THE RUNABOUT INFERENCE-TICKET

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IT is sometimes alleged that there are inferences whose validity arises solely from the meanings of certain expressions occurring in them. The precise technicalities employed are not important, but let us say that such inferences, if any such there be, are analytically valid.

One sort of inference which is sometimes said to be in this sense analytically valid is the passage from a conjunction to either of its conjuncts, e.g., the inference ' Grass is green and the sky is blue, therefore grass is green '. The validity of this inference is said to arise solely from the meaning of the word ' and '. For if we are asked what is the meaning of the word ' and ', at least in the purely conjunctive sense (as opposed to, e.g., its colloquial use to mean ' and then '), the answer is said to be *completely* given by saying that (i) from any pair of statements P and Q we can infer the statement formed by joining P to Q by ' and ' (which statement we hereafter describe as ' the statement P-and-Q '), that (ii) from any conjunctive statement P-and-Q we can infer P, and (iii) from P-and-Q we can always infer Q. Anyone who has learnt to perform these inferences knows the meaning of ' and ', for there is simply nothing more *to* knowing the meaning of ' and ' than being able to perform these inferences.

A doubt might be raised as to whether it is really the case that, for any pair of statements P and Q, there is always a statement R such that given P and given Q we can infer R, and given R we can infer P and can also infer Q. But on the view we are considering such a doubt is quite misplaced, once we have introduced a word, say the word ' and ', precisely in order to form a statement R with these properties from any pair of statements P and Q. The doubt reflects the old superstitious view that an expression must have some independently determined meaning before we can discover whether inferences involving it are valid or invalid. With analytically valid inferences this just isn't so.

I hope the conception of an analytically valid inference is now at least as clear to my readers as it is to myself. If not, further illumination is obtainable from Professor Popper's paper on ' Logic without Assumptions ' in *Proceedings of the Aristotelian Society* for 1946–7, and from Professor Kneale's contribution to *Contemporary British Philosophy*, Volume III. I have also been much helped in my understanding of the notion by some lectures of Mr. Strawson's and some notes of Mr. Hare's.

I want now to draw attention to a point not generally noticed, namely that in this sense of ' analytically valid ' any statement whatever may be

inferred, in an analytically valid way, from any other. ' 2 and 2 are 5 ', for instance, from ' 2 and 2 are 4 '. It is done in two steps, thus:

2 and 2 are 4.
Therefore, 2 and 2 are 4 tonk 2 and 2 are 5.
Therefore, 2 and 2 are 5.

There may well be readers who have not previously encountered this conjunction ' tonk ', it being a comparatively recent addition to the language; but it is the simplest matter in the world to explain what it means. Its meaning is completely given by the rules that (i) from any statement P we can infer any statement formed by joining P to any statement Q by ' tonk ' (which compound statement we hereafter describe as ' the statement P-tonk-Q '), and that (ii) from any ' contonktive ' statement P-tonk-Q we can infer the contained statement Q.

A doubt might be raised as to whether it is really the case that, for any pair of statements P and Q, there is always a statement R such that given P we can infer R, and given R we can infer Q. But this doubt is of course quite misplaced, now that we have introduced the word ' tonk ' precisely in order to form a statement R with these properties from any pair of statements P and Q.

As a matter of simple history, there have been logicians of some eminence who have seriously doubted whether sentences of the form ' P and Q ' express single propositions (and so, e.g., have negations). Aristotle himself, in *De Soph. Elench.* 176 a 1 ff., denies that 'Are Callias and Themistocles musical? ' is a single question; and J. S. Mill says of ' Caesar is dead and Brutus is alive ' that ' we might as well call a street a complex house, as these two propositions a complex proposition ' (*System of Logic* I, iv. 3). So it is not to be wondered at if the form ' P tonk Q ' is greeted at first with similar scepticism. But more enlightened views will surely prevail at last, especially when men consider the extreme *convenience* of the new form, which promises to banish *falsche Spitfindigkeit* from Logic for ever.

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