

IS LOGIC PART OF NORMATIVE ETHICS?

PER MARTIN-LÖF

NOTE. This is a transcript of a lecture given by Per Martin-Löf in Paris on 15 May 2015, as part of the lecture series *Calcul, logique, linguistique*, one organizer of which is the research group SND (*Sciences, normes, décisions*). The transcript is based on a video recording and was prepared by Ansten Klev.

Thank you very much for this kind invitation, which I immediately accepted, not thinking a lot about what I could possibly present. I have very little to go on, essentially only these three letters SND—*sciences, normes, décision*. Since I have never dealt with decision theory—so the D is out—there remain *sciences* and *normes*. Well, *normes* gives association to practical philosophy, most of all to normative ethics, and this is an area which I have never studied. On the other hand, I do consider myself a scientist, and the title SND has a clear interdisciplinary ambition, since it is clear that one wants to bring together something that is normally not brought together, so I thought that maybe I am not in a worse position than anyone else: I mean, either you will have people who know something about norms from the point of view of practical philosophy, and then there would be difficulties with the sciences or with logic, or else you could have someone like myself, who knows something about the sciences and logic, but is not professional in the area of normative ethics. I was unable to think of someone who could truly combine these two titles, so I thought, well, I will, instead of complaining, take this as an opportunity to allow myself to speak about something that I would otherwise hesitate to speak about, but which does interest me very much, namely possible connections between logic and ethics.

I would like to start from the most common definition of logic as the study of reasoning, or theory of reasoning, if you prefer. Since a piece of reasoning is a chain of immediate inferences, which is to say that the notion of immediate inference is prior to the notion of reasoning, I think it is a slight improvement to say that logic is the study of inference rather than of reasoning. But, it is clear that there is a more serious defect in this definition. Namely, when you begin to speak about inference, you have to draw the inference bar with premisses above and the conclusion below, and the question is, What are they now, the premisses and the conclusion? You must have access to that concept before you can begin to speak about inference.

The standard term for the premisses and the conclusion in an inference is either the more old-fashioned term judgement, which was commonly used from Descartes up to Frege and Husserl, or else the currently dominating term assertion. I thought for a long time that the term assertion was introduced by Russell, precisely in

order to replace judgement, in the *Principles of Mathematics* from 1903, but I have come to realize that it is really Peirce who should be credited in the first place for the term assertion, because it appears in his writings well before 1903, during the last decades of the previous century, and he wrote a considerable amount about the concept of assertion and attempted definitions of the nature of an assertion. Since Peirce used the term, it seems to me that the most likely origin of it after all is Kant's *assertorisches Urteil*, because Peirce was very well read in German philosophy in general and in Kant in particular.

So, the improved formulation of what logic is is that logic is the study, or theory, of assertion and inference, or of judgement and inference. I have myself used the term judgement in most of my work, but in this lecture I am going to adopt the perspective of speech act philosophy rather than traditional epistemology, that is, concentrating on the communicative speech acts, of assertion in particular, rather than on the mental act, where there is only one speaker, namely where the person who draws the conclusion is the same as the one who has asserted the premisses, since in that monological situation, rather than dialogical situation, there are many things that you do not see. I want to stress the act of assertion as an external act of communication between agents, and then it seems to me more appropriate to use the term assertion rather than judgement, since judgement is so much tied to the mental deed, or act, of performing a speech act.

How is assertion defined? Well, I take it that we already have access to what is grammatically called a complete sentence, in speech act philosophy normally utterance. And the notion of a complete sentence, or utterance, is fixed by saying that a complete sentence, or utterance, is the smallest unit of speech by means of which you can say something, that is, perform a speech act—if you take an even smaller unit, then it may still make sense, but you do not perform a speech act by uttering it, you are just expressing this smaller unit of sense, without succeeding in performing a speech act.

So, let us accept this standard way of fixing the notion of a complete sentence, or utterance. I will also take it for granted that the outermost structure of a complete sentence is the force/content-structure. I will write that in this way,

$$\text{force}(\text{content})$$

to stress the fact that the force is unsaturated, it needs a content to operate on, whereas the content is by itself saturated. Force here is Frege's term, *Kraft*, and in retrospect one may say that it was not the most natural choice, at least if you compare with grammar and linguistics—mood would have been a better choice, since what this corresponds to most closely in ordinary natural languages is the phenomenon of mood. This is the reason why Hare changed the terminology here in a paper from 1970, and introduced the artificial term tropic instead of force, tropic deriving from *tropos*, latin *modus*, meaning, precisely, mood. But having said this, I will stick to the standard term force here.

The next question is, What is the force, What is the definition of force? The force is the kind of speech act that the complete utterance belongs to. The speech act may for instance be an assertion, or it may have some other force, like the force of a command, or a warning, or a conjecture, or a wish, or—there are endless possibilities here for various forces. The assertoric force is just one of all these possible forces, corresponding to what is linguistically called the declarative sentence. The other part, the content, is the object of the speech act—if I can allow myself to use the act/object-terminology—namely, that which is asserted if it is an assertion, or that which is warned for if it is a warning, or wished for if it is a wish, or conjectured if it is a conjecture. Another possibility is thus to use the term object for content, but since that is in conflict with the standard use of the term object when we speak of mathematical objects and logical objects and so on, I think it is better to have the term content here.

We can then properly define the notion of assertion by saying that an assertion is a complete sentence, or utterance, whose force is the assertoric force—declarative would be the linguistic terminology. One among the forces is the assertoric force, in which case we call the whole complete sentence an assertion, and it is common of course for the assertoric force to use Frege's assertion sign, \vdash .

I said that I want to adopt the viewpoint of speech act theory in this talk. That means that I wish to stress the communicative aspect, in particular of the speech act of assertion, and the asymmetry that comes about in that way. What I am thinking about is the following. We have the speaker and the hearer, and the speaker produces a sentence or utterance, and the hearer, on the other hand, receives the utterance, so he is in an opposite or reverse position—that is, it is one and the same sentence that gets communicated, but the hearer has a reverse relation to it as compared to the speaker.

$$\text{speaker} \longrightarrow \text{utterance/sentence} \longrightarrow \text{hearer}$$

The speaker says something, and that is the complete sentence, or utterance, which is taken up by the hearer. I am using arrows here to stress the asymmetric character of it, the total difference between the speaker and the hearer in the speech act situation.

I have said that an assertion is a complete sentence whose force is assertoric—that is the definition of assertion. Now the question is, How do we explain semantically this particular force that we have called the assertoric force? What is the meaning carried by this particular formal symbol \vdash ? Explaining the forces is precisely the topic of speech act theory, beginning with Austin, so one would expect that that is where to find the right definition. If we go back to Austin himself, he first made the distinction—a very big distinction—a division between constatives and performatives, taking the constatives to be expressed by declarative sentences, whereas the performatives were the other kind of speech act, his main example being—just like in the case of Reinach in 1913—the example of a promise. That

is a very good example because we all know what promises are and under what circumstances we can give promises and under what circumstances we cannot give promises, so anybody can profitably reflect upon the logic of promises.

As I said, at the time assertion was a constative rather than a performative. But at a particular moment in the course of his William James Lectures, which he gave in 1955, and which were posthumously published as *How to do Things with Words* in 1962—towards the end of those lectures he simply abandoned his own constative-terminology and came to realize that the assertoric force is really one of the performatives, in a sense the most basic of all the performatives. So, we forget about this constative-terminology, and we have the performatives, a very long list of such, and assertion is the first in this long list. He grouped all these different kinds of speech act, like assertion, promise, etc. in different groups, sometimes with a rather strange terminology. The promise he classified as a commissive, and the declarative, of which he gave affirmation and denial as examples, he called, for some reason, an expositive rather than a commissive, a terminology that has not survived. The reason is that when the next step was taken on this point, by Searle, who realized the great similarity between promise and assertion, assertion was classified as a commissive, just as Austin had classified promise.

The commissive character of assertion, that is, its similarity with the promise, was stressed by a philosopher, presumably a practical philosopher or a philosopher of law, Gary Watson, in a paper from 2004 called, precisely, *Asserting and promising*. Watson gave a long quotation from Peirce. That particular quotation was from circa 1908, but the first places where Peirce wrote the same thing are from 1902–1903. In this long quotation what Peirce stressed concerning the assertion—and assertion was the term that he used—was that when you make an assertion you take on a responsibility: you are responsible for what you are saying, because others are going to trust you. The responsibility is with you, which is why others have the right to trust you. So, if something goes wrong in this communicative act of assertion, then it is clearly stipulated where the responsibility is, namely 100 percent with the speaker. If what the speaker said, and what others therefore relied upon, should turn out not to agree with reality, not to be true, then it is the speaker who is to be blamed. Of course, there are more complicated circumstances where you may say, *How could you be so stupid as to rely on that person, you ought to have known that he is completely unreliable?*—but those more complicated situations are certainly parasitic on the normal situation in which the speaker is responsible and hence to be trusted.

Peirce made this analysis plausible by making a comparison with a more complicated kind of speech act, namely a testimony under oath in court, or an affidavit in the juridical sense. That is of course a different kind of speech act, but the comparison is very illuminating. If you want people to trust what you are saying more than under ordinary circumstances—this is the case both with a testimony under oath in court and with an affidavit—then, in the first case, it actually becomes criminal

now not to tell the truth. It is not criminal under ordinary circumstances—it is part of the moral law that we should speak the truth, but it is not criminal not to do so—but under these very special circumstances it even becomes criminal. Similarly in the case of an affidavit: if you want a declaration of yours to be trusted more than normally, you can go to a notary public and state it formally in written form, and he will notify it, and you accept some kind of punishment—monetary punishment or something—in case your declaration should turn out not to be reliable. Peirce was of course aware that these are different, more complicated, kinds of speech acts, but he made the comparisons in order to bring out this element of responsibility, that even under normal circumstances we are taking on a responsibility when we are making an assertion.

This analysis I think is quite convincing, and I will take over it in this talk. But, as I have already touched upon, there is another half of it also—that is, besides the responsibility—namely, the assertion as it looks from the opposite point of view, namely the point of view of the hearer, the one who receives the assertion, rather than the speaker. I do not know, as I have not been able to study Peirce so thoroughly, to what extent Peirce actually had this dual aspect, but that is a question for the Peirce experts, to find out whether Peirce himself put equal weight on the responsibility and the dual aspect of it, namely the trust of the hearer. So, I do not dare to say anything about Peirce at this point, but will content myself with the way I look at it.

I would simply say that the speaker vouches for, or guarantees, or in Peirce's terminology, takes on the responsibility for the content of the assertion. This incurs an obligation on his part, so the speaker is under an obligation, whereas the hearer has the right to trust, or to believe, the content of the speaker's assertion.

So, now we have got the full picture here. Not only is there this vouching, or guaranteeing, or taking responsibility on the part of the speaker: there is the opposite side of it also, namely the trust, or the belief, on the part of the hearer. This means, because of the dialogical perspective that I have brought in, that the notions of obligation and permission, or duty and right, immediately come in, notions which we are not used to in standard logic—of course, they are studied in deontic logic, but not in the usual logic in which we have all been brought up. They come in because—now I am using the duality between obligation and permission, or duty and right—the speaker is under an obligation, he is undertaking a certain duty when he makes the assertion, whereas the hearer has the right to trust that he can fulfil his obligation. So the speaker has a duty, whereas the hearer has a right, and right I take to be the same as permission. So, you see that from this dialogical perspective these deontic notions of obligation and permission come in, and they are of course central notions of normative ethics. So, already at this stage there is some indication that the answer to the question which is the title of my talk could go in the affirmative direction.

I want to give a reference to Plato here, because there is a very beautiful formulation of the dialogical versus the monological perspective in two places in Plato's dialogues, one is in the *Theaetetus*, 189e–190a, and the other is in the *Sophist*, 263e. It is the place where he speaks of thought—what goes in our mind—as the inner conversation of the soul with itself, and the word translated as conversation is *dialogos*, so it is the inner dialogue of the soul with itself. In the second of these places, in the *Sophist*, Plato says quite explicitly that thinking and speech, or reasoning, *dianoia* and *logos*, are the same, it is just that thinking is the internalization, or the mental counterpart, of the dialogue, so thinking is the inner, or mental, dialogue of the soul with itself. If one takes the view that logic is primarily about thought, then of course this dialogical perspective is in a sense lost, because when you think, you are both the active part and the passive part, so when you take a step in a chain of reasoning, and you draw a conclusion, you give forth the conclusion, but you do not give it forth to someone else, you take it immediately to yourself, and hence, you tend to overlook this dialogical perspective if you concentrate on thought rather than on the dialogical interaction.

On several occasions here I have used various ways of expressing what is to be understood as one and the same thing, various ways of expressing it in natural language. One place where that was very clear was a moment ago when I said that a speaker vouches for, or guarantees, or takes responsibility for something, and I could add one more: the speaker assures the hearer of something, and the hearer by being assured comes to trust him. Here we have four different ways of expressing the same thing. My attempt here is to bring out one logical structure, but it is very difficult to do that unless you start from natural language, and in natural language these different ways of expressing the logical structure are not completely synonymous—if they were completely synonymous, all would presumably have died out except one, which is what normally happens: language does not tolerate complete synonymy. So, there are indeed differences in natural language between the various ways of expressing this logical structure, but from a logical point of view there is one structure, which means that if one were to formalize this completely, then there would be only one formal symbol here.

The English language—I have not checked about other languages, but the English language has a particularly good way of making the distinction between the speaker and the one who is the receiver of the action, namely in the endings -er, or -or if you prefer the Latin form, and -ee on the other hand. With the verb guarantee, you have the guarantor, who is the speaker, and the guarantee, who is the one who receives the guarantee, who is the hearer. If you look at it from the opposite point of view, from the hearer's point of view instead, then you have the word trust, which I have already used, and then the hearer is the truster, whereas the speaker receives the trust from the hearer, so the speaker is the trustee. So, we get a change here in who is the active part and who is the passive part: when

you change from guarantee to trust, you change that relation and get the converse relation instead.

Now I want to turn over to inference and look at inference also from this dialogical perspective, where it is particularly natural. An inference is normally symbolized by something like this:

$$\frac{J_1 \dots J_n}{J}$$

In an inference both the premisses and conclusion are complete assertions, where by complete I mean that they have both force and content, so both the premisses and the conclusion are asserted in an inference. We all know that the premisses are very different from the conclusion because they occur negatively, and the conclusion occurs positively somehow in an inference. What the dialogical perspective brings in here is that you now naturally look upon an inference as—you are the one who is going to draw the conclusion, to make the conclusion judgement J , and you are receiving the premisses J_1, \dots, J_n from those who have made them. You receive the premisses, which means that with respect to the premisses you are in the hearer situation, whereas it is you who give forth the conclusion J . In terms of giving and taking, an excellent word couple, you take the premisses from others who have produced them, and you give away, take responsibility for, the conclusion.

With respect to the validity of the inference you have to ask yourself, Given that others have taken responsibility for the premisses, can I take responsibility for the conclusion? The question of the validity of an inference, or of a rule of inference, is the question of whether one can take responsibility for the conclusion given that others have already taken responsibility for the premisses.

Göran Sundholm has, in a paper from 1997 and in other papers from soon afterwards, introduced the term epistemic assumption for the premisses J_1, \dots, J_n , because when you contemplate the validity of an inference, you assume that others have already taken responsibility for the premisses, and ask yourself whether you can take responsibility for the conclusion. So, there is an assumption there: you assume that others have taken responsibility for the premisses. It is unavoidable to use the term assumption there: we have no other good term. On the other hand, it is clear that assumption there does not mean what it ordinarily means in natural deduction, for instance. The assumptions in natural deduction are not epistemic assumptions, but rather, if you want, ontic assumptions, where you assume that certain propositions are true, not that certain assertions or judgements have been made.

Now, there is a question of precisely what these epistemic assumptions are. And there are two choices here. I have myself adopted this term, and I have often made a formulation like the following: assuming that J_1, \dots, J_n have already been established—there I use the word establish—can I conclude J , can I take responsibility for J ? And that is just a variant of saying, Assuming that J_1, \dots, J_n are already known, can I also judge or assert, that is, get to know, the conclusion J ? It has struck me while preparing this talk that it is necessary to distinguish between

knowledge in a weaker sense and knowledge in a stronger sense. I will use the expressions knowledge in the unqualified sense and knowledge in the qualified sense. That is simply the difference between whether these judgements have been made or whether they have been demonstrated, or justified, as in the justified true belief definition of knowledge.

knowledge in the unqualified sense = assertion made
 knowledge in the qualified sense = assertion demonstrated, justified

The question is now, When we are considering an inference with respect to its validity, are we assuming that J_1, \dots, J_n have been demonstrated, or are we just assuming that they have been made? When I look back on myself, it is clear that I have been thinking of them as being demonstrated, or justified, which means that J_1, \dots, J_n are pieces of knowledge in the qualified sense. And I know very well that I have thought about them in this way, because I have been plagued, since six years ago in connection with a meeting organized by Maria van der Schaar, called Days of Judgement, in Leiden, that was September 2009, six years ago—when preparing that lecture I became acutely aware of a circularity problem which I had not seen before, and the circularity problem is this: if you define a demonstration to be a chain of immediate inferences, then you are defining demonstration in terms of inference. We are considering an immediate inference, and we are trying to give a proper explanation of that. If that explanation begins by saying, Assume that J_1, \dots, J_n have been demonstrated, then you are clearly in trouble, because you are about to explain demonstration in terms of the notion of immediate inference, hence when you are giving an account of the notion of immediate inference, the notion of demonstration is not yet at your disposal. So, to say, Assume that J_1, \dots, J_n have already been demonstrated makes you accusable of trying to explain things in a circle.

The solution to this circularity problem, it seems to me now, comes naturally out of this dialogical analysis—once you have seen it, you can go to the normal logical situation and explain things properly there also, but at least I have seen it via the dialogical analysis. The solution is that the premisses here should not be assumed to be known in the qualified sense, that is, to be demonstrated, but we should simply assume that they have been asserted, which is to say that others have taken responsibility for them, and then the question for me is whether I can take responsibility for the conclusion. So, the assumption is merely that they have been asserted, not that they have been demonstrated. That seems to me to be the appropriate definition of epistemic assumption in Sundholm's sense.

Now I want to go over to another topic, of a more historical nature. It turns out that when we look at an assertion as the taking on, or the undertaking, of an obligation, then the principle which in practical philosophy is called the ought-implies-can principle becomes of paramount importance. The ought-implies-can principle, at least in the formulation that I myself find the simplest, is the principle that an obligation must be possible to fulfil.

It was Moore who, as far as I know, introduced the term ought-implies-can principle in a paper from 1922, *The nature of moral philosophy*—it may be that Moore had it earlier than that, but at least it occurs in that paper—and Moore in turn referred to Kant for this principle. The usual references are two, one to the *Kritik der reinen Vernunft*, A548/B576, the other to *Die Religion innerhalb der Grenzen der bloßen Vernunft*. A historical observation is that there is at least one more place, which is in *Zum ewigen Frieden* Anhang I, where Kant again refers to this principle, and he does so in the same matter-of-course way as he had done in the two earlier places—so it is clear that he took the ought-implies-can principle as something that everybody knew and agreed with. The difference of this third place from the earlier ones is that after he has written about it in German in one sentence he actually adds a parenthesis, as he often does, with a Latin, scholastic formulation: *ultra posse nemo obligatur*, which means that no-one is obligated beyond the possible, no-one is obligated to do what is beyond what he can do. So it is a variant of the original formulation.

This is as far back as one normally goes concerning this principle, but since Kant put it in this way, it is quite clear that he made no claim to originality. In fact, if you investigate this principle, not as something belonging to practical philosophy, but rather as a juridical principle, belonging, if to philosophy, then to the philosophy of law, then it turns out that it goes back to Roman law. It is included in the *Corpus Juris Civilis*, which is Justinian's collection of Roman Law, from the same year as when the Academy was closed at Athens, so 529. It consists of three parts, and one part is called the *Digesta*, or using the Greek word, *Pandectae*. The *Digesta* part is a kind of compendium, simply a long list of principles of law that had been used by earlier Roman jurists, and it was enforced in 533. The entry of the *Digesta* having the number Dig.50.17.185 says

Celsus libro octavo digestorum.

Impossibilium nulla obligatio est.

So, it says that in the eighth book of the *digesta*, this kind of compendium, by a jurist called Celsus—and there were two of them, both father and son, and here it is Celsus the younger, who lived around AD 100—in the eighth book of the *digesta* of this Celsus you find the principle *impossibilium nulla obligatio est*, that is, there is no obligation towards impossible things, there is no obligation to do something impossible. That is exactly the negative formulation of what I formulated positively—because, as a constructivist, I think it is better with positive formulations—that an obligation must be possible to fulfil: when you negate that you get that there cannot be any obligation to do something impossible.

This, to my mind, has the character of an axiom, so really I could stay silent and just ask you to think it through yourself, I mean, convince yourself of it. But, if someone would continue to ask me for some reason for it, then I would say, well, if we were allowed to take on an obligation which is impossible to fulfil, then whoever wants to do so has the right to challenge me and ask me to fulfil that obligation,

but if the obligation cannot be fulfilled, then I am sinning by omission, or erring by omission, if you like the religious term, I am not doing what I have promised to do. Moral obligations cannot be so strict that you cannot fulfil them, for otherwise you would be subjected to an accusation of sin by omission with no escape: whatever you do, you are sinning by not doing what you have taken on a duty to do. It seems like a requirement on any system of rules, ethical rules in general, that it must not be so strict. I mean, the system of rules must not impose so many obligations that even things which cannot be done become obligations. It is a kind of ethical consistency condition, a consistency condition for a system of ethical rules.

The reason I have spent so much time on the ought-implies-can principle is that when you look upon an assertion as an obligation rather than in the usual way, then the argument that you normally give for consistency, namely why the absurd proposition, \perp , cannot rightly be held true—that argument, which I have tended to call an absolute consistency argument, will have to undergo a change. The usual argument why you cannot derive the judgement, or assertion,

$$\perp \text{ true}$$

by means of a system of valid inference rules is the following. You introduce the notion of validity and say that an assertion is valid precisely if the obligation that it expresses can be fulfilled. A valid rule is then a rule which is validity-preserving. You then give the argument why $\perp \text{ true}$ is not valid, and constructively that is the well known argument that, supposing someone challenges this assertion, then you have to come up with a proof $a : \text{proof}(\perp)$, which may not necessarily be canonical. If that is in turn challenged, then you will have to come up with a canonical proof, $c : \text{proof}(\perp)$, such that $a = c : \text{proof}(\perp)$, and that is impossible because of the definition of absurdity, \perp , since absurdity has no canonical proof. So, this is invalid, which is to say that the obligation is impossible to fulfil, and hence it cannot be derived by means of a valid system of rules. That is the standard argument.

If we look at an assertion as an obligation, then an obligation which is derived by means of a system of valid rules is a valid obligation, that is, it is an obligation which you have the right to undertake. So, the question is, Why do you not have the right to undertake the obligation $\perp \text{ true}$? Well, it is because this obligation cannot be fulfilled, and now we need to invoke the ought-implies-can principle: if $\perp \text{ true}$ is a valid obligation, it must be possible to fulfil, but it is not fulfillable, hence it is not a valid obligation. The previous argument did not use the ought-implies-can principle, because we did not analyze the notion of assertion as an obligation. But if we do analyze it as an obligation, then we need the ought-implies-can principle in this argument.

Now it is high time that I finish by giving a short answer to the question which is the title of my talk. I would like to do that by first looking at the following fourfold division:

	syntax	semantics
force		
content		

We have the dichotomy between force and content on the one hand, and on the other hand between syntax and semantics, and I am using the terms in the standard, Carnapian way. So, we have syntax of force, which in the case of natural language has to do with the mood indicator. We also have the semantics of force, and that is what I have spent so much time on here. Moreover we have the syntax and semantics in the usual sense, of the content. Now the question is, What is the best term for the first line and for the second line, respectively? I will use pragmatics for the first line, that is, for the theory of force, and ontology for the theory of content—ontology because the content is the objective part of the assertion, whereas the force is what has to do with the act, I mean the force is the type of speech act, so it is natural to think of it as the subjective or pragmatic part.

pragmatics = theory of force

ontology = theory of content

Now, pragmatics is part of practical philosophy, whereas ontology is clearly part of theoretical philosophy. The theory of force belongs to normative ethics, as you have seen amply illustrated in my talk, namely that in this force analysis we have to bring in concepts that we normally only hear about in normative ethics. There is moreover a clear order between pragmatics and ontology in the sense that pragmatics is conceptually prior to ontology, and that is because we can explain the various forces, in particular the assertoric force, without going into the inner structure of the content—the content can be left completely schematic when we explain the forces—but not the other way around. This is because the meaning-determining rules, that is, the rules which determine the content, are rules of inference and therefore rules in which both the premisses and the conclusion carry assertoric force. So, the force has to come before you can explain the content.

For logic this means that there are two possibilities. Either we take logic to consist of both the pragmatological part and the ontological part, or even more boldly one could say,

logic = pragmatics + ontology

The other possibility is that we say to ourselves that logic belongs to theoretical philosophy and not to practical philosophy, so we should give up the theory of force and count that to practical philosophy rather and be less ambitious and say that logic deals only with the objective, or ontological, part,

logic = ontology

Of these two choices, the first, and the wider, understanding of what logic is, namely both the theory of force and the theory of content, makes logic straddle the division between theoretical and practical philosophy, whereas the second choice, the narrower choice, makes it entirely part of theoretical philosophy. This objective

view of logic is no doubt the more common understanding of logic presently, but it is in conflict with the traditional definition of logic as the study of assertion and inference, because the study of assertion is mainly about the assertoric force, and that belongs to pragmatics, and similarly inference does not belong to the objective, or ontological, part, for inference is something that we do, it is about our actions. This means that the time-honoured definition of logic is the wider one, which straddles the division between theoretical and practical philosophy.

If we want to adopt the more narrow understanding of logic, the ontological understanding of logic, then we have to change this time-honoured definition of logic, in which case one would say rather that logic is about propositions, truth, and consequence, possibly logical consequence. Logic then no longer has anything in common with normative ethics, but that is achieved at the price that logic no longer stands on its own feet, for logic cannot avoid having to use the forces, at least the assertoric force. If one considers that the analysis of the forces does not belong to logic proper, that means that logic has to rely on another area, and other people who do that for them, who take care of that, and those people are precisely those dealing with normative ethics. For myself, I much prefer logic to stand on its own feet.