

# Logic and Ethics

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**Abstract:**<sup>1</sup> The condition under which it is correct (proper) to make an assertion is that the assertor knows how (is able) to perform the task which constitutes the content of the assertion (correctness condition for assertions). To make an assertion is to commit (obligate) yourself to performing the task which constitutes the content of the assertion (commitment account of assertion). The condition under which it is correct (proper) to undertake an obligation (make a commitment) is that the obligor knows how (is able) to fulfil it (ought implies can). The relation between the preceding three principles is simple: the correctness condition for assertions follows from the commitment account of assertion taken together with the ought-implies-can principle. Both the commitment account of assertion and the ought-implies-can principle bring in the notion of duty (obligation) and hence implicitly, by the correlativity of rights and duties, the notion of right. On the other hand, the notions of right and duty are the key notions of deontological ethics. Thus, all in all, logic has, not only an ontological layer and an epistemological layer, but also a deontological layer underlying the epistemological one. It can be avoided only by treating the notion of knowledge how (can) as a primitive notion, thereby abstaining from relating it to the notions of right and duty (may and must).

**Keywords:** assertion, request, fulfilment

A more precise formulation of the title would be Logic and Deontology. Let me begin by referring to the structure of a speech act. We have the act of uttering something and that which is uttered, the utterance in that sense, which we in linguistics call a complete sentence:

→ sentence

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<sup>1</sup>Per Martin-Löf's invited lecture at Logica 2019 was based on a transcript of a lecture given in March 2019 at the conference *Proof-Theoretic Semantics* in Tübingen. The transcript, which was prepared by Ansten Klev, has previously been published in the online proceedings of that conference, available on the webpages of Tübingen University via the permanent link <http://dx.doi.org/10.15496/publikation-35319>.

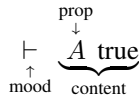
Per Martin-Löf

When you consider a complete sentence, then the outermost structure of it, the most basic structure, is the mood/content structure:

—→ mood content

The view that this is the most basic form of utterance is properly ascribed to Charles Bally, who was a French linguist, successor of Saussure in Geneva: he so to say replaced the subject/predicate form as the most basic form with the mood/content form.

The mood we can characterize at this stage simply as the kind of speech act: if it is an assertion, then we have the assertoric mood, if it is a question, then we have the question mood, if it is a warning, we have the warning mood, etc. But, what about the other part here, the content part? Here I have a proposal. I am going to distinguish between assertoric contents and propositions, or in Dummett's terminology, their ingredient senses. This can be illustrated in the following way, if we have as the mood the assertoric mood, and we take the special case of a content of the form  $A$  true, where  $A$  is a proposition:



Clearly there is a distinction between content and proposition if you view it in this way. Then we have, on the other hand, the BHK-interpretation of the notion of proposition, where a proposition is identified with an expectation or an intention, in Heyting's terms, or with a task, Aufgabe, in Kolmogorov's terminology. We now have two levels here: we have both propositions and assertoric contents, a proposition being so to say the content made into an object in your theory. And by making it into an object I only mean that we make assertions of the form that something is a proposition: then they are no longer contents, but precisely what we call propositions. On the other hand, there is also a great similarity between propositions and contents, so it seems like a natural idea, if we explain propositions in the way I just referred to, the BHK-way, that we could try that for assertoric contents also. So we would have expectations, or intentions, or tasks, at two levels so to say: on the content level and on the proposition level. This will underlie my talk here from the beginning to the end. So from this point on I look upon the content here as a task in Kolmogorov's terminology.

What is a task then? Simply, something to do, or—in the passive voice—something to be done. As soon as we have a content in this sense we can

## Logic and Ethics

speak of fulfilling it, or doing it. And then we have immediately also all the temporal modifications and other modifications to which we can subject our verbs.

Now I have fixed the part

*A true*

What about the mood? Well, for the mood I have already given the general explanation, and then it only remains, for the specific moods that are going to be considered, to give the special explanation for each of them.

Of course, the first mood is the assertoric mood. I will take as the logical notation for assertion the modernized Frege sign,  $\vdash$ . To a large extent this talk will be a talk about the explanation of the meaning of  $\vdash$ . How is it to be explained? I want to adhere to the point of view that what makes something into an assertion is purely formally that its mood is the assertoric one. If we just prefix the mood to a well-defined content, it is already an assertion, that is, you are going to be held responsible for having made an assertion as soon as you have uttered something with the assertoric mood, just as when you make a promise, you are held responsible for its being a promise however unlikely it may seem that you really are going to fulfil it: it is a promise anyway. Similarly with an assertion: it is an assertion as soon as you have this force sign.

There is a huge literature on the notion of assertion, and it has been made much more accessible by Peter Pagin through his contribution under the entry of 'Assertion' to the Stanford Encyclopedia of Philosophy. There, there is at least half a dozen different views of what assertion is, with endless variations on them, so it makes up a paper of no less than 30 pages or something like that. I am not at all going to contribute to that, I do not have the competence, and it is already available. So I will only take up essentially two views here of what an assertion is, namely the so-called knowledge account of assertion, on the one hand, and on the other hand the commitment account of assertion. I hope to clear up sufficiently how they are related to each other.

Concerning the knowledge account, first of all the term here, to speak of different accounts of assertion, that comes from Williamson. And his own preferred view of the nature of assertion is precisely the knowledge account. But the knowledge account goes back to Frege, we must remember. When Frege defined a judgement as the acknowledgement of the truth of a thought, it was clearly a knowledge account, because of the word 'acknowledgement', which has 'knowledge' in it, and it is the same in the German original: die

Anerkennung der Wahrheit eines Gedankens. So Frege's account of assertion was a knowledge account.

For Frege, the content was the thought, and now I have replaced that by the notion of task, so the question is, What modification does that necessitate as compared with Frege? For Frege it was the acknowledgement of the truth of a thought, so Frege used the word true, or truth. And truth now, when we understand content in the way that I have suggested, corresponds to fulfillability. (Fulfillability works perfectly for expectation and intention, but less well for task, so maybe performability rather, in case you choose task.) So truth corresponds to fulfillability, and then Frege's acknowledgement of the truth of a thought corresponds to acknowledgement of the fulfillability of an intention. And to acknowledge, that is, to get to know, the fulfillability of an intention, that is interpreted in the plainest possible way, namely, that is to grasp how the content is fulfilled. So, to know the thought to be true becomes simply to know how to fulfil the task which makes up the content. That is how the analysis I am giving here is related to Frege's analysis.

Then we may already formulate what it is natural to call the correctness condition for assertion, namely the condition under which it is right, and here several terms are possible to use: right, correct, proper. I am going to use them in the same sense. The condition under which it is right, or correct, or proper, to make an assertion is that you know how to perform the task which constitutes the content of the assertion. This is what I have called the correctness condition for assertion in my abstract.

For acts in general it is usually illuminating to ask, What is the purpose of the act? In this case, if we accept the correctness condition that I just gave, What is the purpose of making an assertion? Then we have already to bring in that the speech act involves not only the speaker, but also the hearer, the receiver of the speech act. So, what is it that the assertor wants to achieve, what is the purpose of making an assertion? Well, if we stick to this knowledge account of assertion that I am discussing right now, then the purpose is nothing but to convey to the hearer that the speaker knows how to fulfil the content, the task which makes up the content. The speech act of assertion has no other purpose than to transmit from the speaker to the hearer the information that the speaker knows how to fulfil the task which makes up the content of the assertion, and this succeeds because the speaker must adhere to the correctness condition for assertion that I just formulated.

Since the speaker is conveying to the hearer that he knows how to do something, he knows how to fulfil this task, that means that this could be useful to the hearer: well, he knows how to do that, which means that I can

## Logic and Ethics

go to him and get help with doing this, if I am in need of that help. But, as it is now, there is no mechanism for this, because then we have to introduce some more things first. And that brings me to the commitment account of assertion, because what it does is precisely to bring in these extra bits that are needed.

So, now I come to the commitment account of assertion, which has its origin in Peirce's work during a very early stage of the last century, 1902–03, I think. Peirce's view was that an assertion should be understood as a taking on of responsibility, taking responsibility for the content of the assertion. Responsibility and commitment are not significantly different, and commitment, on the other hand, refers to obligation and duty, so we have

commitment  
obligation  
duty

which means that now the deontic notions have already come in that I referred to in the more precise title.

On the other hand, there is the correlativity of rights and duties, a very fundamental insight due to Bentham right at the beginning of the 1800s—by the correlativity of rights and duties I just mean this, that if I have an obligation, or duty, towards my neighbour, then my neighbour has a right against me, and vice versa. So it is the same action that is carried out, but from my point of view it is an obligation to do it, and from the other person's view it is something that he benefits from by getting me to do it.

So, there is this correlativity of rights and duties, which means that as soon as we have the notions of obligation and duty, we also have the notions of permission, dual to obligation, and right, dual to duty:

commitment		entitlement
obligation		permission
duty		right

Now you see that much more has come into this structure, namely the hearer in addition to the speaker, and these deontic notions and their duals. The duality comes in precisely because of the duality between speaker and hearer. So now I can give a first formulation of the commitment account of assertion, so that it can be compared with what I just said about the knowledge account of assertion. By making an assertion, the speaker assumes the duty of performing the task which constitutes the content of the assertion at the request of the hearer. Now you see more of this duality has come in, because

at the end I said ‘at the request of the hearer’. So now we have not only the speaker, who is the assertor, but we also have the hearer, who receives the assertion, and now he is going to play an important role here, namely in that he has the right to ask the speaker to fulfil his obligation. So we have now request also coming in here:

speaker		hearer
assertion		request

Now things are beginning to look much more promising, because if we take other speech acts like question and answer, then we take immediately for granted that question and answer have to be explained together: you cannot explain the one without bringing in the other. And if we have a command, for instance, there must also be obeyings of the command: we cannot explain the command without having someone who is commanded and who is obligated to obey the command. So it seems very natural, and strange that it has not become generally accepted, as far as I know, that there is a speech act that is dual to assertion in precisely the same way, namely request. Assertion and request have to be explained together, as we already saw a moment ago in my formulation of the commitment account of assertion.

Now I want to vary that formulation in the same way that I varied the formulation of the knowledge account of assertion, namely by putting it in an explicitly teleological way, by asking, What is the purpose of making an assertion? What I said in other words a moment ago then becomes this: the purpose of an assertion on the part of the speaker is to give the hearer the right to request the speaker to perform the task which makes up the content of the assertion, whereupon the speaker is compelled to fulfil his duty by actually performing the task in question. It is essentially the same content as I gave a few minutes ago, but now formulated in an explicitly teleological way.

If we accept this, then we are in the lucky situation of having discovered a very basic logical structure. Namely, we have first of all the assertion of the speaker, which has this form:

$$\vdash C$$

The speaker makes an assertion, and then the hearer has the right to ask the speaker to fulfil his ability, to put his knowledge-how into practice, and that is a speech act of request:

$$C?$$

## Logic and Ethics

When the assertor is requested in this way, he is put under the obligation, or duty, to fulfil  $C$ , or to do  $C$ . So the conclusion is that  $C$  gets done, or  $C$  is fulfilled:

$$\frac{\frac{\vdash C \quad C?}{C \text{ done}}}{C \text{ fulfilled}}$$

This way of writing it makes it look as much as possible like an ordinary inference, but you could also put it, perhaps better, in this way:

$$\frac{\frac{\vdash C}{C?}}{C \text{ done}}$$

We have the assertion followed by the request, and then, because all of this has already occurred, we may proceed further to have the speaker to do  $C$ .

This is really not one rule, this is a whole scheme of rules: one for each form of assertoric content  $C$ . I should give at least one or two examples to elucidate this logical structure. A completely non-logical example—it is logical, but let's speak of it as a non-logical example—is this: you have a child running to its mother saying, Mum, I can swim! That corresponds to the assertion. Then the mother says, Can you? or Show me! (in which case we have an exclamation mark) or something like that, and then as a result of that request, the child actually swims. With this example you already see that this is a practical inference in Aristotle's sense: it is a rule where the conclusion is the performance of an action. Practical syllogism sounds a bit old-fashioned, but practical inference is a perfectly good term that we can use presently. So that is one name for this kind of logical rule. Another possibility is to call it the manifestation rule, or if you think of tests of the kind that we are all engaged in, or examinations, we could call it the examination rule, or test rule.

Knowledge-how, or an ability, is definitely what philosophers call a disposition. Disposition covers a variety of disparate concepts, but at least it is clear that an ability is a disposition. Hence the terminology that has been introduced for dispositions can be used here, in which case the request

$C?$

is called the stimulus condition, and the conclusion

$C$  done

is called the manifestation of the disposition. Now, stimulus has a ring that I am not quite happy about, so one could perhaps use prompting condition instead of stimulus condition.

Here is the new logical structure that this talk is basically about. Something now should be said about how it relates to the knowledge account of assertion that I gave previously. Under the knowledge account of assertion I simply stipulated what the condition is for the assertion to be right, namely that the speaker knows how to fulfil the task in question. That is a stipulation: it is right under that provision. But, if we go from that to the teleological account in terms of purpose, then it is no longer stipulated that what gives the speaker the right to make the assertion is that he knows how to fulfil the content: it is no longer stipulated. It must nevertheless still be so, of course, but it requires now an argument why that is needed in order for the purpose to be fulfilled.

One way it is simple, namely that if the speaker knows how to fulfil the content, the task, then this interaction works properly, because if he knows how to do it and gets challenged, then he simply does it, and it is no problem for him to do that, because he can do it. It is sufficient that he knows how to fulfil that task, but in the other direction, that it is also necessary, you need to invoke the ought-implies-can principle, as I said in my abstract. Because, if he makes the assertion

$$\vdash C$$

then by so doing, he is undertaking a conditional obligation, namely the conditional obligation

$$\frac{C?}{C \text{ done}}$$

And by the ought-implies-can principle, in order to have the right to undertake an obligation, you must be able to fulfil it. Since you are assuming an obligation, you must be able to fulfil it, and that is precisely the condition that we need for this. So it is both necessary and sufficient that the speaker knows how to fulfil the task that makes up the content.

If we look at the rule

$$\frac{\vdash C \quad C?}{C \text{ done}}$$

you see that the major premiss here is connected with *can*, because the speaker must know how to fulfil the intention—know-how and can I make no difference between. Then we have the hearer, he gets the right to challenge the assertion: he gets the right, which means that he *may* challenge the



## Logic and Ethics

assertor. And when the assertor has been challenged in this way, he is under an obligation, so he *must* do something:

$$\frac{\text{can} \quad \text{may}}{\text{must}}$$

I have put it this way just to make it plausible that this is a natural analysis, because *can*, *may* and *must* are among the auxiliary verbs, the main modal auxiliaries, and it seems quite natural that they come in a package, so to say: they fit together into this pattern, and you cannot explain one of them without also bringing in the other two.

Dummett proposed to lift the introduction and elimination pattern from its usual place due to Gentzen, to shift it to the level of assertions, or even to utterances in general, since I began with utterances in general. So he distinguished between conditions for an utterance and consequences of an utterance: what follows from an utterance as compared with what the utterance follows from. Now we have something like this, because an ordinary inference has assertions as premisses and an assertion as conclusion:

$$\frac{\vdash C_1 \dots \vdash C_n}{\vdash C} \quad (C\text{-intro})$$

And this we can consider now as an introduction rule for the form of assertoric content,  $C$ , that you have in the conclusion. We now have also the dual rule here, namely

$$\frac{\vdash C \quad C?}{C \text{ done}} \quad (C\text{-elim})$$

This clearly then should be considered as an elimination rule, since  $\vdash C$  occurs as major premiss, an elimination rule for the form of content that  $C$  has. So you have an introduction and elimination pattern here arising on the level of assertions.

That brings me to my final remark. I began by saying that this whole lecture will be roughly about what the meaning is of the assertion sign. We are used to the fact that when we ask for the meaning of some linguistic construction, it should be visible somehow from the rules that govern that construction, in general Wittgensteinian terms. The first example of this is of course Gentzen's suggestion that the logical operations are defined by their introduction rules. What about the assertion sign? If you did not have this new rule ( $C$ -elim), you would only have the usual rules of inference, which are of the form ( $C$ -intro). If you were to take the assertion sign to

Per Martin-Löf

be determined by these rules, the assertion  $\vdash C$  could not mean anything other than that  $C$  has been demonstrated, has been inferred by the usual inference rules. And that is not how Frege introduced the assertion sign, what Frege meant by the assertion sign. I explained that earlier on: it is the acknowledgement of the truth of a content that the assertion sign expresses. So, we simply cannot explain the assertion sign by referring to the rules governing it if you only have the rules ( $C$ -intro). But now we are in a better situation, because we also have the rules ( $C$ -elim), and they are precisely the rules that are meaning-determining for the assertion sign.

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