Structure and Function of Argumentations - An Epistemological Approach to Determining Criteria for the Validity and Adequacy of Argumentations

Christoph Lumer

1. The need of validity criteria for argumentations

Since the beginning one of the most important motives for the development of a theory of argumentation was the realization, that the criteria of deductive logic are too restricted or even inadequate for assessing the validity and the practical value of argumentations as we find them in scientific texts or in everyday life. And this realization remains valid as well if we add to the criteria of deductive logic rules of interpretation which enable us to enlarge enthymematic argumentations to logically complete argumentations. The main reaction of those theoreticians who took the idea of the insufficiency of logic seriously was, at least, to soften up the validity criteria of deductive logic for the purposes of describing, understanding and assessing informal argumentations or to give up completely these criteria and the idea of the validity of argumentations. Hamblin, e.g., does soften up the deductive validity criteria for being able to comprise all sorts of argumentations (Hamblin 1970, 232-245). Toulmin furnishes a general scheme for argumentations; but this scheme doesn't comprise criteria for their validity (Toulmin 1975, 89-95; Toulmin/Rieke/Janik 1979, 78). And Perelman and Olbrechts-Tyteca even give up and criticize the idea of validity altogether (Perelman/Olbrechts-Tyteca 1958, 4; 36-39; 61).

The trend of neglecting validity criteria is very unsatisfactory, especially for the philosopher - perhaps this is the reason why the theory of argumentation has found so little resonance in philosophy. That trend is unsatisfactory because one aim of argumentation is the acquisition of *knowledge* - and not only of beliefs -; and the argumentative acquisition of knowledge is bound to validity criteria which decide if the argumentation has proven what it should prove. If the aim of argumentations was only to induce certain beliefs to the addressees argumentations wouldn't create much philosophical problems because it is an *empiric* question whether a certain type of speech is efficient in inducing the desired belief. But the perspective of a philosophical theory of argumentation is less the perspective of the *arguer* who tries to induce a certain belief to the addressee (this is rather the perspective of a rhetoric theory of argumentation). On the contrary, the perspective of a philosophical rational theory of argumentation is more the perspective of the *critical addressee* who tries to decide and assess whether an argumentation has furnished enough arguments in favour of the thesis, enough for rationally accepting the thesis. The validity criteria to be established by a philosophical theory of argumentation are exactly the criteria for this assessment. And it is in the nature of things that such criteria cannot be obtained empirically by finding out whether a certain type of speech would convince some addressees.

2. A new paradigm in the theory of argumentation

The just mentioned ideas are the great ideals of a philosophical theory of argumentation. But the present state of research is that up so far we haven't had any theory which would furnish such enriched validity criteria for argumentations, or, what is more, we haven't even had any paradigm how to establish and substantiate such criteria. This gap is partly due to the difficult *methodological* problems of a corresponding theory of argumentations.[1] However, I think, that in my book "Praktische Argumentationstheorie" (Lumer 1990a) I have developed a fruitful general paradigm in the theory of argumentation and criteria for the validity and adequacy of several specific types of argumentation: for deductive argumentations and for four types of non-deductive argumentations. By analyzing various extended examples I have shown that these criteria are sufficiently strong and precise for assessing the validity and acceptability of argumentations as we find them e.g. in scientific texts. The paradigm is an instrumentalistic and epistemological one: argumentations are instruments with the function to guide the process of acquiring knowledge. Because of these practical function and justification of the developed criteria, I have called the theory "*practical theory of argumentation*". In this paper I want to present the approach and some example for validity criteria of the practical theory of argumentation.

The above mentioned insufficiency of deductive logic really consists of four deficiencies: 1. There are *other types of "inferences"*, passages from arguments to a thesis, than deductive ones: several types of inductive inferences and passages that we wouldn't even call "inductive", like those of practical reasoning and reasoning from circumstantial evidence. 2. These types of "inferences" and also the deductive one need a philosophical *foundation* which can't be given by the deductive logic itself. 3. We need pragmatical - in a large sense - rules and *criteria for the* valid and adequate *use of such "inferences" in ideal forms of argumentations*. 4. We need rules of interpretation which constitute the bridge between these ideal argumentations and the argumentations as we find them in everyday life and also in scientific texts. - To remove the second deficiency (foundations for non-deductive "inferences") isn't a task of the theory of argumentation but of epistemology; nevertheless the theory of argumentation presupposes a solution of that problem. The concern of this paper, above all, is to remove the third deficiency (rules for ideal argumentations) and in part the first deficiency (non-deductive "inferences"); whereas my book "Praktische Argumentationstheorie" (Lumer 1990a) also deals with the other deficiencies.

"*Argumentation*" here means an ordered sequence of several judgments ("judgment" here is understood as a proposition combined with the assertive mood [2]) and an indicator of argumentation; one of the judgments is the thesis of the argumentation; the other judgments are the *arguments* for the thesis; the indicator of argumentation (e.g. 'therefore', 'for') indicates which judgment is the thesis, which judgments are the arguments and that the whole is an argumentation.[3]

3. Argumentations as instruments

Argumentations are instruments which fulfill a certain function. For specifying this function I have to introduce some notions of an instrumentalistic terminology. *Instruments* are systems with a certain structure. If this structure is provided with a certain *input* it will produce a certain *output*. The relation between input and output of the system is named the "*function*" of that system. Instruments are systems designed to produce a specific output in a controlled manner by providing the structure with a certain input; this specific output is called the "*standard-output*" of that instrument, and the relating input is called "*standard-input*" and their relation: "*standard-function*" of that instrument. E.g. the standard-output of a drill are holes of a certain size in solid material; the standard-input consists of: supplying the drill with a bit, pressure against the solid material and electric current; and the standard-function is: to drill holes. Another function of a drill - however not a

standard-function - is to whip cream; the input, in this case, is to supply the drill with a whisk, to put this into the cream and to supply the machine with electric current; the output is whipped cream or butter. An instrument which fulfils its standard-function is generally called "*functioning*"; whereas the special name for a functioning argumentation, hence for an argumentation which fulfils its standard-function, is "*(argumentatively) valid*" - this is not the same as logically valid in the sense of "valid inference". An instrument can be functioning and an argumentation can be valid, though actually they have never been and will never be used to fulfil their standard-function. E.g. a functioning drill may be destroyed by a fire before ever having been used to drill holes; nevertheless it has been a functioning dril until this tragic event. In order to decide whether an instrument is functioning or respectively valid the only important thing is that in case of being supplied with the standard-input it will produce the standard-output. One can use a good instrument in the wrong situation or for the wrong purpose, e.g. a drill supplied with a bit made for drilling into wood to drill into concrete or an argumentation for convincing an addressee who doesn't accept the premisses. A functioning instrument, which would be the right instrument for a certain pupose in a certain situation, is *adequate* in that situation for that certain purpose. A functioning instrument will be especially adequate if it is provided with the standard-input for producing the standard-output. The conditions for the adequateness of an instrument, specially for an argumentation, are the instructions for its use.

4. The function of argumentations

The advantage of an instrumentalistic approach in the theory of argumentation is that by determining the standard-function of argumentations we get a superior criterion for assessing the usefulness of proposed criteria for the validity of argumentations: Do argumentations which fulfil these validity criteria realize the standard-function of argumentations?

What is the standard-function of argumentations? The *standard-input of argumentations* is that the argumentation is presented to a linguistically proficient, open-minded, attentive, discriminating addressee who has a certain knowledge, but doesn't have sufficiently founded knowledge of the thesis. The standard-output is *not* that the addressee believes in the thesis - this would be the standard-output of rhetoric. The *standard-output of argumentations* is that the addressee *knows* that the thesis is *acceptable*, which means: that it is true, probable or verisimil. The *standard-function of argumentations* is to convince rationally or to show the acceptability of the thesis.

What does it mean when I say that someone knows something? *Knowledge* is the justified belief that a certain thesis is acceptable. And such a belief will be justified if it is acquired in an epistemologically qualified way and if the subject remembers correctly and at least approximately the acquisition of the belief. So knowledge consists of two parts: the belief in the thesis and the correct remembrance of the epistemologically qualified acquisition of the belief; the remembrance is the *reason* for the belief. To put the matter in a nutshell, the advantages of such a knowledge are these: the epistemologically qualified way of acquiring the belief will guarantee at least the acceptability if not the truth of the belief; and the remembrance will leave the reasons open to criticism and the beliefs open to changes in case of acquiring better resons now for a belief contrary to the original one.[4]

The epistemologically qualified way of acquiring beliefs is based on epistemological principles. *Epistemological principles* are general principles which formulate sufficient conditions for the truth or acceptability of propositions. The *primary epistemological principles* are the truth-definitions, the truth-definitions for elementary propositions and the truth-definitions for complex propositions, e.g. the definition: a proposition '*p* and *q*' will be true, if and only if '*p*' is true and '*q*' is true. The *secondary epistemological principles* are each time sets of general and sufficient truth- or acceptability-conditions which are developed from the truth-definitions. E.g. the *deductive epistemological principle* is: a proposition will be true if it is logically implied by true propositions. The *genesis of knowledge principle* is: a proposition will be true if it is verified correctly. The *interpretative epistemological principle* is: a proposition will be true if it is part of the unique possible explanation of a known fact. Such epistemological principles belong to the tacit knowledge of linguistically proficient and experienced people.

Now, the *epistemologically qualified way of acquiring a belief* consists in using such an epistemological principle as a check list for finding out whether all the truth or acceptability conditions of that list are fulfilled for the thesis in question, thereby coming to a positive result. E.g. using the deductive epistemological principle one can know the truth of a certain proposition '*p*' by checking whether the truth conditions given by this principle are fulfilled, that is, by checking, 1. if several propositions, e.g. '*q*' and '*r*', are true and 2. if '*q*' and '*r*' together logically imply '*p*'; if the results of both checkings are positive, one has deductively recognized the truth of '*p*'.

There are epistemological principles the correct use of which always leads to a true belief - e.g. the deductive principle. Such principles are called "*conclusive*". But there are also principles which are only *efficient* in the sense that their correct use only leads to acceptable beliefs; these are probably true or verisimil beliefs. Inductive epistemological principles are efficient but not conclusive. Finally there are epistemological principles which aren't even efficient and of which only someone believes that they are efficient. Such an inefficient principle e.g. is the principle of revelation according to which everthing is true what has been revealed in the Bible. It is a task of epistemology to examine and to justify, if and to what degree an epistemological principle is efficient.

For every true proposition there are millions of sets of facts which comply with the truth conditions of that proposition and which, therefore, in principle could be the basis for knowing the acceptability of that proposition; e.g. every true proposition is logically implied by an infinite number of other true propositions. But the major part of these sufficient sets of facts isn't accessible to us; so if we don't even know whether '*p*' is true, we normally will not know then at all that '*p* and *q*', which logically implies '*p*', is true. And the epistemological principles are only *general criteria* for the truth or acceptability of propositions, which enable us to examine if a *given* set of facts is sufficient for guaranteeing the truth of the thesis. The epistemological principles have no heuristic function; they don't show us the way to such sets of facts which are accessible to us and which could serve as the basis for knowing the acceptability of a certain proposition. To find such sets of facts remains the main work of the process of acquiring knowledge. As we will later see one main task of argumentations is to save other persons this work. Argumentations are used to transfer knowledge as such interpersonally, i.e. as knowledge and not only as belief.

5. The way of functioning of argumentations - the example of deductive argumentations
After having explained the standard-output of argumentations I have to describe the *way of functioning of argumentations*, i.e. *how* valid and adequate argumentations generate this output. For this exposition I use as an example the deductive argumentations. Deductive argumentations are based upon the deductive epistemological principle - that a proposition will be true if it is logically implied by true propositions - and they guide a deductive process of cognition. The *structure of ideal deductive argumentations* is characterized by the following validity criteria:
DA0: Domain of arguments: Like all argumentations deductive argumentations consist of judgments (combinations of a proposition and the assertive mood) and an indicator of argumentation; one judgment is the thesis, the others are the arguments.
DA1: Indicator condition: The indicator of argumentation shows which of the judgments is the thesis, which are the arguments, that the whole is an argumentation and, if possible, that it is a deductive argumentation.
DA2: Guarantee of truth: The propositions of the arguments of a complete and valid deductive argumentation are true and they deductively imply the proposition of the thesis.
DA3: Adequacy in principle: Finally there must at least be one person sometime who knows that the arguments are acceptable, but who doesn't know this about the thesis.

These conditions determine whether something is a valid and ideal deductive argumentation. The reason for the last condition, adequacy in principle, is that an instrument is an instrument in the narrow sense only if there are real situations in which it would fulfil its function. A "drill" which needs a type of fuel that doesn't exist in the whole universe is not a drill; an argumentation, in the broad sense, for which there is no situation of application is no instrument and therefore no argumentation in the narrow sense, no valid argumentation. With the help of this condition e.g. circular argumentations, like '*p.*, therefore *p.*', are excluded as (argumentatively) *in*valid, whereas the corresponding *inference* surely is (logically) valid.
DA4: Apart from the conditions DA0-DA3 there is a rule of liberalization which permits to drop certain arguments, with the consequence, that also certain incomplete, non-ideal argumentations are (argumentatively) valid. But for explaining the way of functioning of argumentations these liberalizations aren't relevant.
DA5: Adequacy in concrete situations: A valid deductive argumentation will be adequate for rationally convincing an addressee of the thesis if the following conditions are fulfilled: 1. The addressee is linguistically proficient, open-minded, attentive, and discriminating; 2. he knows that the arguments are acceptable but doesn't know this about the thesis; 3. the relation of implication between the propositions of the arguments and the proposition of the thesis is sufficiently direct so that it can easily be grasped by the addressee; if necessary, for fulfulling this conditon the argumentation will have to be devided in a few subargumentations; 4. the set of arguments contains only arguments which are necessary as premisses for the deduction of the thesis.[5]

How can a structure - defined by these conditions and adequately used - produce the standard-output of argumentations? How can it produce the knowledge that the thesis is acceptable? The comprehensive answer is: it guides the addressee in his process of knowing the acceptability of the thesis. The exact way is this: The indicator of argumentation draws the addressee's attention to the fact, that he,

guided by the arguments, can know the acceptability of the thesis. Perhaps he accepts this offer and begins to examine the thesis using the material presented. The systematic first step of this examination is to recognize the type of argumentation, which is the epistemological principle, upon which the argumentation is based and which has to be used in the following process of knowing. In a very clear argumentation the underlying epistemological principle is already specified by the indicator of argumentation (see DA1).[6] But this is a rare case and generally the addressee must recognize the underlying epistemological principle with the help of other indications. A specific of complete deductive argumentations e.g. is that normally all the notions of the thesis are already contained in the arguments. On the other hand a specific of ideal practical argumentations is that their thesis is a value judgment and that the arguments consist of pairs of descriptions of the effects of the value object and value judgments about these effects. Genesis of knowledge argumentations are characterized by the fact that their arguments refer to processes of cognition etc. By using these indications the addressee, having recognized the underlying epistemological principle of the argumentation, has found the fitting check list to be used in the second step. In our example of deductive argumentations the addressees have to recognize that the argumentation is based upon the deductive epistemological principle, that a proposition will be true if it is logically implied by true propositions. - The second step of the process of cognition is to check whether the two conditions of this principle are fulfilled. These conditions are: 1. that the propositions of the arguments are true and 2. that they imply the thesis. 1. When the arguments are presented the addressee can immediately recognize by simple remembrance their acceptability because - according to the adequacy condition DA5.2 - he already knows that they are acceptable. 2. Beyond this the addressee can detect ad hoc that the propositions of the arguments logically imply the proposition of the thesis. He can detect this because (according to the adequacy condition DA5.3) the relation of implication is sufficiently simple and easily to be grasped and because (according to the adequacy condition DA5.1) the addressee is linguistically proficient, which includes that he is also linguistically proficient as far as the logical operators are concerned; and this again includes that he is able to recognize simple logical implications. - Having executed these two recognitions as parts of his checking the conditions of the deductive epistemological principle the addressee immediately after having finished his checking, also recognizes that all the conditions of this principle are fulfilled. And in a last simple step he can infer from the results of the proceeding steps that the thesis is acceptable.

So the general way of the functioning of valid and adequate argumentations is this: With the help of their arguments the argumentations specify those facts from which the addressee can know the acceptability of the thesis, using the underlying epistemological principle of that argumentation as a check list. The arguments of a *valid* argumentation *truthfully* say that certain sufficient conditions for the acceptability of the thesis are fulfilled. And the arguments of an *adequate* argumentation are chosen in such a way that the addressee can immediately ascertain the fulfilling of those conditions. So valid and adequate argumentations present all the material necessary for knowing the acceptability of their theses thereby guiding the addressee in his process of knowing. Although in most cases these argumentations aren't informative in the *primary* sense that their arguments report news to the addressee, they are informative in a *secondary* sense, i.e. they tell the addressee that by using *these* arguments he can know the acceptability of the thesis. It is exactly this secondary information which saves the addressee the above

mentioned work of searching such sets of facts enabling him to know the acceptability of the thesis. And this secondary information is the key for transfering knowledge already acquired by one person to another person.

To convince rationally, to produce the knowledge that the thesis is acceptable, is the standard-function of argumentations. Having explained how argumentations do realize this function I now can expound some other functions which are specific to argumentations. A second important function is to disclose one's reasons for a belief by exposing them to intersubjective criticism; if the addressee accepts the argumentation as valid, this can be a reason for the arguer to be more sure not to have made a mistake in the process of knowing the acceptability of the thesis. A third function is to reconsider one's knowledge. This function is very similar to the second one; the difference is that the addressee is now the arguer himself who properly lists his reasons for rechecking them, and thereby getting more sure not to have made a mistake during the process of knowing. - Taken all these particular functions together the general specific function of argumentations can be called "to show the acceptability of the thesis".

6. General validity criteria - the definition of "argumentation"

What I have said so far is sufficient for understanding the general definition of "argumentation":

x is a valid argumentation, i.e. an argumentation in the narrow sense :=

0. Domain of arguments: x is a triple $\langle p,i,q\rangle$, consisting of (I) a set p of judgments $a_1, a_2, ..., a_n$, (II) an indicator i of argumentation, and (III) a judgment q; if x is a valid argumentation $a_1, a_2, ..., a_n$ (the elements of p) will be called the "arguments for q" and q will be called "the thesis of x".

1. Indicator of argumentation: i indicates that x is an argumentation, that $a_1, a_2, ..., a_n$ are the arguments and that q is the thesis of x.

2. Validity: There is an efficient epistemological principle e and a criterion c for the acceptability which fulfil the following conditions: c is a specification of e for the proposition of q (example: if e is the *deductive* epistemological principle c can be: the proposition of q will be true if it is logically implied by the propositions $a_1', a_2', ..., a_m'$ and if $a_1', a_2', ..., a_m'$ are true); all the conditions of c are fulfilled; and $a_1, a_2, ..., a_n$ are judgments which tell about at least of a part of these conditions of c that they are fulfilled.

3. Adequatcy in principle: x fulfils the standard-function of argumentations; i.e.: there is a person s and a moment t for which is valid:

3.1. s at the moment t is lingustically proficient, open-minded, discriminating and doesn't know a sufficiently strong justification for q; and

3.2. if at the moment t x is presented to s and s closely follows this presentation this will make s know that the proposition of q is acceptable; this process of cognition runs as follows: s, using e and c, will recheck - among others - those criteria for the acceptability of the proposition of q which are said to be fulfilled in $a_1, a_2, ..., a_n$ thereby coming to a positive result.

x is an argumentation (in the broad sense) :=

0. The domain of arguments is the same as the one of valid argumentations; if x is an argumentation, $a_1, a_2, ..., a_n$ (the elements of p) will be called the "arguments for q", and q is called "the thesis of x".

1. x is a valid argumentation, or

2. there is a person s and a moment t for which is valid: s at the moment t believes or (explicitly or implicitly) holds the view that x is a valid argumentation.

These are the *general* definitions for "argumentation". For the practice of analyzing concrete argumentations, however, definitions for the *special types* of argumentations are more appropriate because these definitions are nearer to the peculiarities of concrete examples. Such definitions for deductive, interpretative, genesis of knowledge, generalizing and practical argumentations are developed and justified in: Lumer 1990a (sections 4.2; 4.4; 4.5; 4.6; 6.1; 6.3).

7. Non-deductive argumentations

The most important test for every theory of argumentation which tries to provide validity criteria for argumentations is whether it is applicable to non-deductive argumentations. As already indicated, the practical theory of argumentation does pass this test with ease. Here I can only show in principle how it passes the test.

Interpretative argumentations e.g. are a very important type of argumentation; they can be found in psychology, in hermeneutic philology, in criminalistics as reasoning from circumstantial evidence and in some sciences when they interpret observational data. The several types of argumentations differ in their underlying epistemological principles and therefore in the types of cognition which are guided by them. So interpretative argumentations are based on the *interpretative epistemological principle*. The most simple form of this principle is: a (singular) proposition (about an event) will be true if it is part of the only possible explanation of a known fact. The standard situation of application of this principle is that we know a certain singular fact, which will be the *explanandum*, and some other singular facts which could be a part of the causes for the explanandum, but that we don't know all the singular facts necessary for explaining the explanandum, and that we want to know at least a certain part of the remaining facts. E.g. our explanandum is that Mr. White has been murdered by a thrust with a knife; we know certain circumstantial evidences like what fingerprints are on the knife, that certain persons had certain motives for killing Mr. White; but we don't know, who killed Mr. White and how this person did it exactly; e.g. the judgment 'At the moment t Mr. Black took the knife and stabbed Mr. White.' will be the (central) thesis of our argumentation later on.

The interpretative process of discovery of this thesis occurs in the following way: We formulate arbitrary sets of hypotheses about the unknown facts. Then we check whether these hypotheses together with the known laws of nature and the propositions about the circumstantial evidences form a valid explanation of the explanandum. This explanation must be valid in the Hempel-Oppenheimian sense, that is: The hypotheses together with the known laws of nature and the propositions about the circumstantial evidences must logically imply the explanandum. If there is only one set of hypotheses completing the propositions about the known facts to such a possible explanation all the hypotheses of that set will be true. - The corresponding ideal and complete *argumentation* would look like this: The first part of the arguments would list the known circumstantial evidences and the explanandum; the second part of the arguments would list the aimed hypotheses and the needed laws of nature; the third part would be the execution of the logical inference; and the fourth part of the arguments should be the proof that there is no other set of hypotheses leading to a possible explanation of the explanandum; the fifth part of the argumentation, finally, would be the thesis that therefore all the hypotheses are true.

But the outlined argumentation is mere fiction because its fourth part doesn't exist: normally there are *several* sets of hypotheses completing the propositions about the known facts so that one reaches a valid possible explanation;

and if there is actually even only one such set we will not be able to prove that there aren't more. Unfortunately, many of the arguers don't take this into consideration; and they believe, having shown that a certain set of hypotheses leads to a possible explanation, this would prove that these hypotheses are true; of course this is an erroneous belief.

Actually, a valid interpretative argumentation only leads to a *probabilist* belief and is based on a more complicated, probabilist version of the interpretative epistemological principle (which I cite here only in a simplified version): If there are *n* sets of hypotheses completing the propositions about 1. a certain known explanandum, 2. the known circumstantial evidences and 3. the laws of nature to a valid possible explanation of that explanandum, then all these *n* sets together have the probability of 1; and this probability of 1 is distributed among the *n* sets of hypotheses according to their unconditional probability. Accordingly, a complete valid interpretative argumentation would consist of: 1. arguments listing the explanandum and the known circumstantial evidences 2. arguments listing the *n* sets of hypotheses 3. arguments listing the *n* required sets of laws of nature 4. arguments in which the *n* eplanations are executed 5. *n* arguments estimating the unconditional probability of the *n* sets of hypotheses 6. one argument calculating the interpretatively conditional probability of one of these sets 7. and finally the thesis that this set of hypotheses is probable in the calculated measure.[7] Of course such an argumentation is rather long-winded so that there will be a lot of liberalizations permitting to abridge valid interpretative argumentations.[8]

I only want to touch upon another type of argumentations, the *genesis of knowledge argumentations*. Special forms of this type are the reference to historical sources and the detailed description of experiments. Genesis of knowledge argumentations are based upon the epistemological principle, that a proposition will be true if it is correctly verified. Therefore the arguments of genesis of knowledge argumentations correspondingly consist of a report how the thesis was verified by a certain informant, and of a description how this report has been transmitted to the actual arguer. Obviously genesis of knowledge argumentations don't offer the possibility of a sure examination of the thesis, because by these means at least one cannot check whether the arguer is veracious and if he does remember correctly. As for these questions the addressee can only establish probabilist assumptions. But according to these probabilities genesis of knowledge argumentations nevertheless offer the opportunity to exclude that during the verification and the transmission of the thesis certain mistakes slipped in.

Notes

1 For a methodology for the theory of argumentation see: Lumer 1990a, 7-22.
2 The assertive mood "says" that the attached proposition is true. - For a precise definition of "judgment" see: Lumer 1990b and Lumer 1990a, 88-90; 104-108.
3 I know that such a thing is mostly called "argument" and only sometimes "argumentation". But following this general practice there is no extra name for those judgments of the argumentation which are intended to or actually sustain the thesis.
4 This epistemological conception and the definition of "knowledge" are exposed more detailed in: Lumer 1990a, 30-41.

5 For an exact definition of "deductive argumentation" see: Lumer 1990a, 187-189. - An alternative definition is given by Hamblin 1970, 232-245. - Criticism of Hamblin's definition: Lumer 1990a, 195 f.
6 In German e.g. "deshalb gilt" is an indicator of argumentation exclusively to be used in deductive argumentations, while "da" or "weil" aren't so specific. Therefore "deshalb gilt" does also indicate the type of argumentation and its underlying epistemological principle. Unfortunately, I don't have enough linguistic competence for making out similar phenomena in English.
7 Exact validity criteria for interpretative argumentations: Lumer 1990a, 237-244.
8 Using these validity criteria I have analyzed and reconstructed two extended examples of philological interpretative argumentations, which try to justify two variant readings of the same poem of Walther von der Vogelweide. Cf. Lumer 1990c.

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