Time and Interrogative Logical Form

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Writing of attempts 'to extend the range of logic' beyond 'the traditional logic of statements' to imperatives, John Passmore remarks, 'inquiries have even been made into the possibility of constructing a logic of interrogatives'. A note cites the article by Mary and Arthur Prior entitled 'Erotetic Logic'.[1] The Priors had concluded that the result of their 'present inquiry' was that 'the logic of interrogatives' cannot be developed into 'a symbolic calculus'.[2] A symbolic calculus is indeed strongly suggested by the phrase 'a logic of … ', rather less by the phrase 'the logic of … '. The implausibility of attempting to derive a question from one or more other questions alone—that is, without making at least some implicit reference to the answers to these questions, and hence to some implicit reference to propositions—justifies Passmore's 'even'.

The expression 'erotetic logic' connotes the logical propriety of asking a question,[3] parallel to Passmore's 'logic of statements'; which, as distinct from traditional formal logic, is to be understood as being concerned with the logical propriety of making a statement. For the propositions of formal logic, though conceived as assertable, are not actual assertions or statements of anybody. If the statement somebody makes is based on inference, the concerns of the traditional formal logic may bear on the propriety of making it; but equally, more general epistemological concerns such as whether the speaker is in a position to make the statement—whether the person knows it to be true—apply. The logic of statements is thus a mixture of applied logic and applied epistemology. When the propriety of asking a question is under consideration, the epistemological interest in the right of the questioner to assume the truth of the presupposition of the question is admittedly apt to be overshadowed by the logical interest

[1] John Passmore, *A Hundred Years of Philosophy* (Harmondsworth, Middlesex: Penguin Books Ltd, 1978), 397 and 585, n. 10. Mary and Arthur Prior 'Erotetic Logic', *The Philosophical Review*, **64** (1955), 43–59.

[2] Op. cit., note 1, 59.

[3] As used by Whately the term 'erotetic' applies to a method of disputation. See Richard Whately, *Elements of Logic*, reprinted from the ninth (octavo) edition, (London: Longman, Green, and Co., 1913), Introduction, § 2, p. 3; cf. *The Oxford English Dictionary*, (second edition, 1989), vol. v, 374b.

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in the relation of the question to its presupposition. Yet erotetic logic will still be only an application of the logic of interrogatives, concerned with the logic of somebody's asking a question as distinct from the logical features of questions themselves. As a subject of logic a question is conceived as askable: it need not be conceived as actually asked by somebody on any particular occasion. So 'erotetic logic' is a misnomer: it is not equivalent to the logic of interrogatives; and the Priors touch on erotetic logic proper only with their brief reference to 'the Fallacy of Many Questions'.[4]

But were the Priors investigating the possibility of an interrogative calculus, as their concluding remarks imply? Earlier they had talked about 'a hint toward an interrogative logic, and also towards an imperative logic—the observation that at least one division that may be made among statements may also be made among questions and commands'.[5] They are referring to the division between categorical, conditional and disjunctive. The comparison of questions with commands has frequently proved misleading; and the propositional content arguably contained implicitly within imperative sentences has likely prompted the Priors to suppose that one thing the logic of interrogatives might promise is a symbolic calculus of questions comparable to proposed systems of imperative logic. In fact their article is preoccupied with, first, whether different types of question can be reduced to one another; and secondly, the distinctive character some logical concepts, such as those of the disjunctive and the conditional, the affirmative and the negative, take on when applied to questions—as well as that of modality as applied to answers people may give to some questions. The logic of interrogatives turns out to be concerned with (some of) the logical characteristics of (some types of) questions, as also their answers; that is, with just logic, not with the construction of a logic. Logical points can be made informally.

Perhaps some must. In their conclusion the Priors write: 'Erotetic logic would seem to be antisymbolic; and we hazard the suggestion that, conversely, antisymbolic logic is erotetic'.[6] Whether all logical features of discourse can be captured by the use of symbols is a distinct issue from whether a logic in the sense of a calculus, a system of deriving one expression from another, can be constructed for a specific type of discourse. The traditional logic the Priors speak of had a formal system, and indeed made use of a few symbols, besides exhibiting a 'tendency … to think of propositions

[4] Op. cit., note 1, 46.
[5] Op. cit., note 1, 43–44.
[6] Op. cit., note 1, 59.

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primarily as answers to questions'.[7] So not only was it scarcely anti-symbolic; in dealing with propositions—albeit conceived as answers to questions—it was not actually the logic of interrogatives either. The different implicit contrasts brought out by stressing different words in a sentence provides an argument for the view that sometimes symbolism fails to capture in full the use of an element in an expression because its use changes with the differing wider contexts the expression may occur in. Here is what might conveniently be dubbed a 'conceptual', as distinct from a formal or symbolic, approach to logic—an appellation to be explained later. The point is customarily illustrated by declarative sentences, though it applies equally to interrogative sentences; that is, the approach is applicable to both propositions and questions.[8] Still, this 'conceptual' way of thinking of propositions primarily as answers to questions indicates that the interrogative has relevance to such a 'conceptual' approach to logic, that such an approach is guided by specific logical features of questions.

What these logical features of questions are, the Priors fail to detail. Hence their confusion about anti-symbolic logic being interrogative—or 'erotetic', as they say. The Priors are not alone: no other logicians have considered the peculiar character of interrogative logical form—though there are some hints in more astute authors.[9] Those who have purported to have accounted logically for questions have, in offering their analyses, generally been so preoccupied by their attempts to reduce a question to something else, usually a command of some sort, that they have completely overlooked the logical form of questions—a form questions share with what interrogative clauses and interrogative words express.

So first a sketch of the features of interrogative logical form;[10] then a striking exemplification of how interrogative logical form has application to reality in how time is conceived.

[7] Op. cit. note 1, 50.

[8] A fuller treatment is given in James Somerville, *The Epistemological Significance of the Interrogative* (forthcoming), chapter 9, § ii.

[9] For instance: Hobbes, *Elements of Philosophy Concerning Body*, I iii 1 from *The English Works of Thomas Hobbes*, W. Molesworth (ed.), vol. 1, in *Hobbes Selections*, Frederick J. E. Woodbridge (ed.), (Chicago: Charles Scribner's Sons, 1930), 26; and Hans Reichenbach, *Elements of Symbolic Logic*, (New York: The Macmillan Company, 1947), 340. Further explanation is given in Somerville, op. cit. note 8, chapter 8, § iv.

[10] A more extensive treatment is given in Somerville, op. cit. note 8, chapters 2 and 8; on the notion of the logic of questions see chapter 9, § iv. The method of exposition of interrogative logical form in the book is largely analytical, whereas here it is synthetical.

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I

All intelligible discourse must be about something. So it always has at least one, possibly more than one, subject. In saying something other than fragmentary but complete in itself—in saying something that makes complete sense by itself—one says something about something, about the subject or subjects of one's saying. So in all saying that is complete in itself a distinction can be drawn between the subject of the saying and what is said about it. People primarily say things; but in a derivative sense the words people say, conceived as abstracted from people's sayings, also say these things. But it would seem that not all saying (or the person whose saying it could be) always aims at saying something true; for issuing a command is saying something, but it seems wrong to think that a command says something either true or false. Now, where saying can be sensibly judged to be either true or false, what is said about the subject of the saying is that something is (or is not) true of it, which is generally equivalent to predicating something of the subject. That is, a proposition says (truly or falsely) that something is (or is not) true of its subject, thereby generally giving rise to the distinction between subject and predicate: between what is said to be true of what the proposition is about, its subject, and that subject.

But not all intelligible discourse complete in itself says something. Interrogative sentences expressing questions are not fragmentary but complete in themselves; and if they make sense they are intelligible. Yet questions do not say anything, let alone say anything either true or false. Instead, questions ask something. Since it asks something about something, a question has a subject (or subjects); but since no question says anything, nothing is said to be true of or is predicated of its subject. A question has a subject but no predicate. So predicate logic (together with quantification) cannot apply to questions, because questions have no predicates, cannot predicate anything of their subjects.

The subject (or subjects) of a proposition must be specified or otherwise indicated in some way—such as by use of a proper name, a demonstrative or a grid reference; but specification or indication of the subject of a proposition does not in itself amount to saying anything about the subject: the expression 'the house on the hill' is not the same as the proposition 'The house is on the hill', and so does not say that the house is on the hill, though it implies or presupposes that the (or a) house is on the (or a) hill. Likewise, the subject of a question can be specified or indicated in some way without the question saying anything about its subject, though the

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specification or indication may imply or presuppose something about the subject of the question, as in 'Has the house on the hill been sold?'

Now, in asking—as distinct from saying—something about its subject, a question, instead of saying that something is true of—predicating something of—its subject, merely allows for different possibilities being true of its subject; for a question specifically sets down that the answer to it falls within the range of possibilities it allows for or specifies. To explain further: although a question does not itself say anything, it carries with it the notion of something else that, taken together with the question, does say something—namely, the notion of its answer. Seeing that the answer to a question taken together with the question says that something is true of its subject, and seeing that a question by itself does not say anything, it follows that a question cannot contain within itself its own answer. Hence the notion of the answer to a question is essentially a relative notion, the notion of what bears a logical relation to something else—namely, the question whose answer it is.

As 'question' and 'answer' are correlatives, the notion of a question carries with it the notion—distinct from the notion of a question as such—of the answer to that question; but the notion of the answer to a question already contains within it as a part of itself the notion of the question whose answer it is. So while the notion of the answer to a question is essentially relative, a notion of a question as relative to its answer is formed only incidentally: only rarely does one start with the answer to a question and have to work back to the question whose answer it is. So of the pair, the question is the leading partner: though correlatives, the relationship between them is asymmetrical.

Thus, while there is a logical relationship between the answer to a question and the question whose answer it is, it would be misleading to say that there is a logical relationship between a question and its answer; for what the answer to a question actually is depends on what the truth is in the particular case. As a question does not say anything, a question cannot contain its own answer in such a way that its answer could be safely inferred from the question itself. Yet the kind of answer to a question can be safely inferred from the question itself. For in specifying a range of possibilities for its answer, a question specifies the form of its answer—that is, specifies what kind of answer its answer belongs to. Hence what the answer is to a question is only partly a matter of what is the truth in a particular case; it is also partly a matter of logic. One may have to guess the answer to a question if one has no idea what it actually is; but if one has understood the

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question one cannot have no idea of what kind of answer the answer to it will be: the question itself provides guidance about the form its answer must take. By contrast, presented with the answer to a question without knowing what the question was, the form of the answer (as well as its context) may offer some clues as to the question; but since an answer of that form may fit several different forms of question, one can only guess more or less hazardously, there being no reliable guidance from logic. In short, a question in specifying the form of its answer specifies the necessary conditions its answer must meet; but a question cannot specify what its answer actually is—specify sufficient conditions its answer must meet.

A few words about the term 'answer', since the neglect of the peculiarities of interrogative logical form has given rise to unclarity about how the term should be used. A proposition is a logical abstraction from people's judging, asserting or stating, supposing or conjecturing, and so forth that something is so; likewise a question is a logical abstraction from people's asking something—that is, asking *if*, *where*, *why* and so forth: 'ask' followed by some interrogative clause. So likewise the answer to a question is a logical abstraction from people's answering correctly that question. Answers people give to questions, whether correct or incorrect, may be called 'given answers'. But when people give an answer to a question they do not as a rule give just any answer regardless whether they suppose it to be correct or incorrect. Leaving aside parlour games, joking and other situations involving non-serious uses of language, people are presumed to be giving what they take to be the answer to the question. In other words, people at least purport to be correctly answering the question whether or not they actually answer it correctly.

Now, such given answers to a question are distinguishable from other things people may say in reply to a question put to them—distinguished namely, by the criterion of the specification of the form of the answer to the question contained within the question itself. When what somebody says in reply to a question conforms to what is specified for the form of its answer by the question itself, then the answer given may be called a 'conformable answer'; otherwise what the person says can be classified as only a reply or a response of some sort. Conformable answers are thus logical abstractions from given answers; and the answer to a question is a conformable answer to the question that is correct. Finally, conformable answers to questions have to be taken together with—in the context of—the questions they conform to; and so they take the form of a single word or term, occasionally an elliptical phrase. For example: 'Yes'; 'No'; 'Yes, it is'; 'The dog'; 'Through the window';

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'Because he was late'. Even though conformable answers do not themselves amount to propositions, in the context of the questions they are given in answer to they imply some proposition. So the answer 'John' given to the question 'Who is at the door?' implies the proposition 'John is at the door'; and 'Yes' as an answer to 'Have you any bananas?' implies the proposition 'We have some bananas'.

To sum up the position reached so far: a question specifies the form its answer must take; but it does so without saying or otherwise specifying what its answer actually is. How, though, does a question specify the form of its answer, or indeed, how does a question carry with it the notion—distinct from the notion of a question itself—of its answer? Here it should be recalled that a question specifies the form of its answer by specifying that its answer must fall within the range of possibilities it allows for. But it does so without specifying what its answer actually is—what is actually, as distinct from possibly, the case. Otherwise, the question would not be a question but a proposition, would not merely ask something but say something; for the answer to a question taken together with the question says that something is true of the subject of the question. Now, a question is able to specify the form of its answer, to specify a range of things that are possibly true of its subject, because although it merely asks and does not say anything about its subject, it presupposes something about its subject. Unlike an answer given to a question, which does not say anything by itself but only when taken with the question it is given in answer to, the presupposition of a question is itself a proposition, and so by itself says something that is either true or false. Simply because questions themselves are incapable of saying anything there is a proposition identifiable as the presupposition of a question which says (truly or falsely) that a range of possibilities applies to the subject of the question, thereby enabling the question itself to specify this range of possibilities.

Discrete elements making up a proposition, just as discrete elements making up a question, may presuppose some (other) proposition—as in the expression 'the house on the hill'; but there is no other proposition that can be identified as the presupposition of a proposition. The notion of there being uniquely one proposition which is the presupposition of a question is peculiar to interrogative logical form. For it is by virtue of the presupposition of the question that the question is able to ask something about its subject without saying anything about it, and thereby to specify the form of its answer. (It is a presumption of issuing a command, rather than a presupposition of the command itself, that it can be carried out.) Further, the character of the presupposition of a question marks it

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out as such. 'Is your wife working?' presupposes that the addressee is male and married; but such a presupposition is not the presupposition of this question. The presupposition of a question is either a disjunctive proposition (such as 'Either the cat is on the mat or under the sofa') or else contains one or more indefinite pronouns (such as 'somebody', 'something', 'somewhere', 'somehow'). The presupposition of a question thus sets down a range of possibilities, what is possibly so, but without saying what is actually so. 'Is the cat on the mat or under the sofa?' presupposes just the two possibilities that the cat is either on the mat or under the sofa, and 'Who is at the door?' presupposes that somebody is at the door—that is, various possibilities that different persons are at the door.

A question, then, is able to specify the form of its answer by means of its presupposition: the answer must fall within the range of the possibilities set down by the presupposition of the question. To reject the presupposition of a question—by, for example, making the reply 'Neither' or 'Nobody'—is not to give a conformable answer to the question, but in effect to query the propriety of asking the question. The presupposition of the question narrows down the answer to the question to a certain kind of answer but leaves unresolved what, or which, the answer to the question actually is. Only the actual answer to the question can settle what the presupposition of the question merely leaves open.

It can now be begun to be understood more fully what it means to say that a person asks a question, and so what it means to say, derivatively and abstractly, that the question itself asks something. To ask a question is to specify or otherwise indicate a subject of discourse together with specifying a range of possibilities which, one presupposes, holds true of the subject; but without actually either saying that the range of possibilities holds true of the subject (which is rather what the presupposition of the question does) or specifying what or which possibility within the range specified in truth holds true of the subject (which is what the answer to the question does). And so for a question itself to ask something—to ask *if*, *who*, *where*, and so forth—a subject of discourse must first be specified or otherwise indicated and then a specification be given of a range of possibilities which the question presupposes holds true of the subject, without the question actually either saying that the range of possibilities holds true of the subject—that is, without expressly saying what the question merely presupposes—or specifying what or which possibility within the range specified in truth holds true of the subject. A question thus gives a specification of a range of possibilities—that is, the form of

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its answer—but without specifying what or which possibility actually obtains—what, or which, its answer actually is. It gives this specification by means of interrogative words such as 'who', 'what', 'which', 'how', 'why'; and also 'if' and 'whether'—though in modern English the last two occur in their interrogative uses only in indirect questions.

It is often held that the interrogative words 'who', 'what', 'which', 'how', 'why' are quantifiers; but the analysis ignores the difference in sense between an interrogative word and an indefinite pronoun. The word could be the same (and is in some languages) without its function within the context of a question or an interrogative clause being the same as it is within the context of a proposition. The analysis thus confuses the question with its presupposition; a confusion also made when yes-no and alternate questions are analysed as, or as containing, disjunctive propositions—sometimes with little appreciation that the disjunction has to be exclusive as a matter of the logic of interrogative form as distinct from any supposed deficiency of ordinary English.[11] Besides, quantification has to do with predication, which is foreign to interrogative logical form.

There is one final element of asking yet to be mentioned which has proved a source of confusion in stock reductionist analyses of questions. In understanding a question it is understood that its answer is required. A question deploys interrogative logical form in a way that makes clear the logical requirement for its answer. A question does not convey this requirement for its answer simply by specifying the form of its answer, by setting forth the necessary conditions to be met by its answer. More is involved. The specification by a question of the form of its answer is distinct from the question's requiring its answer—in short, from the question's asking something. This much should be obvious from the difference between the form of an answer and the (actual) answer to a question. The further point is that a question must make clear that its answer is required without specifying this requirement; for the specification of any requirement is as such conditional: it may take two to tango or eggs to make an omelette, but it scarcely matters—the question (*How many?* or *What?*) does not actually arise—if one doesn't care to tango or want to make an omelette. Of course, in asking something a question cannot say that its answer is required, since a question does not say anything; nor do people in asking a

[11] See, for instance, Nuel D. Belnap, Jr, *An Analysis of Questions: Preliminary Report*, Technical Memorandum TM 1287, (Santa Monica, California: System Development Corporation, 1963), 27–28, 46–47, 138.

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question thereby say they require the answer to it—though they may say so at some other time (generally subsequent) to their asking the question. So a question makes clear its logical requirement for its answer by its particular utilisation of interrogative logical form. That is, the logical form of a question indicates or shows, without expressly saying so, that its answer is required; but also without even specifying that the answer is required.

A question merely indicates its requirement for its answer rather as a diner might indicate to a waiter in a restaurant that no fork has been provided by holding up in the right hand the knife which has been provided and holding up an open left hand: by specifying what is given (that is, presupposed) a question draws attention to (indicates without specifying) what has not been given, what is missing. By showing what is wanting in the old sense, what is lacking, a question shows what is wanted in the modern sense, what is required. So in specifying only the form of its answer, a question provides only a partial specification of its answer; thereby indicating without specifying the requirement for a full specification of its answer. A question's asking something, therefore, consists in the partial specification of its answer indicating the requirement for a full specification.

Attempted reductions of questions to commands confuse meeting a requirement with carrying out an action. If a scholarship is open only to those under thirty-five years of age or female, applicants who meet this requirement are not acting in obedience to a command; for in meeting the requirement they are not acting at all. And as questions are to be conceived logically as abstractions from people's askings of questions, the logical requirement of a question for its answer is not to be identified with any person's requiring, needing or wanting anything.

The crucial element in asking, then, is the logical requiring of the answer to the question; and this element can be brought into relief by considering a different utilization of interrogative logical form—namely, where there is simply a specification of the form of the answer to a question without the additional requirement obtaining for the answer to the question. Such a utilization of interrogative logical form occurs in those interrogative clauses that do not express questions. It might seem that all interrogative clauses by definition express questions; but not so.

Questions in indirect speech—including reported questions—are no different logically from questions in direct speech. What are properly called indirect questions ask just as much as do direct questions. That is, the interrogative clauses following verbs of asking, such as 'ask' itself, 'wonder' and 'doubt' express questions. As

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the last instance of 'doubt' shows, an interrogative clause need not report a question that somebody has actually asked on some particular occasion, it may simply allude to a question that somebody might ask—that is, in general a question that might arise. Like a proposition, a question is a logical abstraction considered in isolation from any particular speaker; and so a question can simply arise without the necessity of anybody raising it. But not all interrogative clauses express questions—even questions that somebody might ask. Interrogative clauses following the verb 'know' and other verbs connoting knowledge do not ask questions but instead allude to the answers to questions—but without, of course, saying what these answers are. They are able to do so because the interrogative form they utilize carries with it not just the notion of a question but also the notion of the answer to that question. Such clauses may be said rather to answer than to ask questions. There is no requirement here for the answer to the question the clause alludes to, simply because the context conveys that the answer to the question is understood to be already determined—though since the answer to a question is to be conceived as a logical abstraction, the question need no more have been actually answered by anybody than a question that can arise need actually have been raised (asked) by anybody. And since the answer to the question is thought of in such contexts as settled, at least in principle, the question no longer arises; it is no longer an open question but has been resolved: it arose once but cannot arise now.

With the appreciation that interrogative logical form is not essentially tied to asking but also includes answering dawns recognition that many concepts are interrogative in form—that is, concepts of what provides the answer to a question.[12] The interrogative words—'if', 'whether', 'who', 'which', 'what', 'where', and so forth—obviously give expression to interrogative concepts. Whether they occur in clauses that ask or answer a question, they invoke the concept of the answer to that question. The interrogative pronoun 'who' differs from the indefinite pronoun 'somebody' in conceiving what falls under the concept it exercises, the concept of 'who-ness', as answering a question—as distinct from conceiving it propositionally as a subject of predication. Other concepts, such as the categorial concepts of quantity, quality and relation, are only a little less obviously interrogative. But other more specific, non-categorial, concepts turn out on scrutiny to be equally interrogative. The headings on a form (or field names in a database), such 'name', 'address', 'age', 'eye-colour', 'weight', 'height', 'occupation' and so forth,

[12] A fuller discussion is to be found in Somerville, op. cit., note 8, chapter 2, § iv and chapter 9.

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conceal questions whose answers they head. So 'weight' and 'height' conceals questions like 'How heavy are you' or 'What does it weigh?' and 'How tall are you?' or 'What is its height?' For the answers to such questions—as 'Fifteen stones' or 'Six feet'—give the weight or the height of the person or thing.[13] And to think of a proposition as primarily the answer to some question is to think of it through interrogative concepts. That is why the label 'conceptual' was commandeered to distinguished this approach to logic from formal and symbolic approaches.[14] Being the leading partner of the pair, the question structures the answer; but this truism leads to the profounder truth that the interrogative structures thought as such.[15]

II

Of relevance to an understanding of time are interrogative clauses that are janus-like: sometimes raising a question, sometimes answering it—which can then no longer arise. Interrogative clauses following phrases expressing people's concern or lack of it for some affair, besides phrases expressing the bearing or lack of it of something on some matter, admit of different interpretations depending on the context they occur in. It is no accident that when such clauses merely raise a question they have to do with either the future or what is unknown about the present or the past; and that when the same clauses instead answer the question, which therefore is no longer an open question but has been resolved, they usually have to do simply with the present or the past.

Consider some examples. If I mind if you smoke or where you do your shopping, I may be concerned with what you do—smoke or where you shop—in the (immediate) future; alternatively, I may be concerned with, and so want to learn, if you are (already) an addicted smoker or a regular customer of certain shops—that is, what you have been doing in the past and still get up to in the present. On the first interpretation, observing you fumble in your pocket or handbag, I suspect you are about to pull out a packet of cigarettes and to ask me if I mind if you smoke, and so I get ready to remonstrate with you. Likewise, I may have to wait in anticipation to find out if you go off to Harrods or Littlewoods. I may, though, be instead

[13] Cf. Bede Rundle, *Grammar in Philosophy*, (Oxford: Clarendon Press, 1979), 233 and *Wittgenstein and Contemporary Philosophy of Language*, (Oxford: Basil Blackwell 1990), 175.

[14] More details are given in Somerville, op. cit., note 8, chapter 9.

[15] Cf. Christopher Hookway, 'Questions of Context', *Proceedings of the Aristotelian Society*, **96** (1996), 1–16.

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concerned with your existing habits. While I seek to find out what they are the question remains open. But having noticed the nicotine stains on your fingers I infer that you do smoke and so decide that you are not a suitable applicant for the job or the degree course; and through observing your preference for one store over the other, I conclude that you pass my test. In these situations the question no longer remains open since it has been answered to my satisfaction. Taking an example in the negative, if I am not fussed when or where the lecture is, it may be that whatever time or room in due course is scheduled for the lecture will suit me fine; or that the time or room already fixed will suit me fine whatever I eventually find out about the schedule. The alternative interpretation where the question is no longer open is that the time or room already fixed, which I already know about, causes me no undue difficulties.

Now to take a different pair. If the election result depends on the turnout, it may be imperative for one group of politicians to go round the country before the election stirring up apathy if they are to prevent the other lot getting in. Here the question (*What is the result going to be?*) is still open. By contrast, analysing the votes after the election a psephologist may pronounce that the result, which is known, depends on the turnout, meaning that it does not simply reflect overall popular opinion since a larger (or smaller) turnout would have produced a very different result. Finally, if it doesn't matter who, or if the minister, is at the meeting, it could be that it is of no consequence whoever (including the minister) attends the meeting—say, tomorrow; or whoever (including the minister) is subsequently discovered to have been attending the meeting now. But when you tell me who is at the meeting or that the minister is, and I remark that it is unimportant who, or if the minister, is attending the meeting, the question is closed; for what lacks import is the actual answer to the question, not how the question is to be resolved or decided.

A question may not as a matter of fact arise because its presupposition is false. If so, there is no such thing as the (actual) answer to the question. For the answer to any question depends on what the truth actually is; but when the presupposition of a question is false, the truth precludes there being any such thing as the answer to that question. So for a person to require the answer to such a question is logically improper. But provided its presupposition could have been or might in the future be true, the question itself may be logically unexceptionable. That is, a question can arise even when it does not actually arise, meaning that its presupposition might have been true and accordingly that it might have had some answer. Given one's

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position to know the facts of a situation, it may be logically improper to ask in that situation a particular question which in itself is quite in order logically. Now, when a question can arise it may be said to arise logically. A question arises logically, first, if its presupposition might have been true; and secondly, if the requirement for its answer—on the hypothesis that its presupposition is true and so that it has some answer—would not be logically out of order. A question may be said to have been answered logically when the question is conceived as settled; in which case, while once it arose logically, it can no longer arise logically, since the requiring of its answer is inconsistent with conceiving it as closed. That is, conceiving a question as arising logically is conceiving its answer as being required, conceiving the question as still open and its answer as not yet determined; but conceiving a question as having been answered logically is conceiving its answer as being no longer required, conceiving the question as closed.

It must be borne in mind that a question may be conceived as no longer arising logically even while it is logically proper for some particular person to ask it. Being logical abstractions, questions can be conceived as no longer arising logically—owing to their being conceived as having been answered logically—when they may, so to speak, 'arise for' some particular person. For thus conceived, the 'question' is rather what is expressed by an interrogative clause, not a question in direct speech. So, if you tell me that John knows where the car is, it may be still in order for me to ask where the car is (whether or not I am ignorant of the answer to the question)—though the question alluded to in the interrogative clause following 'know' is conceived as answered logically and hence as no longer arising logically. The requirement for the answer to the question—which is logically out of order when the question no longer arises logically—is a logical requirement, not a requirement of any person.

Since a closed question can no longer arise logically but must once have arisen logically, it might seem that simply the passing of time turns an open into a closed question. Yet questions about past or present events are open if knowledge of these events is lacking; and in being about the past or the present such questions cannot be resolved by what happens in the future generally, unless the future were to have an effect on the past and the present—even though future experience specifically, as distinct from future events generally, can resolve such questions. Instead, the passing of time itself can be understood as the closing or resolution of open questions, of the determination of what is not fixed but in question.

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Time and Interrogative Logical Form

It has rightly become a metaphysical commonplace that time is a necessary precondition of existence. Only abstractions can be timeless; but although abstractions are the stuff of philosophy, they do not themselves enjoy existence. Concepts, propositions, questions, numbers and the like presuppose the existence of people who think of, say, ask or count things at some time. Being fundamental to all existence, time itself can be satisfactorily explicated only through the timelessness of abstractions; that is, the way to get clear about time itself is through the concept of time, by noting how time is conceived. One cannot take a moment of time and scrutinize it, as one might stare into space. And even reflection upon a period of time remembered will not yield clues about time itself.

Being abstractions, concepts and propositions are timeless. Truth is timeless only in the sense that since the concept of being true *tout court* applies (ultimately) to propositions, the truth of a proposition does not depend on what the time is. Nevertheless, what is true of something can and often does vary with time; and so what is said at some time to be so—that is, a judgment or statement—may be true at that time but false at another. By contrast with the concept of the truth of a proposition, the truth as such is often a matter of the situation in the case, the facts, at any given time; for the truth is multifarious. Only when the truth is conceived as formulated in a set of propositions, a set of truths, can the truth be timeless. But while some truths are timeless in that no time references are required to safeguard the truth of the propositions expressing them, others are plainly contingent on what the facts of the case are at the time. Thus, the concept of being true (truth), what is the case, including what the facts are (the truth), and those propositions which are true (truths)—these are all different. Through inflation of language 'timeless' has come to mean what has lasted, or may be expected to last, a long time—the 'timeless' elegance of some developer's houses; rather as 'priceless' has come to mean exorbitantly dear.

'Eternal' means the opposite of 'timeless' in the literal sense; for 'eternal' means what exists at all times, and so what has always existed and will always exist. As distinct from an eternal being, a timeless being, if not altogether a logical, is certainly any other sort of impossibility. The notion of existing at all times is fraught with difficulty, however. Can something that exists throughout the whole of time be coherently conceived? For can the whole course of time be coherently conceived? If something is conceived as continuing to exist into an indefinite future, that means there is always some further future conceivable, beyond any future that is initially conceived, where the thing might not persist. But this objection turns

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merely on the contingency of its existence: even if recourse is not made to the concept of a necessary being, there may be no reason to doubt that the thing will continue to exist indefinitely and good reason to think it will persist—say, on some principle of inertia. So the difficulty is not about knowledge of the future, or even the justification of beliefs about the future. Rather, an existent cannot be conceived to be eternal without also conceiving the whole of time so that all further futures have taken their course and been exhausted. For to conceive an eternal existent is to conceive the future as exhaustible. But to suppose the future can be exhausted is to conceive the future as past, contrary to its nature.

Time is inescapably conceived as tensed, contrary to the prevalent view of scientists and of many philosophers. Time has to be conceived as having delivered a past, as presenting a present and as promising a future—as doing all three. There is no inclination to think of time as not having delivered a past or as not presenting a present; but the confusion of thinking of the future in the way that the past or the present are thought of is hard to shake off. Several ways of thinking of time give rise to misconceptions of time as promising not a future but an occurrence of only a kind of past or present; a time involving a past and a present but no genuine future.

It is not merely insufficient to conceive time as involving a before and an after: it is to misconceive it. Such a way of thinking of time begins by supposing that time could conceivably be spread out before an omniscient observer—just as some portion of space can often in fact be spread out before a human observer—so that the omniscient observer could identify one portion of time as before and another as after—just as human observers can easily identify, relative to themselves, one portion of space as the left or the top, and identify another as the right or the bottom. Both the past and the future are here being misconceived as the present on a mistaken analogy with space: the past, the present and the future are not contained in time in the way that portions of (actual) space are contained in the whole of space. Past occurrences no longer occur, and any future occurrences one might imagine have not yet occurred; so neither of them can coexist with the present, or with each other; only what is in the present coexists. But with the concession that the before and the after of time cannot coexist as parts of space can, the future may still be misconceived as an imaginary present or past. The actual past, being history, is one damned thing after another. Though this bare relation of succession is with good reason projected into the future—unless there is better reason for doubt in specific instances—the one thing known with a priori certainty is

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that the future will never amount to a repetition of the present or the past. However much like the present or the past the future may be thought to turn out to be, the future can never be the present or the past; and when it turns out (if it does) to be pretty much like the present or the past, it is plainly no longer the future but is in turn present, then past. The future that becomes, in time, the past is not—is no longer—the future but the past, which is the nub of the objection Campbell made to Priestley, encapsulated by Russell's distinction between 'past futures' and 'future futures'.[16]

Another misconception arises because time is also a parameter, a dimension, what can be measured; but time in this sense of duration, of lasting for some time, is quite unlike the dimensions of space. If it takes two minutes to boil an egg, or four hours to thaw a frozen chicken, I shall have to allow sufficient time for the process to be completed. Likewise with driving to town, giving a lecture or registering a birth. Time waits for no man; but many a man has to wait, patiently or impatiently, for time to run its course. Here, though, the event, process, action, activity, procedure, operation, ritual—whatever it is that takes the time—is being conceived as a whole, and so as completed; not as interrupted or unfinished. Consequently, the time it takes is being conceived as over, and hence as past —even if the thing that takes the length of time that kind of thing has been measured to take in fact has yet to commence or not yet come to an end. That is, the length of time the thing is expected or, in general, inferred to take can be projected into the future, as well as retrojected on to the past; so that time in the future can be made for that length of time, or that length of time can be used to calculate when in the past the thing commenced and finished. A period of past time is thus used to judge when something that has just started—or has not yet started—will be over in the future, as well as to judge when something both started and finished in the past. In the first case a period of time in the future is being conceived as over, even although it is still future and actually not yet over, perhaps not even begun;[17] while the second case simply employs the notion of what is over.

While there are usually no reasons to suspect that a thing will not take the same time as that sort of thing has repeatedly done in the past, or that it has not taken the same time in the past as that sort of

[16] Bertrand Russell, *The Problems of Philosophy* (Oxford University Press, fifteenth impression 1989), 36. For discussion of the issues between Campbell and Priestley see James Somerville, 'Futures Past and Futures Future', *Journal of the History of Philosophy*, **30** (1992), 103–121.

[17] Cf. Locke, *Essay*, II xiv 31: the fourth point.

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thing has on another past occasion, the length of time it takes is not, as spatial dimensions can be, observed—or rather, in the case of time, lived through—by any observer; who has instead to infer either that it will take the same length of time in the future as it has done in the past or that it took the same length of time on one past occasion as on another. The duration, while conceived as a length of time that is over, is identical with neither any future period of time, which can be conceived only as not yet over but as yet to begin, nor any actual past period of time. In short, time as a dimension (duration) is only notional and not the same as the time the things that take time occur in; for they can occur only in the present.

Just as the space in the room depicted in a painting or a photograph has to be distinguished from the space in the room accommodating the painting on the wall or the photograph on the table, so the ten-minute representation in a ninety-minute film of a whole night of passion has to be distinguished from the life of the cathode ray tube displaying the film. Whereas both actual and represented space have dimensions, actual time—in contrast with represented time—is not measurable, since it is not over yet for its measurement to be made.

But can't references to past, present or future be eliminated by including a time reference in what is said about the temporal, just as the words 'here' and 'there' can be replaced by grid references? 'The cat pounces on the rat at 10.38 a.m. on 1st July, 2003' seems to make use of a timeless present. Significantly, the tense is known rather as the historic present; for tacitly the proposition conceives the event as over, even although the date cited may be in the future, not the past. If it is in the future, the event is being misconceived as past; it is not being conceived as a future event.

If it is argued, similarly, that the timelessness of the truth of a proposition can always be ensured by the insertion of a time reference, grammar gets in the way. The proposition, 'The Leader of the Opposition is going bald' can be abstracted from different statements—one made, say, in 1989, another in 1999—about different holders of the office. But the sentence, 'The Leader of the Opposition is going bald in 1999' needs to be amended: either the time reference should be deleted so that what is expressed is a statement about the holder of the office at the time of making the statement; or the present 'is' should be replaced by either the past 'was' or the future 'will be' so that a statement about the past or a prediction about the future can be expressed. Philosophers and logicians tend to be contemptuous of grammar, often at their peril: if a thing cannot be said without inventing an artificial device for saying it, this may indicate that what one is trying to say is simply confused.

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Unlike the future, the present and the past are conceived as fully specifiable in principle, though often ignorance makes the present and the past only partially specifiable in fact. Something, then, is known of the present and the past; but in principle everything can be known of them. Now, the logical form of a question juxtaposes a subject of discourse and a partial specification of what is presupposed to be true of this subject. And so partial knowledge of the present or the past can be specified in the questions that can arise in the course of enquiries into the present or the past—enquiry having as its object the acquisition of knowledge beyond the knowledge one already possesses. Interrogative logical form is thus tailor-made for partial knowledge; for it can specify, as propositional logical form cannot, one's ignorance—what one doesn't know—as well as what one does know.[18] But further, since the present and the past are conceived as fully specifiable in principle, the answers to these questions are conceived also to be obtainable in principle so that the question no longer can arise logically. The interrogative clauses following 'know' and other verbs attributing knowledge convey that the question they allude to has received its answer logically and hence no longer can arise logically; and other interrogative clauses—but only when the context indicates too that the question can no longer arise logically—can convey the same, it was seen. So when interrogative form is used here to raise the question, it expresses partial knowledge—and hence partial ignorance—of the present or the past; and when it is used instead to answer the question, it expresses that the question raised has been resolved, all questions about the present and the past being in principle logically answerable.

Unlike the present and the past, the future is conceivable only as partially specifiable. The future remains open in some respects until it becomes the present; it is only partially determinable by the present and the past. Nevertheless, something is often in fact known of the future. Hume retreated from the bald assertion in his *Treatise*, 'Any thing may produce any thing' (I iii 15) to his first *Enquiry*'s, 'If we reason *a priori*, anything may appear able to produce anything' (XII iii). What Austin offers as a concession, 'it is not demanded that I do more than *believe* about the future'[19] comes across rather as negative dogmatism. It is common knowledge that the future will be like the present and the past in some respects; and so, if the future is not simply to replicate the present and the past, that the

[18] See Michael Welbourne, 'A Puzzle About Telling', *Philosophy*, **64** (1989), 175–185; also Somerville, op. cit., note 8, chapter 8, §§ iv and v.

[19] J. L. Austin, 'Other Minds', in *Philosophical Papers* (Oxford University Press, second edition 1970), 101.

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future must be unlike the present and the past in other respects. So at least something can in principle be known of the future. But not everything can, even in principle, be known of the future. While it is not always reasonable to expect the unexpected, one should be prepared for at least the possibility of the unexpected because the future is not completely specifiable. To suppose everything could in principle be known of the future would be to conceive the future to be now as fully specifiable in principle as the present and the past are now, and so to conceive the future not as the future but as an imaginary present or past. So the questions that can arise about the future contain specifications of this partial knowledge of the future necessarily resulting from the partial specifiability of the future itself.

Thus, it is not simply incomplete knowledge that makes the future only partially specifiable, and hence indeterminable in some respects. Trite as it is to say so, the future can be spoken of only in the future tense, which is why time is inescapably conceived as tensed. Any notion of the future 'as it is now' incoherently treats the future as if it were the present. So the questions that can arise about the future are to be settled—so that they no longer can arise logically—usually only with 'the arrival of the future', when what was once the future becomes the present. Enquiries are not said to be made about what will happen, only predictions.

Admittedly, some knowledge of what will happen in the future is possible. Such knowledge is to be conceived as logically answering the question 'What will happen?' But generally for questions about the future to be no longer able to arise logically, as distinct from being correctly answered by somebody before the event, the element of indeterminacy attaching to the future would have to be replaced by the full determinacy of the present or the past; in which case the future would no longer be conceived as the future. So any knowledge of the future must await confirmation as the future becomes the present and ceases to be the future. Exceptionally, questions about future eclipses of the sun, and other future movements of astronomical bodies, are taken to be closed. Here the future is, exceptionally, conceived as fully specifiable and thus fully determined by the past; but in these respects only, not as such or as a whole.

Interrogative logical form captures both the degree of indeterminacy attaching to the future as such—its openness in general—and the full determinacy of the present and the past. Questions can faithfully express the only partial specification of the future that is in general possible before its arrival as the present; while the

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answers to questions alluded to by some interrogative clauses mirror the full specification possible in principle once the future has become the present or the past. The passing of time can thus be understood by means of the timeless abstractions of concepts as marking the difference, as the future becomes the present, between an open question which arises logically and a closed question which no longer can arise logically because it has been answered logically.

Since questions about the past or the present can often be open, and questions about the future can exceptionally be closed, the distinction between questions which arise logically and those which can no longer arise logically, though they once did, does not depend on the notion of the passing of time. So the explication is not circular. Yet the notion of the passing of time, of the future becoming the present, is implicated in the notion of the closing of a question. For a question is conceived as closed when it is conceived as answered logically; and it is conceived as answered logically when the answer to it is conceived as known. But the acquisition of knowledge, coming to know, has to do with future experience. So those questions which are now open can with future experience become closed, regardless whether they relate to past, present or future.

As the future makes action possible, interrogative logical form also serves to clarify the nature of choice and decision, as well as that of knowledge concerned with action. One decides whether to do one thing or another, chooses where to go, knows what to do, when to shut up, and so forth. Indeed, interrogative logical form crops up again and again in a variety of fundamental philosophical issues—the unfamiliar thereby serving to cast needed light on the much discussed. Interrogative logical form is all around but like the meek generally goes unnoticed.

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