, it is my belief, the problem of the many should prove quite fertile for philosophical investigation.

1. VAGUENESS AND CLOUDS

Our new problem concerns *vagueness*. Typical vague expressions, such as 'tall man', 'table' and 'stone', purport to discriminate their referents from everything else—

the tall men, for example, from the rest of the world. But as is familiar, and as sorites arguments make clear, their vagueness seems to mean a problem for the purported discriminations. Along the dimension of height, for example, where do the tall men stop, so to say, and the other, shorter fellows first come into the picture? With regard to the range of possible heights, at least, "tall man" must have a *boundary*, if we may use this primarily spatial expression, however "vague" or "fuzzy" that stopping place may or may not be. But, it does not seem to have any; or if it does, where the devil can that stopping place occur? So much, for now, for rehearsing familiar problems of vagueness.

For our new problem, the leading idea is to focus on physical, spatial situations where no natural boundaries, no natural stopping places, are to be encountered. Many cases of *clouds* at least appear to provide such situations.¹ Now, when viewed from far away, certain puffy, "pictured-postcard" clouds can give the appearance of rather a sharp clean boundary, a clean end to them, so to say, where the surrounding sky, then, correlatively begins. But many other clouds, even from any point of view, appear gradually to blend into, or fade off into, the surrounding sky. And even the puffy, cleanest items, *upon closer scrutiny*, also do seem to blend into their surrounding atmosphere. For all our clouds, then, this has the makings of a new sort of sorites argument, as to where any one of them could first start, or stop. But we shall not pursue that matter here and now; for our main present concern is to introduce a really new problem, not to discuss any new variation upon an old one.

What we must become concerned with, at all events, is the underlying concrete physical reality, in which any clouds there might be must find their place. Ordinary appearances may be, of course, widely deceptive. Objects that appear to have no natural stopping place may in fact have just that. In contrast, what appears to have such a boundary, e.g., our putative puffy clouds, may in fact have none. We are to consider the reality and not the appearance.

What should reality be like for a cloud to make a clean break with its surroundings? The best possible case or situation is of this sort: The cloud is composed of continuous, relevantly homogeneous matter, or stuff,^{2,3} which, relative to each of the "routes into and out of the cloud," just stops at a certain point. Right after any such points, and so external to the cloud, there first begins stuff of another kind, or empty space, or some mixture of the two. The natural boundary, or "break," need not be shaped anything much like it appears, as long as it does have some shape that is suitably definite, or proper. Thus the boundary may appear rather simple and smooth, whereas closer inspection may reveal it to be quite jagged, with bumps on bumps on bumps. But, in relevant regards, a clean natural separation is effected.

In the sort of situation just imagined, which we are confident is wildly hypothetical but which we are supposing to be real, our problem of the many will not readily arise. In such a situation, with the natural boundary remarked, there is just one entity that, in respects relevant to being a cloud, far surpasses anything else present. This is the entity composed, or constituted, of all the stuff within the boundary, and not of anything outside (and which, we might add, has the identity conditions over time appropriate to a cloud). So there is no other stuff

around, in our specified situation, that is, then and there, suited for constituting any other, second cloud.

In this supposedly real situation, what other entity could make an attempt at being a cloud, so to say, to give some trouble to the unique preferred status of our cleanly bounded item? An artificial or contrived entity might perhaps be introduced. Think of a certain nine hundred ninety-nine thousand nine hundred ninety-nine millionths of our item, all together, and then, also, the remaining millionth "seamlessly attached to" what you first considered. The greater of these two masses of stuff may be regarded, we shall grant, as constituting an entity, one with a much smaller entity seamlessly attached. But is that (greater) contrived entity a cloud, so that we shall have at least two clouds in our supposed situation? I think not. For if anything is a cloud, it must be a *natural* item, with a real, objective place in nature all its own, so to say. So our contrived object cannot ever fill the bill that cloudhood requires. Even passing over this, and doing so very cautiously indeed, whatever claim it might have to be a cloud is *much* worse than that possessed by our natural, cleanly bounded item. If we allow our common-sense belief, that there is *at most* one cloud right there, to have any weight at all, the contrived item loses out to the natural object. So, with this sort of an underlying reality, we might rest happy with the idea that the only cloud we seem to see is, indeed, the only one right before us. Thinking only of such an underlying reality, then, our would-be problem of the many does not seem to have much chance to get off the ground. (But a good deal later on, in section 9, we shall see how the problem arises even in such a clean, sharp world.)

To get our problem going, let us consider a *very* different sort of reality, one in which, I hope, the problem will most clearly emerge. In relevant regards, then, this sort of situation lies at the opposite pole, along a series of "possible real situations," from where we should place the reality just considered. (Later on, we shall consider some of the intermediate cases.) Before, clouds would be *simple* entities, composed only of stuff and *not* of smaller, simpler constituent *things*. So, this time, clouds, if there really are any present, will be relevantly *complex*. Here a cloud will not be composed of continuous, homogeneous matter. On the contrary, there will be present a large number of dispersed items, each much smaller than a cloud, for example, a large number of dispersed water droplets.⁴ (So far as currently relevant considerations go, each water droplet may itself be either simple or else it may be complex; either way our problem of the many will be quick to arise. In fact, of course, water droplets are very complex, composed of molecules, atoms, elementary particles, and who knows what else.) The water droplets are separated from each other by relevantly different matter, which is not itself water, or by space, or by a mixture of the two. It matters not precisely how their separation is effected, so long as they may be regarded as relevantly distinct from each other.

So we have many water droplets before us now, and they are suitably dispersed. But, for our problem to meet the eye, what is a most suitable dispersion, or arrangement, for these tiny would-be constituents? Where a normal observer would

take a cloud to be, we shall have our droplets closer together. Quite a ways out from that, where it seems clear we are well out of the cloud, well into the surrounding sky, the population is a good deal less dense, the droplets are, on the whole, much farther apart from each other. Moreover, there is no place at all where suddenly, or dramatically, the "denseness" falls off and the "sparseness" first begins. Rather, when we look at things closely, all that is there to be seen is a *gradual transition* from the more dense to the less so. In this reality, which in all relevant regards is the *actual* reality, i.e., really is reality, there is no natural break, or boundary, or stopping place, for any would-be cloud to have. Thus there is none that might give any candidate cloud its own real place in nature. Without this, how are there to be any clouds here, in this actual reality?

If it is anything, a cloud is a *concrete* entity.⁵ Further, it is a concrete entity occupying some space, as well as being spatially located, one existing for some time, if only a moment, and one constituted of some matter or stuff. Well, then, what are the concrete things in our real situation? There are, we may allow, things even smaller than the water droplets—but none of those is a cloud; not really. There are the droplets themselves—but neither is any of them a cloud. We may allow, too, that there are many very contrived entities present, for example, a "scattered concrete individual," consisting of a droplet here and three way over there. But those contrived concrete things are not clouds either. Of course, the only likely candidates will be concrete complexes composed, at least in the main, not merely of some water droplets but of a great many droplets that are "suitably grouped together." If *none* of *these* things is a cloud, then, I am afraid, our situation will, in fact, contain or involve no cloud at all. But, of course, perhaps one or more of these most promising concrete complexes is indeed a cloud. And, if so, then all will not be lost so far as clouds are concerned.

Whether or not all is lost, there is a serious problem here, and that is our problem of the many. For it seems clear that no matter which relevant concrete complex is deemed fit for cloudhood, that is, is deemed a cloud, there will be very many others each of which has, in any relevant respect, a claim that is just as good. To perceive this plethora takes a bit of visual imagination, but I am hopeful that you can do it. Think of any given likely prospect and, then, think of the very many similar complexes each of which "overlaps" it just slightly, sharing constituents with it, except for a peripheral droplet or two, here or there. With any given first choice, there are ever so many such suitable overlappers. And, of course, any of them might have, equally, been chosen first. No matter where we start, the complex first chosen has nothing objectively in its favor to make it a better candidate for cloudhood than so many of its overlappers are. Putting the matter somewhat personally, each one's claim to be a cloud is just as good, no better and no worse, than each of the many others. And, by all odds, each complex has *at least* as good a claim as any still further real entity in the situation. So, either *all* of *them* make it or else *nothing* does; in this real situation, either there are many clouds or else there really are no clouds at all. This dilemma presents our problem of the many.

2. AN ARGUMENT ABOUT CLOUDS AS CONCRETE COMPLEXES

In a manner that was, intentionally, both informal and imaginative, we have begun our discussion of our new problem. Beginning with a wildly hypothetical world, or kind of reality, we moved to discuss the real, actual world. The contrast, informally presented, was meant to help us see where and how our new problem might readily emerge. I hope it was indeed helpful. If the problem is beginning to make some impression, then it may be well to give our discussion a bit more rigor or form. Interestingly enough, it seems that however this is done, the problem, rather than dissolving, or being exposed as some trifling confusion, manages only to impress itself upon us still further.

I shall proceed to present our problem by means of two rather explicit arguments, each quite different from the other, though they will of course be significantly related. In this section, I shall present one of these, which I call the Argument about Clouds as Concrete Complexes. I present it first, because it most directly flows from the discussion that ended the previous section. In the next section, I shall present the other of these introductory arguments.

We have discussed clouds as complex concrete entities, composed of smaller concrete constituents; in the actual world, if there are any clouds, that is what they will each be. Although this discussion served a purpose, it perhaps proceeded a bit too briskly. For as I spoke in quite general terms, someone with a strong aversion to our problem might challenge me with the suggestion of a weird counterexample, or what he would take to be such an example. From this putative challenge, the inspiration for our first argument can be derived.

In our discussion, I have drawn attention to a myriad of concrete complexes, each overlapping many others, which multitude would generally pass unnoticed. I then said, quite generally, that in (any) such situations, there would not be any one complex that had a relevantly and sufficiently better claim on cloudhood than each of many others. But although this is clearly true in most such situations, even a putative objector will agree, there might be a few marginal situations, even some actually in the real world, where among the many poor complexes present, only one just manages to sneak over the minimum requirements that cloudhood sets for complex entities. Here, it is imagined, none of the complexes is well off so far as the criteria for clouds are concerned, and just one is only a bit better off than any of the others. We are to imagine that one to be just enough better off so that it manages to be a cloud, even though a very marginal case of one, while each of its nearest competitors fails altogether. What are we to make of this suggestion?

In the first place, I think it extremely doubtful that, in actuality, such a situation ever really does occur. But, second, if it ever really does take place, then, surely among our real situations, these problematic ones are quite rare indeed. So, certainly, in situations involving dispersions of water droplets, where, in the real world, clouds have their best prospects for existence, it will be at most only *rarely* that we shall *not* encounter our problem of the many or an instance of that problem. Now, these rare situations will be ones where, while we may suppose that there is just one cloud present, the "successful" item is a *very* marginal case of being a cloud. It is

not even a pretty marginal case, let alone a fair to middling cloud. Most certainly, this marginal item will be quite far from being a *paradigm* cloud, a *good example* of a cloud or, as I shall most often put it, a *typical* cloud.

To get farthest away from this challenge, whether or not there ever really is any substance in it, we may present our problem in terms of typical clouds. This moves us to the statement of our first argument. As we want the argument to concern all putative real clouds, and not just the alleged typical cases, it is best to begin it with a premise that will ensure such a general result, by having the one stand, or fall, with the other:

- (1) If there are clouds, then there are typical clouds.

Now, this premise, it must be emphasized, is not offered as analytic, or as a necessary truth, or anything of that strong ilk. On the contrary, it is just offered as true, as a true conditional statement (at least supposing there are any true statements about clouds at all). As such, which is all that matters here, it can hardly be denied by one who would avoid our problem of the many. For if there really are clouds around, then a good many of them have been, now are, and will be typical clouds. It is scarcely credible to suppose that, in fact, *all* the clouds in the world are, if not marginal cases, not much better than fair to middling examples.

It is with our next premise that our imaginative powers are called upon for a clear understanding:

- (2) If something is a typical cloud, then *any* situation involving it contains, in addition to itself, millions of other complex concrete entities, each of which differs from it, in any respects relevant to being a cloud, at most quite minutely.

This premise makes the claim, or contains the implication, that any real, actual cloud is a concrete complex entity. This may well call for some further discussion (which will be provided later, mainly in section 6). But, realizing that the premise is put forward merely as a true conditional statement, it is, in this implication at least, no less than extremely plausible. Given this, we move to a more demanding aspect of our premise: Our imagination is called upon to perceive, so to say, all the other relevant cloud candidates. In the argument I shall present next, recently promised, I shall provide a "visual aid" toward this end, for now I rely on goodwill and native ability. Given this, we next face the claim of *millions* of such candidates, as opposed to, say, many. This might appear either excessive or too definite, where no such definite numbers can be gotten. Realizing a gap to be filled here, I pass over it now, postponing this matter, too, for a later detailed discussion (which will be provided mainly in section 5, though certain other sections, in particular 6, will also have considerable bearing on the matter). Finally, regarding this second premise, it is implied that each of these millions of candidates is, if not as well off as the "original choice" mentioned in the antecedent, at least quite nearly as well off, in respect of meeting cloud criteria. So the "claims toward cloudhood" of these overlappers will not be much worse than those of the apparently well-placed original candidate. A detailed discussion of why this should be so will certainly be desirable. I plan

to proceed with the matter gradually, through our essay's various further sections. But, even now, the proposition itself is eminently credible.

Our argument requires but one further premise:

- (3) If something is a *typical* cloud, then, if there are entities that differ from it, in any respects relevant to being a cloud, at most quite minutely, then each of those entities is a cloud.

This premise, or principle, surely recommends itself to reason. In the first place, it does not even appear to say that any of those latter entities, let alone all of them, will be typical clouds, as is the first. It is content to have them all be only fair to middling cases of clouds, though we ourselves should think a good many of them, at least, to be better placed than that. So, in effect, all this principle is requiring is that the difference between a *typical* cloud and a candidate that fails altogether to instance cloudhood be, in relevant respects, reasonably substantial; at the very least, that it be more than quite minute. Although the credentials of this premise, like its two predecessors, will be furthered by further discussion, the premise, also like them, has every initial appearance of being an entirely acceptable proposition. (We shall find such further discussion in section 8 and, especially, in section 10.)

From these three premises, our problem of the many can be deduced and, thus, introduced. To begin, from (2) and (3), we obtain:

- (A) If something is a typical cloud, then *any* situation involving it contains, in addition to itself, millions of other complex concrete entities each of which is a cloud, that is, it contains millions of clouds.

Although this deduction is not absolutely formal, the divergence from that austere ideal is trivial. In like manner, from (A) and (1), we may in turn deduce:

- (B) If there are clouds, then there are situations involving typical clouds and, in *any* of these, there are millions of clouds.

Logically speaking, though (B) is conditional in form, it adequately presents our problem. Still psychologically speaking, our problem is in large measure one of confronting a dilemma. So, it is well to have our present argument, which introduces the problem, conclude by offering a disjunction of uncomfortable alternatives. From (B), then, we make our final move to:

- (C) Either there are no clouds at all, or else there are situations involving typical clouds and, in *any* of these, there are millions of clouds.^{6,7}

With this argument now before us, our new problem has received a somewhat more formal presentation, to complement our initial, more conversational setting for it. At the same time, by focusing on typical cases, the suggestion of certain small logical moves, as to a single present item alone "creeping over the minimum standard," can be seen not to threaten our problem's seriousness or size. For certain readers, however, my talk of overlapping concrete complexes may, perhaps paradoxically, itself "appear all too abstract." So, especially for them, though for the rest of us as well, I shall proceed to offer a second argument, by which

our problem may again be given an introduction. Giving "the mind's eye a visual aid," this second argument may help us all get a more vivid idea of our problem of the many.

3. AN ARGUMENT ABOUT CLOUDS AS BOUNDED ENTITIES

My second argument focuses on the fact that any cloud must be a limited or bounded entity: at least relative to certain routes, traveling from inside the cloud outward, there must be a stopping place for the cloud. Just so, once one is beyond such a stopping place, or group of stopping places, or, as I shall most often say, such a *boundary*, one is outside the cloud, that is, at a place where the cloud is not. This idea makes no great claim for any cloud's boundary, again to use that convenient term.⁸ Just as the term 'cloud' is vague, we may allow 'boundary' to be vague as well, at least in our current employment, so that a close connection between the two would not be surprising. But, of course, we are using 'boundary' as something of an abbreviation here, as abbreviating something like 'place(s) of the cloud closest to what is outside the cloud', or like 'place(s) between the place(s) where the cloud is and the place(s) where it is not'. So the vagueness we may attribute to 'boundary', or to our usage of it, will have ample roots in common vague terms: in 'place', in 'cloud', and in lengthier expressions with those vague components. Moving from these linguistic considerations to apparently correlative matters in the extralinguistic realm, our argument will be happy to allow, though it does not require, that clouds have "fuzzy" boundaries with "no determinate width," whatever stricter limits the dictates of reason might, or might not, require.

Just as our boundaries may be treated here in the most liberal, fuzzy manner, so our argument is happy to allow cloud boundaries to have all sorts of shapes and a variety of relations to the clouds they bound. With any typical cloud, I suggest, and any actual cloud in our solar system, the boundary will be fully closed, not "punctured" nor "open-ended." But there may be some possible clouds, I should think them atypical of the kind, with what we may call *open* boundaries. Thus, for example, there might be a cloud with an infinitely long, thin tail. Or, for another, there might be one shaped like an infinitely long cylindrical column. Or, at least, our argument will be happy to allow these things and will even be so generous as to allow some such infinite clouds to be typical clouds. But, at all events, with regard to at least some "routes" out of and into the cloud, there must be limits, however fuzzy those may be. This much our argument will require, but so will the dictates of reason. For otherwise there will not be a world with clouds, or even a single cloud, in it, but only a cloudy or foggy world.⁹

With so much disarming generosity displayed, I trust I may begin my Argument about Clouds as Bounded Entities. For similar reasons, it is good to begin here with the very same premise that began our previous argument:

- (1) If there are clouds, then there are typical clouds.

For one thing, as it has already been discussed well enough, we may now immediately move on to add further material.

The second premise of our new argument is a conditional which, for all clouds and not just typical ones, we have just recently provided motivation:

- (2) If something is a (typical) cloud, then there is something that limits or bounds the cloud, that is, something that is the *boundary* of the cloud.

In line with our motivating discussion, we shall continue to be generous with any who might be leery of this premise. We may allow that it is poorly phrased and that, as best formulated, its implications are quite scanty. As far as phrasing goes, for all I know, the required limiting entity, which the premise refers to as a *boundary*, may perhaps not be so called in ordinary usage. And perhaps the verb "limit" also might be somewhat out of place here. But to object to the premise on any such grounds is to quibble beside the main point. For the important thing, as our discussion has indicated, is that with any cloud there will be such a "limiting" or "bounding" *something*, however well or badly I may label it. It should be emphasized, next, that *this premise itself* really makes no great claims for any such boundary; the thing need be neither natural nor conventional, neither salient nor indiscriminable, and so on. Further, the premise does not explicitly exclude the boundary from itself having width and thus being rather on a par with a cloud (though, of course, no such thing is explicitly required either). Nor, then, does the premise thus exclude the mentioned boundary from itself having boundaries, which in turn may have various properties, including the having of further boundaries, and so on.

It is with its *third premise* that our Argument first threatens to run up the numbers where clouds are concerned:

- (3) If something is the boundary of a typical cloud, then there are, in a *bounding envelope* centered on the boundary of any typical cloud, millions of other boundaries of clouds each of which limits, or bounds, a cloud that is different from any cloud thus bounded by any of the others.

Passing over our choice of the phrase "bounding envelope" and other such purely verbal trivialities, there are important substantive and conceptual matters to discuss. In the first place, the function of that chosen phrase is to point out a region that is somewhat thicker than any of the relevant boundaries, but (in case they do have thickness) *not very* much thicker. So, in this region, we may find, side by side, or themselves overlapping, a great many potential boundaries for clouds. Given this, we can see the two key ideas advanced by this premise. The first idea is to focus on the myriad of nearby limiters and, by so doing, on *what they limit*, which then cries out for consideration. Before claiming anything about the presence of clouds, we may notice that *many concrete entities* will be suitably limited: First, each boundary will limit a "region of space" different from every other. Further, in at least many of these regions, the stuff contained will differ from that in many other bound regions. To sharpen the picture, we may note that many of these regions, and their contents, will overlap (slightly) with many others, including (that of) the original typical cloud. In many other cases, there will be no overlap with that original but

a rather fine "nesting" between the new candidates and our original item. This first idea is the visual aid, for the mind's eye, that I promised you, in the previous section. So much for the first idea, which brings to our attention many concrete entities, each so similar to our alleged typical cloud, which normally would go unconsidered. The second idea is to judge these newly considered entities with regard to whether or not they are clouds. According to our premise, if our alleged typical item is indeed a typical cloud, then many of these candidates, millions at least, do not fail to be clouds altogether but are clouds of some sort or other. Although antecedently surprising, once the candidates are considered, this judgement seems quite fitting. Indeed, we may say that it even has a certain claim to modesty, or understatement. For, first, this judgement nowhere claims that any but the original choice is a typical cloud, allowing, even, that all the other clouds in the situation are marginal cases. (In contrast, I suggest, our intuitive idea is that if there are any typical clouds at all, our situation will contain not just one but quite a few clouds that are indeed typical.) And, second, our premise also allows that although many of these candidates are clouds, many of them fail to be clouds, perhaps far outnumbering those whose candidacy is, in any way, successful. (In contrast, our intuitive idea is that not only do many succeed, but none of these "very near neighbors" fail to be clouds.)¹⁰

Now, our premise mentions *millions* of clouds as present in the typical situation (allowing, of course, that there be an infinity of millions and, thus, an infinity of such clouds). And although we might now agree that many clouds must be present, any such numerical reference as that needs further argument. I shall postpone such argument for the while, until section 5. So our third premise needs further consideration. But, even now, when things are somewhat left up in the air (or sky), this crucial, and most interesting, premise appears at least quite plausible.

There remains but one premise to present for our Argument, and that gap shall now be filled:

- (4) If there are, in a bounding envelope centered on the boundary of any typical cloud, millions of other boundaries of clouds each of which limits, or bounds, a cloud that is different from any cloud thus bound by any of the others, then there are situations involving typical clouds, and in any of these there are millions of clouds.

In effect, this last premise adds up, by a procedure that is eminently suitable, only the clouds that we have already agreed to be present and relates the sum to any alleged typical cloud. The procedure is to count the clouds by way of the boundaries limiting them. So where two boundaries limit, or bound, different clouds, there must be (at least) two clouds, and where millions, millions. (We might even *allow* here that two boundaries may both bound the same cloud. But even so, the premise's method cannot falsely add to our judgement.)

Although some of our premises may require a good deal of further discussion, we may agree, I believe, that they together adequately yield our problem. Perhaps discounting small points of grammar, by simple logic, our conditional premises yield us, again, this conditional conclusion:

- (B) If there are clouds, then there are situations involving typical clouds, and, in any of these, there are millions of clouds.

For many purposes, our conclusion might as well be left in this conditional form. But, as with our previous argument, to heighten the sense of a dilemma, it is well to put matters in the form of a disjunction:

- (C) Either there are no clouds at all, or else there are situations involving typical clouds, and, in any of these, there are millions of clouds.

So we have deduced our dilemma now twice over, by our Argument about Clouds as Concrete Complexes and, again just now, by our Argument about Clouds as Bounded Entities. We want to examine these arguments with some care and to investigate the relations between them. For the dilemma they both yield plainly presents a real philosophic problem. Of course, some philosophers, like Parmenides and, in a smaller way, me, too, would be rather happy to accept the first alternative, feeling an absurdity to attend any putatively common particular, such as an alleged ordinary cloud. Perhaps others, maybe certain followers of Leibniz, might be pleased to accept the second. But most will want to avoid both. To do so rationally, they must refute, or properly deny, both our arguments. This, it seems, is not easy to do. Accordingly, there is much for us to discuss here.

4. SOME RELATIONS BETWEEN THESE TWO ARGUMENTS

There are, I think, some rather interesting relations between our two offered arguments. As they are not entirely obvious, it will be worth our while to draw them out explicitly. Let us begin to do so now. The first of our arguments, concerning concrete *complexes*, specifies a certain sort of constitution, or composition, for clouds, namely, as involving certain smaller *constituent entities*. This is done by way of the argument's second premise, a statement which is not matched by any premise in our other argument. Indeed, our second argument makes no specification at all as to the constitution of any cloud. For this reason, I believe, our second argument is more *general* than is our first, applying to all the sorts of underlying realities (or possible worlds) to which the first applies, and then to some others as well. Of course, as concerns our actual situation, this logical disparity makes no difference, for the actual underlying reality, the actual world, is quite as our more specific, first argument requires. But for a comprehensive understanding, the more general matter should be investigated.

In section 1, we considered a possible world where the underlying reality involved no tiny things, no dispersal of water droplets, molecules, or atoms, in the morass of which putative clouds would have to find their place. In such a world, clouds would all be simple entities, rather than complex ones: such a cloud would not be constituted of any other distinct particulars. The cloud would be composed of some matter, or stuff, to be sure, but that matter would be relevantly continuous and homogeneous. Now, in that first section, we made a further assumption too: There would be a clean, natural break between (the matter of) the putative cloud

and whatever was allegedly external to the cloud. Providing that there are clouds, this assumption really is distinct from that of supposing clouds to be (not complex but) simple. So, while still supposing for clouds the aforementioned material simplicity, let us drop this further assumption now.

What sort of underlying reality, or possible world, will we now be supposing? It will be like this: The matter where a cloud is thought to be will not make a clean break with matter that surrounds it but will gradually blend into, or fade off into, such surrounding matter, at every relevant place. For a heuristic, represent the matter "suited for clouds" in red and that "suited for the surrounding sky" in blue. Now, a very close look at "where the two are adjacent" will reveal no sudden change from red to blue (or equally from blue to red). Rather, it will reveal a *gradual* transition from the one color to the other, with at "suitable places in between" various shades of maroon, purple, and so on. In such a situation, we can now easily see, if there is a cloud, the *kind of matter* in it, of which it is composed, gradually blends into *another kind of matter*, at every relevant place, and the cloud is *not* composed of that other kind of matter.

As any such cloud will be a simple entity rather than a complex one, the second premise of our first argument will not apply to it; so in such a world our Argument about Clouds as Concrete Complexes will not apply. But our *second* argument, regarding bounded entities, can apply to such simple things as well as to complex ones. It does not care, so to say, whether the blending between presumed cloud and alleged environment is accomplished by, or instantiated by, a dispersion of smaller items or whether by a true continuity, as just colorfully imagined. So long as our underlying reality exhibits *any* baffling blend, our second argument is well satisfied.

This may come as something of a surprise. For our second argument, mainly by way of its third premise, provides a sort of "visual aid," whereas our first seems to leave things more indefinite, perhaps even, more obscure. It is the first argument that leaves more for the reader to make vivid and concrete. Yet it is not the first, but the second, that is the more general. But though a surprise, there is of course no real paradox here. For the greater concreteness of the second argument is of an *epistemological* sort, relating to a more concrete *understanding* of whatever situations are to be considered, whereas the greater generality of the argument, and thus, in a sense, its greater abstractness, concerns the *metaphysical characters* of those situations.

There is a second relationship between our two arguments that is even less obvious than the one just discussed. But it is at least as important to consider. It is pretty plain, of course, that there is no statement in the second argument that is quite the same as the third and final premise of the first one. What, then, is the relation of our second argument to our first one's final premise?

This final statement may be regarded as a *principle* that *underlies* the third premise of our argument about bounded entities, which premise is, I suggest, the very heart of that more general piece of reasoning. Indeed, so important, then, is this underlying proposition that we may give it a name to remember it by, *the*

principle of minute differences from typical cases; for brevity, I shall sometimes just call it *the principle of minute differences*. How is it that this principle underlies our second, more general argument?

We may regard our second argument's third premise, where so many boundaries are first introduced, as doing *two* things. *First*, it calls to our attention, by way of these boundaries, ever so many (bound) relevant entities, overlapping and nesting in their spatial relations. In some possible worlds, including the actual one, these entities will all be complex; in others, they will all be relevantly simple. In any of these worlds, there will be no clean breaks around, but only relevant gradualness. Just so, *in order for anything* in any of these situations to be properly accounted a cloud, the sorts of entities that overlap must be considered real things. Further, we are supposing, at least for the sake of argument, that in each such situation a certain thing there is even a typical cloud. So we focus on one overlapping thing that is a typical cloud and also, we must then suppose, on at least those many others which, as regards criteria for clouds, differ minutely from a certain typical item.

But are any of these other overlapping entities, which we have had to admit as genuine things, of some sort or other, so much as *clouds* themselves? Giving an answer to this question is the *second* thing done by our key premise: If the presumed item is a typical cloud, our implicit reasoning tells us, then each of the many other entities, so recently focused upon, will be at least a cloud of some sort or other. What is it that guides this reasoning? It is the third and final premise of our first argument, the principle of minute differences from typical cases. Slightly shortened, as per note 7, it reads as follows:

If something is a typical cloud, then, if there are entities that differ from it, in any respects relevant to being a cloud, quite minutely, then each of those entities is a cloud.

So underlying the key premise of our second, more general argument is implicit reasoning which consists of two parts. And the second part of it is quite explicit in our first, more limited reasoning.

If this is right, then a lengthy argument may be constructed which incorporates material from both the two arguments I have actually offered. The constructed argument will be like our offered second one, except that the latter's third premise, just considered, will be replaced by statements that make explicit the reasoning underlying it. For this replacement, we require but two propositions, which together entail the premise they replace. The first of these is our principle of minute differences, rehearsed in display above. The other statement to be employed will then be this rather complex related proposition, which relevantly states the "first part" of the reasoning that was previously implicit:

If something is the boundary of a typical cloud, then there are, in a bounding envelope centered on the boundary of any typical cloud, millions of other boundaries of entities each of which limits, or bounds, an entity different from that thus bounded by each of the others, and each of these bounded

entities differs from the putative typical cloud in question, in any respects relevant to being a cloud, quite minutely.

With this explicit but complicated conditional, we have an argument of five premises, which is itself, thus, quite complicated indeed. Even so, in relevant regards, this "master argument" is not only *vivid* and *general* but also quite *explicit*. For those who can tolerate complications, I offer it now, perhaps in place of my original formulation of my Argument about Clouds as Bounded Entities; after all, it is also about these putative objects' having a stopping place, or boundary. But I shall offer nothing in place of my first argument, the Argument about Clouds as Complex Entities. For I have found that although many people are interested in discussing the baffling boundaries I have mentioned, there are also many who want no part of any such discussion. Any mention of boundaries, or of anything of the like, turns them away right away. Our argument about complex entities, of course, makes no such mention at all. And, as might be expected, I have found that it is eminently discussable by virtually everyone with whom I have, in conversation, broached the problem of the many.

At all events, in what follows, it will often prove a convenience to speak of clouds, as well as of various other things, as bounded and to contemplate their alleged boundaries. Those who want no part of such a convenience may cast things in terms where no such speaking occurs, as is done in my first argument. They may, then, take my talk of boundaries as merely suggesting an aid in the task of noting all that is there in the morass of concrete reality. But however one chooses to frame the introductory arguments themselves, it should by now be clear that our problem is difficult and persistent.¹¹ Indeed, we have already left dangling various puzzling loose ends, some of which I hope to connect with later. And other facets of our problem, at least equally baffling, have not yet been even so much as glimpsed obscurely.

5. ON NEARBY CLOUDS AND THE MATHEMATICS OF COMBINATIONS

Up in the sky on rather cloudy days, science tells us, there is a dispersion of water droplets. Here, and also over there, the droplets are closer together than in the regions surrounding the here and the there. In those other regions, there are droplets too, but they are less close together. There is a gradual transition from the here, and from the there, to the lesser density in the surrounding regions.

We are given to think that here is one cloud, there is another, and in those other regions there is no cloud. Just so, we think of clouds as consisting of, or largely of, water droplets, with the droplets in some suitable grouping. As one gets away from here, one gets outside a cloud; one passes a *place*, whatever that is, that is, or is part of, the cloud's boundary.

The "messier" our reality, the better for generating our problem of the many. Our actual reality is plenty messy indeed. In addition to water droplets, clouds may contain impurities (clouds in a smoggy area); the droplets themselves are complexes

of constituents (molecules, atoms, particles), and each droplet has its own baffling transitions in store for us. To make our reasoning simple, however, and our exposition concise, I shall discount this extra messiness. For us right now, clouds shall be regarded as being composed entirely of droplets of water.

If a cloud's boundary has thickness, and even "fuzzy" edges, there may be certain droplets whose status as constituents of the cloud is objectively less than clear. (I think this suggestion contains incoherencies, but pass over them now. For, as will become clear, our problem is not helped nor hurt by the suggestion.) If *x* and *y* differ in the number of their constituents, they cannot be the same thing, much less, the same cloud. Equally, if *x* and *y* differ in the number of their objectively clear constituents, then they cannot be the same complex entity, much less, the same cloud. So, for the purposes of our discussion, it will make no difference, except as regards expository clarity and conciseness, whether we talk of *fuzzy* boundaries and *clear* constituents or, alternatively, and at another extreme, of simple "two-dimensional" boundaries, with no thickness at all, and just plain old constituents. In the sequel, I shall generally speak in the latter idiom, simpler and clearer. For those who must have fuzziness almost everywhere, the translations are easy to make; near this section's end, I shall show how.

In the same spirit, I wish to make one further simplifying assumption: As things have proceeded so far, we must still recognize three, and not two, relations between a cloud's boundary and any of the cloud's droplet constituents. To be sure, there are those droplets, millions of them, within the boundary of any cloud. No trouble there, even for exposition. Also, there are those millions outside the boundary, which likewise present no need for a remark. But there is a third group: the droplets, probably many thousands, at least, that will *intersect with* the boundary of any likely cloud prospect. What of each of these droplets; is it a constituent, or not, of the putative cloud in question? Were we talking of clear constituents, and clear non-constituents, these entities would be assigned, it appears, to some sort of midway status. And, then, we could proceed quickly to our reasoning that would concern only droplets in the clear category. Foreswearing such parlance, I think it most natural to consider these intersected droplets *not* to be constituents of the cloud whose boundary cuts through them. At all events, if I must, then by stipulation I shall now assume as much, since nothing of substance can be lost or gained by so doing. With these simplifications, the key matters emerge without distortion or delay: Our definite claim of *millions* of clouds, in even the smallest typical cloud's most carefully circumscribed situation, is readily at hand, if any clouds themselves ever are. Indeed, as we shall soon see, such a claim is something of an understatement.

Each of the droplets included by a cloud's boundary is a constituent of that cloud and, on our simplifying assumptions, nothing else is a constituent of it. Arbitrarily choose an alleged typical cloud and consider precisely those droplets that its boundary encloses. Now, in close proximity to this alleged boundary, there will be at least one other such boundary, of a *very* similar shape and "size." By only as minimal a deviation from the first as is required for the task, this second boundary

includes, in addition to all those droplets just considered, exactly one other water droplet. We may imagine that, except for the slight bulge beyond the first required to include the new droplet, the two boundaries are elsewhere wholly coincident. In any event, this second boundary will include a certain complex entity which, on the relevant reckoning, has exactly one more constituent than does our typical cloud. Its droplets bear to it *very* much the same relation, whatever it is, that the already considered droplets, one less in number, bear to the putative typical item. On the relevant reckoning, then, this second complex entity, larger than the first in number of constituents, and also, we might add, in mass and in volume, is a different entity from our typical cloud. But in any respect important to being a cloud, there is scarcely any difference between the two. So in our situation, right there, there is at least one (concrete complex) entity that is, in those very regards, only *minutely* different from a certain *typical* cloud. By this consideration, it is intuitive, this second entity must also be a cloud, if not a typical cloud, at least a cloud of some sort or other. So our typical cloud's situation, arbitrarily chosen, contains at least two clouds, for it contains two different concrete entities each of which is a cloud.

Let us suppose, what seems very cautious, that the foregoing procedure may be applied distinctly at least a thousand times in the case of any typical cloud. Each application will involve a different single droplet that is very close to, but is external to, our typical cloud's boundary, as well as to the boundaries of every new candidate but one, that single droplet then being a constituent of only that one new candidate. As each candidate has a whole droplet as a constituent that is external to each of the others, each candidate really is a different entity from every other. (With a natural choice of their boundaries, each will slightly "overlap" each of the others, and each will "contain" the original allegedly typical specimen.) As each is only very slightly different from a certain typical cloud, in relevant respects, each is a cloud; so each is a different cloud from every other. Thus, in our situation, in addition to our putative typical cloud, there are at least a thousand clouds. But, of course, what we have just done by "reaching outward," we may do as well in reverse, by "reaching inward." Thus, by similar reasoning, there are at least another thousand clouds, each smaller by one droplet than our original typical specimen.

This rather surprising result, of at least two thousand additional clouds, has been arrived at rather cautiously. For with so very many droplets close to our original boundary, both inside and external, when selecting only a thousand in each direction, we could be very choosy in satisfying cloud criteria, whatever those criteria might be. Given our simplifications, it might seem that if we are to run the numbers up much higher this caution must be sacrificed. For, sticking to our simplified procedure, with whole droplets, it might seem that we should have to extend our boundaries considerably, thus reaching regions where careful selection has been abandoned. But his appearance is illusory. For it results from our overlooking the mathematics of combinations, with its notorious power to escalate.

A boundary that, in addition to the original's droplets, encloses any (combination) of our considered nearby external one thousand, but no other droplets, will enclose a cloud. For, although (most) such enclosed candidates will not be *quite*

as similar to our typical specimen as was a candidate with only one differentiating droplet, still, in relevant respects, each will also be only *very* slightly different from a putative *typical* cloud. Now, barring sorites arguments, we may grant that there comes a point where such a slight difference is left behind us.¹² But, surely, we have not even come close to such a point with the variations of boundaries so far envisaged. With just these variations, our previously external droplets produce sufficiently good candidates equal to the number of combinations obtained in taking a thousand items each of the times up to and including a thousand. Each candidate is good enough, that is, not to fail to be a cloud, of some sort or other. And when we include internal selections, and combinations of internal and external, we further escalate matters fast, while never straying far from our original bounded paradigm. So if there are any clouds, there are not only millions of them, but, we might say, a problem of *many* millions.¹³

It will soon be my business to extend our arguments from their original exclusive concern with clouds to cover ordinary sorts of things quite generally, including planets and mountains, tables and their legs, human bodies, and so on. Before I do so, I should like briefly to sketch two things: First, as I promised, I would like to show how our discussion can be put in terms that do not imply the fine boundaries we have recently been supposing. And, then, I would like to say a few words about how the entire discussion of this present section relates to our introductory arguments, which were advanced in sections 2 and 3.

First, then, let us suppose that clouds, even typical ones, do not have the "neat and decisive" boundaries we have been discussing but have, instead, "inherently fuzzy" boundaries. Assuming that this idea is coherent, what does it imply? I take it that, according to the idea of fuzzy boundaries, there are things or stuff, whose status with regard to an alleged bounded item, e.g., a certain typical cloud, is *objectively unclear*, or *indefinite*, or *indeterminate*. Despite this rather mysterious complication, however, fuzzy boundaries occasion no great changes in our arguments.

Consider a typical cloud with such a boundary. In addition to droplets with unclear status, there are many further afield that are *clearly not* constituents of the cloud. Third, finally, and perhaps most important, there are other droplets still, closest to hand, so to say, each of which is a *clear constituent* of the cloud. Consider another fuzzy boundary that encloses a space slightly larger than the first. It does that in just such a way that it encloses a complex entity with all the typical cloud's clear droplets as clear constituents for it, too, *plus one more clear one for it*, which had unclear status for the original, typical specimen. What the new fuzzy boundary bounds is a *different entity* from the typical cloud that is fuzzily bounded, for it differs from the latter in a *certain clear component part*. But, all things considered, and in particular as regards any criteria for cloudhood, the difference between these two fuzzily bounded entities is quite minute. As the one is a *typical* cloud, the other, fuzzy boundary and all, is at least a cloud of some sort or other. Thus, with fuzzy boundaries as much as with neat, we must have, if there are ever any clouds at all, at least two clouds in our situation. The reasoning from here to millions, it is plain, will be entirely familiar. What we have just done is quite obvious: we

replaced talk of neat boundaries by allusions to fuzzy ones; then we made compensating changes right down the line. As such compensations are always available, it makes no difference to our problem whether we think of a cloud's limiter as neat, even two-dimensional, or as being not only somewhat thick but inherently fuzzy as well.

In this section, we contemplated certain combinations of water droplets. By that means, we saw many millions of clouds where one would normally suppose only one cloud to be. Or better, we saw a dilemma involving such millions. How do these recent perceptions relate to our two offered arguments? The first of those arguments, our Argument about Clouds as Concrete Complexes, mentions millions of relevant entities in its *second* premise. We have now seen why this premise, *apparently the argument's most controversial* one, is actually correct and might even be considered an *understatement*. As concerns our second argument, our Argument about Clouds as Bounded Entities, its *third* premise would, I think, be considered its most controversial one. It is in this premise, after all, where the argument first makes mention of millions of clouds. (In section 4, it will be remembered, this premise is analysed into our principle of minute differences plus a complex statement where millions of bound items are mentioned.) Here, too, our recent perceptions involve us in seeing the correctness of that multitudinous premise. So, by means of the mathematics of combinations, even the "weakest links" in our arguments may be seen as plenty strong enough.

6. EXTENDING OUR ARGUMENTS TO OTHER ORDINARY THINGS

Clouds, we may say, are *ordinary things* of one particular sort. If things of that sort, clouds, really do exist, then through science we gain an understanding of them as *complex concrete entities*, each composed, largely if not entirely, of many tiny constituents. Now, in addition to clouds, there are, of course, many other sorts of ordinary things about which we appear to think and talk: salt shakers, stones, planets and their mountains, human bodies and their arms, hands, and fingers, trees and their trunks and branches, tables and their legs and tops, swizzle sticks, and so on. Although it takes a bit more doing, science reveals all these things, if they do actually exist, also to be complex concrete entities, with their own tiny components. Through this revelation, I suggest, we may readily apply, or extend, our arguments about clouds to cover all these other ordinary things as well.

If it could be managed properly, the most direct way to do this would be to add to our arguments a premise to the effect that these other sorts of things, typical tables, for example, just are clouds; presumably, they would be clouds of molecules, or atoms, or elementary particles. But although such an idea may be common in trying to view ordinary things scientifically, I should be rather suspicious of any such extension of our arguments. Rather, I am inclined to think that such a characterization is only metaphorical. For it seems to me that, despite the similarities thus alluded to, there remain relevant differences between tables and clouds, that block an identification.

The conditions for the identity of a table through time, for one example, appear to be rather different from those for clouds. A typical table may be readily disjoined into five separated large parts, for instance, its top and four legs. These may later be reassembled or, alternatively, not. Even if never reassembled, there are many situations in which the table would be regarded as existing throughout; the parts might be on exhibit together, to show how such a table looks when taken apart. But no similar strength against separation appears available for the continued existence of any cloud. Now, I am not claiming that, as against the idea that tables are clouds, such considerations are absolutely conclusive. But, surely, they are substantial enough for us to be suspicious of the idea and to look elsewhere for a less controversial means of extending our arguments.

We may do better, I think, by noting that, at least in *those respects relevant* to our arguments, there is *no important difference* between clouds and many other ordinary things. Rather, the relation of a cloud to its constituents is *relevantly the same* as that between a table and what constitutes it.¹⁴ Because of this, parallels to our Arguments may be advanced for many other sorts of ordinary things. For example, wherever 'cloud' occurs in our stated premises, we can put 'table' or 'stone', making whatever grammatical adjustments are then required. In that way, we can obtain arguments, just as good as before, for dilemmas with regard to tables and stones.¹⁵

For specificity, let us focus on our second argument and on how to extend it. What about boundaries, then, for things other than clouds, thus, for typical stones, or tables? Perhaps even more clearly than with clouds, any of these things will have a boundary, which separates it, and its constituents, from whatever is external to it. Centered on such a boundary, there will be our familiar bounding envelope. And in this envelope there will be many other boundaries, each relevantly enclosing a different complex concrete entity.

Regarding small salient constituents, what are the underlying physical facts that ground this plethora of complex candidates? So far as I can gather from reliable sources, the situation here is, in relevant ways, very much like that before with a cloud and its droplets: At any moment, just about anywhere you please along our stone's boundary there will be some atoms, or molecules, whose status, with regard to our typical stone, nature has left unclear; there is no natural break between the atoms of the stone and so very many others that, *ex hypothesi*, are only outside it. But for our argument to be extended properly, we do not even need anything as cloudlike as that which, it appears, nature so generously does provide. Rather, we require only some such extremely cautious proposition as this following one: Even if there are many places along our stone's boundary where a clean break is given by nature, indeed, even if almost all the boundary's places are of this sort, there are at least a thousand atoms (or molecules) of the stone which are not naturally separate from all relevantly similar ones in the stone's environment. The cautious idea here is that with each of at least one thousand different problematic atoms, we may apportion things variously for want of any natural separation.

Where our typical stone's boundary excludes each of these thousand, as may

be assumed, a very similar boundary may be described which includes any one or combination of them, as well as all the atoms in the typical specimen, but no other atoms. In this way many millions of boundaries may be described. Cautiously reckoning by atoms, each will enclose an entity that is, in relevant regards, only *minutely* different from a certain *typical* stone. So each will enclose a different stone. Even with such a cautious supposition, and such cautious reckoning, our argument may thus be extended to cover stones as well as clouds: Either there really are no stones at all, or else, in any situation involving a typical stone, there are millions of stones. Dilemmas for other ordinary things, for example, tables, follow in like manner.

Having extended our arguments from clouds to more earthy things, we might ask: Why did we not begin with these latter, "more cohesive" objects in the first place? Logically speaking, we might just as well have done so; indeed, as I shall soon argue, perhaps we might better have done so. But people are not often as logical as they should be. So for psychological reasons, it was best to begin with alleged entities that, *often* in our everyday experience, even seem to present something of a puzzle: Where the devil does one of these things end and where, in contrast, is what merely serves to surround it? This puzzling experience, where reality itself appears to mirror vagueness, opens our minds to "new possibilities." Further, it provides us with motivation to think logically, at length and in complex detail, about what ordinarily passes as being too simple for argument: How many things of such-and-such *ordinary kind are right there now*? Clouds, then, are good food for thought, when one wants to serve up the problem of the many.

Once the introduction has been effected, however, clouds do not seem especially well suited for our problem, after all. For, as I said early on, our problem concerns reality and not, except perhaps indirectly and secondarily, how reality appears to us. Just so, whereas it is at least probably right that a cloud must have a boundary, we may be still more confident that this much is required for a table, or a stone. Why is the latter idea certainly not worse, and perhaps better, founded?

We think of certain things as *concrete* and of others as, perhaps more or less, *abstract*. When a concrete thing is an *ordinary* kind of *spatial* entity, as in the case of a table or stone, it must have a boundary. Consider, in contrast, certain "more abstract" entities, which have their being rooted, so to say, in particular concrete entities. Thus a *swarm of bees* is somewhat abstract, the bees being thought of as concrete. It is somewhat difficult to think of the swarm as really having a boundary: Does the swarm really include as a part a certain (part of the) space that separates the bees? It seems not, but, then again, certain things do point that way. So it is hard to know quite what to think here. No matter: it is not important for us to decide the issue. Rather, my point in mentioning it is this: *Insofar* as we can think of clouds as *concrete*, our boundaries for them seem to have a firmer footing.

How, then, *are* we to think of clouds? I think, though I am not very sure of it, that clouds, if they exist, must actually be concrete things. Part of what underlies my thought is that there seems to be the following important contrast between the idea of a cloud and those of such apparently more abstract entities as swarms of bees: A cloud "could be," with no contradiction in terms, composed purely of

homogeneous stuff, with no distinct *constituent things* at all.¹⁶ Further, along the same line, it is at least somewhat odd to say of a certain cloud that it is a ? *cloud of water droplets* even if the cloud is in fact constituted of just such droplets.¹⁷ In contrast, it is at least false to say, if not utterly nonsensical, that a swarm (of bees) "could be" composed entirely of homogeneous stuff, with no (bees or other) distinct constituent things serving to compose it.

While I believe I have been right in treating clouds as concrete, I am surer of the point where many other sorts of things are concerned: stones and tables, to mention a familiar couple. It is utterly absurd, I feel sure, to talk of a * *stone of molecules*, no matter how many molecules may serve to constitute a given stone. Along with this, so far as the logic of the word "stone" is concerned, all the stones "could be" composed, each and every one of them, entirely of continuous, homogeneous stuff, with no small constituent things at all. So I feel quite sure that stones, if any such things do exist, must be concrete entities. Equally, and perhaps for that very reason, I feel sure that if there are stones, each one must have a boundary. (It is a further question, we may allow, what sort of boundary might prove acceptable for a stone.) By reason of their more evident concreteness, most other ordinary things cleave more surely to our problem than do clouds. Epistemologically and psychologically, clouds do better than stones at getting any problem before us, in the first place; but stones do better than clouds at keeping it there. (Even so, clouds do not do badly at that second stage, either.) As experience with extending our arguments thus serves to confirm, our new problem is not only a very comprehensive difficulty but a particularly persistent one.¹⁸

At all events, we have done quite enough with clouds, at least for the while. So let us continue to think some more about such more evidently concrete things as stones, and of what this concreteness might imply for them and their situations. A fairly obvious point, but one still worth mentioning, is this: If you are thinking of a stone, you must be thinking of a concrete object. Suppose that an ordinary person, looking at what we take to be a single stone, operated according to the following function: If there is at least one concrete object there before him which "we would all take to be" a stone, he thinks of a *certain abstract object*; otherwise, he does not think of that object. Could this object, about which he thus thinks, be the only *real stone* in our story, so that this person might conceivably thus avoid our problem of the many? No, it could not. For since that thought of object is abstract, and not concrete, it could *not* be *any* stone at all. For any of those things, the stones, must be concrete entities. Goodness knows what that fellow may be thus thinking of; but we can be sure it is *not* a stone.

Relations of *constitution* may obtain between various sorts of things. Perhaps bees, which are concrete, may constitute a swarm of bees, which is at least somewhat abstract and is thus not concrete. The natural numbers, which are quite abstract, may perhaps constitute the infinite sequence of those numbers which, though not itself a natural number, is also abstract. Various molecules, which are very small concrete things, may perhaps constitute real tables and stones, which are also concrete. Certain stuff, like iron, which is also concrete, may serve to

constitute such concrete things as well. (It does not happen, as far as I can see, that abstract things can literally constitute concrete ones.) For our problem of the many it is the alleged constitution of certain concrete things by certain other ones that is of importance.

In any case, no matter what is constituting what, that which constitutes cannot be the very same thing as what is thus constituted; that is, nothing can constitute itself. Now some people will think that by noting the concrete character of a stone, and in promoting our problem of the many, I must be identifying a stone with its concrete constituents, that I must be implying that a stone is "nothing more than" certain atoms, for example. But *nothing* could be *further* from the truth, as my preceding remark indicates. *So far* is it from implying such an identification that the statement that a certain stone is constituted of certain atoms *actually* implies quite the *opposite*: The statement *implies that* the stone is something *other than* the atoms. Still, as my earlier remarks imply, *both* the stone *and* the atoms may be concrete entities; indeed, *if they exist*, they *must* be. Our problem of the many is hardly hindered. In any relevantly typical realistic situation, either there is no stone or else there are so many atoms so arranged that each of *millions* of groups of them has as its members things that constitute a stone, a stone different from that constituted by the members of any other group.

The concreteness of stones disarms thoughts that vagueness might actually enter into the nature of each of these entities itself. And these thoughts certainly should be disarmed. For they can easily lead to others that would seem to produce a solution to our problem. But being as confused as it is quickly effected, such a product would be no genuine solution. According to these thoughts, because stones themselves are vague, or are indefinite things, no particular number of constituents, say, of molecules, can properly be said to constitute any one of them. This, even though stones do exist, as do molecules, and the latter do constitute the former. (Similarly, no particular amount of matter can be said to constitute a stone.) But my bounded candidates for stonehood, it will be pointed out, are definite enough to allow such statements; my complex concrete entities have no inherent vagueness. Hence they are so different from stones that no problem about them need involve other more ordinary, inherently vague objects.

It seems to me that such a common objection, though perhaps well meant, cannot itself be well conceived; rather, it is fraught with confusion. For what can it be for a stone to be constituted of molecules but of no number of molecules? And although in any real situation *we* may have only a *vague idea* as to what is the number, in any given stone, what kind of number can it possibly be if not some particular number? No, either the stone, that presumed real, typical specimen, is composed of a definite number of molecules, whatever the number may happen to be, or *else* it really is *not* composed of molecules at *all*. But if the putative entity does not number some molecules among its constituents, thus, some particular, definite number of them, it is *not* any real typical *stone* that we are discussing.

As I said, this confused idea about numbers rests on a prior confusion of thinking of stones, of such concrete objects, as themselves being vague or indefinite.

The only things that can be vague, of course, are rather more abstract ones: words, statements, shareable ideas, and the like. And although a statement about a stone may be rather indefinite, even, for example, as to the number of molecules in the latter, the stone itself, which is not abstract at all, cannot be in the least bit indefinite. So the vagueness, and any indefiniteness here, will only be a feature of the expressions employed, such as 'stone', the statements made, the thoughts expressed thereby, and the like; it will *not* figure in any *stone* itself. I suggest that, occurring just where it does, the relevant vagueness, far from avoiding or resolving our problem, serves instead actually to generate the problem of the many.

What I have just done, by focusing upon a stone's required concreteness, I am happy to grant, may be regarded as a refutation of the idea that any ordinary thing may have a *fuzzy* boundary. If so, well and good; for I have also argued that such ordinary entities must have boundaries of some sort or other. Thus we may conclude that, if they exist, such things have boundaries that are not fuzzy but that are as neat as you please.^{19,20} This conclusion does not, of course, contradict my previously argued claim that even if fuzzy boundaries are allowed, indeed, even if they are required, our problematic dilemma can be generated. On the contrary, either way our problem arises. What we have just argued is this: The more obvious routes to our problem are also, it seems, the only genuine ones. Thus I have just given an argument *a fortiori*.

7. ON INFINITIES OF NEARBY STONES AND CLOUDS

The idea of any infinity of stones, or clouds, being right there, ready for you to take in with one quick look, may seem preposterous. It does to me. But, then, I am a sort of Parmenidian philosopher, so to say, who does not believe in the reality of any stones or clouds at all, who opts for the first disjunct of our dilemma of the many. Those philosophers who, like ordinary folks, do believe in stones must allow, as a real epistemic possibility, a nearby infinity of the blamed things; they are faced, we might say, with a problem of the infinitely many. Let us see why.

It is easiest to see how an infinite version of our problem arises when we have in mind a certain possible world, or possible underlying reality, that is quite different from (what we take to be) the actual one. This is the sort of possible reality I discussed in section 4, vividly represented there by a transition between putative red regions (clouds) and their alleged blue surrounding (the sky around them). In such a world, clouds are composed, if they really exist at all, of one sort of matter which, within the cloud, is relevantly continuous and homogeneous. The surrounding, if there really is such a distinct thing, is composed of a matter of a different sort which is "spread throughout it" in the same relevantly continuous fashion. Around where a cloud's boundary is (supposed to be) there is a gradual transition from matter of the one sort to matter of the other. This idea may be immediately extended from clouds to other, more evidently concrete ordinary things, such as stones and tables.

Now, any stone must have a boundary, a place or group of places where it

stops, on the other side of which the stone is not; otherwise, we would just have a stoney universe. So, somewhere around the (red) stone matter there is a boundary that separates the stone, the thing composed of that matter, from its surrounding. Especially because it makes no difference to the argument, for simplicity of exposition we shall, as we did before, think of such a boundary as without thickness, as two-dimensional, if you will, though curved through three-dimensional space. This fine boundary includes or limits a certain amount, and indeed even a certain batch, of (red) stuff or matter; it is that very matter which constitutes our putative typical (red) stone.

Think of a second fine boundary that for the most part lies coincident with the first but that bulges slightly outward from it in a certain relatively small area. The relations between these two boundaries are just the same as those between our first and second considered before with respect to a complex stone's nearby, or peripheral, atom. The only difference is in what the boundaries enclose. This time, there is no extra atom for the bulging boundary above to encompass; so what it encloses is not greater by one salient constituent than what the other bounds. But the bulger does include, in addition to all the matter the one does, a certain extra bit or batch of matter, which is not enclosed by the other. Speaking quaintly, we might say the bulger encloses about an extra "atom's worth of stuff." So the bulging boundary suitably encloses a (simple) concrete entity which is, in regard to matter, and also mass and volume, greater than that enclosed by the boundary imagined just beforehand. Thus each of the boundaries bounds a different (simple concrete) entity.

Supposing there to be stones in this world, the first of these bounded entities is so lucky as to be a typical stone. In any respect relevant to being a stone, though, the second differs from it only minutely. So, as is intuitive and as our principle dictates, the second bounded entity will also be a stone, if not a typical one, at least a stone of some sort or other. Or it will if there are any stones. Putting one and one together, we get two: Either there really are no stones in this world, or else our chosen situation contains at least two of those things.

That much is by now pretty familiar. But how to make the step from at least two to *infinity*? It is easy. We need only realize that "between" the two boundaries considered there are an infinite number of others. Starting with the original boundary, each of these others is coincident with it for the most part but makes something of a bulge where our second did. Each one, so to say, makes a slightly greater bulge than the one before it, the maximum being the bulge of the secondary boundary. So we have an infinite number of very similar boundaries there. Each bounds an entity different from that bounded by every other; indeed, they all differ, though very slightly, in mass, in volume, and even in shape. We have here an infinite number of bounded concrete entities. In all sorts of respects, including any relevant to stoneness, each differs quite minutely from the original putative typical item. By our principle of minute differences, if there are stones, there will be an infinite number of them in this very simple situation.

There is another way to "see an infinity of stones" here, which connects

more obviously with the original third premise of my second argument (The Argument about Clouds as Bounded Entities.) Centered on our first alleged boundary, and extending just a bit to either side, we may describe a thin "band," what I called a *bounding envelope*. Even sticking with our typical stone's shape, now, we may "see" in this envelope an infinity of similarly shaped boundaries. Each of these bounds an item differing in mass and volume from that bounded by every other; but this time, of course, the shape of each bounded item is the same. From here on, the reasoning is familiar.

It will be granted, perhaps, that if our world were of the sort just mentioned, our dilemma would reach into the realm of the infinite. But our world is not much like that one. On the contrary, over *there* stones are *simple* concrete things; in *actuality*, they are *complex*, each constituted by at least very many distinct smaller things, in particular, of so many atoms. But no actual stone is composed of an infinite number of such atoms. So, *realistically*, where does infinity get a chance to enter our new problem?

One way to try to reach that high is to dig deeply, so to say, into our small salient constituents, into our atoms themselves. But insofar as what we find is real, we appear to be left, at some elementary point, with small units that, in fact, cannot be further divided. We thus encounter, perhaps, combinations of elementary particles. But, while running the numbers up, all such reckoning will leave us in the realm of the finite. Focusing on the most realistic situations, this "descending" line of approach does not look promising.

To give infinity a better chance, let us shift our focus from our atoms, or a cloud's droplets, to *whatever it is that separates them from one another*. What is it that does this? Some other sort of matter; empty space, perhaps? For what follows, any such answer will do as well as any other. The important thing is that whatever its nature, this *separator*, as I shall call it, blend gradually into whatever is found in the putative surrounding. And, indeed, no natural break is ever in fact encountered. Now, then, given this realistic blending, the important issue is whether or not the separator is continuous. If our separator is physically continuous, that is, if it is in reality infinitely divisible, then we may argue to an infinity of nearby stones, and clouds.

So far as science can tell us, the separator of a typical stone might really be continuous. With this prospect before us, it is necessary to inquire about the status of the separator with respect to the stone whose salient constituents it serves to distinguish. Is this separator itself part of the stone, a much larger but less easily noticed constituent than the atoms, and any other things, separated by it? I shall argue that an affirmative answer is available to us here, one that follows from our concept or idea of a stone, providing it applies to such realistic situations at all. Now, ordinarily, no one has any conscious or explicit thoughts about this matter, one way or the other. So we must probe a bit for anything to point the way.

First, we may begin our probe by asking what we should say of a tiny item, perhaps a miniscule space ship, that appeared to travel into a stone, upon learning that, in fact, the item went well in between the atom's (and particles) of the stone,

never so much as even touching any such constituent. I am confident that we should then judge, as we did at first, that the item was, nevertheless, actually inside the stone though, with a suitable item, not a part of the stone. Now, someone might of course raise various objections to taking this literally, but I cannot see any of these to have much substance. And it does seem to follow from a literal judgment here that the tiny item must then be surrounded by space occupied by the stone itself. But the space surrounding this tiny thing is all occupied by our separator, for it never so much as touched any small constituent. Given that, the only plausible way for the stone to be in that space is for the separator to be part of the stone. So our miniscule spaceship will be suitably surrounded by, and inside, the stone itself only if the separator is actually part of the stone.

Second, considerations of volume, in the sense of amount of space, lead to the same conclusion. The volume of a typical stone, we should reckon as so many cubic feet, or inches, though perhaps without putting a fine point on things. But much of this volume is occupied only by the separator, and not by any of the stone's smaller, more salient constituents. If the separator is not part of the stone, then either our volumetric judgments are systematically in error, and by quite a lot, or else we must face the mystery of how a volume equal to the separator's may be properly reckoned toward the total for the stone itself. Let us not monger such mysteries, nor torture our thought beyond recognition. Rather, let us explain these matters simply, by means of what may be simply put: Everything within a stone's boundary, as we have described such an encloser, is part of the stone. (Our previous "tiny item" will not be part of a stone even so. How, so? The stone will have an internal (part of its total) boundary, separating it from the enclosed foreign body.)

In the *third* place, if we do not count the separator as part of the stone, we should have to say that a stone is a "scattered" entity, though one which may cease to exist when the arrangement of its scattered components is no longer maintained, e.g., when they get "too far" apart from one another. But it is intuitive, according to our concept of a stone, that if there are such things, they are not thus scattered, being instead relevantly continuous, or at least a relevantly good approximation thereto.

Fourth, and perhaps most important, if the separator is not part of our stone, what are we to make of the stone's boundary? Our idea of a stone has it that its boundary should be a continuous limiter, or at least something much of that sort, and that whatever is just inside of the boundary be, if not the whole stone, then some part of it. However, if the stone's boundary is even roughly where we have been considering it, and the separator is not part of the stone, then much of what the boundary encloses will not be part of the stone but, instead, only a quite alien thing. That is absurd. But if the separator is not part of the stone, what is the alternative? The alternative is equally repugnant: To include just the stone itself, and so no alien thing as well, the boundary will have to be a scattered-sum-of-boundaries of constituent particles. I doubt that such a sum is coherent at all; in any case, it is not the *boundary* of any stone. As both of the alternatives to it are absurd, the separator is part of the stone itself. Thus we may reason, at least four times over, that a stone's separator is a genuine, though often overlooked, part of it.²¹

Given this requirement, what transpires if it happens that the relevant space, or whatever separates atoms, is relevantly continuous? What happens is just this: With any nearby typical stone, an infinity of nearby stones will exist. Let us see why.

Supposing things to be continuous, an infinite number of nearby boundaries will each limit a different separator, each thus apportioning a different separator to the stone it bounds. (To see the infinity of boundaries, we just follow recipes for the imagination already given earlier in this present section.) Each of an infinite number of different boundaries will bound different likely candidates for stonehood. If there really are any stones, then, in our situation (at least) one of these is a typical stone. But, in any respect relevant to stonehood, any of the others differs from such a one only quite minutely; quite minutely, indeed! So if there are stones, each of this infinity is a stone, at least a stone of some sort or other. Thus a continuous domain for would-be separators yields an infinite version of our problem: Either there really are *no* stones at all, *or else* there are situations involving typical stones and, in any of these, there is an *infinite* number of stones involved. The reasoning to infinity is quite parallel, I trust, for our old friends, clouds, for tables, and even for human bodies.

The argument for this dilemma concerning infinity has made a crucial substantive assumption about physical reality: that whatever separates small items, or at least appears to do so, is in fact continuous. Well, what of this supposition; is it true, or not? To get serious about this is to ponder our current epistemological situation regarding the innermost features of physical reality. As a layman, and no scientist, my own position is at a remove. But it seems to me that no one is as yet so very much better off than I am: As of right now, epistemologically speaking, space, or whatever separates, might really be infinitely divisible; so, it might really be that our alternatives are zero or infinity for nearby stones. By the same token, for all anyone can now say, our separators might really not be infinitely physically divisible. For all we can say, it might really be that our alternatives are zero or, not infinity, but a finite number running into the millions. Either way, of course, we have quite a dilemma.

Whether or not our separators are continuous, so whether or not they generate an infinite version of our problem, they will play a part that is quite in addition to everything done by our smaller, more salient constituents. And a realization of the part they play can prove quite instructive regarding the place of ordinary things, like stones, in the concrete complexity of reality. For consider a rather neater world than ours, relevantly possible, in which the arrangement of particles in a typical stone, as well as in other ordinary things, is as neat and regular as you please, both in the interior and even at what we take to be the periphery. And suppose as well that right outside the "most peripheral layer" of atoms, there is a rather spacious vacuum all around, or some undifferentiated field of rarified stuff. Just so, as regards small, salient constituents, there will be no gradual blending here, between those of the stone and those merely in its environment. In a case like this, nature provides a clean break *of a sort*. But is it a break *that will yield exactly one stone* in the described situation? I think not. Confining consideration to small constituents

would have things be that way; but we should then miss out on the part played by that which separates them. For even with such a regular arrangement, many different, equally good apportionments of separators are available. One, as good as any, is to take the smoothest outside tangent surface as a boundary; another, just as good, is to take a surface that *barely* encloses each most external particle, then dipping in a certain amount, perhaps the diameter of such a particle, until it is halfway to the next particle, where it then rises, economically to enclose again. And, of course between these two, there are very many (perhaps infinitely many) compromises, each no worse than any other possible boundary for any such stone. Here, then, and *thus also in the actual world*, we shall have *very many stones each having exactly the same atomic constituents as every other*, providing, of course, that, in any world, there ever are any real stones at all.

8. INTERNAL AND EXTERNAL RELATIONS

Philosophers have meant various things by *relations*, and there are various philosophic contrasts concerning relations that have been marked by 'internal' and 'external'. Seldom, if ever, have these contrasts been clear ones. So it is with some trepidation that I approach such metaphysical matters here. Still and all, it seems to me that some brief remarks in this regard can serve to make clearer the severity of our problem of the many.

Focusing on salient constituents, say, atoms, we find that those of a certain table bear certain relations to each other, regarding spatial distribution, bonding forces, and so on. It is at least largely owing to these mutual relations, we may call them the *internal relations* among the table's (salient) constituents, that those atoms serve to constitute that table. Ordinarily, we are inclined to think that this is pretty much all there is to the matter of having a table in a common realistic situation. But, on reflection, it seems that, if there are in fact any tables, there are some rather different factors involved that are also crucial. I think that we may fairly say that these factors concern the *external relations* between those constituents of the table and, on the other hand, various other entities that are, quite literally, external to the table, for example, atoms in the table's immediate surrounding. Fortunately for our new problem and, so, unfortunately for our common sense thinking, these relations are, in reality, gradually manifested. Accordingly, a consideration of the complexities they might impose will do nothing to avoid, or to solve, our problem of the many. On the contrary, an appreciation of these external relations will impress upon us all the more the persistent character of this problem.

Consider a table made of iron, an iron table. Now, the internal relations of the table, the relations among its (internal) constituents, are important for the table's being there. But so are the relations to other things in the world, things outside the table. Should "too many" other iron atoms be right up against those of the considered putative table, and be suitably bound together by appropriate forces, we might well have a large solid iron sphere. Well, some such thing as that will be no table at all, let alone the particular table we first supposed. So it is important for

the table's being there that the relations of its atoms to those others are as they "in fact" are, and are *not* as we *next* supposed them to be.

Consider a less extreme situation involving our supposed iron table. This time there *would not be so many* additional atoms bound to the first group, to the table's, so many that we should have no table at all in the situation. Instead, there would be only a few new atoms attached to the first group. What of those *first* atoms *now*, when these other atoms are attached to them; would *they* still constitute a table? (Would they, perhaps, even constitute the very same table that they did in the previously mentioned situation?) If the answer is affirmative, then, even sticking just with combinations of atoms, there would be, in this situation, at least two tables present: one would be composed of just the atoms in the first group; the other, larger table, of those plus the few atoms attached to them.

I believe that our thoughts here are in conflict. One thought, quite common enough, is that the first atoms now do *not* any table make, that the attached atoms logically prevent them from constituting a table. So this thought is, in effect, that, in this case, those first atoms would have the wrong external relations, for tablehood, to the world's other atoms. But, I have found, there is another thought that quite a few people have. This *second* thought is that those first atoms *will* still constitute a table. (Indeed, a strong but common version of this thought continues, they will still constitute the first table here mentioned.)

For people who have this second thought (even if they also have the conflicting first one), our problem of the many will have yet another way of arising. For while the first atoms will "by themselves" still constitute a table (presumably, the first table), those atoms *along with* the "newly attached" atoms will constitute another, slightly larger table. And where two tables are thus encountered, many more cannot be far off. But, as I have implied, many folks will resist this second, troublesome thought, or not even have it at all. Let us now suppose, what may be quite doubtful, that they alone are right here. If so, then we might say this, regarding our currently considered situation: With even those few other atoms attached, the *absence of certain external* relations prevents the first atoms from constituting a table, hence, from being a problematic factor. By the same token, the *presence of opposite external* relations will prevent this trouble here.

But, of course, we have just pretended to think about things in a manner that hardly conforms to the complexities of reality. Even forgetting considerations of the separator, and the complexities that they present, we must have had in mind a very nice regular atomic arrangement, like that mentioned for stones toward the end of the previous section. There, a stone's atoms, here, a table's, were so nicely arranged that "there would be no question" regarding any of them, whether or not it was a constituent of a most salient stone, or table, in the situation. Now, in such a *special* case, the largest group of considered atoms has, as compared with any other group in the situation, some rather special external relation or relations. Surrounded by a vacuum, as we supposed, its members alone would "stand free"; they alone would be a group of bonded entities with no such further entity bonded to them. All the "interior groups," in contrast, have no such special, clean, "free"

status. So, in *such* a case (and still forgetting about separators), there *seems some reason* to suppose that *only one table* is constituted. But even when matters of external relations are in the forefront, any *realistic* situations will yield *no* such happy result.

In realistic situations, there is, not the pretty arrangement of atoms and surrounding vacuum lately considered, but a more gradual falling off of the relevant forces and materials, from the central part where stones, or tables, may allegedly be found, to the peripheral areas. Now, it is of *course* true that any selected group of atoms will have external relations, to the other atoms in the world, that are *some-what* different from those of any other. So this fact of gradualness cannot mean that any group's external relations will be identical to any other's. But if we consider any *such* relation that might, with any shred of plausibility, be of *importance* to any *ordinary kind of object*, to tablehood, or to stonehood, then our gradualness would appear to mean quite a lot. For it appears, there is no *such* external relation which *exactly one* group of atoms will have, in any such gradual, realistic state of affairs. Rather, in such situations, *any such appropriate external relation that one* complex concrete entity, or its components, may enjoy will be possessed as well by *plenty of others*, which overlap or nest with it. For example, if one such entity "approximates to standing free to such-and-such a degree," many others will similarly approximate to such a relational status. External relations, then, present only another facet of the problem of the many; they do not present us with any promising way to avoid, or to resolve, that problem.

9. COUNTERFACTUAL REASONING, JOINED ENTITIES, AND PARTIAL ENTITIES

If I am to trust them—and what rational alternative is there for me in the matter—scientific sources have it that typical concrete complexes, big enough plausibly to be tables or stones, do not come with any neat natural boundary. In relevant regards, they present the gradualness we associate readily with clouds: in any such regard, stones are to their atoms what clouds are to their droplets. But, let us suppose, for the moment, that this is not so. Let us suppose that I have been misled by my sources, or that they have overlooked some recondite physical factor that, in a typical realistic situation, sets off just one group of atoms there as suitable for constituting a table or stone. And let us suppose, further, that considerations of separators cannot generate our problem (supposing, perhaps, that our reasoning in section 7 was, somehow, actually fallacious). Would nature then have given us a solution to the problem of the many?

Right off, it seems quite incredible that this problem should arise for some kinds of ordinary things, clouds, but not for others, stones. Intuitively, and as I remarked near the outset, the problem appears to concern the vagueness of so many of our common terms, of "cloud" and "stone" alike. Now, anything is possible, so to say, but it seems quite unlikely, indeed, that such problems as these terms may engender can be avoided, or solved, by happy external arrangements of matter.

This intuitive suspicion, that everything should be in the same boat here, however nature should selectively operate, is confirmed by appropriate counterfactual reasoning. For such reasoning, it is apparent, will exhibit our problem of the many in any case, only casting it in a counterfactual form, while retaining its full logical substance. (Indeed, even if clouds themselves were to have sharp natural boundaries, this point would still hold good.) Consider a situation, then, presumably, only hypothetical or counterfactual, in which a typical stone had a clean natural boundary. Perhaps this stone would be made of homogeneous, continuous matter, which presented a proper two-dimensional surface to empty space outside or to surrounding matter of a radically different kind. Well and good, we may first suppose, for such a stone, or for a table carved from it. We must still reason, however, on pain of intellectual prejudice, about other, then hypothetical situations, ones in which any stones present would be constituted of separated atoms, just as all of our actual stones do seem to be. In these latter situations, now presumed hypothetical, all the relevant physical factors fade off gradually—from presumed stone to required surrounding.

It is absurd to suppose that there would be no stones, and no tables, in the more gradual world but that there would be such things in the naturally cooperative world. To be sure, the stones, and tables, in one world would be radically different in kind from those in the other; in relevant regards, we are considering *two kinds of* stones, and of tables. But this even *implies* that, if there are such things in either world, there are stones and tables in both these worlds. Taking the cooperative world as actual, consider the counterfactual gradual world. In a situation involving a typical stone of that world, how many stones *would* there be? By reasoning that is now familiar, or a counterfactual version thereof, one should have to conclude with our dilemma: In the *gradual* world, either there *would be no* stones at all, or else, in any situation involving a *typical* stone, there *would be millions* of stones. But, as we agreed, there will be stones in the cooperative world (if and) only if there would be stones in the gradual world. So, both our well-placed reasoner and we must conclude: Either there are *no stones even in the naturally cooperative world*, or else, in the gradual world, in any situation involving a *typical* stone, there *would be millions* of stones. While this is counterfactual, it is quite a dilemma just the same.

Even if nature did not conspire so that we should *more easily perceive* our problem, the problem of the many would still arise. It certainly looks, then, to be a problem about the logic of typical vague terms. In this important regard, then, our new problem parallels the old sorites problem, which, as I have argued elsewhere, is a problem about the logic of such expressions and, so, would arise no matter how the course of nature should run.²² At all events, we may now be pretty confident that even if my scientific sources have put me on the wrong track, about the putative boundaries of tables and of stones, our problem of the many will still be with us.

There are other considerations which show that not very much depends on getting the actual facts right about the realistic situations we have had so much in focus. Beginning with clouds, as we did, we have been thinking, implicitly at least, of those very boundaries of objects, including boundaries of tables and of stones,

that are, so to put it, exposed to the open air. Although it is common for a cloud to have its entire boundary so exposed, it is only rarely, as far as everyday experience goes, that a stone's entire boundary confronts the air, as happens when a stone is hurled through the air. Normally, the stone is resting on the earth, or upon something that is thus resting, or so on.²³ Therefore, in actual typical situations with stones and tables, in contrast to the case with clouds, we find a more problematic part of the object's presumed boundary—the part “adjacent to” (part of the boundary of) some other “solid object.” Now, even if there were no problem with the more exposed parts of a stone's boundary or surface, these problematic parts would generate the problem of the many quite well enough. For in these areas, at least, there is no natural break of any sort; there is no natural limiting place for an object, where it leaves off and where another object, which it is touching, first begins.

Situations that we describe as those of two objects touching each other, for example, one with an iron table and an iron ball resting upon it, are on a spectrum with those described as involving two objects joined together. It is mainly, we come to suppose about reality, a matter of *how many atoms* or at least, *how much* matter, the two share at the time in question.²⁴

Although cases of these objects touching are extremely common, cases of their being joined are somewhat less so. But, of course, very many of these things that are *not in fact* joined, and which *never will be*, are quite *suitable* for certain sorts of joining. Thus almost any two iron objects can be readily joined, by a suitable use of molten iron or of some other metal. Further, a stone, by way of suitable stone material, may be joined to the earth itself, by being joined to a large rock outcrop, which is part of the earth's crust or mantle. Now, we may assume here that the size of the joining stuff is not great: perhaps, even that only a very slender strand joins the putative items. Thus we might best (try to) preserve our idea that there are still at least two objects in the situation, which are joined, and *not* that there is *just one bigger thing*, into which the two objects were so fused that each of them no longer existed.

Where two things are joined, even by a slender strand, part of the boundary of either must “cut through” the joining material. Throughout this material, even if nowhere else, there is, quite surely, no natural break or separation to be found. Not only is the spatial array of atoms in a baffling blend, but any bonding forces are also quite gradually distributed with regard to any candidate boundary. So, regarding either joined object, *if any* boundary is proper, there will be *many* that are. With either object, let us assume that the “exposed parts” of its boundary present a clean natural separation. Because atoms are so very small and numerous, however, there will still be, in our one example, millions of iron balls joined to millions of iron tables, and in our other, millions of stones joined, right there, with millions of planets. (With continuous, homogeneous matter, the point is, if anything, more obvious; indeed, in such a reality, infinities are easily obtained.) Each stone, we may assume, can share part of its boundary, the exposed part, with each of the others in the situation, but the parts within the joining stuff, quite sufficient to generate our problem, will differ from stone to stone.

With these thoughts about joined entities in mind, compelling counterfactual considerations favor our problem. Unlike those counterfactuals recently considered, these do not concern any esoteric hypothetical worlds but only small variants upon actual situations. So we may consider a typical iron ball and a typical iron table that have not, are not, and never will be joined or, even, ever be touching. And we may ask: What would the situation be, if, contrary to fact, they were joined by a slender band? If they exist now, they should exist then. If they existed then, there must be a boundary separating at least one table there from at least one ball. But, if so, there would have to be millions of such boundaries; thus millions of such balls and tables. So either such a table *does not in fact exist*, and so with tables generally, *or else* in that situation, there *would be millions* of tables.

A related dilemma may be generated entirely in terms of the actual situations of our world: If there are any tables, then, I am confident, somewhere in the actual world there is at least one typical table at some time joined to some other object, while each must retain its distinct identity. But, with that putative table, there are millions of tables in its "immediate situation," or else it does not exist at all. But as far as tablehood goes, that joined entity is not significantly worse off than any prospect. Hence either there really are no tables or else, in that table's situation, there are millions.

It is now a good time for us to consider these issues as they relate to alleged entities that, so to say, are most naturally, or typically, in a joined state or status. I call these *partial entities* because, as with a leg of a table or a branch of a tree, in this natural or typical state, they are each part of some other, larger entity, the implied table, or the tree.²⁵ The branch, for example, if it really exists, is joined to, or relevantly continuous with, or "at one" with, the tree's trunk and, indeed, with the rest of the tree. If there really is a branch it must stop somewhere, so that it will not include the trunk or, indeed, the whole tree. But any place that the branch stops cannot be better than all the other available places for its stopping. Rather, realistically speaking, it is no better than many others. And even if, absurdly, just one such boundary, or partial boundary, is somehow the very best one there, in regard to yielding an instance of branchhood, millions of others will still be at least very good, too, in the same regard. At all events, if any boundary yields us a *typical* branch, as we may suppose often happens, each of millions of others will yield a "nearby" entity that is, at least, a branch of some sort or other.

It may be helpful, at this juncture, to consider the "opposite" of joining: the separating or breaking off, of a typical branch from a tree. (The typical or optimal state for our stone and planet, so to say, was to be separate, so we joined them, for our consideration. The typical state for our branch and tree is for them to be joined, or together; so we shall separate them, also for our consideration. Thus we are considering each situation along with its "opposite," endeavoring to be comprehensive.) A certain branch was on a certain tree; now it is on the ground. Let us suppose, for simplicity, that there were no losses or gains in the situation, with regard to atoms or stuff, other than those required for this separation. So the atoms that now constitute a certain branch on the ground used to constitute a branch (presumably, the

same one) on a tree. Suppose, alternatively, that a break had occurred along a plane very near to our first, actual break but not so near that the material severed would be exactly the same. With this second alternative, we also would have a branch on the ground. This time the branch would be composed of somewhat different atoms, and stuff, than in what went on before; perhaps we now have a slightly greater group or batch. Well, *these* atoms would *also* have constituted a branch back on the tree. So we must conclude that before either break, and even in the absence of any break, really, *each* of these *two* groups of atoms constituted a branch on this tree, providing of course that there was ever *any* branch in the situation (or, even, any tree). But, then, if there was any branch there, there must have been at least two of them, for at a given moment, one given branch cannot both be constituted of a certain number of atoms and, at that same time, also be constituted of another number of them. Equally, at a given time, one branch cannot be constituted of a certain batch of stuff and also of a lesser batch. The reasoning from two to many more is now rather obvious. So this gives us a handy way to see, all over again, our new philosophical problem.

Near the beginning of section 1, I asked what sort of possible world, or underlying reality, would make things hardest for generating our problem of the many. My answer was that it would be a world where ordinary things, clouds, stones, and tables, were composed of continuous homogeneous matter, which made a clean break with, perhaps, entirely empty space that surrounded the object all over. In such a case, we might say, nature itself provided a definite real boundary and, so, in a given situation, just one ordinary object with a uniquely preferred status. But, as our recent reasoning shows, even in such a world as this, our problem of the many arises: it arises counterfactually, of course; still better, it arises for cases of joining balls to tables; perhaps best of all, it arises for cases involving partial entities, for example, a tree and its branches. For it is hard to suppose that a typical, paradigm tree, which we take to have quite a few branches, but not many millions, somehow does exist in such a world either without any branches or with so many as all that. As I said near the outset, of both section 1, and of this present section, our problem concerns the logic of our ordinary terms and not, or not so fundamentally, the underlying arrangements of matter, in this possible world or that one.²⁶

Near the beginning of section 6, where I began to extend our arguments about clouds to other ordinary things, I mentioned several sorts of partial entities among the things concerned. Thus I mentioned along with planets, the mountains "upon" them; along with trees, their trunks and branches; and along with tables, their tops and legs. Most importantly, for us, along with human bodies, I mentioned their arms and their hands and even their fingers. I should now mention a further partial entity, another part of our bodies, in the properly broad sense of that term: human brains. Now, in that I believe our bodies to be relevantly like clouds, I do think that the problem of the many arises for our bodies just as it does for clouds, along lines that are, by now, perhaps boringly familiar. So the problem of the many looks to cut deep, and close to home, on that account. But even if there is no relevant similarity between clouds and our bodies, the problem of the many will still

be of great philosophic moment, and not just due to counterfactual considerations. For, as a matter of fact, there is no natural separation between any *brain* I have and all of the rest of my body. Since my brain is, I suppose, if not quite a typical one, at least a pretty good example of a brain, this means that my body has, among its parts, millions of concrete complexes, each one of which is a brain of mine. Of course, there is one other alternative, as is characteristic of our problem: Perhaps, instead of having millions of brains, neither I nor you really have any brain at all.

I consider the arguments of this section to be rather important in regard to the problem of the many. But it must be emphasized that their importance is not confined to their providing a hedge against uncertainty, in case my scientific informers have led me astray about the gradualness the real world involves. On the contrary, there are at least two other aspects to their importance. First, because I do believe that my informers are reliable and that our world is relevantly gradual, these present arguments are to be employed, I am confident, *in addition to*, and not instead of, the arguments of previous sections. These present ones, then, are arguments *a fortiori*. Second, and more important, I think, these present arguments, more than those of previous sections, indicate that our problem is one regarding the categories of our own thinking, the logic and meaning of our own terms. The problem is not due to unfortunate circumstances surrounding us, to the messy gradualness that, as it happens, does appear so frequently in the world. That gradualness just helps us to see the problem in the first place; it is no more crucial to the problem itself than is our having started with clouds and not with stones.

10. THE PRINCIPLE OF MINUTE DIFFERENCES, EXCLUSION PRINCIPLES, AND SELECTION PRINCIPLES

Our discussion has confirmed the intuitive idea that the problem of the many is a problem with our *words*, and with such *thoughts* as those words serve to express. Further, it seems from the *vagueness* of the words involved, though perhaps from other of their features as well. That we have a serious problem here, and even that it involves at least the factors just mentioned, I believe quite confidently. What I am less confident of, but do also believe, is that I can provide an *analysis* of this problem, even with a modicum of illuminating detail. Any analysis I should provide would *begin* with what I have called *the principle of minute differences from typical cases*. I should say that such a principle governs (the meaning, or the logic, of) our words for ordinary kinds of things, like 'cloud', 'stone', and 'table', as well as (that of) many other common vague expressions. What I should then do is go on to analyze this principle itself and to exhibit its relations to other principles that also govern these expressions of ours. This latter task, though it perhaps cannot be fully completed, is, I think, one well worth pursuing. But, for various reasons, including the obvious one of space, I will not do so here.

Especially because of the role I expect it to play in our problem's analysis, I used (an instance of) this principle as a premise, the third and final one, in my first introductory argument. Also largely for this reason, in section 4, I construed the

third premise of my other introductory argument as being motivated by this principle; then I developed a lengthened "master" version of that argument where the principle figured explicitly. Finally, I appealed many times, in my discussion of examples, to relevant instances of the same proposition. But I do not think that our problem, the problem of the many, can be avoided even if this principle were to be rejected. On the contrary, as I shall argue in this section, and also in the next one, this persistent problem would still be with us and still be in want of any adequate solution.

In a rather general form (and not just confined to clouds or to stones), the principle of minute differences may be put as follows:

With respect to any *kind of ordinary things*, if something is a *typical member* of the kind, then, if there are entities that differ from that thing, in any respects relevant to being a member of the kind, quite *minutely*, then each of those entities is a member of that kind.²⁷

The kinds of things governed by this principle include, of course, clouds and stones and tables; we need not be precise in delimiting the range. The reason the principle governs the kinds is that it governs the terms the kinds' members must satisfy: 'cloud' and 'stone' and 'table', and so on. The reason the principle governs the terms is that they are vague and, without going into the matter, have their vagueness involved in such discriminations as the terms purport to make.²⁸

In almost any context, I have found it very easy to get firm assent to this principle and even to principles that are more ambitious. Indeed, people seem so sure of it that they consider it quite trivial, perhaps a trivial exhibition of the meaning of 'typical' and of its near synonyms, like 'paradigm'. Only in the context where our new problem is introduced have I found any resistance to the principle.

Because I have used the principle in introductory arguments, one might think that by rejecting the principle, one could easily reject those arguments and, so, that one could avoid the problems the arguments were used to introduce. But such a thought is *not* correct. In the *first* place, we must notice that the principle is nowhere used in the second of my arguments, the one about clouds as bounded entities. So its rejection would leave that argument just as it is, still introducing our problem. To be sure, in section 4, I advanced the principle as (part of) an *analysis*, or *explanation*, of (part of) that argument. But my explanation of the argument might of course be wrong even though the reasoning to be explained is itself philosophically adequate. In the *second* place, in a manner most harmonious with the preceding remarks, the first of my introductory arguments, about clouds as concrete complexes, may be easily revised, so that the principle is not employed there either. Retaining its first premise, we just compress that argument, so that, instead of its previous (2) and (3), the argument's only other premise now reads like this:

- (2') If something is a *typical* cloud, then *any* situation involving it contains, in addition to itself, millions of other complex concrete entities, each of which is a cloud.

Regarding our realistic situations, with a plethora of overlapping concrete complexes, what this premise says may be put like this: either nothing there is *so* favored that it is a *typical* cloud or else there are *millions* of things there each of which is (well favored *enough* that it is) a cloud, at least of some sort or other. Our principle may be regarded now as an explanation of (part of) the appeal of this very attractive simple premise, (2'). Although I think not, perhaps that explanation is erroneous. Even so, that would scarcely give one much reason to reject (2') itself, which, in any case, would be very hard to deny in any philosophically adequate manner.

So a rejection of our principle, a dubious move in any event, will fail to solve our problem. That this is so should be rather evident; why it takes a bit more thought to see. The reason begins to emerge when one asks: If we reject that principle, what should we replace it with, for surely at least something much like it does seem to be required? The answer to be given will be, most likely and most plausibly, a longer, hedged version of the original simpler statement. In the longer version, we begin the same way and, then, tack on at the end an appropriate *exception clause*. Thus we might say that each of those (minutely differing) entities is a member of the same kind *except for those that* share "too much" space, or "too much" matter, with the aforementioned putative typical member. As reasoning can make clear enough, it is *very* hard to state an exception clause that stands up to any scrutiny. (When we realize that the relevant principle must govern the thinking of many stupid little children, things look better and better for our original simple version.) But with regard to the problem of the many, that great difficulty is a somewhat peripheral matter, which we can well afford to pass over.

The main matter here is this. Such an exception clause will provide, at best, only an *exclusion principle*. This sort of principle says, in effect, that, in those situations it governs, *at most* one entity has the status it accords, for instance, the status of being a cloud or a stone. Such a principle says that there can be at most one winner, so to say, and that any other competitors will then be excluded from sharing the same status. With regard to our problem, it is surprising how much stock philosophers want to place in some such principles of exclusion. When I propose our new problem quite informally, as I did in section 1, many philosophers think they can solve it, and right away, too, by adducing some exclusion principle. Indeed, this has occurred with some very able philosophers. But, nevertheless, it is only an unfortunate error.

A certain philosopher thinks he sees just one table right there before him. He is rather baffled by my suggestion of overlapping complexes fading off into the surrounding. To relieve this puzzlement, he reaches into his bag of tools, or tricks. What might he employ? For a start, he might resort to this old saw: Two physical objects cannot both occupy the very same space at the very same time.²⁹ This is an exclusion principle. For what does such a principle say? In general terms it says something like this: If two entities both satisfy a certain description or, in a very general sense of the term, both have a certain property, then they cannot both satisfy a certain second description or possess a certain second property; at least one of the two compared entities will be *excluded* from satisfying the second description.

What about the saw in hand? So if two entities both satisfy 'physical object', they cannot both satisfy 'occupies precisely all of spatial region R at exactly moment of time T'. So, too, if two entities both satisfy the latter description, then at most one of them can satisfy the former, that is, can be a physical object. (Perhaps one of them will be a shadow, or whatever.)

The exclusion principles employed in an attempt to escape our problem will, experience shows, differ in several ways from the very common sort of proposition just considered. First, instead of speaking so generally of "physical objects," our objector will mention a specific ordinary kind of thing, for example, chairs, or stones. Second, the concrete complexes we must consider, as the only likely candidates for being stones, or chairs, do *not*, at a given moment, occupy *exactly the same* space as each other; rather, they overlap, or nest, or whatever. So for an exclusion principle that even *seems* to apply, one needs some other description that is a suitable approximation to, and substitution for, one that specifies such exact sameness. Hence, vague and dubious as it may be, some such principle as the following is likely to be adduced: If two entities both occupy *nearly*, or *virtually*, all of the same space, as each other, at a given moment of time, then they cannot both be chairs, or both be stones. Or, perhaps, some near variant will be employed: If two entities both are constituted of *almost*, or of *virtually*, the exact same matter, or (group of) atoms, at a given moment of time, then they cannot both be chairs, or both be stones.

Let us assume, what might be true, that our thinking about stones, and about chairs, is governed by some such exclusion principles, perhaps even analytically so governed. And let us take this supposition a good deal farther: At least one such principle is (coherently and properly) applicable to the bafflingly gradual situations reality so often involves. Without further argument, this is a pretty strong assumption for us to be making now.³⁰ But let us do so anyway and thus give our stimulated objector what he seems to want. Will such a principle allow him to avoid, or to solve, our problem?

In point of fact, it cannot even begin to do anything of the kind. For what is needed for our problem's solution, if there is any to be had, is a proposition of an entirely different sort, which I will call a *selection principle*. A selection principle, one that is both applicable and correct, will single out, or *select*, from among the entities in a situation, those that satisfy a certain description or possess a certain property (or, in particular, that are of a certain kind). For our problem, if a principle will help, we need such a *selection* principle. Further, we need one that will select *just one* entity, from a nearby multitude, as being of a certain kind, one that common sense affirms. So we require *not* any exclusion principle but a *selection* principle that will, in realistic situations, *select* just one complex thing, from among all the concrete complexes present, as, say, *the only stone there*.

But of course finding such an adequate selection principle, or even anything that approaches it, seems to be very much harder than formulating exclusion principles or approximations to principles of exclusion. For the former, but not the latter, amounts to nothing less than a solution to our new problem. Just so, as far

as all these principles go, we are no better off with our problem than ever we were. The role of exclusion principles, in these matters, is not what some philosophers have expected.

What is the logical role, in these matters, of an adequate exclusion principle (if there be any such adequate proposition)? It will say, as we have noted, that in situations where entities compete with each other for a certain description or a certain status, for example, for being a stone, they cannot both achieve it: there can be *at most one* winner. Consider our realistic situation, with all its complex candidates for stoneness. Suppose that an exclusion principle about stones applies, perhaps concerning the sharing of "too much" space or "too many" atoms. What will the principle say, then, about the concrete complexes present? It will say, simply, that *at most one* of those concrete entities is the situation's sole stone. Of course, such an exclusion principle is entirely compatible with any adequate selection principle, but it is *also compatible* with the *absence* of any such principle of selection.

With or without using the principle of minute differences, what our reasoning has *already* yielded is that we have a *dilemma*: In a relevantly typical situation, at any given moment of time, *either* there are many stones there *or else* there are none. Now, our exclusion principle, supposing the most for it, will provide us with this further information, which is entirely compatible with that disjunction: There *are not many* stones there then. So if there is such an adequate exclusion principle, it will, in the absence of a selection principle, "resolve" our dilemma only in a most radical and Parmenidian way. There really are no stones there then, nor any stones at all.

This, after all, is the depressing truth about exclusion principles: They do nothing to escape our problem; rather, given that problem, which has by now been provided from various quarters, they only force us toward the more radical of the two options it poses. Why, then, have philosophers, perhaps in some hurry to escape our problem, assumed that exclusion principles might be of any use? Although it must be somewhat speculative, I think the answer lies along these lines: These philosophers have simply assumed that there really *must* be *at least one* stone in the situation, that this *must* be an *absolute given*, which shall never be questioned, on any account. Now, *given this as an absolute, unmovable dictum*, an exclusion principle *will* yield the result that there is one, and only one, stone present. But, of course, to reach that conclusion in *such* a manner is just to be so deeply in the grip of our ordinary common sense suppositions as to fail, if only temporarily, to consider our problem at all seriously. It is to forget, to ignore, or to misunderstand the problem, rather than to solve it. For if one does think about the problem seriously, one will realize that, in terms of principles, the problem is one of finding an adequate *selection* principle, which is quite a different matter from bringing any exclusion principle to bear. At the very least, we might say, our problem is one of finding, if not the required principle itself, a *philosophically adequate reason* to believe in the existence of some appropriate *selective* proposition, even while no such reason appears anywhere to be found.

Perhaps the most important point of his section is the one just made, a point which, I suggest, is quite important in its own right. This point also has importance,

however, for the examination of our principle of minute differences, as I have already suggested. We may see this a bit more clearly now and, partly as a result of that clearer perception, build a case for that principle, in its simple, original version.

As will be remembered, even those who object to our simple principle are wont to agree that something like it governs such typical vague terms as 'cloud' and 'stone' and 'table'. The objectors think, however, that only a more complex (version of our) principle, holds true here, one with a suitable exception clause. Their motivation for that complicating retreat is that they are supposing that such a complicated principle will serve to solve our problem, while retaining what is right in the simple version. As we already saw, that problem can be introduced without employment of *any* such principle, simple or complex; so, for that reason alone, the motivation is undermined. We can now see more clearly that this must indeed be so. Suppose that our vague terms *are* governed by such a complicated minute difference principle, complete with its exception clause. All that such a principle will do, then, is impose on our problem, which is already upon us, a certain exclusion principle, the one stated or implied in that exception clause. Hence, even if it does govern our key terms here, such a principle will only pressure us *from* the many toward the *none*, a most radical result, and will in no wise afford common sense any comfort.

Because I would like my thoughts about our problem's *analysis* to be right, I tend to favor the principle of minute differences in its simple, exceptionless version. But, even apart from this theoretical partiality on my part, I can see no reason to deny this principle, which is as intuitively appealing as it is simple, especially as doing that will be of no use in solving our problem. Nor have I ever seen any reason to accept the more complicated statements, with exception clauses, which are, apparently, as *ad hoc* as they are complex, especially as doing that will, equally, be to no avail here. The point on which I should like to focus now, however, by way of concluding this section, is neither of these two rather evident ideas. Rather, it is a third thought concerning the relation between them, which, while somewhat less evident, is really not a very difficult conception either. It is this: The simple, original principle and a more complex version, with an exception clause, are *logically compatible* with each other. Thus the acceptance of the latter, dubious in any case, *would not in itself rationally require* the rejection of the simple, intuitive principle of minute differences. On the contrary, the two together may hold, both of them governing the vague terms at issue. What would that joint holding imply? It would imply that key vague terms were logically inconsistent expressions, including 'typical cloud' and 'typical stone'.³¹ That is, the supposition that anything satisfied these expressions would logically yield a contradiction: certain complex entities that differed minutely from a putative satisfier of 'typical stone' *both would be* stones (by the simple version) and *also* (by the complicated version) *would not be*. For the strongest of reasons, then, there would be no typical clouds or typical stones. As we have already agreed, if no typical clouds, then, in fact, no clouds at all. Hence, with both principles holding, our dilemma would not only be relevantly yielded but, as has happened so many times before, it would be resolved only in movement toward its more radical side.

11. SOME QUESTIONS FOR COMMON SENSE PHILOSOPHY

Our arguments, I believe, pose a formidable dilemma for common sense thinking. In our time, indeed, since Moore's rejection of idealism, this common thinking has been the cornerstone of the most dominant philosophy, which I call *common sense philosophy*. So our arguments challenge this dominant philosophy as well. They seek to reject, in turn, the ideas of Moore and of his very many followers.

However intriguing this may be, few will allow themselves to be convinced, by these or any other arguments. They will assume, instead, that some flaw, no matter how difficult to specify, must always be present. For common sense philosophy is not just another of philosophy's schools. Rather, it does not only rely on, but also advocates and supports, our common sense thinking, which is society's common ground. Consequently, the power of any mere arguments to move us away from this philosophy will be quite limited. Although I should like to pursue our arguments further, I am also anxious for some of this radical movement to occur. So I will now forego further examination of our challenging patterns of reasoning.

I cannot possibly tell what will prove most effective in getting our problem of the many to be seriously considered as a genuine philosophic dilemma. But it is my hope that *if you ask yourself certain questions*, as I have often done, something toward this end may be accomplished. Now, up until this point, we have often just *assumed* what common sense would have be so: That where people judged, or were wont to judge, that a typical cloud or stone was present, there really was *at least one such* cloud or stone. This assumption led to another implicit in it: *Everything required* for the existence of the assumed cloud or stone, such as a suitable boundary, was in fact there, in the situation. Now, these assumptions are very often made in everyday life, at least implicitly. For the sake of argument, in our philosophic reasoning, we have made them, too, though in a rather more tentative, or even hypothetical, fashion. But let us now become, or at least try to become, a bit more doubtful about these common existential suppositions.

In this mildly skeptical frame of mind, let us seriously ask: What is there in these ordinary situations, with so many small constituents so gradually dispersed about, that could be, or could serve as, the boundary for *any* (typical) cloud or for even a single stone? If you ask this question seriously, and try to think of the underlying situations concerned in all their detail, then, I suggest, you will find no available answer to be very convincing. Nevertheless, as there must be some suitable answer here for there to be any clouds or stones, it should not be hard for you to manage to find an answer that will at first seem a bit plausible. For example, you might hit on the idea that what will do is whatever enclosing curved limiter yields a certain average density throughout a certain more or less well-pictured region. But examining any such answer closely, I suggest, will result in a certain amount of depression; for, in the baffling morass of indicated continuents, there seems no reason to think that our idea of a cloud or of a stone really does require any *given particular* average density, complexity of structures, or whatever, and *not* some *other* one that is only *minutely* different from it. So the result your alleged boundary is to

yield seems impossibly arbitrary, rather than well enough determined by real features of the situation. This absurd arbitrariness, and the depression about any allegedly adequate answer, is closely connected with sorites arguments. As we have forsaken these arguments for most of our essay, so we shall now again pass over these annoying causes of discontent.

We shall still have plenty enough to worry about in thinking over such answers as initially seem even remotely plausible. For we must now ask ourselves the yet more pointed question: What can there be, in these bafflingly gradual situations, that can be the boundary of, not just *a* genuine cloud, or *a* real stone, but the *only* cloud, or the *single* stone, there? To obviate our argument's dilemma, we must find an answer to these questions that is philosophically adequate. But what actual feature can there be, in the baffling morass of separated items, which can select just one complex as uniquely filling the bill? If we take anything that is even remotely plausible as a requirement for a cloud's boundary, like whatever encloses a "largest" complex of just such a particular average density, then there will be very many items that meet it equally well, as our thoughts of overlapping have so often indicated. If we take something even remotely plausible for a stone itself, for example, a "largest" item there that has such-and-such a complexity of structure, overlapping complexes again prevent any answer from adequately bringing forth a uniquely well-qualified candidate. And, as we have seen, looking to "external relations" for help will fail to narrow things down adequately.

No matter what property we pick, to use an available expression, it seems inconceivable that, in realistic situations, there is precisely one entity that possesses it and, *in virtue of that*, is actually the only cloud or stone there present. After this is thought over to any great extent, the idea that there *must be* some answer begins to look badly founded, at least, perhaps even quite absurd. Now, it is no good to say something like "the property of being *the* cloud in the situation," hoping to specify thereby the appropriate uniquely possessed attribute. That would just beg the question here. For you may *readily question* on what real basis, and so *whether or not* at all, *anything does satisfy* the offered *demanding* description. Indeed, we may put the matter in terms of these descriptions themselves, assuming them to be well formulated. For when we ask ourselves what it could be, in realistic situations, that would give such descriptions semantically proper application, we are apt to bounce between two walls: Either we shall think of something that, realistically, is absent altogether, such as certain of those natural breaks in reality which have been previously remarked, or else it will be something, like those features so recently considered, that is many times exemplified. Now, for all our queries and failures, there just might, I suppose, really be something present that we are always overlooking and which, by fortunate circumstance, in many typical situations, always picks out just one (putative boundary as proper, and so with just one) putative cloud or stone. But, unless we can describe or specify it, at least vaguely and obliquely, we should have our doubts. For, otherwise, we should have to assume a great deal. We shall have to assume that, very often, many stupid little children are somehow made to get things right, as to the small number of nearby real clouds or

stones, by the operation of some imperceptible, perhaps ineffable, and certainly quite mysterious factor. Unless it is some truly Almighty Father Who so manages things for us all, we may question whether those blissful toddlers are so well placed as common sense would have them be.

In answer to the present line of questioning, certain lines of reply are predictable. Perhaps the chief among these, which I shall discuss as representative, proceeds from a certain view about ordinary vague expressions. On this view, such terms are incomplete.³² In addition to some cases for which they are positively defined, and also some for which they are defined so as not to apply, there are still others where the matter of their semantic application is *left open*. Thus it will be *up to us*, in certain circumstances, to decide whether or not such terms shall apply. Now, it has been argued elsewhere that this view is actually incoherent and so cannot properly represent the semantics of any expressions at all.³³ But we shall now pass over any such great difficulties. For whether or not those problems prove fatal for the view even quite generally, certain more specific questions may be raised regarding any attempt to apply such a view to the questions that we have been asking.

It is not clear exactly how the intermediate steps should go, but if this view about vagueness is to help us with our present questions, it will at some point have to incorporate an idea at least much like this one: Our language and thinking, on the one hand, and the objective external facts, on the other, all as determinate as they are at the time, together specify *that there is exactly one* cloud or stone in our typical situation; but they *leave open* the matter as to *which* entity in the situation is the unique present cloud or stone, which *further matter* is thus *left open for us* to decide. Looking to preserve common sense, as it does, and offering us the sort of putative logical distinction that might seem to explain some confused questioning directed against society's common ground, this reply is bound to have an appeal for us that is both marked and quite immediate. But if we examine the matter with care, the offered distinction will do little to settle our questioning attitude. For according to what it delivers, which entity in our situation is a cloud or is a stone will be, at least in many cases, a matter of human thought and decision; whereas the truth of these matters is that, supposing there is to be any real stones or clouds, which entities are these is *not* something relevantly dependent upon what we happen to think or decide.

It is, to be sure, a matter of human convention, and so in a way dependent on our thinking, *which things we call 'stones', which 'clouds'*, and which neither, supposing, of course, what we may now allow, that we actually do call some things by these words or names. This is because we have endowed certain sorts of marks and sounds with certain semantic properties, however accomplished, and we may subsequently change these matters by relevantly similar processes. But all of this, as should be obvious enough, is quite irrelevant to the sort of dependency upon our thought required by our considered line of reply. For one thing, with regard to any situation, it is similarly up to us whether we should call *anything at all* a 'stone' or should ever have done so.

In certain situations, it is of course a matter of human action, and its consequences,

as to which things present are stones and, in this century, even which are clouds. In the course of events, we can effect the arrangements of matter, so that even which things are plausible candidates for stonehood can be the result of what we do. And since these actions, or many of them, are in turn dependent on our thoughts or decisions, in many cases these matters are correlatively dependent on what we think or decide, or so we may now suppose. But, like the one just previously considered, this is not the dependence required by our reply, for it, too, applies just as much to each branch of the distinction the reply offers. In this sense or respect, it is even dependent on human thought, in various situations, that there is *any* stone present at all.

No, what our reply requires is a good deal more. It requires that even after everything is so specified and determinate, both in our language and in our environment, so that it is *true* that a certain typical situation does contain a *single stone*, it is *still up to us* to decide *which* entity there is the only stone present. And this, I suggest, is to require of a matter that must be relevantly objective, or independent of our thoughts, that it be thus dependent upon our thinking, that it be *only* a quite *subjective* matter *instead*. Now, with various artifacts, for example, chairs, there may be some *shred* of plausibility in claiming that there is no such condition of objectivity. For example, one might suppose that it may be a matter of which of several nearby things certain people right now most prefer to sit upon, or something of the like. And, just perhaps, continuing this line of thinking, this might mean no relevant objectivity for the matter of which of those things is the sole available chair. Now, even here, with such artifacts, the suggestion is *not* very plausible. But with stones and clouds, which entities, if they exist, are entirely *natural* things, the case for any such relevant dependence on our thought appears to have *nothing whatever* to be said for it. So our considered reply, with the distinction it seems to offer, will not answer our baffling questions about clouds and stones. Nor, then, as some *general* answer is presumably required, will it do even for ordinary artifacts.

I have argued that an attempt to reply to our questioning, a rather good representative of such attempts, will fail for an instructive reason. It will overlook, or ignore, a condition governing the terms for the kinds in question, which it must do in order for a distinction it offers to be applicable.³⁴ In sum, our questions have led to putative replies, and these in turn to arguments that the replies are inadequate. It appears, then, that there really are no adequate, unobjectionable answers to be found.

12. SOME IMPLIED PROBLEMS

The problem of the many poses a formidable challenge, I submit, to our common sense thinking. Were only this by now familiar challenge involved, with no substantial further difficulties as well, our new problem should be of some considerable interest to serious philosophers. But, in fact, the problematic situation is quite the reverse of the isolated conundrum to which I just alluded. On the contrary, the problem of the many implies, for our philosophical consideration, a number of

serious further difficulties. In this final section, I shall discuss, very briefly indeed, three (sets) of these. In each case, my discussion will primarily, if not entirely, concern implications of the second, multitudinous disjunct of our dilemma. The reason for this partiality will be apparent: Generally, if the first, Parmenidian situation is presumed to obtain, things will be *so bad* for common sense that there will be little *room left* for any further particular problems to arise. But just as I shall, for this obvious reason, be mainly engaged in disclosing problems in the multitudinous one of our two alternatives, so it will be the other, nihilistic one toward which these implied difficulties will be pointing the way. As will be apparent, in each of these three problem areas, the trouble first arises in what might be deemed a *metaphysical* version; but as soon as one might think to make light of such a problem, an *epistemological* version is right on hand to mystify.

A. The Problem of Having an Object in Mind

We commonly suppose that, regarding various existing ordinary things, several nearby stones, for example, we can think of each of them, or have each in mind. Sometimes, we may think of them all together. But we also presume that often we think of just one of them, individually: Often, if I choose, I can close my eyes and think of just one actual stone. But if there are millions of "overlapping stones" before me, in the manner that our prior reasoning has brought to light, how am I to think of a single one of them, while not then equally thinking of so many others, with each of which "it" might so easily be confused? The presumed *relations* between us, and our minds, and ordinary material complexes look to be in deep trouble.

I look at what I take to be a single stone, right over there. Then I close my eyes and think to myself, "It is quartz." But *what is it?* It had better be a stone, at least, or else it is extremely doubtful that, in *this* very common and in *no way untoward* situation, I am thinking of any real object at all. But, then, there are so many stones right there; if any are quartz, they all are. So, being charitable to myself, in any sense or way, will be of no help here. If there is no particular one I have in mind, then what am I doing in conjuring up the sentence subvocally, as I do, "It is quartz." That will not even be grammatically appropriate for expressing any truth that I might be grasping about real objects over there; I should better think, "They are quartz." But, if relevantly more appropriate, that latter thought would be quite disconcerting.

We think it true, and even important, that each of us often does concentrate upon just such a one existing entity, without then and there having to contemplate as well millions of others so very much like it. Indeed, if we *never* do engage in such *individualistic* thinking regarding members of a certain kind of things, e.g., regarding tables or stones, it might well be doubted that we ever think *at all* of any real things of that kind. So this problem is rather serious. But how is it to be resolved? I suggest that up until now, at least, not one of us has ever really thought of any existing stone or table or human hand.³⁵

Supposing there are stones, there are millions right there now. How should I

individuate in thought any one of them, so that I might contemplate it alone, without the confusion, or intrusion, of so many competitors for my attention? Any mark I could observe would be shared by so many; so would be any description, or property, I should have even the slightest reason to think is exemplified there at least once. I could, of course, *formulate* a demanding description that *calls* for unique satisfaction, e.g., '*the largest stone over there*'. But as just indicated, there is no reason whatever to suppose such a description to be satisfied. With all that overlap going on, it is far from clear that there is a single largest stone there, whether in mass, in volume, or whatever. What might be largest in one regard might well not be in another. And who knows how many "regards" there are here? But even if, perhaps by God's design, there were one, clearly and univocally, largest stone right there, it seems incredible that I should have *it alone* in mind just by my thinking of those quoted five words. Rather, there should be some real *connection* between me, and even those demanding words of mine, and, at the other end, the single stone there that is the real object of my thought. With so many stones there, however, what connection could, appropriately and uniquely, link me, or my words, to just the single stone I am supposed to be contemplating?³⁶

Perhaps there is some special *causal* connection between me, or my thoughts and words, and a single nearby stone that is to be the sole object of a certain salient idea of mine? Putative causal accounts of things are now much in vogue. This is particularly true as regards a person's thoughts about a given existing concrete entity and as regards such language as may be most appropriate to that thought or to its expression. Finding the notion of causation itself at best obscure and suspecting it to be even semantically inapplicable, I find little illumination from these fashionable accounts.³⁷ But even discounting any such general suspicion, an allusion to causal processes would seem futile for the particular problem at hand. For consider two very similar, barely overlapping quartz stones over there. Whatever causal relations the one beares to me are *very* closely matched by those the other bears. How, then, is just one of them to be causally connected to me so that I am thinking now only of it, and not of the other, whose causal credentials seem so relevantly similar?

Whether it involves causation or not, *perception* might be thought to provide the link from my thought to its sole relevant object. Normally, of course, we suppose that this is how most individualistic thinking gets started. But then, normally, we suppose that a person can, and often does, *perceptually discriminate* a certain stone from its background and from whatever other stones might be nearby. However, given our prior reasonings, it seems that such perceptual discrimination never does in fact place, and that our common, sanguine idea that it does is but a comfortable illusion. Indeed, rather than solving our problem of individualistic thought, reflections about perception now mean further problems for us there, as well. For if we *do not ever* perceptually discriminate one stone from millions of others, it is *doubtful* that we ever *perceive* stones at all. What, then, *if anything*, do we actually perceive? This is a question I suggest, that we should take quite seriously. Just so, we should not assume, at the outset, that any affirmative answer, especially one congenial to common sense, will prove philosophically impeccable.

Largely owing to work of Kripke and of Donnellan, *ordinary proper names*, of individual people, places, and things, have recently been the focus of much discussion.³⁸ Accordingly, we might expect some philosophers to think that by an *act of naming* one might bring before one's mind just a single ordinary concrete entity, just one real stone, for example. Frankly, following the tradition of Russell and Quine, I cannot see how having such proper names around, like 'Plymouth Rock' or 'Felix', can yield solutions to *any* fundamental philosophic problems. But even if one doubts the generalization, in regard to the particular case at hand the negative point is plain. Especially with no help in sight from causal or perceptual processes, how am I to name just one stone here 'Plymouth Rock' or 'Oscar' or 'Felix', while leaving its overlappers quite anonymous? There seems no more prospect of bringing this off than of individually thinking of just one nearby instance of stoneness. So, again, rather than solving our problem, the appeal to a familiarly presumed activity calls that activity itself into question. It is doubtful, then, that we have ever named any ordinary thing without at the same time naming so many others much like it (whatever the situation with regard to naming people). But it is also hard to believe that we have, in some happy act, actually named millions of things each 'The Rosetta Stone' or each 'Plymouth Rock'. So we have another problem to take seriously: Have we ever really *named any ordinary things* at all?

If I have never thought individually of any stone, or any other common object, then it seems doubtful, to put it mildly, that I have ever thought of any such things collectively either. Accordingly, it may well be that I have never *thought of* any real stones at all, or tables, or even human hands. If that is so, then it would seem that *a fortiori* I do not *know anything about these entities*, however commonly I might otherwise suppose. In discussing this (complex of) problem(s), I have been sketching, then, a new route to a view of epistemological skepticism, concerning much, if not all, of our alleged knowledge of the external material world. The alternative of the many, we may say, means many problems for common sense. What of the none, our first, Parmenidian alternative? Well, if there are no real stones or hands, then it is as clear as reason's light that no real hand or stone will be the object of my thought, nor within the scope of any human knowledge.

B. The Problem of Identity through Time

Throughout this essay, our focus has been upon situations at a given moment, or instant, of time. Such a moment may be conceived as without duration altogether or else, for any who are squeamish of such a fine idea, with only such extremely short duration that any changes taking place therein would be negligible with regard to our problem. In reality, however, time goes on, and various significant changes do occur with respect to any of the putative ordinary things that have been our concern. In particular, with any significant lapse of time, these things, stones, for example, lose some of their salient constituents, some molecules or atoms. (They also gain some such constituents; typically, they lose "a lot" while gaining "a few.") It is commonly supposed that an ordinary thing can survive the loss of some such constituents, even without replacement, providing that their number, and their role in

its structural arrangement, is not "too great."³⁹ I think that this is right and, indeed, that some such condition governs the logic of vague terms like 'stone', at least 'typical stone'. But if we consider our new problem's implications, there is a lot of trouble here.

Consider an atom or molecule that leaves its place within the boundary of a typical stone, stone B, and travels outward a very short distance, so that it is now alongside, perhaps even "nosing ahead of," one of those atoms which, just before, was right outside, and very close to, that aforesaid boundary. In reality, if there are stones, this happens with any one of them, during any hundredth of a second (and, generally, a lot more happens, too). Before the movement of this atom, there were at least two stones in our situation, B and a slightly larger stone, C, which, at our outset, contained all B's atoms plus that one, just mentioned, right outside B's initial boundary. Now, what are we to think once the movement has taken place?

To simplify matters, but not in any way that these present difficulties require, we shall think of stones as distinguished by those atoms which compose them. We ignore, for example, possible infinities that separators might impose. (This mirrors our earlier thinking of clouds just at the level of droplets.) Given this, and even with only the one small movement to consider, it seems there is an impossible problem for the continued existence of stone B, thus for the identity through any significant time of any real stone. We may call this problem of identity, which is of course not confined to stones, *the problem of competition for parts*. The propriety of this name will become apparent soon enough, as we consider along with B and C, a third stone, A, smaller than either of them, and as we then notice the struggles between stone B and each of the two others.

Before the traveler's journey, *the atom that it is now alongside*, or just nosing out, *used to be* a constituent (of stone C) *necessary and sufficient to distinguish C*, the larger of our first two stones, *from B*, the smaller. Given this, can B survive the journey of that traveling atom? Common sense, of course, says "yes." But an affirmative answer leads to a dilemma. This is how the dilemma begins: *The traveling atom, itself*, also before its journey, *distinguished B*, the smaller of our two stones, *from A*, a smaller stone still. That smallest stone of these three had *all the atoms of B*, the middle stone, *except for the, to-be-traveler*. So for B to remain distinct from such a smaller A, *B must retain the traveler*. Otherwise B will cease to exist (or else B will entirely coalesce with A so that, *from that time ever onward*, the two will become objectively indistinguishable, which is hardly a serious option). This is the first horn of the dilemma. Let us see the second.

If B, the middle stone, is to *retain* the traveler, then its boundary must move outward, so that that atom is still internal to it and not external. Such an adjustment, however, means that the alongside, or nosed-out, atom will also be within B's boundary and so part of B itself. This means, in turn, that the largest stone of the three, stone C, must now cease to exist (or else C entirely coalesces with B, from then ever onward, those two becoming forever indistinguishable, again not a serious alternative). But the relation of the smallest to the middle, of A to B, is relevantly the same as that of the middle to the largest, of B to C, so that there is nothing to

choose between the two horns of our dilemma here. First, it is arbitrary, and so not true, to think that, while losing the traveler, B, but not A, continued to exist. And second, it is just as arbitrary, and so just as false, to think that, while retaining the traveler, B, but not C, continued to exist. As those are the only options for B's continued existence, and neither holds, the traveler's little journey means an end to B's existence.

Like our stone B, any typical real stone can be treated as the middle member in a trio of the kind just considered.⁴⁰ Just so, with any such stone, the loss of a tiny peripheral part means an end of it. But such losses occur in any hundredth of a second. So a typical stone, if it exists at all, does so for no more than a hundredth of a second. This result does three things. *First*, it makes the second disjunct of our original problematic dilemma yet more unpalatable: (at any time) in any case involving a typical stone, there are millions of stones, and all of these last for no more than a hundredth of a second. *Second*, again assuming that there are stones, it makes it even more doubtful that we ever have a single one in mind. And, if anything, it is more doubtful still that we ever perceive any stone, much less that we should gain knowledge of any. For not only is any putative one so difficult to discriminate from many others, but, if it exists at all, any stone is so soon gone that we never get much of a chance even to try. Nor are we much better off with any other sort of ordinary material thing. So our epistemological problems, having already been bad enough, get even worse.

Third, and finally for now, we should notice that the argument just sketched does *not* contradict the common sense assumption that, at least in realistic situations, any typical stone can survive the loss of a tiny peripheral part. For *that* assumption does not itself imply the existence of any typical stones. Rather, it says:

- (cs) If there are any typical stones, then, in realistic situations, each of them can, and, given science, even will, survive the loss of a tiny peripheral part; that is, such a stone will still exist, whether or not it is still a typical stone.

What we have argued for is a conditional with the same antecedent and a consequent to opposite effect. Thus, joining our recent conclusion with the entirely plausible statement (cs) yields, instead of any contradiction, the result that there are no typical stones.⁴¹ And this, in conjunction with the all but indubitable idea that if there are stones, then some (in fact) are typical ones, yields, in turn, the consequence that there really are no stones at all. So, three times over, considerations about time pressure us to our problem's nihilistic, or Parmenidian, side.

C. The Problem of Minds and Bodies

A person's presumed body, just like its supposed salient parts, is susceptible of our problematic dilemma. Even brains, as we saw near the end of section 10, bear the brunt of our problem. And whereas the numbers, in the second disjunct, might not rise quite so high so fast, individual cells, including neurons, would each also present a momentary overlapping multitude. When changes through time are considered,

as sooner or later they must, no typical human body, or any such part of it, would seem to last long enough to be of any use. (Or else, what is less plausible, though hardly less troubling, there will be with respect to any such body, or relevant part, very many indistinguishable from it at any time.) If this is our physical situation, what is one to make of one's own nature and, then, of one's relation to any other sentient beings?

Whether or not he is a physical entity, a person, if a real existent at all, must be an utterly concrete individual and in no wise any mere abstraction. But if one is a physical entity, then, it is only plausible, one should be a rather complex one and not some elementary particle, or atom, or whatever. Granting this, a physical nature will imply for oneself, and for people generally, our problem of the many: Either one does not exist, and there are no people, or else in any case of any typical person, or even of any pretty good example, there are, right then and there, millions of people present. And then, of course, further problems will arise: No typical real person will last for even a hundredth of a second, your alleged self included, not long enough to formulate, or to understand, even a rather simple thought or idea. (Or else, and less likely, right where you are now, there are many objectively indistinguishable people: So, who can you be, anyway?)

At first blush, then, our problem would give comfort to dualistic views regarding the mental and the physical: I am a concrete entity that is *only* mental or spiritual in nature and *not* physical or material. So that I might be distinct from other entities, and last long enough to think, I would lack spatial extent altogether. But although such a move might formally avoid those difficulties we have been disclosing, it leaves one, to put it mildly, with a very puzzling epistemological situation. For one assumes that each of us knows about various other people, whom one distinguishes each from the other. But, given our prior reasoning, no such knowledge seems possessed by anyone.

If I ever am successful in distinguishing one person from others, so that I might know something about him, then at least sometimes I do this by distinguishing a particular body from others, which body I take to be *his* body. This involves the thought, on my part, that this particular body is the body of a single person and that this person has no body but this one. But our problem pulls the ground out from such common implicit thinking. For either there are not any human bodies, in which case this presumed way of distinguishing people is without any real substance, or else there are so many bodies there to go on that the associated thought of other persons runs wild. Given the latter option, we should ask: Are there millions of people right across the way from me now, where there "seems to be just one, or two"? And, if so, who's who?

Even in my own case, trouble is very near. Either I have no body at all, even none as a useful shell or appendage, or else there are millions right around where I take mine to be. The former alternative is obviously troubling, but the latter gives one troubles too. With all these bodies about, and so very many brains as well, how many are really mine (even for a moment)? How can I possibly know? Might there not be, instead of just me with millions of bodies and brains, millions of people

"right here now," each "with much of my perspective on things" and a slightly different body and brain (momentarily) to employ? How is *anyone* to know what is going on here, *myself included*? Unless they are extremely skeptical, then, metaphysical dualists, regarding mind and body, can take only cold comfort from our problem. In the associated epistemological area, they face a very severe form of skepticism, a very severe version of the problem of other minds.⁴²

BRIEF CONCLUDING POLEMIC

Once the problem of the many is appreciated, the choice we face is clear. First, one may try to break the dilemma posed, in a manner that is, of course, philosophically adequate. But as most of our essay has strongly indicated, perhaps especially our asking of questions in section 11, the prospects here are dim indeed. Second, one may accept the alternative of the multitude. But as the discussion of this present section has begun to indicate, this is only a way of compounding and proliferating problems. What we want, of course, is to find a way that is relevantly free of such difficulties. This leaves the third and final alternative, the way of Parmenides, of the other Eleatics, and of the Megarians: There really are not any of those putative ordinary things we think there are. Within this final option, further more specific routes may be sketched. With the ancients, we may think that "thought mirrors reality"—so that we have been discovering the Oneness that is the Only Reality or have been taking steps toward that philosophical ideal. On the other hand, we may, at this late juncture, finally part with our Parmenidian company: Perhaps there is no available thought that is adequate to concrete reality, and what passes for that is really as to nothing. Here the idea is to strive to find something that is relevantly adequate, before making claims "in its terms" as to what obtains in (perhaps the complex of concrete) reality. This, indeed, is the position I favor. According to it, we must set our sights in wholly new directions, that being the true lesson of our failure to find a proper course between the many and the none.^{43,44}

Notes

1. For the idea that I use clouds to introduce my problem, I am indebted to Ernest Sosa.
2. According to certain lexicographers, on the most preferred meaning of 'cloud' such homogeneous clouds are logically impossible. Thus my *Webster's Seventh New Collegiate Dictionary* (Springfield, Mass., 1969) lists for the noun: "1(a): a visible mass of particles of water or ice in the form of fog, mist, or haze suspended usu. at a considerable height in the air. (b): a light filmy, puffy, or billowy mass seeming to float in the air." I am confident, however, that no such ambiguity as the above exists for 'cloud' and that (b), though quite deficient, does more toward giving the only (relevant) meaning than does the ridiculously unsemantic (a).
3. The sort of semantic constraints recently urged by Hilary Putnam and by Saul Kripke for certain terms, e.g., 'cat', do not apply to 'cloud' or to other terms I shall similarly employ later. (Although I was once convinced they were right about 'cat', I now think even that term does not have the constraints they urge for it but is much in the same boat as 'cloud'. For now, this latter issue may be safely passed over.) As regards the putative constraints, see Putnam's "Is Semantics Possible?" and "Meaning and Reference," both available in *Naming, Necessity, and Natural Kinds*, ed. S. P. Schwartz (Ithaca, N.Y., 1977), and the third part of Kripke's "Naming

and Necessity," in *Semantics of Natural Language*, ed. D. Davidson and G. Harman (Dordrecht, 1972).

4. As the previous two notes indicate, this realistic situation is *just one possibility* for clouds, in any relevant use of that thorny term.

5. I cannot offer a good definition of 'concrete', in the sense most relevant to philosophy. Its opposite is 'abstract', which I also will not try to define. By 'concrete entity', I mean much the same thing that many philosophers have meant by 'particular' and that many have meant by 'individual'.

6. I offer no definition of 'situation' but use it in much the same way that many philosophers have done. By it, then, I mean much the same thing that many have meant by 'state of affairs'. Situations can encompass more or less space, and so with time. By my stress and placement of 'any', I indicate that even "quite immediate" situations in space (and, of course, in time) will involve so many clouds if any at all. That *some* situations should (even at a moment) involve so many is of course no problem. Consider the present situation of the earth's entire atmosphere. On this matter, I am indebted to Terence Leitch.

7. Following philosophical and logical tradition, I here understand 'there are clouds' to be made true even by the existence of even one cloud. But, of course, this understanding is for me just a convenient pretense, and it is in no wise required for the argument.

For convenience, and *more important to make note of*: Now that this first argument has been presented, in what follows I shall generally omit the qualifying words 'at most' and just speak of entities that differ *quite minutely*. Should they desire to do so, readers may overlook the omission and say to themselves "*at most* quite minutely."

The qualifier 'at most' provides a needed hedge here in at least two (related) ways: *First*, the spotted entities may differ from each other in certain relevant ways by an amount that is *even less* than what should be regarded as quite minute, perhaps one that is only *extremely minute*. But, then, of course, they should still stand or fall, as regards being clods, together with the allegedly typical item. *Second*, there may be certain respects relevant to the kind in which the spotted entities differ *not at all* from the putative typical cloud. Then, too, as far as just being a cloud goes, the typical item cannot thus succeed while the others fail. Once the need for the qualification is noted, it is painfully boring to keep making it.

8. In a recent paper, "Talk About Talk About Surfaces," *Dialectica* 31, no. 3-4 (1977):411-30, Avram Stroll and Robert Foelber argue that the proper application of "surface" is a good deal narrower than one might suppose. I find some of their arguments pretty convincing, and I expect that a similar case could be made for the ordinary word 'boundary'. But I shall use 'boundary' to cover ever so many cases anyway, thus often employing it as a term of art. As the reader can verify, nothing of substance will depend on this eccentricity.

9. On these matters, I have profited from discussion with Jerrold Katz.

10. I think this intuitive idea is grounded in the adequacy of premise (3) of our first introductory argument. This thought of mine will be developed shortly, in section 4, where I shall discuss some relations between the two arguments.

11. A good deal later on, in section 10, I shall show how *versions of both* our introductory arguments may be given which make *no* mention of the principle of minute differences. So, although I *think* this principle underlies our arguments, and our problem, I am *not* relying on that idea to get the problem going, or to keep it around. Indeed, then, I am not even relying on it for my *introductory arguments*, let alone in regard to asking relevant *questions*, perhaps the most important route to the problem, which we encounter in section 11.

12. *Without* barring such sorites, we get, not only our new problem, but, further, the result that there are no clouds. So I am just being generous here.

13. I do not know how to tote up the numbers, precisely and in detail, but I have been assured that the mathematical results here are *extremely* congenial to our arguments.

14. On matters of physical fact, I have relied on Robert Weingard, a philosopher of physics, and, indirectly, on colleagues of his in the Rutgers University Physics Department.

In section 9, I shall argue that not much depends on the physical facts, anyway. Still, it is nice to have nature, so to say, on our problem's side.

15. Our problem is by no means confined to the putative referents of various common nouns for kinds, like 'table' and 'stone'. If anything, it is even more evident that the problem arises for alleged referents of many ordinary expressions lacking such terms, e.g., 'thing with blue and red stripes', 'delightful gift', 'product of the finest Italian craftsmanship', and so on, and so forth. So, I am just focusing, you might say, on some of the *hardest* cases: If things go badly for common sense *here*, with 'stone', as seems to be impending, an awful lot of "easier stuff" will fall as well.

16. Contrary to the offerings of certain lexicographers. See note 2.

17. My Webster's also lists under the noun 'cloud', "3: a great crowd or multitude: SWARM." If there is such a sense of 'cloud', then it is different from the one I have been using throughout. In *that* sense, the referents of 'cloud', if any, would *not* be concrete things.

18. On the matters of these last four paragraphs, I am indebted to correspondence with John Tienson and to discussion with Terence Leichti.

19. I think this is a good place for me to present an independent argument for the proposition that if stones exist, then each of them must have a two-dimensional boundary, with no width or extent, though suitably curved through three-dimensional space. Consider any alleged stone. With no boundary, or limiting places, one can travel from a point within the stone, in any direction, forever and never get to be outside. But, in that case, we will have a stoney universe rather than a universe with stones. On the other side, with no boundary, from any point outside the stone, and there must be some such, one can travel in any direction forever and never encounter the stone. So, again, nowhere in the universe does the stone exist. The stone has a boundary; but must it be without any width? (I do not care what the ordinary sense of boundary may dictate or allow. If required to do so, I use the term here, as a term of art.) The cloud's boundary must either be part of the stone or else not; we rule out the idea that only part of the boundary is part of the stone. Now, if it is part of the stone, then the boundary is *internal* to the stone. But if it has extent, then there must be an "outer" limit to it, otherwise we can travel forever, in any way, and always be in the stone, for being in its boundary. So, it cannot have extent; or, what amounts to the same, whatever limits *that* extent is the stone's *real* boundary and is extentless. All right, now suppose the alternative: the boundary is *external* to the stone itself. If such an external boundary has extent, we can travel through it toward the stone. But unless it has a limit, the *real*, extentless boundary, we shall never get to the stone itself; the stone will not exist anywhere. So, in any case, a stone's boundary has no width at all.

Few philosophers have thought seriously about boundary conditions on ordinary (physical) things. An exception is Ernest W. Adams in "The Naive Conception of the Topology of the Surface of a Body," in *Space, Time and Geometry*, ed. P. Suppes (Dordrecht, 1973), pp. 402-24, and in "Two Aspects of Physical Identity," *Philosophical Studies* 34 (1978):111-34.

20. Perhaps this is a good place to present or sketch a sorites argument, which I call *the sorites of the boundary*. For, otherwise, you might think that I believe in the extentless boundaries lately argued for *on condition*. I have no such belief, for I deny the condition itself; I do not believe in stones. Here, with this sorites, is one reason why: Our gradual, messy world has the atoms of an alleged stone fade off into those merely in the putative surrounding. Take a point "well within the stone" and one "well outside" such that the line joining them by least distance is a problematic path toward, or from, a boundary. (If there is even one such problematic path, the argument goes through. In fact, there are "ever so many.") Take *very* small steps inward, each equal to every other. Chosen small enough, it is quite clear that no step will take you to or across the stone's boundary; none will take you to the stone. So, you cannot encounter the stone that way. If the stone existed, then, even with such a small choice, you could. Therefore, the stone really does not exist.

Both the sorites just given and the argument in the preceding note need further elaboration and defense, which I cannot properly do here. But I have examined them for quite a while. The closer I looked, the better they looked.

21. Now, it may also be that an adequate argument, or several, can be adduced to opposite effect, to the conclusion that a stone's separator is *not* part of it. But if there is one, what would it show: It would not necessarily show that our previous arguments were in error. On the contrary, it might show that *in addition to* the requirement on stones that, in these situations, their separators be counted as parts, *there was also a requirement to opposite effect*. Thus it could be that our idea of a stone was *inconsistent*. Reflection on attempts to apply the idea properly to these situations would, in such an event, then serve to reveal the inconsistency. And this, of course, would not avoid our problem of the many. On the contrary, it would not only yield our dilemma but would resolve it in the direction of the first, and the more radical, of its two alternatives.

Not to make things easy for our problem now, we shall assume that our concept of a stone is a consistent one. But then, as we have argued, this means that the *only* relevant requirement regarding the separator is that it is part of the stone.

22. This is a main theme of my paper "Why There Are No People," in *Midwest Studies in Philosophy*, vol IV, *Studies in Metaphysics*, ed. Peter A. French, Theodore E. Uehling, Jr., and Howard K. Wettstein (Minneapolis, 1979):177-222.

23. There are in outer space, I suppose, many stones with such entirely exposed surfaces. But while worth noting, that has little to do with our everyday experience. And, out there, one will find, if any, very few tables, pine cones, and so on.

24. These considerations generate a sorites argument in which we gradually increase the size of "the joining part." Such an argument might show, I suggest, that there is no coherent distinction between joining and touching, at least no coherent application of it to ordinary things. But if there are such things, if there are stones and tables, then they must be able, in some possible circumstances, to touch. So such a sorites argument seems an interesting way of challenging the existence of these putative entities and thus of yielding the more radical alternative of our problematic dilemma. But as sorites arguments are, in this essay, always to be in the background, we pass over these difficulties, merely noting them now for work on future occasions.

25. For the suggestion that I consider such partial entities, which in turn sparked the thoughts of joining recently discussed, I am much indebted to Samuel Wheeler.

26. If all this is so, and partial entities do everything one might wish for our problem, why did I not just start out with trees and branches, instead of clouds and then stones, and thus wrap everything up quite neatly and quickly? The answer parallels the one I gave for having started with clouds rather than with stones: People are rarely, I am afraid, as logical as they should be; it is hard to get them to ponder our problem unless we start with psychologically gripping cases. I have found, through my own experiences of philosophical conversation, that the order employed in this paper, while logically somewhat roundabout, is psychologically superior to more direct approaches.

27. I discuss principles like this one in "Why There Are No People," *Midwest Studies in Philosophy*, especially in section 5 of the paper.

28. This is admittedly quick, sketchy, and without sufficient argument. For elaboration and argument, see "Why There Are No People"; the elaboration is mainly given in section 2; the argument runs throughout the paper.

29. For an interesting discussion of such exclusion principles, see David H. Sanford, "Locke, Leibniz and Wiggins on Being in the Same Place at the Same Time," *Philosophical Review* 79 (1970):75-82.

30. A main difficulty here is that a sorites argument can be given to question, or undermine, the coherence of the "almost," "nearly," and "virtually" just suggested for stating an apparently relevant exclusion principle. Indeed, I believe that such arguments completely undermine the coherence of *any* available departure from an exact sameness version, thus any available exclusion principle that would even seem relevant to our topic. But, as with so many sorites arguments, I pass over this difficulty now. As the sequel quickly makes clear, I can well afford to do so.

31. In "Why There Are No People," I argue for the stronger claim that even such simple

expressions as 'cloud' and 'stone' are logically inconsistent. So although I do not see any reason to accept the more complex statement, and thus the route to inconsistency which its addition means, I am of course very well prepared to do so.

32. I think that in his paper "Wang's Paradox," *Synthese* 30, no. 3-4 (1975):301-24, Michael Dummett presents this view.

33. I argue this in section 3 of "Why There Are No People."

34. A misunderstanding of this error will falsely promise easy answers here. Thus some will suppose, I am afraid, that *in arguing for* the condition:

Clouds and stones (and so on) are things of a sort such that which things are clouds and stones (and so on) is a *purely objective* matter, and so *not* dependent on human thought in any relevant way,

I *must have been arguing to deny* the following condition, at the same time:

Clouds and stones (and so on) are things of a sort such that which things are clouds and stones (and so on) is *not* a purely objective matter, and so *is* dependent on human thought in some relevant way.

And, supposing this, they may think, in addition, that the latter condition may well be correct and, perhaps, even, that arguments based on the considered reply may show it to be so. (I confess that I cannot myself see any strong reason for accepting this latter condition, but we may *suppose* that there is one.) With all this in mind, they may then conclude that my own arguments for the former condition must themselves somehow be unsound, thinking, as they may, that the two putative conditions cannot possibly both hold true together. Although some of this presumed thinking may be quite valid, the first and, particularly, the last of these ideas, each crucial to the conclusion, are surely mistaken. For both the conditions just exhibited can indeed hold true together. What *cannot all be true* is that both of these should hold *and also* that there be clouds and stones (and so on). Should two such conditions as these hold true, as perhaps they might, the relevant expression, say, 'cloud', will be an inconsistent one, logically on a par with, say, 'perfectly square triangle'. (That this should be so would be rather surprising. But, perhaps, it need not be overly so, once we realize that, only with the former expression, and not the latter, will the considerations needed to bring out the inconsistency be quite elaborate and unobvious ones.) At all events, should the latter condition hold true, that will not negate the one for which I argued. Nor will it, then, obviate the dilemma our problem poses for common sense. For if the latter condition holds as well as mine, that dilemma will have been yielded and even, in an unwanted sense, resolved. Indeed, it will have been, still one more time yet again, resolved in favor of the more radical of the dilemma's two alternatives.

35. I have no theory of *thought about objects* or, as some philosophers say, of *de re* thought; nor do I know of any wholly convincing view. For an interesting and well-argued account, however, I can suggest Stephen R. Schiffer's "The Basis of References," *Erkenntnis* 13, no. 1 (July 1978):171-206. On Schiffer's account, our problems emerge quite strikingly.

36. There are *two* related problems here, which we may distinguish. *First* is the problem of finding, or of finding adequate reason to suppose the existence of, a connection that has actually, with some considerable frequency, been there to serve me in the past. Such a connection has, presumably, even been enough to get many stupid little children thinking individually of stones nearby them. This is the problem of accounting for actual individualistic thought; if it cannot be solved, then our common sense thinking is in very bad trouble. A *second* problem is this one: Especially assuming the first problem finds no adequate solution, how can one, by whatever strategy necessary, get oneself to think, at a certain time, of just one real nearby stone? With this second problem, it is obvious, we may employ many more assumptions than a proper solution to the first will allow. I will make things easier for myself, now, and focus on the first of our problems. But my reasoning about it will, I suggest, indicate that even the second problem may well be beyond any adequate solution.

37. First, of course, there are the doubts one feels upon encountering Hume's writings on

the subject. But I am thinking more of certain other problems with *causation* that closely *parallel* those we have been discussing here regarding *ordinary things*. In my paper "The Uniqueness in Causation," I argued that any particular thing (event, or whatever) can be caused by *at most one* entity. But in our messy, gradualistic, complex world, no one candidate entity, be it object, event, or whatever, seems relevantly better suited than ever so many very similar alternatives. Since it is arbitrary and, hence, false, to say of any one that it causes the event in question, there is *nothing* that *causes* the given particular. As I argued, this uniqueness is not a peculiar nuance of 'cause' but holds for any available locution that would seem, at first, suited to describe the relevant "interactions." The present radical extension of those ideas is, of course, very sketchy and needs much further development. But, for now, I mean only to be raising some doubts. The mentioned paper appeared in *American Philosophical Quarterly* 14, no. 3 (July 1977):177-88 and is reprinted in *The Philosopher's Annual*, vol. I — 1978 (Totowa, N.J., 1978), pp. 147-71.

38. See Saul A. Kripke's "Naming and Necessity" in Davidson and Harman, *Semantics of Natural Language*, and his "Identity and Necessity" in Schwartz, *Naming, Necessity, and Natural Kinds*. See Keith Donnellan's "Proper Names and Identifying Descriptions," in the former volume, and his "Speaking of Nothing," in the latter.

39. This is one of the most conspicuous places for sorites arguments to operate against the alleged existence of stones and other presumed ordinary things. I have in mind the *sorites of decomposition by minute removals*, especially as presented in section 1 of my paper "There Are No Ordinary Things," *Synthese* 41, no. 2 (June 1979):117-54. Also relevant are *the sorites of slicing and grinding*, in section 2 of the paper, and *the sorites of cutting and separating*, in section 3. For those of you who think those arguments to be mere fallacies, the present paper's problems may well help you think them over again.

40. With *certain marginal cases* of stones, such trios may be unavailable. But if they do exist, such trivial exceptions scarcely affect the present argument.

41. So, of course, our argument, together with the commonsensical (cs), *does* contradict *another* common sense assumption, namely, that *there are* typical stones. It is easy to conflate these two common sense assumptions, but that is a temptation to be resisted.

42. It is, I believe, interesting to compare what I have been doing in this essay with what was done by my erstwhile tutor, Professor Sir Peter Frederick Strawson, in his very interesting book, *Individuals: An Essay in Descriptive Metaphysics* (London, 1959), especially in chap. 1 and 3. Roughly, beginning with certain epistemological requirements, assumed to be met, the tutor derives our common sense metaphysics. Just as roughly, the pupil, by first questioning certain metaphysical assumptions of common sense, now goes on to question associated epistemological suppositions.

43. The arguments of this paper are meant to complement those offered in several other recent papers of mine. I have already cited "Why There Are No People" and "There Are No Ordinary Things" I should now mention as well: "I Do Not Exist," in *Perception and Identity*, ed. G. F. Macdonald (London, 1979: 235-51), which volume is a festschrift for Professor Sir Alfred Jules Ayer, and "Skepticism and Nihilism," *Nous*, forthcoming.

The epistemological problems raised in this last section, an outcome of considerations from metaphysics and the philosophy of language, should be taken as complementary to the universal skepticism for which I argue in my book, *Ignorance: A Case for Skepticism* (Oxford, 1975). In "Skepticism and Nihilism," I discuss certain other connections between skepticism (in epistemology) and radical views in those other areas of philosophy.

44. In coming to appreciate the many facets of this problem, I have had helpful discussions with many people. In addition to those already cited, all of whom were quite generally helpful, I should gratefully mention: Tamara Horowitz, Sidney Morgenbesser, Thomas Nagel and Stephen Schiffer.