# The Epistemic/Epistemological Theory of Argument

**Christoph Lumer**
University of Siena, Italy

Appeared in: Scott Aikin; John Casey; Katharina Stevens (eds.): The Routledge Handbook of Argumentation Theory. New York; Abingdon, Oxon: Routledge 2026: 43-53.

**Abstract:** This article presents the epistemic or, more precisely, epistemological theory of argument. According to this theory, the standard aim of arguments is to lead an addressee to an epistemologically justified and acceptable belief in the thesis. The article provides an instrumentalist justification of this approach (arguments are good instruments for guided knowledge acquisition), presents other functions of arguments, and offers an analysis of how arguments work. This analysis then serves as the basis for developing criteria for various good types of argument (deductive, probabilistic, practical, etc.) and for general criteria for epistemologically good arguments. A final outlook provides an overview of contributions from epistemological argumentation theorists on standard topics in argumentation theory.

## 1. What is the epistemic/epistemological theory of argument?

The epistemic theory of argument (or argumentation theory) is one of the major and fully-fledged approaches in argumentation theory, from the basic idea of which answers to all topics of argumentation theory can be developed. Its basic idea is that the goal or, more precisely, the standard *output of arguments is knowledge or, in the epistemological sense, justified acceptable belief* (Biro 1987: 69; Biro & Siegel 1992: 92; 96; Siegel&Biro 1997: 278; 286; Lumer 1990: 43-44; 1991: 100; 2005a: 213; 219; Goldman 2003: 58). Similar expressions for this goal are: "rational persuasion" (Johnson 2000: 189; Bondy 2010: 144), "provide good reason to believe the conclusion" (cf. Feldman 1999: xiii; 12; 24; similar: Bowell&Kingsbury 2013: 23; Ennis 1995: 2). There are some further determinations near to these (Sanford 1972: 198; Blair 2012: 172; Siegel 2023: 472; Sinnott-Armstrong 1999, 181; Govier <1985> 2010: 3). In addition to the just mentioned,[1] the following theorists, among others, are also representatives of epistemic argumentation theory: Aikin (2008), Bailin (1999), Battersby (1989; 2016; Bailin&Battersby 2016; 2022), Ritola (2003), Weinstein (1994).

---

1 The categorizations just made are based on the cited passages and publications and, to a large extent, on self-categorizations. One exception is Johnson: he does not want to be categorized as an epistemic/epistemological argumentation theorist (personal communication, August-September 2007; Johnson 2007). In contrast, Govier, for example, self-categorizes as “someone sustaining an epistemic/epistemological approach in argumentation theory” (personal communication, Aug. 21, 2024).

Although epistemological argumentation theorists agree on the function of arguments just described, their theories differ slightly in their central theses and in the degree of elaboration (see Lumer 2005b: 192-201). In case of doubt, the following presentation is based on the currently most developed epistemological argumentation theory, i.e. the Practical Argumentation Theory (core: Lumer 1990; 1991; 2005a).

The usual name for the theory to be examined here is "*epistemic* argumentation theory"; but the term "*epistemological* argumentation theory" (or „*epistemological* theory of argument") is more precise. According to a *strong, epistemological* approach, the standard output of arguments is a belief justified in an epistemological sense; this approach thus relies on epistemologically established criteria for the justification of beliefs, which—according to epistemological research—guarantee that a belief justified in this way is really true or at least *acceptable* in the sense of being truth-like or probable; for this to happen, the criteria for the justification of beliefs must refer to their truth-conditions (further details below). Now, however, there are some argumentation theories that, as they themselves say, also aim at truth, justified beliefs, or rational persuasion, or see inference as the path to such a belief, but which interpret these concepts in a much weaker way and do not refer to epistemologically [43/44] identified criteria. Therefore, they declare arguments to be good that are much less effective, i.e. lead less often to acceptable beliefs. An example of such a conception is Pinto's theory, which equates objectivity with defensibility in the cognitive community (2001: 133-136), but not with the fulfillment of truth criteria. Pinto's argumentation theory is therefore, according to Pinto's own classification, epistemic but not epistemological in the sense explained here.

According to the above explanation, epistemological argumentation theory sees *(in the epistemological sense) justified acceptable belief* as the standard output of arguments. A competing approach in argumentation theory is the *rhetorical argumentation theory*. For this approach, the standard output of argumentation is (epistemologically unqualified) *persuasion*, i.e. the state that the addressee simply believes the thesis of the argument—however well or poorly this opinion is then justified. Representatives of this approach are Perelman & Olbrechts-Tyteca, Hamblin, Tindale. The most important criticism of this approach, which goes back to Socrates and Plato, is that because rhetorical theories do not aim at truth and epistemologically justified beliefs, the arguments they endorse often lead to false beliefs and, as a result, to wrong decisions with corresponding negative consequences (Plato, Phaedrus 259e-262c; Gorgias 452e-455d; 458e-460a; Philebus 58a-59b; current criticism: Siegel 2023: 495-510; Lumer 1990: 287-289). *Consensualism* also competes with epistemological argumentation theory. According to this theory, the *consensus* achieved under certain conditions is the standard output of arguments in the sense of argumentative discussions, where this consensus, however, does not have to meet epistemological standards. Advocates of this approach are Habermas and Pragma-dialecticians like van Eemeren, Grotendoorst, Garssen, Snoeck Henkemans, Houtlosser. The main criticism of this approach is that because its rules of argumentation are not tied to epistemological standards, the shared beliefs resulting from following these rules may be false, unacceptable, and unjustified. (Epistemological criticisms: Biro & Siegel 2006; Lumer 2010; Siegel & Biro 2008; Siegel 2023: 474-486.)

## 2. An instrumentalist justification of epistemological argumentation theory

In normative argumentation theory, "argument" is used in three senses: 1. argument as a sequence of propositions (or, more precisely, of judgments, i.e., propositions plus assertoric mode), one of which is the thesis and the others are the reasons for it; only this will be referred to as "*argument*" (or "argument$_1$") in the following; 2. argument as an action in which an argument$_1$ is presented; this will be referred to in the following as "*argumentation*" or "*argumentative act*"; 3. argument as argumentative discussion, in which the participants use argumentation—usually competing—to advance arguments (e.g. to determine which of the theses put forward is true); this will be referred to in the following as "*argumentative discussion*" or "*discourse*". 'Argument' is the ontologically and definitionally most fundamental and simplest of these three concepts. For, as already indicated, 'argumentation' can be defined via 'argument' and 'argumentative discussion' via 'argumentation'. There are arguments without argumentation and argumentations without argumentative discussion; but all argumentative discussions contain argumentations, and all argumentations contain arguments. So argumentative acts and argumentative discussions are respectively ontologically more complex. Accordingly, the standards for arguments also apply to argumentation and those for argumentation also apply to argumentative discussions, but not vice versa. (Siegel 2023: 516-517; Lumer 2023: 585-586.) For this reason, epistemological [44/45] argumentation theory begins systematically with the development of criteria for arguments and, only then, develops criteria for argumentation acts and then for discourses. Pragma-dialectics, by contrast, pays little attention to arguments and develops a theory of discourse straight away.

Epistemological argumentation theory conceives of arguments as epistemic instruments and justifies standards for good arguments accordingly. Why? Firstly, according to everyday meaning, arguments have an epistemic function. This implies that theories that do not have this epistemic orientation, but aim, for example, at epistemologically unqualified belief-shaping or consensus, are not argumentation theories in the usual sense.

Secondly, in the philosophical tradition, after Socrates' and Plato's criticism that rhetoric only aims at (non-epistemic) persuasion of the addressee, but not at knowledge (e.g. Plato, Gorgias 452e-455d; Phaedrus 259e-260d), a distinction was made between persuasive rhetoric and epistemologically oriented argument.

Thirdly, the decisive reason for an epistemological approach is instrumental: We all need substantial and true beliefs for our orientation in the world and for successful action planning. In order for our beliefs to be systematically (and not just randomly) true, or, if this cannot be guaranteed, at least acceptable, they must be based on cognition processes in which the subject uses appropriate criteria to check whether the proposition in question is true or acceptable. In addition, the subject should also remember the most important stages of this cognition process for possible later review. (Was the cognition process correct? Did another belief that is incompatible with this one perhaps arise from a more certain cognition process and should therefore take precedence?) This memory is the *subjective justification* of the belief. The belief that arises from such a cognition process together with the subjective justification is a *cognition*. Arguments are important

instruments for (i) acquiring, (ii) consolidating and (iii) imparting cognitions. (i) Good arguments list in their reasons everything that has to be checked when recognizing the truth or acceptability of the thesis. Therefore, hypothetical theses can be tested by trying to develop a (according to epistemological criteria) good argument for them. If this is successful, then the thesis has been recognized as true or acceptable. (ii) Arguments are also the ideal form of (inferentially obtained) cognitions, that is, the combination of subjective justification, in which the cognitive steps are presented in a systematically ordered way, and the resulting opinion. (iii) Since good arguments list in their reasons all that needs to be checked in order to determine the acceptability of a thesis, presenting an argument can be used to *guide the addressee in recognizing the thesis*. In this way, the arguer can pass on not just *information* but a *cognition* as such. This saves the addressee the work of having to search for a justification of the respective thesis themselves.

Effective instruments for non-epistemic or merely coincidental persuasion or consensus-building are occasionally useful—for example, when a terrorist or irrational suicide bomber is to be dissuaded from his destructive actions so quickly that there is insufficient time for an argumentatively induced, epistemologically correct change of opinion. But such instruments are comparatively secondary. For one thing, they are needed much, much less often than epistemological ones. For another, their effect often rests on the addressee's impression that the persuasion process is a rational cognition. And our culture could do without them, but not without epistemologically conceived arguments: These are an essential part of socially organized sciences, namely the core of scientific discussion and imparting of knowledge, deliberative democracy and progressive discussion culture. (Lumer 2023: 587-592; more detailed justifications: Lumer 2005a: 219-231; 236-239 (Sections 4-6; 9); 1990: 30-51 (Sections 2.2-2.3).) [45/46]

## 3. The function of arguments

What is a standard output? Arguments are abstract entities that cannot have intentions and that also exist independently of subjects who intentionally produced them. Nevertheless, they are functionally organized, functional entities, instruments that are useful for specific purposes. These two characteristics can be consistently described using the terminology of systems theory: arguments are *structures* that have certain *functions*, i.e. when they receive a certain input, they produce a corresponding output. Arguments have a range of functions, that is, of input-output relations. But the criteria for good arguments in epistemological argument theory are conceived in such a way that the structures described by them fulfill a very specific function or several closely related functions under given conditions, namely the *standard function*, that is, relations from standard input to standard output. (Lumer 2005a: 219) In the case of a car, for example, the controlled driving is the standard function; stepping on the accelerator (pedal) together with the position of the steering wheel is the input; a sufficiently filled energy store, released brakes, an obstacle-free road, etc. are the functional prerequisites; and the directed movement of the car is the standard output.

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 justifiedly 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: 43-44; 1991, 100; 2005a: 219.)

But arguments can also be used for a number of other functions that are still specific to arguments (Lumer 1990: 49-50; 2005a: 219-220; Blair 2004: 139-141); three of them have already been mentioned above: *F1. Arguments as ideal forms of (inferentially obtained knowledge):* see above (ii). *F2: Transfer of knowledge:* see above (iii). *F3: Autonomous inquiry:* see above (i). *F4: Checking one's own knowledge*. *F5: Intersubjective assurance of one's knowledge* (Lumer 1988: 448-450). *F6: Intersubjective research*. *F7: Resolving a disagreement (in an epistemologically qualified way).* – Blair mentions two further functions: justification, rationale-giving (Blair 2004: 140-141). In addition to the argument-specific functions, there are also a number of non-specific ones: one can impress or bore with an argument, show one's intelligence, etc.

## 4. Arguments' way of functioning

How do good arguments fulfill their function? To answer this question more easily, two types of standards for good arguments must be distinguished. An instrument that fulfills its standard function is called "*functioning*". A more specific expression for the functioning of arguments is: the argument is "*(argumentatively) valid*". This is not the same as logically valid. Argumentative validity includes logical validity in deductive arguments, but not in other arguments, but in any case it goes beyond conclusiveness (see below). (Lumer 1990: 1-2; 2005a: 220.) Functioning instruments can be used in many situations; to realize their standard function, they must be used *adequately*.

In order to explain how good arguments work, we must first explain their structure. This is easiest to do with deductive arguments (Lumer 1990: 45-48; 280-281; 1991: 102-104; [46/47] 2005a: 221-224). Simplified conditions for argumentative validity and the adequate use of deductive arguments are:

*Argumentative validity of deductive arguments:*

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

*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 whether the thesis is likewise; 3. the relation of implication between the premises' propositions and the proposition of the thesis is sufficiently direct so that the addressee can easily grasp it. (Exact conditions: Lumer 1990: 187-189. Other epistemologically justified criteria for good deductive arguments: Feldman <1993> 1999: 61-80; 94-100.)

The core of all conditions for argumentatively valid arguments is the guarantee of acceptability (see DA2). This is based on an *effective epistemological principle*, in the case of deductive arguments on the *deductive epistemological principle DE:* 'A proposition is true if it is logically implied by true premises'; genesis of knowledge arguments are based on the *epistemogenetic epistemological principle EE:* 'A proposition is true if it has been correctly verified'. These and other epistemological principles provide general conditions for the acceptability of a large number of propositions. They are developed by epistemology in the broader sense and ultimately justified with reference to the truth conditions of such propositions. The deductive epistemological principle follows from the meaning of 'logical implication', the epistemogenetic one from the meaning of 'verification'. Epistemological principles are *effective* if the fulfillment of their conditions actually guarantees the truth or acceptability of the target proposition. Effective epistemological principles formulate general conditions for the acceptability of propositions in general or of propositions of a certain type (e.g. value propositions). In an argument for a specific thesis, they must be specified for that thesis. A specification of the deductive epistemological principle DE is, for example:

*Ex1:* '$p$ is true if $p$ is logically implied by $q$ and $r$, and $q$ and $r$ are true' where $p$ = 'Socrates is mortal', $q$ = 'all humans are mortal' and $r$ = 'Socrates is human'.

Usually, for one and the same proposition there are specifications from several principles—for example, $p$ is also specified by the epistemogenetic principle of knowledge:

*Ex2:* ‚Socrates is mortal. For in „Phaedo“, Plato describes how he himself witnessed Socrates' death.‘ [47/48]

And for the same proposition, there may also be several specifications from the same epistemological principle, such as countless logical derivations from different sets of premises. In principle, therefore, one and the same thesis is always at the core of a very large number of specifications from several effective epistemological principles.

*Good arguments* now consist essentially of assertions that the conditions for such specifications of an epistemological principle have been fulfilled. However, in doing so, some of

these conditions are often left out. For example, specification Ex1 of the deductive principle of knowledge becomes:

*Ex3:* ‚Socrates is a human. All humans are mortal. Therefore Socrates is mortal.‘

However, arguments constructed in this way are only good if they fulfill two additional sets of conditions. First, good arguments must be based on those (of the many) specifications whose *conditions are actually fulfilled*, so that the assertions in the argument are true; otherwise the specification says nothing about the acceptability of the thesis. If the conditions are met, then the argument built from this specification, e.g. Ex3, *guarantees* the *acceptability* of the thesis. If, in addition, the argument is suitable in principle for guiding the recognition of new theses, in particular if it is not circular, then it is *argumentatively valid* (see the above conditions DA0-DA3). Second, a good argument for rationally convincing an addressee must be *accessible* to that addressee. In particular, the addressee must already have justified belief in the acceptability of the premises; and the steps from the premises to the thesis must be comprehensible to the addressee. If the argument is accessible to the addressee in this way, then it is (in principle) *adequate to convince this addressee*. If the addressee is also receptive to the argument, then the argument is *situationally adequate* for rationally convincing this addressee (see condition DA4).

How does rational persuasion work with the help of argumentatively valid and situationally adequate arguments? Good arguments convince rationally by guiding the addressee in recognition: When the argument is presented to an addressee, the argument indicator informs the addressee that he has an argument in front of him, i.e., an offer to examine a thesis with guidance, and which of the judgments is the thesis and which are the reasons. The addressee may accept this offer and begin to examine the thesis and the premises. The systematically first step is then to find out the epistemological principle on which the argument is based. For this principle is the key to understanding what conditions of acceptability the argument is supposed to fulfill. Most people cannot formulate epistemological principles, but they often have a vague understanding of what conditions an argument of a particular type must fulfill.

The role of the epistemological principles in guided cognition is that they serve as a checklist for the addressee for the acceptability of the thesis. And the role of the (good) argument is that it lists for the addressee, in sequence, everything that he must check according to the epistemological principle in order to recognize the acceptability of the thesis. And because of the adequacy of the argument, he can also immediately recognize that the respective sub-condition is fulfilled: He already knows that the individual premises are true (DA4.2); and the relationship between the premises and the conclusion is sufficiently simple that the addressee can recognize the implication relationship ad hoc (DA4.3).

The last step in the recognition process is that the addressee, after checking the individual reasons of the argument, whereby he then (if possible) already uses the epistemological principle and ticks off its individual conditions, recognizes that all the conditions of the epistemological principle are fulfilled, so that the thesis must be acceptable, and therefore he accepts the thesis. [48/49]

This conceptualization of the structure and functioning of good arguments in rational persuasion by epistemological argumentation theory has a number of advantages. 1. The approach explains in detail what inferential knowledge consists of at all, namely in checking the acceptability conditions of the thesis. It is thereby that it really explains what it means to 'infer from premises to a conclusion'. 2. It also explains how rational persuasion works as guided cognition. This persuasion thus remains a form of *cognition*; the addressee *convinces himself* and thus retains his autonomy; he does not become a victim of hidden manipulation. 3. The precise analysis of how argumentation works (together with the individual epistemological principles) allows for a precise determination and justification of the individual conditions of a good argument. 4. The recourse to epistemologically justified principles of knowledge guarantees the acceptability of the theses of argumentatively valid arguments. 5. It not only justifies the epistemic rationality of using argumentations conceived in this way. 6. It also explains the existence of different types of argument, which are based on different principles of knowledge, and is also open to the introduction of new types of argument beyond those currently known. 7. The distinction between argumentative validity and situational adequacy and the insistence on the fulfillment of both these conditions solve the problem of the relationship between objective and subjective conditions of good arguments and the tension between timeless acceptability and addressee orientation. Argumentative validity guarantees acceptability and situational adequacy guarantees epistemic accessibility for the addressee. 8. The instrumentalist approach, according to which good arguments must in principle be able to convince someone rationally of the acceptability of the thesis, explains why the criteria for argumentatively valid arguments already contain conditions that go beyond the truth guarantee—such as the exclusion of circular arguments and too large steps from the premises to the next conclusion—or why, conversely, (certain) uncertain arguments are admitted as valid at all, although they can only show the acceptability of the thesis, or why enthymematic reductions are also admitted, etc.

## 5. Non-deductive arguments and various argument types

Because of the generality of the explanation of the structure and functioning of good arguments just presented, criteria for non-deductive arguments can be developed in the same way. The starting point is always an effective epistemological principle; and the argument consists essentially in asserting that the individual conditions of a specification of such an epistemological principle are fulfilled for the thesis in question, whereby these assertions must be true. However, deductive arguments are the only certain and therefore monotonic arguments (i.e. their result cannot be refuted by an expansion of knowledge); all other arguments depend on the respective database, are not certain and therefore not monotonic. In order to avoid contradictory statements, this database must, strictly speaking, always be mentioned in non-deductive arguments.

Most *probabilistic arguments* are based on principles of probability calculus that deal with the relationships between different probabilities (criteria for probabilistic arguments: Lumer 2011a: 1149-1151). Contrary to the widespread view that criteria for probabilistic argumentation cannot be

applied to everyday arguments because these do not mention quantitative probabilities, they can be used very well to reconstruct many ordinary language arguments if one uses quantitative estimates for the vague everyday expressions for certain probability ranges ('(quite, very, extremely, reasonably...) likely'; '(almost) certain'...). In this way, it becomes possible to recognize whether an argument is epistemologically reconstructible and thus valid or not. [49/50]

The central types of *practical argument* are action justifications. These are arguments for a judgment about the action, namely the judgment that the action is optimum among the known alternatives, i.e., has the highest value (Lumer 1990: 372-381; 2014; special type: Lumer 1997). Such arguments for optimality judgments are molecular; their most important elements are arguments for value judgments that an action has a certain value. These arguments are based on principles of rational decision theory and philosophical theory of practical rationality. The most important such decision principle is the *definition of 'expected utility'*, in simplified form: the expected utility of an event *a* is equal to the sum of all products of the probabilities of the possible consequences of *a* and the utility of these consequences (Bicchieri 1998: 824; cf. Lumer 2014: 8-10). The associated practical arguments essentially consist in claiming that the conditions of the specifications of this epistemological principle are fulfilled for *a* (Lumer 1990: 362-366; 2014: 11-14; Feldman <1993> 1999: 351-354; 420).

The three types of arguments just presented (deductive, probabilistic, practical for value judgments) are all *elementary* and general. They have, first, somewhat more specific but very common subtypes—e.g., probabilistic arguments from testimony or arguments to expert opinion, which are justified by the frequency or probability of error in the statements of the reference person (Lumer 2020a). Second, there are still fairly general *complex molecular arguments* (i.e. compositions of at least two elementary arguments)—e.g. arguments for optimality judgments or arguments for the best explanation (systematization of molecular arguments: Lumer 2011b).

## 6. General criteria for argumentatively valid and adequate arguments

On the basis of the explanations given so far, 'good argument' can be *defined* or specified. The basic ideas are as follows: an *argumentatively valid argument* consists of a thesis *q*, an argument indicator and reasons; there is a specification *c* of an effective epistemological principle for the thesis *q*, whose conditions are fulfilled; the reasons are identical with the assertions (or a subset of them) that these conditions are fulfilled; and there is a person who does not yet have rationally justified believe in the thesis and who would be guided by the reception of the argument in recognizing the thesis. The adequacy conditions for rationally convincing are analogous to those for deductive arguments. (Exact conditions: Lumer 1990: 58-59; 2005a: 234-236.)

An advantage of the exact definitions of 'argumentative validity' of an argument and its 'adequate use for rational persuasion' is that they can be used as the basis of a systematic theory of fallacies, which in principle draws up a systematic *list of all general fallacies*: *General fallacies* consist in violating the individual conditions of these provisions. Subsequently, one can still define *specific fallacies* according to the *way* in which these conditions are violated (Lumer 2000;

epistemological analyses of individual fallacies, e.g. Aikin & Casey 2022; Biro 1977; 1987; Biro & Siegel 1992; Goldman 1999: 150-153; Lumer 1990: 256-257; Ritola 2003; Sanford 1972; 1988; Siegel & Biro 1997).

## 7. Other services of epistemological argumentation theory

In addition to the core topics presented so far, a number of other topics have also been addressed within the framework of epistemological argumentation theory: a *theory of argument interpretation* explains how everyday arguments can be approximated to the ideal of argumentatively valid and adequate arguments in order to assess their validity and adequacy (Feldman <1993> 1999: 113-166; Lumer 2003; 2019). *Epistemological theories of argumentative* [50/51] *discourse* develop rules whose observance enables participants to recognize optimally the truth of a thesis through cooperation (Lumer 1988; Goldman 1999: 139-144). An epistemological *theory of critical thinking* and of *argumentation pedagogy* develops theories, guidelines and materials for epistemic and argumentation competence (e.g. Bailin 1999; Bailin&Battersby 1999; 2016; 2022; Siegel 1988).

**Acknowledgements:** I thank Scott Aikin and Harvey Siegel for our discussions of topics in this article. I thank Trudy Govier and Ralph Johnson for information about their argumentation-theoretical positions. Linguistic revision has been financed by the European Union, project PRIN2022 CUP B53D23033960006. Scientifically responsible person: Prof. Lumer.

## References

Aikin, S.F. (2008) “Three objections to the epistemic theory of argument rebutted,” *Argumentation and Advocacy* 44, 130-142.

Aikin, S.F.; J.P. Casey (2022) *Straw Man Arguments*, London, UK: Bloomsbury.

Bailin, S. (1999) „The Trouble with Percy,“ *Informal Logic* 19 (2-3), 161-170.

Bailin, S.; M.E. Battersby (2016) *Reason in the Balance. An Inquiry Approach to Critical Thinking*, 2nd ed., Indianapolis, Indiana: Hackett.

Bailin, S.; M.E. Battersby (2022) „Inoculating Students Against Conspiracy Theories: The Case of Covid-19,“ in S. Oswald et al. (eds.) *The Pandemic of Argumentation*, Cham: Springer, 271-289.

Battersby, M.E. (1989) “Critical Thinking as Applied Epistemology. Relocating Critical Thinking in the Philosophical Landscape,” *Informal Logic* 11, 91-100.

Bicchieri, C. (1998) „Decision and Game Theory,“ in E. Craig (ed.) *Routledge Encyclopedia of Philosophy*, London; New York: Routledge, Vol. 2, 823-835.

Biro, J.I. (1977) “Rescuing 'Begging the Question'”, *Metaphilosophy* 8, 257-271.

Biro, J.I. (1987) "A Sketch of an Epistemic Theory of Fallacies," in F.H. van Eemeren [et al.] (eds.) *Argumentation, Analysis and Practics. Proceedings of the 1986 Amsterdam Conference on Argumentation*, Dordrecht: Foris, 65-73.

Biro, J.I.; H. Siegel (1992) "Normativity, Argumentation and an Epistemic Theory of Fallacies," in F.H. van Eemeren [et al.] (eds.) *Argumentation Illuminated*, Amsterdam: SicSat, 85-103. Normativity.

Biro, J.I.; H. Siegel (2006) "Pragma-Dialectic versus Epistemic Theories of Arguing and Arguments. Rivals or Partners?," in P. Houtlosser; A. van Rees (eds.) *Considering Pragma-Dialectics. A Festschrift for Frans H. van Eemeren on the Occasion of his 60th Birthday*, Mahwah, NJ; London: Erlbaum, 1-10.

Blair, J.A. (2004) "Argument and Its Uses," *Informal Logic* 24, 137-151.

Bondy, P. (2010) „Truth and Argument Evaluation," *Informal Logic* 30 (2), 142-158.

Bowell, T.; J. Kingsbury (2013) „Virtue and Argument. Taking Character into Account," *Informal Logic* 33 (1), 22-32.

Eemeren, F.H. van; R. Grootendorst (2004) *A Systematic Theory of Argumentation. The pragma-dialectical approach*, Cambridge: Cambridge U.P.

Eemeren, F.H. van; T. van Haaften (2023) „The Making of Argumentation Theory. A Pragma-dialectical View," *Argumentation* 37, 341-376.

Ennis, R.H. (1995) *Critical Thinking*, Upper Saddle River, NJ: Prentice Hall.

Feldman, R. (<1993> 1999) *Reason and Argument*, 2nd ed., Upper Saddle River, N.J.: Prentice-Hall $^{2}$1999. [51/52]

Goldman, A.I. (1999) *Knowledge in a Social World*, Oxford: Clarendon.

Goldman, A.I. (2003) "An Epistemological Approach to Argumentation," *Informal Logic* 23 (1), 51-63.

Govier, T. (<1985> 2010) *A Practical Study of Argument*, 7th ed., Belmont, California: Wadsworth.

Johnson, R.H. (2000) *Manifest Rationality. A Pragmatic Theory of Argument*. Mahwah, New Jersey; London: Erlbaum.

Johnson, R.H. (2007) "Informal Logic and Epistemology," *Anthropology & Philosophy* – International Multidisciplinary Journal 8 (1-2), 69-88.

Lumer, C. (1988) „The Disputation. A Special Type of Cooperative Argumentative Dialogue," *Argumentation* 2, 441-464.

Lumer, C. (1990) *Praktische Argumentationstheorie. Theoretische Grundlagen, praktische Begründung und Regeln wichtiger Argumentationsarten*, Braunschweig: Vieweg.

Lumer, C. (1991) „Structure and Function of Argumentations. An Epistemological Approach to Determining Criteria for the Validity and Adequacy of Argumentations," in: F.H. van Eemeren [et al.] (eds.) *Proceedings of the Second ISSA Conference, Amsterdam 1990*, Amsterdam: Sicsat, 98-107.

Lumer, C. (1997) „Practical Arguments for Theoretical Theses," *Argumentation* 11, 329-340.

Lumer, C. (2000) „Reductionism in Fallacy Theory," *Argumentation* 14, 405-423.

Lumer, C. (2003) „Interpreting Arguments", in F.H. van Eemeren [et al.] (eds.) *Proceedings of the Fifth ISSA Conference, Amsterdam 2002*, Amsterdam: SIC SAT, 715-719.

Lumer, C. (2005a) „The Epistemological Theory of Argument - How and Why?," *Informal Logic* 25 (3), 213-243.

Lumer, C. (2005b) „The Epistemological Approach to Argumentation - A Map," *Informal Logic* 25 (3), 189-212.

Lumer, C. (2010) „Pragma-Dialectics and the Function of Argumentation," *Argumentation* 24, 41-69.

Lumer, C. (2011a) „Probabilistic Arguments in the Epistemological Approach to Argumentation," in F.H. van Eemeren [et al.] (eds.) *Proceedings of the 7th ISSA Conference, Amsterdam 2010*, Amsterdam: Rozenberg; Sic Sat, 1141-1154. (CD-rom.)

Lumer, C. (2011b) „Argument Schemes – An Epistemological Approach," in F. Zenker (ed.) *Argumentation. Cognition and Community. Proceedings of the 9th OSSA Conference, Windsor, Canada, 2011*. URL: <http://scholar.uwindsor.ca/cgi/viewcontent.cgi?article=1016&context=ossaarchive>.

Lumer, C. (2014) „Practical Arguments for Prudential Justifications of Actions," in D. Mohammed; M. Lewiński (eds.) *Virtues of Argumentation. Proceedings of the 10th OSSA Conference, Windsor, Canada, 2013*. Windsor, Canada: University of Windsor. URL: <http://scholar.uwindsor.ca/cgi/viewcontent.cgi?article=2077&context=ossaarchive>.

Lumer, C. (2016) „Walton's Argumentation Schemes," in P. Bondy; L. Benaquista (eds.) *Argumentation, Objectivity, and Bias. Proceedings of the 11th OSSA Conference, Windsor, Canada 2016*. Windsor, Canada: University of Windsor. URL: <http://scholar.uwindsor.ca/cgi/viewcontent.cgi?article=2286&context=ossaarchive>.

Lumer, C. (2018) „Strength of Justification – The Rational Degree of Certainty Approach," in S. Oswald; D. Maillat (eds.) *Argumentation and Inference. Proceedings of the 2nd European Conference on Argumentation, Fribourg 2017*, London: College Publications, 315-333.

Lumer, C. (2019) „Recognizing Argument Types and Adding Missing Reasons," in B.J. Garssen [et al.] (eds.) *Proceedings of the Ninth ISSA Conference, Amsterdam 2018*, Amsterdam: Sic Sat, 769-777. URL: <https://ilias-argumentation.com/wp-content/uploads/2021/08/ISSA_2018_Proceedings_of_the_Ninth_Confe-1.pdf>.

Lumer, C. (2020a) „Arguments from Expert Opinion – An Epistemological Approach," in C. Dutilh Novaes [et al.] (eds.) *Reason to Dissent. Proceedings of the 3rd European Conference on Argumentation [Groningen 2019]*, Vol. 1., College Publications, 403-422.

Lumer, C. (2020b) „A Theory of Philosophical Arguments," in OSSA, Ontario Society for the Study of Argumentation (ed.) *Evidence, Persuasion & Diversity. Proceedings of Ontario Society for the Study of Argumentation Conference, Vol. 12 (2020)*. URL: <https://scholar.uwindsor.ca/cgi/viewcontent.cgi?article=2487&context=ossaarchive>.

Lumer, C. (2022) „An Epistemological Appraisal of Walton's Argument Schemes," *Informal Logic* 42 (1), 203-290. URL =

<https://informallogic.ca/index.php/informal_logic/article/view/7224>.https://doi.org/10.22329/il.v42i1.7224

Lumer, C. (2023) „Justifying the Epistemological Theory of Argumentation. On Harvey Siegel's Approach," *Informal Logic* 43 (4), 574-600. URL = https://informallogic.ca/index.php/informal_logic/article/view/8473.

Pinto, R.C. (2001) *Argument, Inference and Dialectic. Collected Papers on Informal Logic with an Introduction by Hans V. Hansen*, Dordrecht; Boston; London: Kluwer. [52/53]

Ritola, J. (2003) "Begging the Question. A Case Study," *Argumentation* 17, 1-19.

Sanford, D.H. (1972) "Begging the question," *Analysis* 32, 197-199.

Sanford, D.H. (1988) "Begging the Question as Involving Actual Belief and Inconceivable Without It," *Metaphilosophy* 19, 32-37.

Siegel, H. (1988) *Educating Reason. Rationality, Critical Thinking and Education*, New York; London: Routledge.

Siegel, H. (2023) "Arguing with Arguments. Argument Quality, Argumentative Norms, and the Virtues of the Epistemic Theory," *Informal Logic* 43 (4), 465-526.

Siegel, H.; J. Biro (1997) "Epistemic normativity, argumentation, and fallacies," *Argumentation* 11, 277-292.

Siegel, H.; J. Biro (2008) "Rationality, Reasonableness, and Critical Rationalism. Problems with the Pragma-dialectical View," *Argumentation* 22, 191-203.

Weinstein, M. (1994) "Informal Logic and Applied Epistemology," in R.H. Johnson; J.A. Blair (eds.) *New Essays in Informal Logic*, Windsor: Informal Logic, 140-161. [53/]