

The Epistemological Approach to Argumentation - A Map

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Abstract: This contribution gives an overview of the epistemological approach to argumentation. It explains what an 'epistemological approach to argumentation' is, and justifies this approach as being better than a rhetorical or a consensualist approach. It systemizes the main directions and theories within the epistemological approach according to their criteria for good argumentation. It presents contributions by epistemological argumentation theorists to major topics of argumentation theory. Finally, it introduces the articles of the two special issues of "Informal Logic" about the epistemological approach to argumentation.

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This introduction explains what an 'epistemological approach to argumentation' is, comparing it to other approaches (section 1), systemizes the main directions and theories within the epistemological approach according to their criteria for good argumentation (section 2), and presents contributions by epistemological argumentation theorists to major topics of argumentation theory (section 3). Finally, the articles of this and the following special issue of "Informal Logic" are incorporated into the map plotted so far (section 4).

1. What is the Epistemological Approach to Argumentation and Why Is It Better Than Its Rivals?

Three full-fledged approaches can be distinguished in the current theory of argumentation on the basis of what they (explicitly or implicitly) assume to be the main purpose or standard function of argumentation.¹ 1. *Rhetorical* argumentation theories aim at persuasion, i.e. the output that should be reached by argumentation is to cause or increase the addressee's belief in the argument's thesis. The theories of Perelman & Olbrechts-Tyteca and of Hamblin are paradigmatic. 2. *Consensus* theories of argumentation see argumentation as a means for reaching (under certain restrictions) consensus, i.e. shared beliefs, in an argumentative discourse. The most prominent

¹ Arguments are abstract entities. As such they cannot have aims. But they can be defined in such a way as to fulfil a certain standard function, which does not exclude their fulfilling other functions as well, in particular functions near to the standard function.

consensus theories are van Eemeren's and Grootendorst's Pragma-Dialectics and Habermas' discourse theory. 3. According to *epistemological* theories of argumentation, the standard output of argumentation is knowledge or justified belief in the epistemological sense [Biro 1987, 69; Biro & Siegel 1992, 92; 96; Siegel & Biro 1997, 278; 286; Lumer 1990, 43 f.; 1991, 100; Goldman 2003, 58]. Similar expressions for this goal are: "rational persuasion" [Johnson 2000, 189 ²], "to increase the degree of reasonable confidence which one has in the truth of the conclusion" [Sanford 1972, 198], "to provide good reason to believe the conclusion" [cf. Feldman 1999, xiii; 12; 24], "to show another person [...] that the other person [...] has a reason to believe something" [Sinnott-Armstrong 1999, 181]. Apart from fulfilling the standard function and producing the standard output, argumentation can be used for other functions specific to argumentations, in particular also for individually inquiring about the truth of hypotheses [Meiland 1989, 186 f.; Lumer 1990, 49 f.; 2005, sect. 4].³ That the three approaches are "full-fledged" shall mean that their inherent determination of a purpose or function is the kernel of a scientific paradigm because it makes it possible to systematically develop answers to all important questions of argumentation theory on this basis. Although e.g. Toulmin's theory is very influential it is not full-fledged in this sense.

Rhetorical theories have been the target of philosophical critique since antiquity, in particular ever since Socrates' and Plato's famous attacks. The most important criticism is: Since rhetoric does not strive for truth and knowledge it will often lead to false beliefs, i.e. disorientation about how the world is, and thus to false decisions with tremendously negative consequences [e.g. Plato, Phaidros 259e-262c; Gorgias 452e-455d; 458e-460a; Philebos 58a-59b]. And this is true since ever.⁴ Socrates' and Plato's second most important criticisms of rhetoric consists in refusing

² Previous Johnson defended a rhetoric approach [e.g. Johnson & Blair 1977], which he criticized later [Johnson 1990, 271].

³ Some philosophers prefer to define the aim of argumentation in broader terms than 'believing', e.g. as 'acceptance' or 'recognition of validity claims', which should include practical attitudes (first of all intentions) and emotional attitudes [e.g. Habermas 1981, 35; 38; Pinto 2001, 10-20]. However, this idea does not really open an alternative to aiming at belief states; therefore this broader characterization has not been included here. (Of course, an arguer can - successfully - aim at practical or emotional attitudes by presenting an argument. However, the question is if the further attitudes are secondary effects of a rational belief change (regarding the argument's thesis) induced by the argumentation or if they can be achieved directly. 1. The first way, of course, is possible. However, an analysis of argumentations' way of functioning [e.g. Lumer 2005, sect. 5] speaks against the second possibility. Arguments are designed to make people check acceptability conditions for a thesis, the result of which (if everything goes smooth) is justified belief. The defenders of the view in question have not provided an alternative function analysis of argumentation which would show how the arguments envisaged by them are supposed to work. Of course, argumentation should also influence action and emotion. Given the limits just emphasized, the best way to do so is to look for beliefs that exercise an influence on practical attitudes. Epistemologically conceived practical arguments follow this strategy [cf. Lumer 2005, sect. 7]. 2. It is not clear what the "thesis" of an argument should be if argumentation directly aimed at something different than (justified) belief. According to the usual understanding, the thesis of an argument is a proposition or statement, i.e. the meaning of a declarative sentence; but acceptance of a statement is a belief.) For an extensive discussion of the object of argumentation and a critique of Habermas' "acceptance programme" see: Lumer 1990, 141-158.

⁴ Criticism from an epistemological point of view: of Perelman's & Olbrechts-Tyteca's "Nouvel rhétorique": Lumer 1990, 287-289; of Hamblin: Johnson 1990.

probabilistic reasoning, which according to them leads only to something similar to truth [Plato, Phaidros 272d-273c; Timaios 29bc]. This, however, is false. The probable is not *similar* to truth, it may be true and mostly is but sometimes is not. To forgo justified probabilistic beliefs would have disastrous consequences because e.g. all assumptions about the future and thus about the various consequences of our options cannot be certain with the consequence that trying to decide without justified probabilistic beliefs would leave us without any guidance. Therefore, we have to expand our epistemic goal from truth to *acceptability*, i.e. truth, high probability or verisimilitude, in spite of the risk that the acceptable may be false. But in order to guarantee that propositions believed to be acceptable are really acceptable (and thus approaching the truth as closely as possible) the respective beliefs have to be justified. Finding criteria for arguments that lead to justified acceptable beliefs is an important task for the epistemological approach.

Epistemological argumentation theories are based on epistemological criteria for truth or acceptability of propositions and thus are bound to truth. Therefore, they fair much better in the respect of providing orientation. Argumentation designed according to epistemological standards provides a sufficiently extensive wealth of acceptable beliefs, i.e. (more or less) correct pictures of the world, hence good orientation and thus help us to make optimum choices. A somewhat inconspicuous feature that contributes significantly to this success is that epistemologically conceived argumentation does not only aim at acceptable belief but at *justified* belief, which implies the belief's acceptability, but then adds subjective justification to this belief. This subjective justification (i) presupposes that one arrives at one's belief by checking whether some acceptability criteria of this belief are fulfilled (*cognizing process*) and (ii) it consists in remembering the kernel of this kind of genesis (*subjective justification*), e.g. from what premises a conclusion was inferred. A correct cognizing process obviously guarantees the belief's acceptability. The subjective justification helps in cases in which one arrives at inconsistent (justified) beliefs - this can happen because uncertain justification, of course, does not guarantee truth, and thus justified beliefs sometimes are false. In such cases, with the help of the remembrance (subjective justification), first, the more weakly justified belief can be identified and given up and, second, other beliefs that were based on it can be identified and given up as well. Thus the subjective justification helps revise one's beliefs towards more truths. [Lumer 1990, 30-43; 1991, 100.]

Consensus theories of argumentation, like rhetorical theories, aim at the other's unqualified belief in certain propositions, leading to the same problem as the rhetorical approaches. This time, however, one has to share the other's respective belief. But this restriction does not change the problem. Now consensus is put before truth. What help can a consensus provide if the shared belief is false? The truth of a belief simply does not depend on someone else's sharing this belief but on fulfilling the truth conditions of the proposition in question. Even the idea of consensus theorists that the road towards consensus has to be regulated by rules that again are jointly accepted does not help, as long as this consent is not based on objective criteria for truth and acceptability.⁵

⁵ Criticism from an epistemological point of view: of Pragma-Dialectics: Siegel & Biro 1997, 281-285; Biro & Siegel 1992, 89-91; of Habermas' discourse theory: Lumer 1990, 150-158; 291-296; 316 f.; 401-404.

Of course, there are also objections to the epistemological approach to argumentation [cf. e.g. Hoffmann's and Huss' contributions to this issue as well as Feldman's reply to Huss]. One objection is that the epistemologist is only a participant in the discussion as everybody else; he has no particular authority for deciding debates. This is true but it is not an objection. First, the epistemologist as such is not interested in winning discussions. He proposes and justifies criteria for epistemically valuable arguments. If someone decides to adopt them he will have the advantages listed above; if he decides against them he will not have these advantages. Of course, even the suggestions made by epistemologists sometimes are wrong, bad or not optimum. However, what is important is not that an epistemologist has made a suggestion but that this suggestion is good and justified. - A further objection to the epistemological approach is that truth and believing cannot be distinguished; so insisting on objective truth as one of the conditions for argumentative validity is superfluous and illusive. But of course, the truth of some proposition p is different from believing that p . The first is defined by the truth conditions of p , whereas believing is a subjective state. On the other hand, the truth of p is epistemically present only in the form of one's own believing at the very moment that p is true. However this does not amount to a collapsing of truth into belief; one can well distinguish, though only in a fallible way, s ' believing at time t that p from the truth of p if s is not identical to oneself or t is not identical to the respective moment and if our present belief in the truth of p is sufficiently justified. - Many objections to the epistemological approach to argumentation are inspired by relativistic ideas. This is a too big topic for being started on here.⁶ What is important, though, in responding to this kind of objection is to underline the necessity and existence of clear and efficient, epistemologically justified truth definitions and criteria as well as procedures for cognizing the truth and the criteria for good argumentation based on them. Only this can cut off the seemingly eternal general objection that some people believe this, other people believe that, where the relevant question is: Which belief is justified? And here a big research task is still waiting for the champions of the epistemological approach, namely to enlarge and further elaborate the arsenal of such epistemologically justified instruments.

2. Directions within Epistemological Argumentation Theory

2.1. Argumentation Theories that Are Epistemological in a Broad Sense and Mere Epistemic Approaches

Nowadays with the strong influence of cognitive sciences there is also much talk of "epistemic" or "epistemological" conditions, "(social) epistemology" or generation of "knowledge". Not every argumentation theory that participates in this discourse or considers itself to be "epistemic" or "epistemological" is epistemological in the strict sense just explained. In particular it is not if for example, the term "knowledge" is used in a different sense than in normative epistemology, namely e.g. as the current stock of expert opinions. One case in point is: Willard 1983. An argumentation theory that is *epistemological in the strict sense* does not only share the

⁶ For an extensive critique of relativism from an epistemological point of view see: Siegel 1987.

above outlined idea that the central purpose or standard function (or similar) of argumentation is to lead to knowledge and justified belief, it must also understand these terms in a strict normative epistemological sense, which relates knowledge and justified belief to objective truth conditions. Thus, merely considering that good argumentation has to take into account the addressee's epistemic situation or that argumentation stimulates inferences and epistemic procedures does not yet amount to an epistemological theory of argumentation in the strict sense.

An illuminating case is Pinto's theory [Pinto 2001]. Pinto's theory is clearly epistemological in a broad sense because it sees argumentation as aiming at true belief [ibid. 23], as inviting to inferences [ibid. 36 f.] and because it sees argument appraisal nearer to epistemology than to logic [ibid. 21 f.; 31] and seeks "epistemic standards" to which argumentation should fit [ibid. 135]. But Pinto's important contributions to clarifying argumentation notwithstanding, the core of his theory is not epistemological in the strict sense. This holds not only because of his relativistic ideas regarding the ultimate standards of argument appraisal [ibid. 31; 136],⁷ which is barely compatible with an objective conception of truth, but even more because of his discourse theoretic conception of such standards and of truth: their "objectivity" is equated with interpersonal validity [ibid. 133; 135], i.e. the fact that they can be sustained in dialectical interchange within the broader cognitive community [ibid. 135; 136]. This conception of discursive justification is purely formal and consensualistic⁸ in that it takes the purpose of such standards again to be to *settle* questions about what good arguments are [ibid. 136, fn. 11]. So any reference to objective truth and truth conditions ultimately referring to the state of the world is missing. And this does not fit with the ideas expressed in the justification of the epistemological approach, namely to provide true and acceptable beliefs that help us orient ourselves in the world.

2.2. Types of Criteria for Good Argumentation Used in Epistemological Argumentation Theory

Here several directions within epistemological argumentation theory (in the strict sense) shall be distinguished according to the type of criteria of good argumentation they propose. In order to do so it will be helpful to first introduce such types of criteria in a pure form without much comment and then to present the major ideas behind the choice of the respective set of criteria.

Hamblin [1970, 224-252] has introduced several sets of criteria for good argumentation, which in any case answer the same questions from a different perspective. The two most important subjects of these criteria are the quality of the reasons and the relation or inferential link between

⁷ Of course, any epistemological theory of argumentation has to take into account the persons' epistemic situation, which implies that an argument that is good for rationally persuading a person at a given time may not be good for rationally persuading another person because e.g. the latter as opposed to the former, does not justifiably believe in some premise of the argument. But this situational adjustment of good argumentation does not amount to a *strong relativism* in the sense that *ultimate and rational standards* of argument appraisal are interpersonally different.

⁸ The proximity of these ideas to Pragma-Dialectics and even more to Habermas' discourse theory, i.e. consensus theories of argumentation, is amazing.

the reasons and the thesis. The following exposition focuses on these two aspects only and slightly modifies Hamblin's exposition.

A: Alethic criteria: A1: The argument's reasons are true. A2: The reasons logically imply the conclusion. [Cf. *ibid.* 234.]

E: Epistemic criteria: E1: The addressee knows the reasons to be true. E2: The thesis follows clearly from the reasons. [Cf. *ibid.* 236 f.]

RH: Rhetorical criteria: RH1: The addressee accepts the reasons. RH2: The passage from the reasons to the thesis is of a kind accepted by the addressee. [Cf. *ibid.* 245.]⁹

Because "know" in E1 is meant in the strict sense, which implies truth of the known, the epistemic criteria are stronger than the alethic criteria and imply them.

Hamblin is content with the rhetorical criteria [*ibid.* 245], whereas from an epistemological point of view none of these sets of criteria is satisfactory. There are three problems, which then have to be resolved in an epistemologically satisfactory set of criteria of good argumentation. Or put positively, from an epistemological standpoint criteria for good argumentation have to fulfil (at least) three *conditions of adequacy*:

AQ1: Guarantee of acceptability: Fulfilment of the criteria of good argumentation should imply that the thesis is (at least) acceptable because good argumentation should lead to justified belief for the sake of having true, probable or truthlike beliefs. - The rhetorical criteria do not fulfil this requirement.

AQ2: Inclusion of plausible reasoning: In order to provide sufficient orientation, criteria for good argumentation must not be too narrow and permit only certain arguments; uncertain arguments with a merely plausible or acceptable thesis must be included as well (cf. the criticism of Plato in section 1). - The alethic and the epistemic criteria do not fulfil this condition. So what Hamblin has called "epistemic criteria" is epistemic in a very strong sense. And we have to look for weak epistemic criteria.

AQ3: Accessibility: Mere truth, acceptability, logical implication etc. do not help; the argument's user must also have access to them. The addressee e.g. must believe in the premises' truth in order to come to believe in the conclusion via inference. - The alethic criteria do not satisfy this condition.

So none of the sets of criteria considered so far fulfils all three adequacy conditions. Therefore, epistemological argumentation theorists have introduced new sets of criteria for good argumentation, which can be categorized as follows. The following descriptions are not intended to represent the precise conditions developed by any single author, which of course are much more elaborate and sophisticated, but to reflect the main idea behind such criteria.

⁹ Hamblin calls this group of criteria "dialectical", allegedly using the Aristotelian term for them [Hamblin 1970, 241]. But Aristotle's dialectical argumentations are based on premises that are "endoxa", i.e. something like the best expert opinion [Aristotle, *Topics* 100a27-b23], and not on simple acceptance by the addressee. So dialectical argumentations are epistemologically much more ambitious than what Hamblin has in mind, which is clearly rhetorical.

G: Gnostic or weak epistemic criteria: G1: 1. The argumentation's addressee justifiedly believes in the argument's reasons. 2. And he has no further information that would defeat that argument. G2: It is reasonable for the addressee to proceed from believing in the reasons to believing in the argument's thesis.¹⁰ - Note that these criteria speak of an argument and an addressee and more implicitly of a time too. So they define 'good argument' (or 'good argumentation') as a three-adic notion: '*a* at time *t* is a good argument for person *s*' (or 'to address argument *a* at time *t* to person *s* is good argumentation').

PL: Plausibilist criteria: PL1: 1. The argument's reasons are true or (in uncertain arguments) acceptable on some database *d*. 2. In uncertain arguments the reasons respect all the relevant information of the database *d*.¹¹ PL2: The reasons' truth or acceptability, according to an effective epistemological principle, implies the thesis' acceptability. Such epistemological principles e.g. are deductive and inductive implication, probability calculus and definition of 'expected utility'. - Plausibilist criteria define 'good argument' as a two-adic notion: '*a* is a good argument on database *d*', where the reference to the database can be omitted for certain arguments.

PR: Prosbatic criteria (Greek "prosbatós" means accessible): PR1: 1. The addressee justifiedly believes in the argument's reasons. 2. In case of uncertain arguments his database must be identical to that of the argument. PR2: 1. The addressee (at least implicitly) knows the argument's underlying epistemological principle, and 2. its application in the argument is clear to him. - Prosbatic criteria define 'good argumentation' as a four-adic notion: 'to address argument *a* (with database *d*) at time *t* to person *s* is good argumentation', where reference to the database may be omitted in case of certain arguments.

RE: Responsibilist criteria: RE1: 1. The *arguer* justifiedly believes in the reasons. 2. In case of uncertain arguments the arguer does not dispose of further information relevant to the implication. RE2: 1. The *arguer* justifiedly believes that the reasons' acceptability, according to an effective epistemological principle, implies the thesis' acceptability. 2. Because of these beliefs the arguer believes in the thesis.

Some implications: Fulfilment of the plausibilist criteria always implies the thesis' acceptability ($PL \rightarrow AQ1$), whereas fulfilment of the gnostic and the responsabilist criteria nearly always implies the thesis' acceptability ($G; RE \sim \rightarrow AQ1$). Obviously, all four sets of criteria are designed to include plausible reasoning ($G; PL; PR; RE \rightarrow AQ2$). Fulfilment of the gnostic and of the probatic criteria in each case implies accessibility for the addressee and thus fulfilment of the rhetorical criteria ($G; PR \rightarrow AQ3\&RH$). This is the lesson epistemologists have learned from rhetoric. Fulfilment of the responsabilist criteria, on the other hand, implies accessibility for the arguer ($RE \rightarrow AQ3$), and it mostly implies acceptability for the arguer ($RE \sim \rightarrow AQ1$). Plausibilist

¹⁰ It is difficult to find a formulation for the inference condition that covers both the acceptability and the accessibility condition. "Reasonable" is not quite clear in itself but is intended here to do both jobs. All the criteria that I found in the literature have some problems in this respect.

¹¹ This condition is stronger than: the database does not contain a defeater of the argument. Unlike the former, the latter condition, does not reflect the possibility that the database, though not containing a *defeater* for the argument, might contain *stronger support* for the argument so that the thesis' posterior probability could be higher than what the argument suggests. Such a too weak argument would not be good either.

and probatic criteria taken together imply the gnostic criteria (PL&PR \rightarrow G), whereas the opposite does not hold because the former criteria are much more specific about the argument's structure.

Some ideas behind these types of criteria are as follows. All four sets of criteria use concepts such as 'justified belief', 'acceptable', 'epistemological principle', i.e. weakenings with respect to 'knowledge', 'true' and 'deductive implication', and include special conditions for encompassing uncertain, plausibilist argumentation as well. The *gnostic criteria* then try to fulfil the other two adequacy conditions, i.e. acceptability and accessibility, in one go. Therefore, gnostic criteria have to be situational; they do not define the 'goodness of argument (as such)', of course from an epistemological point of view, but only 'goodness of an argument in a certain situation (which is characterized by a person and a specific time)'. Gnostic criteria do not establish direct conditions for the argument's structure, and they lean heavily on the concepts 'justified belief' or 'reasonable', which have to do the main work to provide restrictions for the argument's structure. This has several disadvantages. The criteria for good argumentation do not help in constructing arguments; they do not help in explaining how argumentation leads to justified belief; they do not tell us if the argument may, perhaps, be useful in another situation.

Plausibilist and probatic criteria on the other hand belong together in that for good argumentation both sets of criteria have to be fulfilled. They accommodate the two adequacy conditions in two steps. Satisfying the plausibilist criteria guarantees acceptability; satisfying the probatic criteria guarantees accessibility. The plausibilist criteria are structural and refer only to the argument (and a database), whereas the probatic criteria are situational and refer also to the addressee and time. So both sets of criteria taken together make up a structural-situational theory.¹² The structural, plausibilist criteria may be considered as defining an instrument, i.e. the argument, that *in principle* is apt to fulfil the standard function of argumentation. The situational, probatic criteria, on the other hand, can be seen as rules for using this instrument: In which (epistemic) situation can the instrument be used to really fulfil the standard function?

This kind of subdivision in two sets of criteria has several advantages. 1. It immediately makes clear how the two adequacy conditions are fulfilled. 2. The structural criteria give precise indications on how to construct an argument. 3. And these arguments are designed in such a way as to describe what the addressee has to examine for cognizing the thesis' acceptability. So they can guide the addressee's process of cognizing. The probatic criteria only guarantee that the addressee can really undertake this examination. 4. This kind of division of labour also makes clear why good argumentation is not relativistic even though it is adapted to the addressee: the argument is objective, but the probatic choice as to which argument to use reflects the addressee's epistemic situation. 5. The subdivision makes clearer why some argumentation is fallacious, and it also subdivides fallacies in fallacies of the argument itself and fallacies of usage. So it can reveal that

¹² What I have called "situational" vs. "structural" in the current debate is sometimes referred to as "subjective" vs. "objective" [Ritola 2004; Biro & Siegel 2006]. Apart from being much less specific and precise, the latter terms are a bit loaded and misleading because plausibilist ("objective") criteria reasonably always have to be complemented by probatic ("subjective") criteria, so that the compound is also subjective in some way.

the argument itself may be good and useful in some other situation, even though it was not good to use this argument for convincing this particular addressee. [Cf. Lumer 2005, sect. 6.]

Responsibilist criteria are situational (like the gnostic criteria). But they differ from both the gnostic and the plausibilist-prosbatic criteria in a much more fundamental way, namely with regard to for which *way of argumentations' functioning* they are designed. To provide justified belief is the standard function of all kinds of epistemologically conceived argumentation, but the sets of criteria differ as to the way how they make it to fulfil this function. Plausibilist-prosbatic and gnostic criteria design argumentation in such a way as to lead to justified belief by *guiding the addressee's cognizing*: The argumentation invites the addressee to infer the thesis from the premises and the addressee follows this invitation [Pinto 2001, 36 f.]. More precisely, what happens is this. The argument's reasons state the fulfilment of a set of acceptability conditions of the thesis, e.g. that certain premises are true and that they logically imply the thesis, which together imply that the thesis is true, hence acceptable. The addressee now examines, whether these conditions are fulfilled (i.e. if the premises are true and if they imply the thesis) and then if their fulfilment amounts to the thesis' acceptability. For this second part of his examination the addressee must know the epistemological principle on which the argument is based - in our example it is the deductive principle, which says that a proposition is true if it is logically implied by true premises - and he must find out if the conditions stated in the argument's reasons are a concretization of this principle; and 'the thesis c is true if the reasons r_1, \dots, r_n are true and logically imply c ' obviously is a concretization of the deductive epistemological principle. If these examinations yield a positive result the addressee has confirmed the thesis' acceptability and he can rationally believe in it. In a nutshell, "guiding the addressee's cognizing" means: the argument (truthfully) states sufficient acceptability conditions of the thesis to be fulfilled; and the addressee checks if this is so - thus following the course of the argument's reasons in his cognizing. [Lumer 1990, 45-48; 280-281; 1991, 102-104; 2005, sect. 5.]

Responsibilist criteria on the other hand are fit to regulate a different manner of argumentation leading to justified belief: *authority-based cognizing*. By expounding the argument the arguer presents himself not only as informant (about the thesis) but also as someone who has cognized the thesis' acceptability relying on the expounded reasons [cf. Goldman 1999, 132 f.]. Now the responsibilist criteria do not require that the addressee justifiedly believe in the reasons etc. So let us assume that he does not. What then happens is this. The addressee cannot, on the basis of his knowledge, confirm that the reasons are acceptable; perhaps he cannot even follow exactly the course of the argument because he does not have sufficient knowledge about this type of argument (e.g. the epistemological principle) or because the single steps are too difficult for him or because of similar reasons. But the addressee gets a favourable impression of the argument and of the arguer's competence in these matters. Therefore he accepts the arguer as an authority in this field, the argument as probably good and the thesis as acceptable. The rationale behind his reasoning is a statistical inference: an authority in this field will mostly rely on good arguments, and the authority's opinions will mostly be true, therefore the thesis is probably true [Goldman 1999, 133]. It is characteristic for authority-based cognizing that in his cognizing the addressee

does not (really) follow the course of argument;¹³ he cannot really check it. In place of this he relies on the arguer's competence. This burdens the arguer with a particular epistemic responsibility with respect to the addressee. If the arguer wants to do justice to this responsibility he has to fulfil the responsibilist criteria.

As the statistical argument shows authority-based cognizing is epistemically rational, in particular in situations where a (relative) lay audience is confronted with complex expert reasoning, e.g. TV viewers listening to an expert debate, parliamentarians, judges or jury members listening to expert witnesses. And because of this rationality the addressee's resulting belief in the thesis is justified. However the justification is weak and secondary, namely based on the authority's primary cognition. The addressee's (*hearer's*) subjective probability of the thesis (*claim*) should be identical to that of the arguer (*speaker*) multiplied by the addressee's estimate of the arguer's reliability (i.e. the addressee's rational degree of trust): $P_h(c) = P_s(c) \cdot P_h(r)$, with $P_h(r) < 1$, of course. So after authority-based cognizing the addressee's rational probability of the thesis must be lower than that of the arguer, whereas argument-guided cognizing leads, on the average, to the same probability of the thesis as that of the arguer (the probability may be higher e.g. if the addressee attributes higher probabilities to the reasons than the arguer, and it may be lower in the opposite case). Authority-based cognizing, unlike argument-guided cognizing, does not really exploit the argument's potential for providing the opportunity to check the thesis' acceptability. In this respect it is an improper use of arguments; in extreme cases the same result can be achieved by some argumentative hullabaloo, though with the risk that the addressee detects some parts of it as being false or senseless and therefore distrusts the arguer completely. (In this respect the safest argumentative "magic" is sound arguing itself.)

In addition to regulating argumentation aimed at authority-based cognizing, responsibilist criteria of good argumentation may serve as *complementing* conditions for argumentation aiming at *justification transmission* [Goldman 1997, 161 f.]. Guiding the addressee's cognizing the thesis by itself presupposes only fulfilment of the gnostic or plausibilist-prosbatic criteria but not fulfilment of the responsibilist criteria. The arguer e.g. possibly does not believe in some of the argument's reasons or does not have a justification for them, or he may formulate only a hypothetical argument, or (in case of solipsistic argument invention and argumentation used for inquiry) there is no arguer at all; all this does not undermine the addressee's cognizing the thesis [cf. Feldman 1994, 170]. However, if an arguer wants to transfer knowledge or justified belief as such, he has to fulfil the responsibilist criteria in addition to the gnostic or plausibilist-prosbatic criteria. Why? Apart from the mere semantic reason that otherwise there would not be any transfer of justified belief, the

¹³ This is also different from cognizing guided by genesis of knowledge arguments. In these arguments the arguer reports how the thesis has been cognized and how this knowledge has reached him [Feldman 1999, 216-232; 418; Lumer 1990, 246-260]. With a sufficiently detailed report, the addressee in principle would recheck fulfilment of the thesis' acceptability conditions, as the witness has done; so the addressee would follow the witness' course of cognizing. But the problems, as compared to direct argumentation, are, first, that the report necessarily is quite incomplete, so that for the missing parts the addressee has to fill in probabilistic hypotheses and, second, that the addressee usually has to accept a big part of the report only on the basis of the arguer's say-so.

deeper rationale is that of an interpersonal enterprise of knowledge improvement. If someone's argumentation (addressed to another person) is, as the arguer knows, good for the addressee (the gnostic or plausibilist-prosbatic criteria are fulfilled) but not for the arguer (the responsibilist conditions are not satisfied) then the arguer must have some relevant information that the addressee does not have. To improve the addressee's epistemic situation the arguer should introduce this piece of information in the discourse and hence change his argument.

2.3. Epistemological Argumentation Theorists and Their Criteria of Good Argumentation

The last subsection has provided a rough map of the physical geography of general epistemological argumentation theories. Now human locations and political boundaries have to be plotted on it.

Feldman and *Pinto* have developed gnostic criteria for good argumentation. *Feldman* defines: "An argument is a good argument for person *S* if and only if [G1.1F] (i) *S* is justified in believing the conjunction of all the premises of the argument, [G2F] (ii) *S* is justified in believing that the premises are "properly connected" to the conclusion, and [G1.2F] (iii) the argument is not defeated for *S*." [Feldman 1994, 179.] (The insertions in square brackets are mine, C.L., and indicate to which of the above criteria *Feldman*'s criterion corresponds. "G1.1F" e.g. means: *Feldman*'s version of the gnostic criterion G1.1.) Condition (ii) (=G2F) does not really fit in that it aims only at acceptability (AQ1) but not at accessibility (AQ3). - *Pinto* formulates weak epistemic conditions for good argumentation: "[G1P] (WE1) The premisses must be reasonable to believe. [G2P] (WE2) It must be reasonable to infer the conclusion from the premisses." [Pinto 2001, 23.] Unfortunately, "reasonable" is very, very vague; it should cover acceptability as well as accessibility.

Johnson and *Lumer* adhere to structural-situational criteria of good argumentation. *Johnson* defends a mixture of alethic and plausibilist criteria together with probatic criteria: A1J: The premises are true [cf. *Johnson* 2000, 198]. PL2J: The premises are adequate and provide sufficient support for the conclusion [ibid. 204]. PR1.1J: The addressee has rationally accepted all the premises [ibid. 195]. In addition, *Johnson* requires "relevance" [ibid. 200-204], which is not very clear and may be interpreted as serving several functions: PL1.2: taking into account all the relevant information of the database; PR1.2: the addressee has no further relevant information. Aside from the fact that *Johnson*'s criteria do not include a version of PR2, the insertion of an alethic requirement for the premises is problematic. It excludes for example arguments with explicitly probabilistic premises. - *Lumer* proposes a plausibilist-prosbatic criterion for good argumentation. He defines 'argumentatively valid argument' (which is his generalized concept of a sound argument) in plausibilist terms and adds probatic adequacy criteria to this for their use for rational convincing. [Lumer 1990, 58 f.; 1991, 104; 2000, 410-412.] (These criteria are a bit long to be quoted here in full; but they are included in this issue: Lumer 2005, sect. 8.) An interesting feature of these criteria is that they do not conceptualize the relation between the argument's reasons and the thesis in terms of 'inference' or '(logical) implication' but they use the more general concept of cognizing as checking whether the conditions of an acceptability criterion for the

proposition in question are fulfilled. Lumer calls the general versions of such acceptability criteria of a certain type of propositions "epistemological principles" and distinguishes types of argumentation according to the epistemological principle they are based on. Such epistemological principles are identical to or have to be justified with reference to truth definitions for various types of propositions. (Including these epistemological principles in the argument's reasons would not turn the argument into a deductive argument because the fulfilment of such principles usually cannot be positively proved.) This more general approach makes it possible to cover also argument types that usually are neglected in current argumentation theory, e.g. practical arguments based on definitions of 'expected utility', probabilistic arguments or arguments for empirical theories.

Though *Biro* and *Siegel* have not developed explicit general criteria for good argumentation they defend a conception (mainly elaborated for capturing question-begging arguments) that stresses the importance of "objective", i.e. plausibilist criteria [Biro 1977; 1984; 1987; Biro & Siegel 1997, 278; 2006]. Although they recognize that a good (according to objective, plausibilist criteria) argument may be used in a pointless or circular way [Biro & Siegel 2006, sect. II] - this is their tribute to accessibility (AQ3) - they tend to go along with the plausibilist criteria alone as far as possible and do not formulate probatic criteria. Though this strategy is unobjectionable in principle, as long as the need for a probatic complement is acknowledged, it has caused misunderstandings. A trial to spell out 'good argumentation' in terms of plausibilist criteria for arguments alone, of course, would be a non-starter. Probably the current debate would give rise to fewer misunderstandings if Biro and Siegel said this more prominently and worked out probatic criteria.

Goldman has developed a combination of (mainly) responsibilist and probatic criteria: RE1.1G: The arguer justifiedly believes in the premises; RE2.2G: he believes in the conclusion; PL2G: and the (explicit and implicit) premises jointly provide strong support for the conclusion [Goldman 1999, 134; 1994, 34]. Originally he also added: RE2.1G: The arguer justifiedly believes that the (explicit and implicit) premises (together) strongly support the conclusion [id. 1994, 34 f.; 36]. The audience does not believe in the conclusion [Goldman 1999, 136] ¹⁴ RH1G: but in the premises [ibid. 137; 1994, 37]; PR2.2G: the premises-conclusion relationship is explained in a fashion that promotes its comprehension by the audience [id. 1999, 138]; ¹⁵ PR1.2G: the audience has no defeater for the argument [ibid. 139]. ¹⁶ Apart from some lacunae (RE1.2, PR1.1, PR2.1) and blends of conditions from different criteria series (PL2G instead of or in addition to RE2.1G; RH1G instead of PR1.1), what is surprising about Goldman's criteria is, first, the lack of plausibilist criteria (though he mentions them [Goldman 1999, 135; 1994, 27] he does not include them in his list of criteria for good argumentation) and, second and above all, the combination of more or less

¹⁴ This condition has no counterpart among the criteria listed above because these were restricted to conditions for reasons and for the reasons-thesis relation.

¹⁵ Earlier version: Through the arguer's argumentation the audience recognizes that the premises provide strong support for the conclusion [Goldman 1994, 37]. But this is an effect and not a rule of behaviour for the arguer.

¹⁶ In addition to these conditions Goldman proposes conditions for good dialogical argumentation [Goldman 1999, 139-144; 1994, 42 f.], which among others prescribe extended argumentative discourse, i.e. to anticipate possible objections to one's view.

responsibilist with more or less probative criteria. The latter is surprising because these two kinds of criteria are designed for different ways in which persuasive argumentation can achieve its purpose: responsibilist criteria suit authority-based cognizing, probative criteria are one half of the criteria suited to argumentation-guided cognizing (cf. above, sect. 2.2). (Feldman has criticized that the responsibilist criteria were not necessary for rational persuading [Feldman 1994, 170].) Indeed, Goldman seems to mix these two ways of functioning. On the one hand he compares argumentation-based cognizing with information by a testimony and its veritistic value [ibid. 132 f.], on the other he refers to the usual, cognition guiding way of functioning [ibid. 137 f.], which though, apart from the probative criteria, also requires plausibilist criteria. This kind of mixing is a bit astonishing because Goldman himself, in another publication, nicely distinguishes between what here has been called "guiding cognizing by argumentation" (Goldman calls it "justification creation") and justification transmission, i.e. guiding cognizing by argumentation plus the arguer's adherence to the justification [Goldman 1997, 161 f.]. (On this occasion, for regulating argumentation that guides cognizing he uses Feldman's [1994, 179] *gnostic* criteria [Goldman 1997, 160 f.].) So it is not clear why he later requires fulfilment of the responsibilist criteria for all kinds of good argumentation.

3. Contributions of the Epistemological Approach to Various Topics of Argumentation Theory

Even though the epistemological approach is a full-fledged approach to argumentation such that its systematic elaboration should provide answers to all questions of argumentation theory much of this elaboration is still missing. The following list tries to sketch a bit of what supporters of the epistemological approach have done in various fields of argumentation theory beyond developing general criteria for good argumentation on the basis of a function analysis (see sect. 1; 2.2.-2.3). Implicitly this will also be a list of desiderata for further research.

Aims of argumentation theory and methodology: Battersby [1989] and Weinstein [1994]¹⁷ see critical thinking as "applied epistemology" (analogously to "applied ethics"); consequently they have centred their respective research on finding truth criteria in different areas. Although this may hold for critical *thinking* and argumentation theory urgently needs applied epistemology as its basis, it does not capture the specialities of *argumentation*. - Johnson gives a rather generic characterisation of "informal logic" (which may be treated as his term for "argumentation theory") as: "branch of logic whose task is to develop non-formal standards, criteria, procedures for the analysis, interpretation, evaluation, criticism and construction of argumentation in everyday discourse" [Johnson 1999, 270]. (The restriction to everyday discourse seems to be arbitrary, and to call it a "branch of logic" presupposes an understanding of "logic" that is quite different from the usual.) - Lumer outlines more specific tasks for argumentation theory as a theory that is based on logic and epistemology: determining aims and methodology of argumentation theory, function

¹⁷ Weinstein's programme is described and defended in: Weinstein 2003.

analysis of argumentation, criteria for deductive and other types of argumentation, fallacy theory, interpretation of argumentation, embedding of argumentation in discourses [Lumer 1990, 1-7; 2000b, 58-69]. In addition he proposes (and then applies) a precise double methodology for argumentation theory: 1. an idealizing hermeneutics, which tries to elicit the desired information from ideal forms of argumentation, 2. and an instrumentalist methodology, which designs criteria for good argumentation as instruments fulfilling the standard function of argumentation [id. 1990, 7-21; 1995]. - Although Pinto, too, recognizes the superiority of an instrumentalist approach, he then *uses* an intuitionist methodology [Pinto 2001, 23]. A sophisticated intuitionist methodology is also used by Siegel & Biro, who look for the best explanation of our pre-theoretic judgements about argumentation [Siegel & Biro 1997, 28].

Single argument types: Even if the general criteria for good argumentation in principle are sufficient in a certain sense for designing and evaluating all types of argumentation, doing this is, by no means, a trivial task. It is not trivial because the general criteria do not *identify* the various epistemological principles used in the different types of arguments (the plausibilist criteria contain only an existential quantification over epistemological principles (cf. PL2), and the gnostic criteria are still less informative in this respect (cf. G2)); and establishing and justifying such principles often is a good piece of theoretical work - Weinstein [1994, 142 f.; 149] has stressed this point. Therefore, for all practical purposes it is nearly indispensable to use quality criteria for single argumentation types that are based on specific epistemological principles. Criteria for different argumentation types at the moment have been elaborated in epistemological argumentation theory to a highly varying extent. Criteria for good *deductive arguments* have been developed by Feldman [1999, 61-80; 94-100] and Lumer [1990, 180-209]. Although a general theory of *probabilistic argumentation* is still missing, criteria for certain subtypes have been developed: for *genesis of knowledge arguments* (which try to show that the thesis has been correctly verified by someone), which include arguments from testimony and from authority [Goldman 1999, 103-130; Feldman 1999, 216-232; 418; Lumer 1990, 246-260], for *interpretative arguments* (which try to establish the causes for known facts and circumstantial evidence through inference to the best explanation based on Bayes' Theorem) [Lumer 1990, 221-246], for some *statistical types of arguments* [Feldman 1999, 232-327]. Criteria for the *truth of scientific theories* have been proposed by Weinstein [2002; 2006] and Goldman [1999, 238-250], and Feldman proposes criteria for arguments to causal relations [Feldman 1999, 277-327]. *Practical arguments* about the desirability of states of affairs and about optimum courses of action have been proposed by Feldman [1999, 351-354; 420] and Lumer [1990, 319-433]. *Pascal arguments* are applications of practical arguments; they are based on rational decision theory and are arguments under complete uncertainty in favour of treating a thesis to be true; criteria for Pascal arguments have been developed by Lumer [1997]. A strategy for developing non-cognitivist *ethical arguments* for fundamental moral principles has been proposed by Lumer [2000c, 30-46].

Interpretation of argumentation: Epistemologically designed criteria for good argumentation, in the first place, describe ideal arguments and their use. In order to be able to assess everyday argumentation by these standards the expressed arguments have to be brought in an

ideal form by interpretation. Tools for interpreting arguments have been elaborated by Feldman [1999, 113-166] and Lumer [2003].

General fallacy theory: According to the epistemological approach, fallacy theory is only the negative counterpart of the positive criteria for good argumentation. Fallacies, roughly, are arguments or uses of arguments violating these standards. Because there are some diverging main directions in positive epistemological argumentation theory (cf. above, section 2) corresponding lines in fallacy theory can be developed. Fogelin & Duggan e.g. propose a *gnostic* definition of 'fallacy' as: "general procedure (or what have you) used for the fixation of beliefs that has an unacceptably high tendency to generate false or unfounded beliefs relative to that procedure for fixing beliefs" [Fogelin & Duggan 1987, 257].¹⁸ Siegel & Biro have criticized this characterization from a *plausibilist* viewpoint: it binds fallacies to irrelevant psychological features and disregards plausibilist criteria of the thesis' acceptability [Siegel & Biro 1997, 279]. According to their own approach [ibid. 285-289], "fallacies fail as arguments because they fail, for systematic reasons, to render belief in their conclusions rational" [ibid. 285]. Unfortunately, Siegel & Biro do not specify this idea that much. Lumer proposes a *plausibilist-prosbatic* theory, and hence distinguishes two big classes of fallacies, fallacies of what he calls "argumentative validity", i.e. structural fallacies of the argument itself [Lumer 2000a, 412-418], and fallacies of adequacy, which regard the situational use [ibid. 418-420]; and he defines dozens of classical and new fallacies as specific violations of his general criteria of good argumentation.

Special fallacy theory: Begging the question: Begging the question is the special fallacy that has gained the most attention among epistemological argumentation theorists, and there is a lively debate about its definition. The reason for this is that begging the question clearly shows that alethic and plausibilist criteria are not sufficient for defining 'good argumentation' and that epistemic conditions have to be fulfilled as well. Sanford [1972; 1981; 1988], Goldman [1999, 151; 2003, 54] and Sinnott-Armstrong [1999] defend *gnostic* criteria, which define 'begging the question' in situational terms of the user's justified beliefs. A typical definition is: an argument formulated for *s*' benefit begs the question either if *s* believes one of the premises only because he already believes in the conclusion or if *s* would believe one of the premises only if he already believed the conclusion [Sanford 1972, 189]. Biro and Siegel propose *plausibilist* criteria, which define 'begging the question' as a structural feature of the argument itself, namely, along the lines that it generally (and not only for a specific person) is impossible to justifiedly believe in one premise without already justifiedly believing in the conclusion [Biro 1977; 1984, 242; 1987, 67 f.; Biro & Siegel 1992; 2006]. Jacqueline [1993, 322] and McGrath [1995, 351] have developed similar definitions. Biro and Siegel criticize Sanford's criterion as psychologistic and neglecting the argument's objective features. Sanford replies that Biro's criterion in a grossly counterintuitive way (i) counts some question begging argumentations as impeccable and (ii) some instances of good argumentation as begging the question [Sanford 1988, 33-35]. Lumer proposes a *plausibilist-prosbatic* criterion, which distinguishes two kinds of begging the question: the strict *petitio* is a

¹⁸ See also Goldman's *gnostic* characterization: "Fallacious patterns of argumentation are ones with no reliable tendency to issue in true conclusions." [Goldman 1999, 150.]

fallacy of the argument itself and it is defined similar to Biro's & Siegel's 'begging the question' [Lumer 2000a, 417]; the soft petitio is a fallacy of the argument's use, namely (approximately) that the addressee does not justifiedly believe in (at least) one of the argument's reasons and that his most obvious attempts to cognize this reason go via the thesis [Lumer 2000a, 418 f.] The strategy to distinguish strict and soft petitio could resolve the dispute between Sanford and Sinnott-Armstrong on the one hand and Biro and Siegel on the other insofar as the *extensions* of what both parties regard as 'begging the question' may turn out to be identical.¹⁹

Special fallacy theory: other fallacies: Several other fallacies (or alleged fallacies) have been discussed from some epistemological point of view e.g.: *argumentum ad hominem* [Siegel & Biro 1997, 285-289; Goldman 1999, 152 f.], argument from authority [Lumer 1990, 256 f. (246-260); Siegel & Biro 1997, 285-289; Goldman 1999, 150 f.], affirming the consequent [Korb 2003], *argumentum ad ignorantiam* [Oaksford & Hahn 2004], *argumentum ad populum* [Korb 2003].

Incorporation of argumentation in argumentative discourse: The epistemological approach to argumentation treats argumentation mainly as instruments guiding cognizing for gaining knowledge or justified belief. Cognizing essentially is an individual activity. So the foci of the epistemological approach have been monological argumentation directed towards an audience and solipsistic inquiry by argumentation. This, of course, does not imply that the epistemological approach does not regard or has nothing to say about the use of argumentation in dialogues and

¹⁹ Such a solution would require that Biro and Siegel admit - and it should be no problem for them to do so - that, apart from what they define, there are also cases of soft petitio. Adding the soft petitio would remedy Sanford's criticism (i) by declaring more instances of argumentation as fallacious. Sanford's criticism (ii) instead seems to rest on two mistakes, one by Sanford, and one by Biro and Siegel. First, if Sanford has found an argument that initially seemed to be question begging in Biro's and Siegel's sense but later turns out to be usable in a non-question begging way, then it must be possible to cognize the argument's reasons without cognizing the thesis. But then the argument should not be question begging, according to the characterization of Biro's and Siegel's criterion given above, in contrast to what it first seemed to be. So both parties would classify the case as not question begging. Second, for this solution Biro and Siegel, however, would have to give up the "objectivist" characterization of the strict petitio as not depending "on what particular arguers happened to know or believe" [Biro 1984, 245] or the general "objectivist" characterization of fallacies: "Fallaciousness is a property of arguments in a context and is independent of the beliefs of their users." [Biro & Siegel 2006, beginning of sect. II.] If a particular user of the argument happens to be the only one who has acquired justified belief in the reasons independent of a justified belief in the thesis this implies the possibility of such belief and thus makes the argument not question begging. It is difficult to define the 'possibility of a belief' independent of 'beliefs in possible worlds', which of course include the actual world. The real difference in the main directions in defining fallacies is not between subjectivist versus objectivist definitions but between pure situational, gnostic accounts versus structural-situational, plausibilist-prosbatic accounts. (A mere structural, plausibilist account, which considers only acceptability and not accessibility for a particular addressee, instead is, I repeat, a non-starter.) The extension of question begging arguments could be identical for both accounts (of course depending on the right definition of 'justified belief' in both), whereas the intensions would still be different, with the structural-situational definition having the advantage of being able to distinguish strict and soft petitio and thus explaining better what is wrong. In addition, within the structural-situational account there might also be competing definitions as to exactly where the border between strict and soft petitio should be drawn. But again the extensions of both types of petitiones together could be identical in these theories.

discourse. Goldman proposes rules for argumentation in dialogues, which shall guarantee the most effective cooperative search for truth, [Goldman 1999, 139-144] and examines the cultural climate necessary for the social dissemination of such a practice [ibid. 144-149]. Lumer specifies rules for disputations, i.e. argumentative dialogues directed at collectively finding the truth and making justified belief more certain by eliminating cognitive errors through criticism and collectively extending one's database for finding defeaters [Lumer 1988].

Miscellanies: Siegel [e.g. 1987; 1999] has strongly criticized epistemic relativism and defended the epistemological approach as leading to objective knowledge and justified belief. Freeman [2005] has elaborated a theory of acceptability of premises, in particular of premises not based on argumentation guided cognizing.

4. The Contributions to the Present and the Following Issue

The present and the following issue of "Informal Logic" are entirely dedicated to the epistemological approach to argumentation. Some of the contributions were invited (Battersby, Biro & Siegel, Feldman, Lumer, Weinstein) the others (Freeman, Hahn & Oaksford, Hoffmann, Huss, Weinstock) were selected from among the papers submitted on a call for papers [Informal Logic 24.1 (2004), Teaching Supplement #10, p. 0]. They contribute to four topics: I. General defense versus criticism of the epistemological approach, II. particular argument types, III. fallacy theory, IV. psychological aspects.

I. Defenses and Criticisms of the Epistemological Approach to Argumentation

Lumer defines what an 'epistemological theory of argumentation' is, namely one that sees providing justified belief as the principal aim of argumentation, and justifies it instrumentally as an approach that designs argumentations in such a way that they lead to more true beliefs than argumentations designed by competing approaches. In addition to this more general part, he presents his particular theory, a structural-situational theory, which separates plausibilist criteria for the argument itself from probative, accessibility criteria for its use, and he tries to show its superiority over mere situational ("subjectivist"), gnostic theories. The basis for this defense is an analysis of how argumentation functions in rational convincing: the addressee uses the argument as a guide for his cognizing.

Hoffmann is critical of the stronger epistemological theories of argumentation (Biro, Siegel, Lumer, Feldman, Goldman), which aim at objective criteria for deciding on the quality of argumentation. He distinguishes three forms of an argumentation's quality being relative: it depends on the addressee's knowledge about the argument's reasons, on his background knowledge (in case of uncertain arguments), and on his values (in case of practical arguments). While these three dependencies are also underlined by 'the epistemologists', Hoffmann objects that the criteria for argumentation evaluation themselves might be relative to culture etc. too and that the three dependencies hold also for any evaluator of an argumentation.

Huss criticizes the epistemological approach to argumentation from the standpoint of van Eemeren's and Grootendorst's consensus theory. He maintains that the epistemological approach cannot give advice for good argumentation because the "advice" it can give, namely to use only propositions that are justified in the epistemological sense, is empty: we cannot do otherwise. If epistemologists want to give more advice they can do so only as participants in a discourse who propose something, which, in order to be effective, has to be approved by the other participants. So consensus theory, one might summarize, necessarily is the frame theory of argumentation.

Feldman responds to *Huss's* criticism (in this issue) of the epistemological approach. *Feldman* argues that the epistemological approach, of course, can give good advice and, as respective textbooks show, such advice from an epistemological viewpoint actually has extensively been given. Just to the contrary, consensus theories cannot give good advice because they are restricted to the recommendation to only rely on commonly accepted premises and argument schemes, which may be poor or false. *Feldman* concludes by criticizing consensus as the goal of argumentation, among others with the argument that this may lead to false and irrational consensus.

II. Particular Types of Arguments from an Epistemological Perspective

Hahn & Oaksford deal with probabilistic argumentation. They make a case for using Bayesianism as a theory of argument strength, explain how Bayesian probability theory can be used for reconstructing (open and hidden) probabilistic argumentation and defend its use in argumentation theory against criticism, in particular the criticism that everyday arguments do not contain numerical probabilities. In their opinion, advantages of such an approach are that degrees of beliefs as well as argumentations' dependence on prior beliefs can be captured and that epistemically good and bad instances of classical fallacies can be distinguished. They try to show this for arguments from ignorance, circular and slippery slope arguments.

Freeman, on the other hand, proposes a heterodox probability theory as a model for conceptualizing the validity of non-deductive arguments and of the strength of such arguments, namely L. J. Cohen's theory of "ampliative probability". *Freeman* justifies this choice by claiming some inadequacies of orthodox probability theory and sketches Cohen's theory, which assigns probability to a strictly general hypothesis in proportion to the number of canonical tests with different variables undertaken so far that confirm the hypothesis. *Freeman* goes on to apply this model, coming from physical sciences, to psychological generalizations, legal contexts and evaluations.

Battersby inquires into criteria for (arguments on) causal claims. His paper is a continuation of his project of applied epistemology. He takes causal claims in epidemiology as paradigm cases because in epidemiology it is particularly difficult to establish causal claims so that they have to be defended argumentatively, and because epidemiologists are usually well-trained in methodology. The fruit of his bottom-up inquiry of criteria for causal relations used in epidemiology are some lists of such criteria, which then are compared with criteria proposed by argumentation theorists, namely Walton and Hitchcock.

Weinstein, apart from two introductory sections with criticisms of *Freeman's* and *Pinto's* theories, deals with general theoretical claims in empirical theories. He proposes a truth definition

for the respective propositions, according to which such propositions are true if they are implied by the - historically in the long run - most comprehensive theory. Weinstein's paper is part of his general project of an applied epistemology. But, as opposed to Battersby, he uses a top-down methodology.

III. Epistemological Fallacy Theory

Biro & Siegel first defend the epistemological approach to argumentation as an approach that sees providing good reasons for believing the thesis as the aim of argumentation. This conception then becomes the basis for dealing with their main topic: begging the question. They criticize gnostic, "subjectivist" epistemological definitions of 'begging the question', defend their own plausibilist, "objective" approach and develop an improved version of their criterion. They make some concessions: fallaciousness is no longer seen as a property of arguments as such but as a "property of arguments in a context"; and they admit that good arguments may be used in a circular way. However their central criterion remains as it was: impossibility of justifiedly believing in the premises without believing in the conclusion.

IV. Epistemologically Conceived Argumentation and Psychology

Weinstock reports some interesting results of psychological research on constructive as well as critical argumentative skills and personal epistemologies, i.e. people's explicit knowledge of criteria for good argumentation and justified belief. Knowledge about justification requirements is related to skilled argumentation. Three levels could be identified where the highest roughly corresponds to what epistemological argumentation theories require. This shows the practical importance of epistemological argumentation theory and it is an encouragement for the further development of standards of good argumentation on this basis.

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