The question is whether the shape of what, as followers of Frege, we understand as logic proper or the logical element in thought has thus far impeded a proper grasp of the form of certain types of actual thought. On the the Fregean conception of 'logic,' it is the systematic elaboration of formal connections of thought to thought; the correlative understanding of the inner form, or 'logical form,' of individual thoughts is one that is fitted to the study of these inter-thought connections. What falls outside these forms is not thought. Thus for example Frege is led to reject vague predicates as failing to fit with his version of the law of excluded middle. The distinction between past and present tenses falls to similar considerations, even already in *Grundlagen*, and must be replaced by an account in which tensed predicates really express atemporal relations to particular times, so that the opposition between "ξ is red" and "ξ was red (then)" turns on different ways of filling in the second "temporal" blank in, say, "Red(ξ,τ)". This reduction is reasonable enough on the face of it, though the intuition of Lewis, for example – that redness just *isn't* a relation to something, but something a thing can just plain *be* – must give one pause.

A more difficult case would be with aspectual judgment, whether of the type that pertains to intentional action, or to the operations of substances generally. This difficulty is independent of tense: peering into the remote past, or adopting a Godlike atemporal view - which is like looking at things from an imaginary "time at infinity" posted after all the times and events of real history - there will still be a difference between "the tree was falling over (on that Tuesday)" and "the tree fell over (on that Tuesday)"; the first might be ('timelessly') true, but the second ('timelessly') false, if say, someone did something to stop the fall, or an H-bomb went off and vaporized the tree before it hit the ground. Here the Fregean and indeed standard device of cutting an extra position in a predicate that is common to both judgments, in order to represent features of the two contents that are the same and different, is plainly not adequate: the distinction will survive the relationalization. (I note

that Lewis' four-dimensionalist solution to the problem of tensed state-attribution will not work either.) The Fregean will simply have to accept two predicates, "ξ fell over on (date) τ" and "ξ was falling over on τ", and will be unable to represent the – evidently *formal* – connection between them. It is sometimes thought that the manifold of times and dates is something extralogical, just some of the stuff we think about, and thus that the reduction of "ξ was red" to something like "$\exists$t t$\prec$now $\wedge$ Red(ξ, t)" gets time out of logic – that is, out of the form of thought and into its content. But it is hard to see how a similar trick can be pulled in the aspectual case: we have to do with a distinction of representations of things as "complete" and "incomplete", as grammarians put it, and it is not clear that this can be represented as a matter of content rather than form.

This sort of example might lead one to doubt that that everything that pertains to the form of thought is represented in the Fregean system and its successors, however much enriched by modal and suchlike operators. The systems characteristically accept only one *form of predication*, which is exactly the form that is found in purely mathematical judgments. But, on the face of it, the aspectual opposition would force us to accept at least two more. And similarly, it would force us to recognize a *form of predicable item* that is intrinsically such as to admit these two modes of predication - it is built for them, so to speak - and which is thus distinct from the Fregean *Begriffswort* and its successors in later systems.

It involves a symbolic perversity akin to that of Peirce's existential graphs (or indeed Frege's system as a whole), but one might imagine a *Begriffsschrift* attempting to come to terms with this by admitting different positions for contentful sign of the relevant sort, so that "$\xi^{\text{fall over}}\tau$" and "$\xi_{\text{fall over}}\tau$" would express respectively "ξ fell over, on (date) τ" and "ξ was falling over, on (date) τ". All concrete symbols of that type – genuine verbs we might call them – would admit these *two* modes of 'unity' with other signs, and in the initial specification of vocabulary, they would have

to occupy a line different from the one supplied for 'normal' one-place predicates, two-place predicates, etc., as they are usually understood. It should be noticed that expressions of such a type cannot be classified by the sort of 'categorial grammar' familiar from Ajdukiewicz, Lewis and others. This is a system of considerable abstractness and power, which, I believe can characterize the syntax of *any* familiar logical system. In other words, the aspectual case does not fit with Frege's model of function and argument. *Function and argument can only combine in one way* – not to put too fine a point on it – but aspectual considerations seem to show that the concept *fall over* is made or forged, or born, to be joined immediately to singular representations *in two ways*, even apart from difficulties about tense proper. (In the 'symbolism' described above the statements are still construed as 'tenseless'.)

The Fregean account stays too close to the sort of analysis required for the formulation of principles of consequence. If we are only interested in the existential generalizations made available by "the tree fell over on that Tuesday" and "the tree was falling over on that Tuesday", we will not need to see the sameness that my half-baked symbolism was trying to bring out. We can just see "ξ fell over, on (date) τ" and "ξ was falling over, on (date) τ" as two different relational symbols with no inner logical connection. Here we have "form without function/argument analysis." The focus on function and argument is closely related to the focus on iterability, apart from which the special arts of the contemporary logician lose their point. It should be noticed that the distinction between "it was falling" and "it fell" is not to be compared with the opposition of, say, $\Box$P and $\Diamond$P, since opposed modes of predication are no more iterated than the standard single mode of predication in, say, "F(a)" can be iterated.

I have labored this illustration as (to my mind) especially clear and founded on what seem to be undeniable facts. Consider though what linguists call *generic* propositions, and the particular class of them that appear in simple discourses about species of plant and animal, which I called "natural historical judgments": say "robins nest", "robins have

wings" etc. The linguist's expression "generic proposition" is supposed to cover a much wider class including, say, "Dutchmen are good sailors," "1969 Mustangs have rectangular tail-lights", "Tuesdays are a nightmare for me," "the French 'ne...pas' means *not*", and so on. Here there is an extensive contemporary literature in linguistics, with a small but increasing philosophical echo. Here we have to do with a special *form of generality* - or, as I think, a system of forms of generality - but at the bottom it is the question of the *form of predication* that makes for the difficulties. It is clear that in "robins nest" and "robins have wings" the surface-grammatical *subject,* "robin," appears as a predicate in some judgments, e.g. in "this bird is a robin"; in the received logical atmosphere this predicative use will inevitably be taken as the core employment of the expression; similarly the predicate in "robins have wings" will appear in predications of a quite different type, singular tensed predications like "this robin has wings". The generic sentence "robins have wings" will thus inevitably be analyzed as containing the elements "ξ is a robin" and "ξ has wings". An example is in the customary use of the "Gen x" operator, wherewith the judgment that robins have wings is expressed "[Gen x: x is a robin](x has wings)", a formulation that is usually traced to the treatment of "most" and similar expressions in the categorial grammar of Lewis & co. To put it in terms of that so-called categorial grammar, the linguists' thought is that in the generic proposition we are secretly employing *an operator that takes two* THINGS-THAT-TAKE-NAMES-AND-YIELD-SENTENCES *and yields a sentence from them.* (This is only the syntactic beginning; a flood of semantical proposals then follow.)

It is not clear that the semantic features of "robin" that come out in its predicative use are all those that are relevant to the formulation of the natural history of robins. –Doctrines of this type operate on a sentence by sentence level, as one would reasonably do with "most", but it is clearly constitutive of the natural history "generics" that they form a system. And so forth. The point that strikes deepest, if the matter could be properly formulated, would I think arise from contemplation of

the *connection* between simple predications like "this bird has wings" or "this robin has wings" and a background of generic judgments. It is not clear that there is not a circle secretly present in accounts that begin with this apparantly innocent syntactical decision. To put the point crudely, the generic facts about robins have a bearing on the facts about actual individual robins - facts that are are presented with the form of predication contained in the sub-sentence "x has wings". This again is in contrast with the like of "most"; what can be predicated of an individual A rarely turns on what holds of most A's.

Let us make a different contrast, one that shows up in exemplification statements. If I say, *Most As are F*, *Some As are F* or *All As are F*, I can go on, saying, *for example, this A is F*, *that A is F* and so on. The predicate is tensed in *Most As are F* and the others – and all the instances must bear the same tense. But "Robins are F" can be illustrated with past facts about robins, – for example, this robin was F (pointing at film) – and it would have to be so if "are F" is something like "are spotted in the Fall", since it's not Fall right now.

The parallel with the aspectual case is clearer if we go back to the sentence "robins nest," in which a proper (i.e. aspectible) "verb" is employed. Intuitively, the second element in the 'Gen x' machinery would have to be "x nests", which would have a substitution instance in "this robin nests" affirmed in a suitable demonstrative context. In English this proposition is *habitual* in character. It would not seem to be truly affirmed of a perfectly ordinary adolescent robin whom I might see now, one facing her first winter, and not having nested – since she was born this past spring. But in any case, it is plainly not a habitual that is wanted. This would be clearer if our example were, say, "mayflies breed" - the individual only breeds once, not habitually; one does not say of any one mayfly "it breeds", even at the moment when it breeds. In the present tense - and on the face of it the judgments in question, "robins nest" and "mayflies breed" are purely present in character - *the only available non-habitual remark* would be the progressive proposition "this

robin is nesting". But a rewrite of the generic proposition as "[Gen x: x is a robin](x is nesting)" would go back into English as "robins are nesting" which, though generic, is not natural-historical, and is in any case false when said at this time of year (January). *It* can be said in spring, at least in years when all goes well for robins, but "robins nest" can be said at any time of year. The truth is that the aspectible expressions exemplified above with "fall over" are shown to admit *yet another* form of predication in generic propositions (and still another in habitual propositions). "This robin was nesting last spring" (e.g. before I shot it), "this robin nested last spring" and "robins nest in spring" all share *the same material contents* (I overlook difficulties with the demonstrative) and differ only by form - logical form if you like - and in the final analysis, none can be taken as prior; these three possibilities of thought all come into the world together. If human thought is 'discursive thought' in Kant's sense, and thus typically involves predication, then it must be a completely false understanding of predication, and thus of the inner character of thought itself, and of the logical element, that would fall down before such quotidian examples.

The linguists are trapped by a conception of predication that cleaves too closely to the (rightly) mesmerizing model passed down to us by our father Frege. There is something in the element we breath that makes us torture perfectly ordinary propositions like "the tree is falling over" and "robins breed".

This defect shows up in almost every employment of Church's $\lambda x(...x...)$ among the linguists. It is sometimes called a predicate abstract, but what it 'abstracts' is the Fregean predicate which includes tense and aspect and so on: all you need to do is supply a name and you have a complete thought. But this is not how you arrive at what is diversly predicated, of course. Thus in e.g. G. Carlson we have constructions like$Hab(George, \lambda x(x\, smokes)$; here we have a double error. First, instances of $x\, smokes$ would be e.g. $George\, smokes$, which is habitual already, so who needs the Hab operator or the like? But if we switch to

the non-habitual, what shall we choose? It seems it can't be something past like $George\,smoked$ or $George\,was\,smoking$ - replacing "George" with "x", of course. So it'll have to be the present progressive. But the truth is plain, we need something on the order of $to\,smoke$, something that can "make a sentence out of a name", but in different ways, which must be marked, and to some extent are marked in human languages. In his criticism of Anscombe, Evans assumes that the object of intention can be captured in the $\lambda x(...x...)$. I guess he would write $George\,intends\,\lambda x(x\,smokes)$ when George intends to smoke, since he does write $George\,intends\,\lambda x(x\,refers\,to\,x)$. (It is true that "refers" is a special verb, it is performative inter alia, and doesn't have a progressive.

To express all of this we need to introduce more nutty procedures like the one I compare to Peirce and Frege's above. $George_{smoke}\tau$ and $George^{smoke}\tau$ and $\frac{smoke}{George}\tau$ for progressive, perfective and habitual respectively (assuming again that we can separate out tense.) For generic propositions, we would need a way of attaching a predicate to a common noun, so called - and a way to view the subject of such judgments as also the only other ingredient in George is an S. [1]

[1]There is discussion in Dummett of the distinction between the Fregean 'complex predicate' and Fregean 'simple predicate'. The distinction was lost on the readers, cp Harman's review of FPL, since without considerations like these it is hard to see the difference between the simple predicate to smoke and the complex predicate smokes or is smoking if you are restricted to, say arithmetical language. But Dummett points out that in some sense a simple and complex predicate might be the same, the complex predicates are arrived at by deletion, but the simple ones presupposed in composition. The joining of simple predicates with other words depends on 'valence' not on the concept-object, function-argument analysis.