

The Epistemological Theory of Argument - How and Why?

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[Published in: In: Informal Logic 25.3 (2005). Pp. 213-242.]

Abstract: The article outlines a general epistemological theory of argument, i.e. a theory that regards providing justified belief as the principal aim of argumentation, and defends it instrumentalistically. After introducing some central terms of such a theory (2), answers to its central questions are proposed: the primary object and structure of the theory (3), the function of arguments, which is to lead to justified belief (4), the way such arguments function, which is to guide the addressee's cognizing (5), objective versus subjective aspects of argumentation (6), designing different types of argument (7). Then the notion of '(argumentatively) valid argument' is defined and criteria for the adequate use of such arguments are introduced (8). Finally, this conception is justified as, among others, leading to more true beliefs than competing conceptions (9).

Keywords: argument, argumentation, epistemological approach, Practical Theory of Argument, justified belief, acceptability, epistemic accessibility, guiding cognition, objectivity, validity, adequacy, justification, function of argumentation

1. Defining 'Epistemological Theory of Argument' and the Structure of this Paper

An epistemological theory of argument is characterized by two features. 1. It takes the standard function of arguments to be: to lead the argument's addressee to (rationally) justified belief, i.e. to guide him to realize the truth or acceptability of the argument's thesis - where 'acceptability' is intended to be a broader term, meaning: truth, high probability or verisimilitude. 2. It develops criteria for good arguments and argumentation on this basis, i.e. it designs them in such a way as to fulfil their epistemic function. This is not the broadest characterization of an epistemological theory of argument but it still leaves room for quite a wide range of specifications. In the following I will be more restrictive and introduce more specific determinations, which will be justified in the subsequent sections. I use the label "Practical Theory of Argument" to distinguish this more specific theory.¹

The paper is structured as follows. In section 2 some central notions of the epistemological theory of argument are explained just in order to clarify their intended content, without justificatory aims: 'argument', 'argumentation', 'justified belief', 'cognition', 'epistemology', 'standard function'

¹ This theory was first elaborated in: Lumer 1990. An English exposition of some of its main features is: Lumer 1991. Some general extensions of this theory are provided in: Lumer 2000a (a general theory of fallacies), Lumer 1988 (embedding of monologic argumentations in dialogical disputation for collectively enquiring into truth), Lumer 1995 (methodology and type of theory), 2000b (relation to logic), Lumer 2003 (interpreting arguments with the aim of evaluating them critically). The present paper advances some parts of this theory for answering to important questions in the current debate about the epistemological approach.

etc. In sections 3-7 some central inner-theoretical questions of an epistemological theory of argument are discussed and the respective determinations of the Practical Theory of Argument are introduced and defended: the primary object (argument, argumentation or discussion) and the structure of the theory as well as the ontology of arguments (sect. 3), the exact function of arguments (sect. 4), their way of functioning (sect. 5), the problem of objectivity versus subjectivity of argumentation (sect. 6) and the basis for different types of arguments (sect. 7). After these discussions the concepts of 'argument', '(argumentatively) valid argument' and of 'situational adequacy' can be defined (sect. 8). Having thus completed a rather detailed picture of the Practical Theory of Argument, finally, this theory and the epistemological approach to argumentation in general are justified in comparison to competing approaches: the rhetorical and the consensus theory of argumentation (sect. 9).

2. Some Central Notions of the Epistemological Theory of Argument

An *argument* here is intended to be a sequence of statements or judgements (i.e. propositions plus the assertive mode ²), one of which is the thesis or conclusion, while the others are the reasons or premises, and of an indicator of argument such as 'therefore', indicating which proposition is the thesis and what are the reasons. Statements "say" that the enclosed proposition is true. Only propositions can be true or false, and e.g. logical implications hold only between propositions. But sometimes, in a loose way of speaking, I will also say that a "statement / thesis is true" etc. instead of saying the "statement's / thesis' proposition is true". "*Argumentation*" here shall mean: the (mostly monological) act of arguing, i.e. the presentation of an argument. In addition there are *discussions*, i.e. dialogues consisting mainly of argumentations by the participants. Epistemological approaches to argumentation take arguments to conceptually and systematically precede argumentation and discussion, which does not exclude that they also study the use of arguments in discussions [cf. e.g. Lumer 1988]. Their central task is to establish precise criteria for good arguments and their use. (Other tasks of an epistemological theory of argument are: 1. "self-reflection", i.e. fixing the aim and methods of the theory of argument, defining the basic concepts of the theory, in particular 'argument', determining the function of arguments and explaining their way of functioning etc.; 2. to develop a theory of interpretation of argumentative utterances; 3. to develop a theory of fallacies and 4. a theory of argumentative discussions etc. [cf. Lumer 2000b, sects. 3-7].)

The other central notion of the theory, '*justified belief*', includes knowledge, which roughly may be identified with (surely) justified true belief, but also justified beliefs that have been

² Propositions in the narrow sense roughly are the meanings of that-clauses. Arguments, however, are not expressed by that-clauses but by assertive sentences, whose meaning, in addition to the proposition, contains the assertive mood. Unfortunately, both English expressions for this meaning, are ambiguous: "statement" in addition to these intensional objects refers to assertive sentences and to assertive acts; "judgement" in addition to the intensional object refers to the mental act of judging.

acquired by rational but uncertain means and therefore may be false. Justified beliefs that are not knowledge aim at truth, too. But because of the limited means they are forced to rely on they do not always achieve this goal. Justified belief is the result of (rational) *cognition* or *cognizing*, i.e. a process of acquiring belief that satisfies certain epistemological standards; and these standards require checking as to whether certain conditions of truth or acceptability of the proposition in question are fulfilled. Justified belief then consists of two components: the belief resulting from a positive outcome of this check and the *subjective justification*, i.e. the memory of at least some traces of the cognition. The subjective justification is rationally necessary because there are false cognitions and because we use uncertain ways of adopting beliefs. As a consequence this sometimes results in conflicting, inconsistent beliefs, and we have to revise at least one of them, namely the most weakly justified belief. And it comes to situations where a belief just revised had served for justifying another belief so that this second belief now has to be revised as well. In such situations, now disposing of subjective justifications enables the person to assess the strength of the evidence one had for adopting the belief (in case of conflicting beliefs) to then relinquish the weaker justified belief and to identify beliefs that depend on a revised belief.

"*Epistemology*" here means a normative theory that among others provides criteria for rational justification, i.e. it provides the standards to be followed in rational cognition. (This is a rather broad concept of 'epistemology', which includes among others also logic and probability theory.) These standards have to be developed on the basis of truth definitions for certain types of propositions. The deductive epistemological principle 'a proposition p is true if p is logically implied by true premises' e.g. in the end relies on the truth definitions for complex propositions (i.e. propositions containing logical operators): the "mechanics" of the logical operators guarantees what is expressed in the deductive epistemological principle. Justifying epistemological principles on the basis of truth definitions is important because only this guarantees that fulfilling the criteria given by an epistemological principle for the truth or acceptability of a proposition really implies the truth or (at least) acceptability of that proposition. "*Acceptability*" of a proposition here always is intended to be epistemically rational acceptability, i.e. truth, high probability or verisimilitude.

Finally, when speaking of the "standard function" of arguments "*function*" is meant in the system theoretical sense: relation between input and output. There is a structure, i.e. the expression of an argument, that if "fed" with some input, such as being presented to an addressee who does not (sufficiently) know the thesis to be true, under certain conditions produces a certain output, e.g. the addressee's justified belief. Arguments have many functions, they can impress, bore, amuse people etc. The *standard function* of arguments shall be the function for which good arguments have been designed in the theory of argument, namely to lead to justified belief.

3. The Primary Object, Scope and Structure of the Theory

Above 'argument', 'reason', 'argumentation' and 'discussion' have been distinguished. Some theories of argumentation have argumentation or discussion or reasons as their primary objects of

study. Of course, there are arguments, argumentations as well as discussions and we need concepts, expressions and theories for all of them. However, as already stated, epistemological approaches to argumentation primarily deal with arguments and their use; and this is necessarily so. Or more precisely: 1. 'Argument' is taken as the systematically primary concept in terms of which the concepts '(argumentative) reason' and 'argumentation' are defined; subsequently 'argumentative discussion' is defined with the latter terms. 2. In addition, the epistemological theory of argument deals with the respective objects in the same systematic order, which - apart from 'reason' which is only an auxiliary term - reflects their increasing complexity: argument, argumentation, argumentative discussion. (This does not imply that 'argument' is taken as a primitive notion. Of course, it shall and will be defined - but in terms of concepts like 'statement', which are not specific to argumentation theory.) The various parts of this claim shall now be justified.

'Argument' systematically precedes '*reason*'. At a first glance just the contrary may seem to be true because arguments are mereologically composed of a thesis, an indicator of argument and reasons for the thesis so that the straightforward strategy to define 'argument' seems to be: an argument is a statement plus reasons for it ... But contrary to this first appearance, the term '(good) reason' can sensibly be defined only by using the term 'argument'. First, argumentative reasons are always reasons *for a thesis*; a one-digit concept of reason would make every statement a reason, so it would be a useless concept. Thus, the thesis has always to be added to the reason. Second, whether a reason (in the sense of a single statement) is a good reason for a given thesis depends substantially on the other reasons of the argument, so in the end on the whole argument. This is so because if e.g. a reason *p* does not in itself imply the thesis *q*, it is not clear in what relation *p* could stand to *q* for making it a reason for *q*. So the other reasons have to be taken into consideration too; and the best way to define '(argumentative) reason' is to equate them with the statements of an argument that are different from the thesis.

'Argument' and 'argumentation' systematically precede also '*discussion*' or '*argumentative discourse*'. The *kernel* of rational cognition, i.e. acquisition of justified belief, is essentially an internal, mental process: the subject examines whether criteria for the acceptability of a proposition are fulfilled. And ideally, the reasons' part of an argument consists of statements asserting that these criteria are fulfilled. Of course, cognition can be furthered or even hindered by other people's comments, hints, arguments etc., i.e. (pieces of) dialogue. However the proper cognition takes place internally and consists in checking the fulfilment of criteria for the acceptability of a thesis; other people's talk here has only the role of *prompting* (or preventing) certain check-ups, it does not *make up* these check-ups. In principle the whole cognitive process can be - and often really is - executed independently of other people's intervention. (Observing, preparing observations, conducting experiments, getting information from other people about their experiences and reflections go far beyond mental processes. But for acquiring the respective justified belief all this has to be internally represented, and the proper decision about what to do with this information, if and how to transform it into what kind of justified belief, is a mental process.) All this means that a linguistic device that mirrors cognition and its epistemic result is "monologic", namely some sort of sequence

of assertions that sufficient criteria for the acceptability of the thesis are fulfilled. And because cognition is at the centre of the epistemological approach, this excludes discussions as its primary object of study. In a second step though arguments and argumentations can be integrated in discussions. The kernel of (rational) discussion is argumentation, i.e. the presentation of an argument. But discussions are then enlarged by questions, criticism, counter-claims, retractions etc. [cf. Lumer 1988, 452-461].

The most difficult part of the present justification is to show the conceptual and systematic precedence of arguments over *argumentation*. Argumentations in a certain sense are more fine-grained than arguments. This can be seen from the fact that a complete description of an argumentation has to include some description of the argument but it also has to specify some further variables (for the situation, the expression and perhaps for the addressee and the purpose): person *s* at time *t* expressed the argument '*a*' in language *l* / uttered "*u*" (which has the meaning '*a*') for convincing *h*. The main reasons for taking arguments as the central notion and primary object of study in an epistemological approach to argumentation are these:

1. 'Argument' is the more primitive notion. One can easily define 'argumentation' in terms of 'argument' and vice versa. (An argumentation is a complex of speech acts in which an argument is presented. Versus: An argument is the meaning of an actual or possible argumentation.) But if one then tries to define 'argument' without making use of the notion of 'argumentation' or vice versa it turns out that such a definition of 'argumentation' must, in an oblique way, use the defining conditions of 'argument', whereas such a definition of 'argument' need not recur to the defining conditions of an argumentation. (The definition of '(deductive) argumentation' would have to go along this line: "... sequence of speech acts uttered by someone; ...; one of the speech acts expresses the thesis, i.e. an assertion whose proposition the arguer wants to show to be true; the other speech acts express assertions whose propositions are true and logically imply the truth of the thesis' proposition." The definition of 'argument' would go along this line: "sequence of assertions; ...; one is the thesis; the other assertions' propositions are true and logically imply the thesis' proposition." So trying to use 'argumentation' as the more primitive notion is awkward at the least.)

2. There are uses of arguments independent of argumentation. The typical or standard use of arguments is their presentation in an argumentation mostly for convincing. However, this is not their only use [cf. below, sect. 4]; and some of their uses are independent of argumentation but not vice versa (because of no. 1).

2.1. Arguments are ideal forms of subjective justifications. They list the conditions that make the thesis acceptable and have been checked - with a positive result - by the subject. The additional information which is implied in describing argumentation - who uttered at what time the argument - , is irrelevant for the subjective justification. Cognition is limited by situational constraints, in particular the epistemic subject must have cognized ³ the reasons as acceptable and he must understand the argumentative relation. But, first the original arguer and the time of argumentation

³ To "cognize" here shall mean the process by which justified belief is acquired; probably it is the expression that most unambiguously refers to this process.

are not parts of these situational constraints. Second, it is not even necessary that there is such an arguer; the epistemic subject may have found the argument by himself. Third, statements that situational constraints are fulfilled are not parts of the subjective justification. Such constraints shall mainly guarantee that the cognition in question is accessible to the epistemic subject. If he has cognized the thesis along the line of the argument the respective constraints obviously were fulfilled; he must not additionally check that they were fulfilled, and there is no need to include the statements about their fulfilment in the subjective justification.

2.2. Another use of arguments without argumentation is inquiry [cf. Meiland 1989, 194]. An epistemic subject tries to develop a valid and sound argument that could prove a certain conjecture. In such cases there is no arguer who presents the argument to somebody else. And even in a very broad sense the subject does not present the argument to himself; he constructs a hypothetical argument instead and examines its validity and soundness.

The general gist of these arguments in favour of the claim presented above that arguments conceptually and systematically precede reasons, argumentation and discussion is this. An epistemological approach to argumentation constructs arguments in view of their epistemic function as the statements that formulate what has to be (and later: has been) checked for cognizing the thesis. This epistemic kernel in principle does not depend on argumentation or discussion. But, the other way round, this epistemic kernel is also the kernel of what happens in successful argumentation and discussion.

4. Instrumentality and the Function of Arguments

Arguments are abstract entities, which exist independently of a subject who e.g. has designed them or brought them into being. Therefore, arguments *as such* cannot have aims or have been designed as means. There are many arguments that will never be thought by anybody, and there are many arguments expressed by several people with perhaps quite different aims. (Argumentations, being acts, of course can have aims; they are produced by a subject for a certain purpose, and their aim resides in the subject [cf. Johnson 2000, 168].) Nevertheless, arguments as such are functional entities, instruments that shall be useful for some aim. The way here to conceptualize this is to say that they have a standard (or proper) function. "To have a function" does not mean that the function must have been performed; it is sufficient that in case the input were fed in the respective structure the appertaining output would be produced. Arguments have a lot of functions, i.e. input-output relations. But the criteria for good arguments in the epistemological theory of argument have been designed in such a way as to fulfil a very specific function, namely the standard function (or more precisely: they are designed to fulfil several closely related functions) [Lumer 1991, 99 f.].

The *standard input* of arguments is that one of their linguistic expressions is presented to a linguistically proficient, open-minded, attentive and discriminating addressee who does not yet have a sufficiently justified belief in the thesis. The *standard output* of arguments is that the

addressee justifiably believes that the thesis is true or acceptable (or that he has a better justified belief in the thesis). The standard function, i.e. the relation between standard input and standard output, may be termed "*leading to justified belief*" or to "*rationally convince*". [Lumer 1990, 43 f.; 1991, 100.]

Some further functions, closely related to this standard function and still specific to arguments, are these [cf. Lumer 1990, 49 f.; cf. now also: Blair 2004, 139-141]. 1. Arguments can *represent justified beliefs* in the sense of being the ideally formed content of justified belief. In section 2 I said that justified belief is acquired by cognition and that it consists in believing in the thesis and remembering at least traces of the cognition and at best remembering the results of the single check-ups of the thesis' conditions of acceptability. In case of inferred beliefs the content of a justified belief (thesis and ideal justification) is identical to an argument. The input of the function 'to represent justified belief' then is to cognize the thesis, and its output is to believe in the argument - which is a certain form of justified belief. 2. An arguer may combine the standard and the function just explained by convincing an addressee with the help of an argument that makes up the content of her own justified belief. This function may be called "*transfer of justified belief*". What is important about transfer of justified belief is that the arguer does not only communicate what she believes or that she induces the addressee to believe the same but that she transfers *justified belief as such*; the addressee acquires the same justified belief that the arguer already has. 3. Arguments can be used for *autonomous (argumentative) cognition*. A person tentatively constructs an argument for some hypothesis she does not yet justifiably believe (to a sufficient degree) to be acceptable and then examines if this argument is a good one. If it turns out to be a good one she has already cognized the thesis' acceptability. (Why this is so will be explained in sect. 6.)⁴ 4. *Reconsidering one's justified belief* for securing it presupposes that a person already has some justified belief of the thesis or at least believes in the thesis. And she then uses an argument found somewhere to recheck criteria for the thesis' acceptability. In case of a positive outcome she has secured her justified belief, making it more certain. 5. *Intersubjective securing of a justified belief* begins with disclosing one's justified belief by presenting the respective argument to some audience for intersubjective critique. In this way the private, subjective justification is made public and thus can be scrutinized by others who may reveal errors or other insufficiencies. If one's justified belief has passed this test one can be more certain about it [cf. Lumer 1988, 448-450].

⁴ Here, rationally convincing has been adopted as the standard function of arguments; and this is reflected in the terminology used in the following; it speaks of the "arguer" and the "addressee" etc. But there is no problem and nothing substantial will be changed if autonomous cognition were taken as the standard function of arguments. From the standpoint of rationally convincing, autonomous cognition with the help of arguments may be regarded as a limiting case where arguer and addressee are identical; the monologue has become a soliloquy. This is possible because the standards for rationally convincing to be proposed below do not require that the arguer already justifiably believe in the thesis. From the point of view of autonomous cognition, an argument presented by another person is only a *hypothesis* for a good argument (other people are heuristic devices so to speak), which then has to be checked for its validity. The kernel of both autonomous cognition and rationally convincing is that the subject and the addressee, respectively, check the conditions for the thesis' acceptability; so the kernel in both cases is *convincing oneself* (cf. the following section).

An instrument that fulfils its standard function is called "functioning" (or "in working order"). As a more specific expression for the functioning of arguments here will be said: the argument is "*(argumentatively) valid*". This is not the same as logically valid. In cases of deductive arguments argumentative validity includes logical validity but goes beyond this; in cases of non-deductive arguments argumentative validity does not even include logical validity. The conditions that have to be fulfilled for argumentative validity will be specified below. - Functioning instruments can be used in various situations. For fulfilling their standard function they have to be used in an *adequate* manner, in particular the standard input has to be provided. A functioning instrument that is not used in an adequate way may be as good as possible but still not provide the desired output. If you drill into concrete using a bit made for drilling into wood you will not produce the desired result (but ruin your drill bit). Instructions for use should tell what the appropriate manner of using the instrument for fulfilling its standard function is. The same holds for good, (argumentatively) valid arguments. In order to fulfil their standard function, i.e. for rationally convincing, they have to be used in an adequate manner. If the addressee e.g. does not justifiedly believe some premise to be true he will not be convinced by the argument - even if the argument is (argumentatively) valid, e.g. deductively valid and sound. Therefore the conditions for argumentative validity (i.e. for good arguments) have to be supplemented by conditions for an adequate use of arguments in certain situations (conditions for good use). So there will be two sets of conditions for good argumentation, conditions for good (argumentatively valid) arguments and conditions for their good (situationally adequate) use. The latter conditions are instructions for using arguments.

5. Arguments' Way of Functioning

In the foregoing section the standard function of arguments (leading to justified belief, rationally convincing) has been explained, and their standard input and output have been specified. What still has to be explained and what is very important from an epistemological point of view is their way of functioning: *How* do arguments fed with the standard input produce the standard output? How does rational convincing work?

The way arguments function can be explained most easily for deductive arguments [cf. Lumer 1990, 45-48; 280-281; 1991, 102-104]. To fulfil their standard function arguments have to be argumentatively valid and they must be used adequately. The following are abridged versions of the two respective sets of criteria:⁵

Argumentative validity of deductive arguments:

DA0: Domain: The argument consists of 1. a single statement, the thesis, 2. an indicator of argument (like 'therefore', 'for this reason'), and 3. a set of further statements, the premises.

⁵ The complete criteria for deductive arguments are given in: Lumer 1990, 187-189. These complete criteria, apart from being more precise, in particular also deal with simplified and abridged arguments like enthymemes.

DA1: Indicator: The indicator indicates 1. that the whole sequence is an argument, 2. which statement is the thesis, and 3. which statements are the premises.

DA2: Guarantee of truth: 1. The premises' propositions are true, 2. and they logically imply the thesis' proposition.

DA3: Adequacy in principle: There is at least one person who justifiedly believes that the premises are acceptable but who does not justifiedly believe this about the thesis.

Situational adequacy of deductive arguments:

DA4: Situational adequacy: An (argumentatively) valid deductive argument is 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 premises are true but does not know if the thesis is likewise;⁶ 3. the relation of implication between the premises' propositions and the proposition of the thesis is sufficiently direct so that it can easily be grasped by the addressee.

How do adequately used valid arguments (defined by the above conditions) lead to justified beliefs? The most concise answer is: they guide the addressee in his process of cognizing the thesis. More comprehensively and precisely what happens is this: The indicator of argument informs the addressee that this is an argument and what its thesis is. In addition the indicator calls his attention to the fact that with the help of this argument he - at least in the arguer's opinion - can cognize the thesis' acceptability. The addressee now may accept this invitation and begin to examine the thesis and the premises.

If the argument is clear the systematically first step of this examination is to find out the epistemological principle upon which the argument is based. All (argumentatively) valid arguments rely on an efficient epistemological principle such as the deductive epistemological principle: 'a proposition is true if it is logically implied by true premises' or the genesis of justified belief principle: 'a proposition is true if it has been correctly verified'. Such epistemological principles are general criteria for the truth or acceptability of a wide range of propositions. An epistemological principle is *efficient* if fulfilment of its conditions really guarantees the truth or acceptability of the respective proposition, i.e. if the principle (mostly) leads to true or truth-like conclusions. The revelation principle, 'a proposition *p* is true if it is stated in the Bible', e.g. is not efficient. The efficiency of epistemological principles relies on their relation to the truth definitions for the propositions in question. In the case of the genesis of justified belief principle this relation is established by the verification: "To verify" just means to check if the truth conditions of some proposition are fulfilled and to find that they are. Different types of arguments have to be distinguished according to the epistemological principle they rely on: deductive arguments, genesis of justified belief arguments, (various kinds of) probabilistic arguments, practical arguments etc.

⁶ For not complicating the principal explanation, here is requested that the addressee *knows* the premises to be true. Of course, deductive arguments can also start from merely acceptable premises. In this case the argument is no longer certain and monotonic so that precautions have to be taken to exclude that other information of the addressee defeats the thesis (cf. below).

(see below, sect. 7). Most people are not able to formulate epistemological principles. Nevertheless if trained a bit they have an intuitive understanding of such principles in the sense that they know which conditions have to be fulfilled by this type of argument.⁷ To find out which epistemological principle the argument relies on is the key for using the argument as a guide to cognition. Without recognizing (at least in the weak, intuitive sense just explained) the underlying epistemological principle one cannot make sense of the argument, one does not know which kind of standards the argument is supposed to show to be fulfilled. The indicator of argument sometimes also indicates the respective epistemological principle and the type of argument; "from this follows" may be such an indicator, though it is not unequivocal, indicating deductive inferences as well as deductive arguments. Unfortunately, this is a rare case and usually the addressee has to find out the epistemological principle from semantic cues of the thesis and the reasons. In complete deductive arguments e.g. the thesis' notions already appear in the reasons; in complete practical arguments the thesis is a value judgement and reasons consist of statements about the value object's implications and their respective values.⁸

Once it is found, the underlying epistemological principle can be used as a checklist for cognizing the truth or acceptability of the thesis. The addressee now has to check if all the conditions for the truth or acceptability of the thesis listed in this principle are fulfilled. In the case of deductive arguments this means checking 1. whether certain premises are true and 2. if they logically imply the thesis. But which premises? The premises specified in the argument's reasons, of course. If the argument is argumentatively valid and adequate the addressee can immediately check if those two conditions are fulfilled, and the result of this check-up will be positive. 1. The premises are true (DA2.1), and the addressee knows them to be true (D4.2). So when confronted with the premises the addressee will in each case immediately recognize them as true. 2. The premises logically imply the thesis (DA2.2), the addressee is linguistically proficient (DA4.1), which includes linguistic proficiency with respect to the logical operators and thus also logical implications, and the relation of implication in the argument is sufficiently direct so that he can easily grasp them (DA4.3). All this enables the addressee to immediately check that the premises imply the thesis and to come up with a positive result.

The last step of the cognition then is rather simple. Because the addressee knows about the epistemological principle he can infer that the two conditions for the thesis' acceptability are fulfilled so that the thesis must be acceptable.

⁷ The more a person is trained in this respect the better she can distinguish various types of arguments and the more precisely she knows what conditions exactly have to be fulfilled. To have an explicit knowledge of such principles and their argumentative use is one of the key qualifications for good argumentation.

⁸ The lack of clarity about the epistemological principle used is one of the big problems of the present argumentative practice in general. For improving this practice, at least in difficult cases, one should even include the respective epistemological principle explicitly in the argument's reasons. This means the remaining arguments would have these principles as implicit reasons. A different solution, which presupposes more explicit knowledge about epistemological principles, is to invent and use more type specific indicators of argument.

It has been said that (argumentatively) valid and adequate arguments guide the addressee in his process of cognizing the thesis. This guidance consists of several things: specifying the thesis that shall be examined, i.e. informing that this thesis can be proved; specifying the epistemological principle that may be used for cognizing the thesis' acceptability; and specifying the premises from which the thesis can be inferred (the epistemological principle in itself, being completely general, does not yet do this). By specifying all these things the argument invites the addressee to examine what has to be examined for cognizing the thesis' acceptability. And in an (argumentatively) valid and adequate argument the specifications are chosen in such a way that what has to be examined can immediately be checked with a positive result; this is the point of good argumentation. Formulated in an overly subtle and somewhat exaggerated way guidance of cognizing by good argumentation works like this: "Do you want to cognize the acceptability of thesis t ?" - "Yes." - "Okay. The cognition I have to offer is based on the deductive epistemological principle. So please take this as your checklist! The first condition on this list should be that the premises are true. So here are the premises: p_1, p_2, \dots, p_n . Please check if they are true!" Because these premises are chosen in the right way the addressee does so with a positive result. "The second condition on your checklist should be logical implication. So please check whether p_1, p_2, \dots, p_n imply t !" Because the implication is sufficiently direct the addressee does so with a positive result. "Now you have ascertained that all the conditions of your checklist for the acceptability of t are fulfilled. So now please accept t !" - Of course, argumentation (usually) does not take this explicit and slightly exaggerated form. But the point of my explanation of the way it functions is that the usual good argument contains all the information for inflating it to this form.

Another crucial point of this conception of arguments' way of functioning is this. Even if the addressee is guided in cognizing the acceptability of the thesis, he himself takes the essential steps in the cognitive process. *He* uses the epistemological principle as a checklist; and *he* checks if its conditions are fulfilled. So he convinces *himself* of the thesis' acceptability. And the epistemological approach to argumentation explains the rationality of rationally convincing someone by argumentation this way: the arguer convinces the addressee by guiding him in a process of convincing himself by using epistemological standards.

Truth *definitions* imply rather specific ways of (directly) verifying the defined proposition. For directly verifying e.g. a proposition ' $p \& q$ ' one has to verify that p and to verify that q . Epistemological principles - though being based on truth definitions - often are much less specific and allow many (perhaps infinite) indirect forms of cognition for one proposition. The deductive epistemological principle, for example, contains an existential quantification: 'If *there is* a set of true propositions p_1, \dots, p_n that imply a proposition t then t is true.' If t is true there is an infinity of such sets - for $t = p \& q$, $\{(p \& q) \vee r, \neg r\}$ may be such a set. But most of them are not epistemically accessible, i.e. we do not justifiedly believe their elements to be true (if we do not already justifiedly believe t to be true). So what a good (in this case deductive) argumentation does is to choose one of these sets that *is* epistemically accessible to the addressee. An epistemological approach to deductive argumentation sometimes is criticized because deductive argumentation

allegedly cannot provide new knowledge because all the information to be learned is yet implied in the premises, which have already to be accepted. Of course, the thesis is implied by the premises, the latter are true - otherwise a deductive argument would not be (argumentatively) valid - and the addressee has already accepted the premises - otherwise using this argument would not be adequate for convincing. Nonetheless, adequate deductive argumentation provides new knowledge about the thesis; before the argumentation the addressee did not justifiedly believe the thesis to be acceptable (cf. DA4.2) but afterwards he does. The reason for this is that we cannot know all the implications of the justified beliefs already acquired (our justified beliefs are not deductively closed). First, there is an infinity of such implications so that for a finite brain it is physically impossible to know them all; second, most of them are irrelevant. Adequate (deductive) argumentation in this situation is informative in a secondary sense: It tells the addressee that by starting from this set of premises he can cognize the acceptability of the thesis. This secondary information saves the addressee the work of finding an adequate set of premises on his own from which the thesis can be inferred. This secondary information does the above-mentioned work of transferring justified belief as such from the arguer to the addressee.

6. Argumentative Validity and Adequacy - A Synthesis of the Objectivist and the Subjectivist Account of Epistemologically Good Argumentation

One of the major problems an epistemological approach to argumentation has to resolve is the relation between the objectivity and subjectivity of argumentation. On the one hand the epistemological approach aims at objective knowledge and true beliefs: Good argumentation has to be designed in such a way that if everything goes smoothly the result is that the addressee knows a true proposition to be true or justifiedly believes an acceptable proposition to be acceptable. Good arguments have to guarantee the truth or acceptability of the thesis. And this distinguishes the epistemological approach from a rhetorical approach: an argument can be good in this specific sense of the epistemological approach even if it did not convince (e.g. because the addressee was stubborn or not sufficiently attentive or did not believe some premise), and it can be bad in this sense even though it did convince because it was persuasive [Feldman 1994, 168; Lumer 1990, 29]. On the other hand, according to the epistemological approach, argumentation shall lead to justified belief, guide cognition etc., which is an epistemic task. But cognition is an activity of a subject and depends on the subject's epistemic situation. There are several subjective aspects in good argumentation.

1. Epistemic accessibility of reasons and inferences: First, the premises of an argument can be true but the addressee does not justifiedly believe this, or the inference may be too difficult for this addressee; then this is not a good argument for convincing this addressee. But it could be a good argument for convincing another addressee who justifiedly believes the premises to be true and e.g. is more trained in logic. So being good for convincing cannot be solely a quality of the argument

itself; it also depends on the addressee, on his epistemic state. The argument must be epistemically accessible to the addressee.

2. *Uncertain epistemological principles:* Second, if we only used *certain* ways of cognizing, our knowledge would be utterly restricted; we could not make predictions or empirical generalizations, we could not explain on a theoretical level, or interpret texts or circumstantial evidence, or appraise our actions etc. So uncertain ways of cognizing and efficient but uncertain epistemological principles have been invented and are used in argumentation. This by itself already means giving up an ideal of alethic objectivity because this kind of cognition no longer guarantees truth. In addition, such uncertain epistemological principles differ in probative force. Therefore, an uncertain argument may be sufficiently strong in one situation, e.g. when addressing laymen, but too weak in another situation, such as addressing an audience of experts with a scientific claim. So even this kind of sufficiency is not a feature of the argument itself but of its use in a given situation. Finally, uncertain epistemological principles cannot guarantee the thesis' truth, and they are nonmonotonic: there may be different pieces of evidence (or an enlarged set of evidences) that lead to an incompatible thesis. Of course, epistemology provides means for deciding such conflicts. The relevant point of these solutions for our question is that uncertain cognition has to take into consideration all the available relevant justified beliefs. However, which justified beliefs are available does not depend on the argument but again on the epistemic situation.

3. *Uncertain reasons:* Third, once uncertain epistemological principals have got the epistemological placet we also have to reckon with uncertain justified beliefs as the starting point of argumentation. We have to reckon with uncertain, in particular probabilistic, premises or reasons, whose probabilities enter into the calculation of the thesis' probability. From an objective point of view, however, there are tendencies, propensities and relative frequencies but no probabilities; propositions are either true or false even if we do not know what they are. On the other hand, for objectivity's sake to require for probabilistic arguments e.g. that premises with a probability above 50% have to be true, and those with a probability of maximally 50% must be false would distort the sense of such arguments: such arguments are designed precisely for addressees who do not have a sufficient justification for such 100% beliefs; and the probability calculation of such arguments just starts with premise probabilities unequal to 1 or 0. So an epistemological theory of argument should also allow good *arguments* - and not only their use - that are not objective in the respect that they contain probabilistic premises.

These two conflicting requirements of epistemologically conceived argumentation have led to competing conceptions of good argumentation among champions of the epistemological approach: to objectivist [e.g. Biro 1977; 1984; Siegel 1989; Siegel & Biro 2006] and subjectivist conceptions [e.g. Feldman 1994; Sanford 1988; Sinnott-Armstrong 1999] of good argumentation. Similar divisions also exist among exponents of other approaches. The conflict is clearly evident in what the various theories require for premises - ranging from truth to mere acceptance by the

addressee - or in the requirements for the relation between the argument's reasons and its thesis - here the requirements range from inductive implication to again acceptance by the addressee.⁹

The solution to this, proposed by the Practical Theory of Argument, has already been intimated above. It consists in distinguishing (argumentative) validity and situational adequacy. Argumentative validity is a property of the argument itself; it guarantees that the requirements of objectivity are fulfilled; argumentative validity must imply that the thesis is objectively true or acceptable, which does not depend on a subject. Situational adequacy on the other hand is a relation between the argument and a situation (characterized mainly by the addressee's justified beliefs at the given time); situational adequacy has to guarantee that the requirements of subjective epistemic accessibility are fulfilled; the argument's reasons must already be justifiedly believed by the addressee, he must know the epistemological principle, the complexity of inferential relations has to be adapted to his inferential abilities etc. In rational convincing, the two sets of criteria have a "logical" order: Only argumentatively valid arguments can be situationally adequate; first of all the thesis' truth or acceptability has to be guaranteed, and then epistemic accessibility has to be secured. This has been explained instrumentally. We first have to look for instruments that in principle are suited to fulfil the required function, i.e. for which there is a situation in that they would fulfil the function; and among these we then have to choose the ones suited to the particular situation. - Accordingly, the problem of criteria for good argumentation that try to get along with only one set of criteria is that they do not do justice to the two different functional roles of the two sorts of requirements: guarantee of acceptability and epistemic accessibility. Acceptability does not depend on subjects recognizing it, and epistemic accessibility is by no means guaranteed by acceptability.

This is the principal idea. But the way argumentation functions and the interplay of the two sets of criteria have so far only been explained for deductive arguments. Deduction is a *certain* way of cognizing. Therefore, criteria for good deductive argumentation only have to deal with the first subjective challenge, i.e. epistemic accessibility of reasons and inferences (cf. above DA4.2-3), but not with the other two: the problems caused by uncertain epistemological principles and uncertain reasons. If one wants to admit uncertain epistemological principles and arguments (and above I have argued that this is urgently required) one cannot uphold the original strong objectivity requirement for argumentative validity, namely that it has to guarantee the thesis' truth, that the premises have to be true and that they certainly imply the thesis. For uncertain types of arguments these requirements have to be replaced by weaker ones in such a way that argumentative validity guarantees only the thesis' acceptability, namely at least probability or verisimilitude. A very important feature of these weaker requirements is that, because of the nonmonotonicity of uncertain arguments, even argumentative *validity* does not only depend on the acceptability of the specific reasons but is also relative to some presupposed database. The most important singular conditions for argumentative validity then are the following: 1. The argument's underlying epistemological

⁹ A nice short overview of some diverging sets of criteria resulting from attempts to deal with the just discussed tension is given in: Govier 1992, 393 f.

principle must be efficient, i.e. (mostly) leading to acceptable conclusions. 2. A given database may allow applying several epistemological principles or several inferences that lead to different conclusions, inconsistent with each other. (The database may e.g. contain the information that Helen is female, 40 years old and a heavy smoker. And it may contain information about life expectancies of 40 years old women and - different - life expectancies of 40 year-old female smokers.) Epistemology provides hierarchies of strengths of epistemological principles and rules for dealing with such situations. In case of conflicts, argumentative validity requires using the strongest epistemological principle or inference. (In the example the inference with the stronger premises - 'h is female, 40 years old and a heavy smoker; life expectancy for such people is 70 years' - is the stronger inference.) 3. The set of premises taken from the database for the inference must be stable in the sense of including all (and only) the information from the database relevant to the thesis in question; e.g. adding further premises from the database would not lead to different conclusions. (We may e.g. have a testimony that Simon was the culprit and contrary results of genetic testing. In such a case an inference to the best explanation has to include both these facts in the set of facts to be explained.) 4. (Prior) probabilities of the argument's premises must be correct with respect to the presupposed database. - In addition, for rationally convincing situational adequacy requires that the argument's database be identical with that of the addressee, that the addressee be linguistically proficient, open-minded, attentive and discriminating, and more.

Though argumentative validity of uncertain arguments is not objective in the sense of guaranteeing truth it is not subjective in the sense of making argumentative validity relative to an addressee. (Far less is it rhetorical in the sense of requiring mere acceptance by the addressee.) One kind of relativity to the addressee here has been replaced by relativity to the database. This makes clear that argumentative validity does not depend on the addressee's subjective features but only on the database and that reasons' probabilities do not depend on the addressee's arbitrariness but are justified by the respective database as well as by epistemological rules. The underlying idea is to approximate argumentative validity of uncertain arguments to objectivity in the strict sense as much as possible.

Having explained the Practical Theory of Argument's proposal on how to conceive the relation between objectivity and subjectivity of argumentation this proposal can be defended in a more substantial way by comparing it with competing conceptions. An entirely objective account of epistemologically conceived good arguments would have to do without any reference to an addressee's epistemic situation. Such an account would perhaps work if the only way of cognizing were direct verification, which implies that for every proposition there were only one way of cognizing it, hence the same way for everybody; so there would not be much adjustment to the specific addressee. However even in such a situation knowledge would differ intersubjectively and the problem of epistemic accessibility would still have to be resolved: Some people would know the premises to be true, others not. But above all, we have many more ways of cognizing than direct verification: indirect and uncertain cognition. And this makes some form of adjustment to the addressee's epistemic situation much more indispensable. Therefore, an entirely objective account

to argumentation is a non-starter. And the existing objective accounts always contain some consideration of subjective requirements.¹⁰ To conceive argumentative validity as has been done here preserves as much as possible of the objectivist idea of guaranteeing truth or acceptability. But this kind of validity has to be supplemented by situational adequacy.

If the particular epistemic situation in any case has to be taken into consideration the subjectivist conception just from the outset is in a better position; and *prima facie* it seems to be obvious to define 'good argumentation' completely in subjective terms without any objective element. Feldman has followed this line, defining 'good argument' this way: "An argument is a good argument for person *S* if and only if (i) *S* is justified in believing the conjunction of all the premises of the argument, (ii) *S* is justified in believing that the premises are 'properly connected' to the conclusion, and (iii) the argument is not defeated for *S*." [Feldman 1994, 179.]¹¹ Condition iii is a formula for resolving the problem of nonmonotonic reasoning that there may be justified inferences to a contradictory thesis that have precedence over the one in question. Feldman's definition is subjective in the sense that the goodness of an argument is defined relatively to a person.

The *prima facie* advantage of a pure subjective account notwithstanding, I want to show that it has several disadvantages, which originate in the fact that it does not separate the argumentative validity and situational adequacy of arguments. 1. In the case of an argument with an unrestricted (i.e. without probabilistic qualification) premise *p* that *s* at the time being was justified to believe in but that later turns out to be false, according to Feldman's definition, one cannot say that the argument was and is bad or fallacious - though we usually do say so: The argument is fallacious though we did not recognize this; and it is fallacious because *p* is false. We do not criticize that it is no longer justified to believe in *p* but that *p* is false. So why not include truth of premise *p* into the conditions of a good argument? However, this *per se* is not a strong point; perhaps we should change our way of speaking. 2. Feldman's definition is short and elegant but with the help of a trick: it strongly refers back to epistemology, which has to tell us (and *s*) when *s* is justified in believing in some premise and in "proper connections" between premises and a conclusion. 2.1. To begin with the last point: *s* is justified in believing in such a "proper connection" if there is such a connection and if *s* has recognized it. And then epistemology has to spell out what a "proper connection" is, e.g. that logical implication is a "proper connection". But this is exactly the same as

¹⁰ In their theory of begging the question, Siegel and Biro e.g. distinguish between a good argument and its use in a given situation, where this use may be pointless [Siegel & Biro 2006, end of sect. II]. This is rather close to the distinction made here, i.e. the distinction between argumentative validity and situational adequacy.

¹¹ Feldman explains that "justified in believing *x*" does not imply that the person believes in *x* but only that *x* is justified [Feldman 1994, 177]. I think this specification goes in the wrong direction because without belief in the premises, epistemic accessibility of the premises would no longer be guaranteed. There might be a very big step from being justified in believing to justifiedly believing, and often a step too big for the addressee. Belief in the inference, on the other hand, in adequate argumentation usually is acquired only in the moment of argumentation itself. But even here problems may arise for making the step from being justified in believing in the inference to justifiedly believing it. - But this is a minor point that does not regard the main difference between an objective and a subjective account. So in the following I will ignore these problems.

what is spelled out in the respective condition of argumentative validity (cf. e.g. DA2.2). So the (more or less) objective criteria have to be provided somewhere - even if this is not made explicit in Feldman's definition. 2.2. *s* is justified in believing in probabilistic premises if i. the premises' probabilities on the respective database are as specified in these premises - where epistemology, or more precisely: probability theory, has to tell how such probabilities have to be calculated - and ii. if *s* has recognized this. Condition i though is exactly what is said in the condition of argumentative validity of probabilistic arguments, whereas condition ii is part of the respective conditions for situational adequacy. So again the objective criteria show up. 2.3. There are too many possible ways to justifiedly believing in unrestricted (premises) for listing them all. Objective criteria of argumentative validity here can only specify the target of these ways: the premises' truth. This again is what is said in the criteria of argumentative validity. But already this provides a criterion for criticism if the target has been missed - independently of the question if the addressee was justified in believing the premise. 3. As is characteristic for a pure subjective account, Feldman provides only a unique criterion, which does not distinguish argumentative validity from situational adequacy. In the best case his definition is extensionally equivalent to the conjunction of argumentative validity and situational adequacy. (Actually, Feldman's definition has a larger extension because it includes arguments with justified but false unrestricted premises (cf. above, point 1).¹²) But in any case, intensionally it does not distinguish two levels of argumentative goodness, the first guaranteeing acceptability: truth, high probability or verisimilitude, the second guaranteeing epistemic accessibility. These are quite different matters. Objective acceptability does not depend on cognizability and the respective situation. Only distinguishing these things makes clear why a good argumentation is good: It guarantees acceptability, and it does so in an epistemically accessible way. As a further aspect of the missing distinction, there is no distinction among quite different kind of fallacies: Is the argument good but was only used in the wrong situation and could be adequately used in another situation? Or is the argument bad in itself? As a consequence one may be seduced into some crude form of relativism, according to which knowledge is relative to subjects. Differentiating validity and adequacy knocks the bottom out of this relativism by proving that argumentative validity does not depend on the subject and by explaining the necessary subjective parts as epistemic accessibility. 4. But the biggest problem of Feldman's definition is that it does not tell us what the addressee has to check for to find out if the thesis is true or acceptable or if the argument shows what it is supposed to show. His criterion does not provide any assistance for assessing arguments and theses. And it cannot do so because the objective part of the goodness of an argument is not worked out in the definition.

¹² One could try to make an extensional distinction between argumentative validity and adequacy in Feldman's terms in a very simple manner. One could define '(argumentatively) valid argument' like this: *x* is an argumentatively valid argument if there is a person *s* for whom *x* is a good argument. The extension of this term is again much larger than the extension of what here has been defined as '(argumentatively) valid argument'. It would e.g. include a vast quantity of deductive arguments with false premises. But this extensional approach does not resolve the intensional problem.

The last point has to be examined a bit further because it entails what makes up the central advantage of the proposal given in the Practical Theory of Argument, namely to develop a synthesis of the objective and the subjective account of epistemologically conceived goodness of argumentations. The central advantage is that the objective part of the criteria for argumentative goodness, i.e. the conditions for (argumentative) validity, specifies the conditions for the thesis' objective truth or acceptability; and *by this* it also specifies what the addressee has to check in order to cognize the thesis' truth or acceptability. This means this part explains why the argument is good; it provides an aid for cognizing the thesis' truth or acceptability; and it says what the subjective justification of one's belief ideally should consist in. The coincidence of these things also explains why checking an argument's (argumentative) validity with a positive result implies cognizing the thesis' acceptability (cf. above, sect. 4). An (argumentatively) valid argument is defined (by the respective validity conditions) in such a way that it consists of statements that the thesis' conditions of acceptability are fulfilled; if the addressee has positively checked that these statements are true he has cognized the thesis' acceptability. For making these points clearer by an example, take again condition DA2.2 for the argumentative validity of deductive arguments, which requires that the premises must logically imply the thesis. This is exactly (part of) what the addressee has to check for cognizing the thesis' truth. Compare this with Feldman's condition (ii): "S is justified in believing that the premises are 'properly connected' to the conclusion". First, for cognizing the thesis' acceptability it is not necessary for the addressee to check if *he is justified in believing* e.g. that the premises logically imply the thesis, he only has to check if the premises imply the thesis. Second, for finding out if he is justified in believing in the logical implication the addressee has to check if the premises imply the thesis. Third, because the target of asking oneself if one is justified in believing in the logical implication is different from that of asking oneself if the alleged implication holds there might even be some difference in the respective outcomes: Even if with the last question one retrieves an already acquired justified belief (which in deductive argumentation is a rare case) this question invites more than the former to recheck if the implication really holds. - These advantages are those for the addressee. In addition there is an essential advantage for the arguer. The conditions of argumentative validity describe the argument's structure and thus are an aid, a manual, for constructing good arguments.

The conditions of adequacy have quite a different role. They mostly have to guarantee epistemic accessibility of the argument; they only specify the prerequisites for cognition, i.e. when the cognizing can be executed. If an argument is adequate for convincing an addressee he is in the position to carry out the cognition aimed at by the arguer, i.e. to check if the reason-statements are fulfilled etc.; if the argument is not adequate he simply cannot carry out the desired cognition. But for cognizing the thesis' acceptability the addressee does not have to examine whether or not the conditions of adequacy are fulfilled. So he has e.g. to check if the premises imply the thesis (DA2.2, part of argumentative validity) but there is no need to check if this implication is sufficiently direct for being grasped by himself (DA4.3, part of situational adequacy). Either he grasps the implication, then he has already cognized this part of the thesis' acceptability conditions and no further work has to be done; or he does not grasp it, then he is not able to verify the

objective implication, and stating that he does not grasp it does not help him to find out if the implication holds. A mere subjective account of epistemologically conceived arguments blurs the distinction between these completely different requirements of good argumentation, between objective argumentative validity and subjective situational adequacy.

7. Different Types of Arguments

Deductive arguments are the only form of certain arguments. (They have been reconstructed from an epistemological point of view e.g. by: Feldman 1993, 61-80; 94-100; Lumer 1990, 180-209.) As has already been stated, certain knowledge would be much too small a basis for orientating ourselves in the world. Uncertain forms of justified beliefs and of arguments are needed. These are based on epistemological principles other than the deductive, and they have to be differentiated according to the underlying epistemological principle. Genesis of justified belief arguments e.g. are based on the *genesis of justified belief principle*: 'A proposition is true if it has been correctly verified'. The epistemological principle states in a general form under which conditions a certain type of thesis is true or acceptable. In the appertaining arguments the conditions of concretizations of such a general principle for a specific thesis are stated to be fulfilled, e.g.: 'The traffic lights were still at red when the car *c* started. This has been testified to by *s* who herself waited with her car beside *c* for green.' or: 'In the first century after Christ a part of the Italic slaves used as simple farmhands had only 30 free days per year; cf. Columella, *De re rustica* 2, 11, 8.' Genesis of justified belief arguments also include arguments from testimony or from authority. Their essence is to describe or mention, in a more or less incomplete way, (i) how the thesis has been cognized by somebody and (ii) how this justified belief has been transmitted to the arguer. With respect to the last example, an expert e.g. knows that Columella is a rather reliable and precise Roman author about agriculture who had a farm himself and that his work has come down to us in some way ending up in carefully edited standard editions. So the addressee gets at least some pieces of information about the original cognition and about the transfer so that he can check them and see if they are correct, while he has to make probabilistic assumptions about the missing pieces. The multitude of such assumptions makes genesis of justified belief arguments a rather weak sort of arguments.

Genesis of justified belief arguments are only a first type of probabilistic arguments. Their argumentative form (including criteria of argumentative validity and / or situational adequacy) and epistemological has been studied by: Feldman 1993, 216-232; 418; Lumer 1990, 246-260. Another special form of probabilistic arguments that has been reconstructed from an epistemological point of view are interpretative arguments, which try to establish the causes for known facts and circumstantial evidence by an inference to the best explanation based on Bayes' Theorem [cf. Lumer 1990, 221-246; Lumer 1992]. In these and other cases of probabilistic arguments [cf. e.g. Korb 2003] the underlying epistemological principles are those of probability theory. Some statistical types of arguments, whose epistemological principles are obviously those of statistics, as

well as causal arguments have been reconstructed by Feldman [1993, 232-327]. Practical arguments about the desirability of states of affairs and about optimum courses of action, which list the object's pros and cons and try to assess and weigh them, have been reconstructed from an epistemological point of view by: Feldman 1993, 351-354; 420; Lumer 1990, 319-433. The latter arguments are based, among others, on utility theory and the theory of practical rationality as their epistemological principles. Pascal arguments, which are based on rational decision theory and are arguments under complete uncertainty in favour of treating a thesis to be true, have also been reconstructed epistemologically [Lumer 1997]. Deductive, probabilistic and practical arguments are basic forms of arguments and not reducible to each other; interpretative and genesis of justified belief arguments are special types of probabilistic arguments, whereas Pascal arguments are special types of practical arguments.

This list is not intended to be exhaustive. The important points for the present discussion are: First, all argumentatively valid arguments are based on and appeal to some efficient epistemological principal, which is justified in epistemology and which guarantees the thesis' truth or acceptability by its relation to the thesis' truth conditions. Second, different types of argument can be distinguished according to their underlying epistemological principle. Third, the epistemological principles used in non-deductive arguments are more complicated than the deductive principle and thus lead to more complex forms of argument, which cannot be reduced to deductive arguments. A first structural enlargement is that criteria for argumentative validity of *all* uncertain forms of argument include a reference to some database, which, according to the adequacy conditions, then has to be that of the addressee. This means the argument's validity is relative to this database and does not only depend on the argument's premises. This feature has already been dealt with in the last section. A further structural enlargement is specific to practical arguments. Practical arguments like other arguments shall guide the addressee to cognize the (epistemic) acceptability of the thesis. This epistemic part of practical arguments already leads to new complications because the object of the value judgement may have huge numbers of possibly relevant consequences and implications, which even in principle we cannot all justifiedly believe and survey. However, the practical part of practical arguments is a still more fundamental enlargement. What does this practical part consist in? It has to do with practice: finally believing in the thesis (i.e. a value judgement) has to motivate the addressee to some degree with respect to the value object, to materialize the value object, to protect it etc. or to destroy, to flee from it, to abandon it etc. The addressee may believe as strongly and justifiedly as one wants in the thesis, if he does not have such a kind of motivation the argument has failed as a *practical* argument. If practical arguments can guide cognition only like other arguments (namely to guide checking if the thesis' acceptability conditions are fulfilled) then the practical part of practical arguments must be a question of *thesis selection*. There may be countless true theses about the object or action in question, all well-defined and many of them cognizable so that an argumentatively valid and adequate argument for them exists. The important feature that makes one or only a small number of these arguments to practical arguments is that their theses have such a content that believing in them generates the respective motivation. Arguments and reasons fulfilling this motivational

requirement in practical philosophy have been called "internal" [cf. e.g. Williams 1979]. However, motivation is an empirical, causal effect. This implies that being a good practical argument depends on the addressee's or, more generally, on human motivational make-up; and criteria for argumentative validity and adequacy of practical arguments have to be based on the respective psychological findings. This point cannot be worked out further in this article. What is important here is that constructing validity and adequacy criteria for various types of arguments does not only require basing them on epistemology but eventually, when it comes to practical arguments, transcends even this base and additionally requires foundation in theories of practical rationality and in the psychologies of motivation and decision.

8. General Criteria for Argumentatively Valid and Adequate Arguments

With the elucidations given so far the general definition of '(argumentatively) valid argument' and with it the general criteria for good arguments (first in a rough form then in an extended and precise form) should be understandable.

An argument x is (argumentatively) *valid* iff (i) there is a (general) epistemological principle e and a criterion c that is a concretization of e for the thesis q of x (so c says: q is acceptable if conditions c_1, \dots, c_m are fulfilled), and the reasons of the argument are identical with the conditions c_1, \dots, c_m of c or with a part of them; (ii) e is efficient (cf. above sect. 5); (iii) the conditions c_1, \dots, c_m of c are fulfilled; (iv) there is at least one person who does not yet justifiedly believe the thesis and who if confronted with x would be guided by x to cognize the acceptability of the argument's thesis.

The central point of this definition is that the reasons of a valid argument truthfully state some propositions to be true that are identical to all or part of the concretized conditions of an efficient epistemological principle, concretized for the thesis. One of the infinite concretizations of the deductive epistemological principle e.g. is: 'Socrates is mortal' is true if 1.1. both 'all humans are mortal' and 1.2. 'Socrates is human' are true and if 2. these two propositions imply 'Socrates is mortal.' Everyday arguments would omit two of the three possible reasons thus being condensed e.g. to: 'Socrates is mortal since he is human.'

An *argument in a broad sense* is a valid argument or an argument believed or stated by someone to be valid.

A valid argument is *adequate* for rationally convincing a listener (hearer) h if h is not yet sufficiently convinced of the argument's thesis, if h knows at least implicitly the underlying epistemological principle, if h justifiedly believes (which includes that in this very moment h cognizes) the conditions of the concretization c to be true, if h is able to add the most important missing conditions of acceptability, if the argument is sufficiently strong for h 's purposes, and if h has no relevant knowledge about the thesis above the database presumed in the argument.

For the various types of arguments more specific definitions should be developed that rely on the respective epistemological principles; such definitions are much more helpful for

argumentative practice. Developing them here, however, would exceed the limits of this paper.¹³ - The rest of this section provides more exact versions of the general conditions just introduced.

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

A0: Domain of definition: *x* is a triple $\langle r^\circ, i, q \rangle$, consisting of

A0.1: a set r° of judgments/statements r_1, r_2, \dots, r_n ,

A0.2: an indicator *i* of argument, and

A0.3: a judgment *q*;

r_1, \dots, r_n (the elements of r°) are called the "reasons for *q*" and *q* is called "the thesis of *x*".

A1: Indicator of argument: *i* indicates that *x* is an argument, that r_1, r_2, \dots, r_n are the reasons and that *q* is the thesis of *x*; in addition *i* can indicate the type of argument, i.e. the epistemological principle on which the argument is based.

A2: Guarantee of acceptability: There is an epistemological principle *e* and a criterion *c* for the acceptability fulfilling the following conditions:

A2.1: Efficient (epistemological) principle: the epistemological principle *e* is efficient; and

A2.2: Concretization (of the principle): the criterion *c* is a concretization of the principle *e* for the thesis *q* (so *c* says: '*q* is acceptable if c_1, \dots, c_m '), and the reasons r_1, r_2, \dots, r_n are judgments claiming of at least a part of the conditions (c_1, c_2, \dots, c_m , with $m \geq n$) of *c* that they are fulfilled (these reasons may have a probabilistic form and refer to a database like this: $r_i =$ 'the probability of b_i on the database *d* is p_i '); and

A2.3: True reasons: all conditions (c_1, c_2, \dots, c_m) of *c* are fulfilled.

A3: Adequacy in principle: *x* fulfils the standard function of arguments; i.e.: there is a subject *s* and a time *t* for which holds:

A3.1: the subject *s* at the time *t* is linguistically competent, open-minded, discriminating and does not know a sufficiently strong justification for the thesis *q*; and

A3.2: if at *t* *x* is presented to *s* and *s* closely follows this presentation this will make *s* justifiedly believe that the thesis *q* is acceptable; this process of cognition will work as follows: *s*, using *e* and *c*, will recheck - among others - those conditions (among c_1, c_2, \dots, c_m) for the acceptability of the thesis *q* which are claimed to be fulfilled in r_1, r_2, \dots, r_n , thereby coming to a positive result.

x is an argument (in the broad sense, which includes invalid arguments) :=

A4.0: Domain of definition: The domain of definition is the same as that of valid arguments.

A4.1: Valid argument: *x* is a valid argumentation, or

A4.2: Seemingly valid argument: there is a person *s* and a moment *t* with *s* at *t* believing or (explicitly or implicitly) holding the view that *x* is a valid argument.

A valid argument *x* is adequate for rationally convincing an addressee *h* (hearer) at *t* of the thesis (*q*) of *x* iff condition A5 holds:

¹³ I have defined some specific types of argument elsewhere: deductive arguments [Lumer 1990, 187-189], interpretative arguments (to the best explanation) [Lumer 1990, 237-244], genesis of justified belief arguments [Lumer 1990, 258-260], practical arguments for value judgments [Lumer 1990, 362-366], Pascal arguments for theoretical theses under uncertainty [Lumer 1997, 339].

A5: Situational adequacy:

A5.1: Rationality of the addressee: The addressee h (at t) is linguistically competent, open-minded, discriminating and does not have a sufficiently strong justification for the thesis q . And

A5.2: Argumentative knowledge (of the addressee): A5.2.1: The addressee h at t knows at least implicitly the underlying epistemological principle e of the argument x ; and A5.2.2: at t he (h) is able to develop the criterion c of acceptability (which is intimated in x) by means of his knowledge of the principle e if all the reasons of an ideal version of x are presented to him. And

A5.3: Acceptance of the reasons: The addressee h at t justifiedly believes that the propositions c_1, c_2, \dots, c_m are true, with c_1, c_2, \dots, c_m being the conjuncts of the antecedent of the criterion c of acceptability (intimated in x). And

A5.4: Explicitness: If in the reasons of x not all conditions (c_1, c_2, \dots, c_m) of the criterion c of acceptability (intimated in x) are claimed to be fulfilled the addressee h at t is able to add the most important conditions of acceptability. And

A5.5: Sufficient argumentative power: A5.5.1: The criterion c of acceptability (intimated in x) together with the subjective probabilities of the addressee (h at t) that the conditions of c are fulfilled provide a sufficiently high degree of probability of the thesis (q of x) - sufficiently high according to the desires of the addressee (h at t); and A5.5.2: in case of a nonmonotonic argument the database of the addressee h at t does not contain relevant justified beliefs which are not enclosed in the database presumed by the argument.

9. Justification of the Epistemological Approach to Argumentation

The epistemological approach to argumentation, in the specific form of the Practical Theory of Argument, so far has been sufficiently expounded as now to be justified. The epistemological approach here has been characterized by a certain conception of the standard function of arguments: to lead the argument's addressee to justified belief. The most important competing determinations are: 1. *rhetorical*: the aim or function of argumentation is persuasion, i.e. to cause or to increase acceptance of the thesis [Perelman & Olbrechts-Tyteca 1958, 5; Hamblin 1970, 241; cf. also: Blair & Johnson 1987, 48]; 2. *consensualistic*: the aim or function of argumentation is consensus, i.e. to produce a shared belief [Habermas 1981 I, 48] or - in van Eemeren's and Grootendorst's terms -: to "solve conflicts of opinion" [Eemeren & Grootendorst 1984, 1 et passim; Eemeren et al. 1996, 275; Eemeren & Grootendorst 2004, 5; 56]. Consensualistic approaches mainly take discussions as their principal object of study (and van Eemeren and Grootendorst use "argumentation" mostly in this sense). If one concentrates on the argumentative aspect of such discussions the main difference between the consensualistic and the rhetorical conceptions of argumentation is that, according to the former, in good argumentation the arguer must believe what she says, i.e. she must accept the whole argument for herself, which is not required in rhetorical theories.

The epistemological approach to argumentation now is justified by its various advantages:

1. More truths: It designs good arguments as instruments that guide people to acquire justified belief; if such arguments are used in the proper way the output is not only that the addressee believes something new but that he justifiedly believes it. This implies that this belief is acceptable: true or at least truth-like or probably true. This is guaranteed by relying on epistemological principles that are justified by their particular relation to the truth definitions of the respective theses. And true (and often also truth-like) beliefs are helpful for orientating ourselves in the world and for choosing the best course of action, they are much more helpful than false beliefs. We can reach our ends because we justifiedly believe what the consequences of our actions are; and we can choose the best end and option because we justifiedly believe their implications and to what degree these fulfil our criteria for good ends and actions. In addition, admitting uncertain arguments extends the set of knowable propositions to a degree, which is necessary and sufficient for practical matters. It does so with the help of risky procedures, which, however, are still efficient. Of course, as a consequence even the output of epistemologically good argumentation may be a false belief. But because of being based on epistemological principles the rate of true or truth-like beliefs among all practically important beliefs resulting from epistemologically designed argumentation is the highest obtainable for humans. In any case it is much higher than the rates for argumentation designed according to the rhetorical or consensualistic approach because these approaches lack any direct connection to truth conditions.¹⁴

2. Cumulation of knowledge: Beliefs acquired by epistemologically designed argumentation are supplemented by the respective justification. This makes the sources of the beliefs retrievable and implies information about the strength of justification. As a consequence, in cases of conflicting beliefs the one with the weaker justification can be given up and with it further beliefs depending on the corrected belief etc. All this amounts to a process of replacing false beliefs with true ones or at least statistically increasing the rate of true beliefs. This holds because uncertain epistemological principles have to integrate the person's complete database into one coherent picture, which because of the growth of this database excludes more and more simplistic interpretations that were compatible only with the smaller database. This means that the epistemologically organized process of belief acquisition is cumulative. Nothing of this holds for rhetorically or consensualistically designed argumentation because neither is bound to a cumulative system of knowledge change. Even if it allows belief changes, these changes are not related to truth; so, occasionally, false beliefs

¹⁴ Some consensualistic or rhetorical approaches (Perelman, Habermas, Tindale [1999, e.g. 117-120]) take 'convincing a universal audience' or 'universal consensus' as criterion for truth or for particular argumentative quality. 1. The main problem with this proposal is that it lacks connection to substantial definitions and criteria of truth. Why should consensus have anything to do with how the world is? 2. Actually universal consensus admittedly never exists. If it existed consensus theories of truth could not explain it. But the most obvious explanation would be that this consensus originates from cognizing the truth, where 'truth' then must be defined independent of consensus. 3. If universal consent never exists appeal to it can only be *de jure* [Perelman & Olbrechts-Tyteca 1958, 41], i.e. that the respective proposition *should* find universal consensus. But for establishing what should find universal consent one again needs independent criteria. And of course, these should be alethic and epistemological. [For a more extensive critique of particularly Habermas' proposal see: Lumer 1990, 291-296.]

will be replaced by true ones but much more frequently false or true beliefs will be replaced by false ones.

3. *Usability as subjective justification:* Epistemologically conceived arguments represent the ideal form of propositional subjective justifications; so subjects may directly store the argument as the justificatory part of their justified belief.

4. *Transfer of justified beliefs:* Epistemologically designed argumentation of an arguer addressed to another person transfers justified belief as such.

5. *Perspective of a truth seeking person:* The epistemological approach designs arguments from the perspective of an addressee who wants to examine the thesis' acceptability. He checks the reasons to ascertain whether they are sufficiently strong for rationally accepting the thesis. Epistemological argumentation theory provides criteria for such examination. [Cf. Feldman 1994, 175; Lumer 1991, 98; Meiland 1989, 194.] It thus supports the rational and emancipated subject. Rhetorical approaches on the other hand tend to instrumentalize the addressee by inducing beliefs that do not have the advantage of being bound to truth and that are chosen by the arguer for his personal reasons. And consensus theories tie each subject to other people's opinion without offering any epistemic advantage. 5.1. A side effect of taking the addressee's perspective is that the respective arguments are also suited for monologic use, for finding out the truth, inventing hypothetical arguments etc.

6. *Precise criteria for assessing arguments:* The epistemological approach provides (or at least aims at providing) precise criteria for assessing arguments according to their epistemological value. These criteria can be used to design arguments as well as to decide on them. Consensus theories on the other hand do not have anything to offer in this respect; they stop after having provided procedural rules. And rhetorical approaches either provide only *classifications* of arguments without precise prescriptions, or they propose recipes that instrumentalize the addressee.

This justification is not linguistic but practical, or more precisely: instrumentalist - and this is the reason for the name "Practical Theory of Argument". It does not appeal to the common or "true" sense of "argument" or "argumentation" but lists instrumental advantages of the objects defined before. The justification does not exclude that we also may develop e.g. a rhetorical theory of persuasive speech and that in certain situations it would be instrumentally better and morally legitimate to use instruments designed by such a theory, i.e. well designed rhetorically persuasive speech - think e.g. of someone who tries to convince some terrorist to surrender but who thinks that the most effective premises he could use and which come from the terrorist's confused beliefs are all false.¹⁵ However, although these rhetorical instruments will have other advantages, they will not have those listed above.

¹⁵ I see much less room for a consensualistic theory of "argumentation" that is not epistemologically conceived. (An *epistemologically* conceived consensualism could e.g. strive for an argumentatively justified consensus as a means to integrate socially distributed knowledge and to minimize errors of cognition, thus increasing one's rational certainty about a proposition. I have developed such an approach in: Lumer 1988.) In non-epistemological consensualistic discussions each participant, as a rational person, *for herself* should strive for justified belief and thus should be argumentative. On the other hand she should not do so with respect to the

This liberal view about these different types of instruments and approaches notwithstanding, some priorities should be clear. First, epistemologically conceived arguments are and should be prevailing in most domains of our lives, of course in science but also in political decisions, courts of law and daily life, because here we are interested in truth and in finding out best solutions. And such arguments provide this much better than e.g. mere rhetoric (cf. advantages 1 and 2). Second, even if someone simply intends to make an addressee believe some proposition, of course, epistemologically conceived arguments could do this work too. Sometimes though, mere rhetoric could be the better instrument for achieving this goal. But even in this case rhetorical success often is parasitic towards valid argumentation because the addressee has the vague impression having been rationally convinced. Third, historically the terms "argument" and "argumentation" have been used for those kinds of speech and meaning that are bound to truth. An epistemological approach to argumentation elaborates this more or less vague understanding. So the concepts finally defined by this approach should be *the* concepts of 'argument' and 'argumentation' - and not e.g. the objects defined in rhetorical or consensualistic approaches. Of course, one could invert the meanings of these terms without much detriment because this is a secondary question, which does not change the concepts and the value of the objects; but it would be a break with the linguistic tradition.

Acknowledgements: I would like to thank Tony Blair, Ralph Johnson and Christopher Tindale for their very valuable comments on this paper.

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other participants - otherwise we would have a completely epistemologically conceived discussion. I do not see a coherent function for such discussions. Either they collapse into a rhetorical conception by giving up the consensus requirement and allowing strategic behaviour. Or they collapse into an epistemological conception by giving up the substantial liberality of arguments and requiring that only epistemologically designed arguments may be advanced in the discussion.

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