Reductionism in Fallacy Theory

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1. What Does "Reduction of Fallacy Theory" Mean? – The Scope of this Paper

In contemporary theory of argumentation fallacy theory has become a subdiscipline on its own, rather separated from positive and systematic approaches to establishing criteria for good arguments. This at first glance is a bit strange, and another approach seems to be more natural: First there should be a positive theory of good arguments, among others, providing exact criteria for good arguments; then 'fallacy' should be defined as an argument not complying with these criteria; finally, there should be a systematization and explanation of fallacies in relation to those criteria. And given the historical fact of a wealth of fallacy theory, an additional task should be: to define exactly and to explain the falsity of all traditionally known and scrutinized types of fallacies with respect to the criteria for good arguments (and the justification of such criteria), or to reject their assumed fallaciousness, and to decide open questions in fallacy theory. This project I call the "reduction of fallacy theory".

The advantages of such a reduction are rather obvious: The explanation why something is a fallacy is not *ad hoc* but justified by a positive theory of arguments; there are exact criteria for dividing fallacious from correct arguments; a complete systematization of fallacies may be developed; etc. But up to now there are only few attempts at a reduction of fallacy theory. One reason for this is the poor state of positive argumentation theory itself, viz that there are even less attempts to develop exact criteria for the correctness not only of deductive arguments but of several other types of arguments and arguments in general as well. Even existing endeavours to reduce fallacy theory are suffering from this disease, e.g. the pragma-dialectical approach.[317]

I have developed such a positive theory of arguments, the "practical theory of arguments", which provides exact criteria for the correctness of several types of arguments and for arguments in general and which gives epistemological reasons for these criteria.[318] In what follows I shall sketch a reduction of fallacy theory on the basis of the practical theory of arguments.

2. What are Fallacies? – A Definition of 'Fallacy'

What do I mean by "fallacy"? A rather common and, I think, completely right idea in current fallacy theory is that logically invalid arguments are not the only type of fallacy and that there are informal fallacies as well. But some important theorists now extend the expression "fallacy" to false moves in discursive dialogical argumentation (e.g. Eemeren / Grootendorst 1995: 136; Walton 1991: 224). Some reasons they offer for this are: Otherwise the purpose of argumentation could not be taken into account (Eemeren / Grootendorst 1995: 133 f.; Walton 1995: 232); only this would allow to treat the pragmatic aspects of arguments and fallacies (Walton 1991: 224). But this is not true: Purposes and pragmatics exist already on the level of monological argumentation when an arguer e.g. in a book presents an argument to an addressee for convincing him. In spite of that prominent account in fallacy theory I use the term "fallacy" exclusively for incorrect arguments or incorrect use of arguments, with "argument" meaning something that consists of a thesis, an indicator of argument and further judgements describing grounds for the thesis; the latter judgements I name "reasons (for the thesis)". False dialogical moves I call "incorrect debating"; one big subclass of incorrect debating consists of fallacies. I shall restrict my analysis to fallacies in the expounded sense - not denying that we need a theory of correct and incorrect debating too. Theories of correct or incorrect debating presuppose theories of correct argumentation and of fallacies. But these theories instead can be developed independently of those theories; and not all fallacies are forms of incorrect debating, e.g. fallacies in books often are not because they are not part of a debate.

A good starting point for defining "fallacy" is Johnson's definition: "A fallacy is [1.] an *argument* [2.] that violates one of the criteria / standards of good argument and [3.] that occurs with sufficient frequency in discourse to warrant being baptized" (Johnson 1995: 116). My main concern about Johnson's definition is that it does not enclose fallacies consisting of an inadequate use of perhaps good arguments, e.g. presenting an argument with true premises which the addressee does not know to be true. For enclosing these fallacies we must define 'fallacy' as a two-adic notion with the situation (consisting of an addressee and the time) being the second variable and introduce a further disjunctive condition that the argument in this situation does not fulfil its standard function. But what is a good argument if not an argument that at least in one situation can fulfil the standard function of arguments? But if the argument can not fulfil the standard function in any situation it can neither in the specified situation. So if we have introduced the disjunctive condition the original condition [2], that the argument must be a good one, is already implied and thus superfluous. - A minor concern is that the frequency of a type of incorrectness should not determine if some sort of incorrectness is a fallacy or not. Therefore I drop Johnson's condition [3]. The resulting definition then is: *x* is a *fallacy* in the situation *l* (consisting of an addressee *h* and the time *t*) iff 1. *x* is an argument and 2. *x* in *l* does not fulfil the standard function of arguments.

3. Positive Theory of Arguments – A Rush through the Practical Theory of Arguments

The definition of 'fallacy' which I have just developed is neutral with respect to different positive theories of argumentation in that it does not specify what the standard function of arguments is. This specification must be provided by a positive theory of arguments. Here is not the place for developing and defending such a theory. Instead of this I shall rely on my own practical theory of arguments and sketch some of its main features.

317 For a critique from an epistemic point of view see: Siegel / Biro 1995: 290-294.

318 The general theory is developed in: Lumer 1990a. An English description of some main ideas is: Lumer 1991; a German analogue is: Lumer 1990b. Lumer 1992 and Lumer 1995 are extensions and applications of the general theory to further special types of arguments. Lumer 1988 treats the application of the theory in a theory of dialogical argumentation.

According to the practical theory of arguments, the standard function of arguments is to rationally convince an addressee. And to "rationally convince" means leading the addressee to get the knowledge that the thesis of the argument is acceptable, i.e. true, probable or verisimile. This leading works in such a manner that verbal material is presented to the addressee which he can examine; and if he has examined this material with a positive result he has won the intended knowledge. The material which he has to examine, of course, are the explicit and implicit reasons of the arguments, and the examination consists of checking if these reasons are true. In good argumentation these reasons are chosen in a way that the addressee can immediately check their truth: He already knows that they are true, and he must only remember this; or they are analytically true, and he can immediately recognize this; or they are of a sort that he believes the arguer that they are true.

But why does recognizing the truth of the reasons of correct arguments amount to recognizing the acceptability of the thesis? This is guaranteed by the fact that such arguments are based on *epistemological principles*, e.g. the deductive epistemological principle: 'A proposition is true if it is logically implied by true propositions'; or the genesis of knowledge principle: 'A proposition is true if it has been verified correctly'; or the interpretative epistemological principle: 'A proposition is true if it is part of the only possible explanation of a known fact' etc. So epistemological principles are general propositions that propositions are true under certain conditions. There are efficient epistemological principles which when applied really guarantee the acceptability of the thesis; and there are inefficient epistemological principles. It is a task of epistemology to examine and prove the efficiency of epistemological principles; such proofs are ultimately based on the truth definitions of propositions. Of course, good arguments are based only on efficient epistemological principles. And the various types of arguments differ in on what epistemological principle they are based: Deductive arguments are based on the deductive epistemological principle; genesis of knowledge arguments (like arguments from authority) are based on the genesis of knowledge principle etc.

Epistemological principles are *general* criteria for the acceptability of propositions. For their application in an argument they have to be concretized for the specific thesis, i.e. their variables have to be filled in. If you want to argue deductively for the thesis that Socrates is mortal one concretization of the deductive principle of knowledge (that a proposition is true if it is logically implied by true propositions) might be this: ''That Socrates is mortal' is true if 1. 'that Socrates is mortal' is logically implied by 'all human beings are mortal' and 'Socrates is a human being' and 2. if the latter two propositions are true.' Such concretizations of principles of knowledge I call "criteria of acceptability". The art of good arguing consists of finding such criteria of acceptability for a given thesis the conditions of which are fulfilled and by the addressee are known to be fulfilled. An ideal argument then consists of the thesis, an indicator of argument and reasons in which the several conditions of such a criterion of acceptability are judged to be fulfilled. The ideal version of our example then would be: 'Socrates is mortal, because 1.1. all human beings are mortal, 1.2. Socrates is a human being, and 2. because these two propositions logically imply that Socrates is mortal.' The two premisses 1.1 and 1.2 are material reasons, and the last judgement is a formal reason. Of course, most arguments are not that ideal; the formal reason and even material reasons are omitted. But this is not problematic if enough reasons are left over for reconstructing the ideal version.

The process of acquiring knowledge guided by an argument then ideally works in this way: The addressee understands the judgements functioning as reasons and recognizes the underlying principle of knowledge by means of the indicator of argument or with help of other hints. The argument then gives him the criterion of acceptability which the arguer has in mind, or at least gives him so many parts of this criterion that the addressee could reconstruct the complete criterion. The addressee now has to verify if this criterion of acceptability really is a concretization of the principle. Then he has to check if all the conditions of the criterion of acceptability are fulfilled, i.e. if the reasons are acceptable. An argument is suitably chosen for rationally convincing the addressee only if he immediately can check the truth of the reasons. If the results of all these checks are positive he knows the thesis to be acceptable.

According to this analysis, arguments are instruments for rationally convincing by being guides for the acquisition of knowledge. Instruments have to fulfil their standard function; or more precisely: They must be *functioning*, i.e. they must be able to fulfil their standard function in at least one (specifiable) situation of application; otherwise they are not instruments in the narrow sense but only in the wide sense that someone believes them to be instruments in the narrow sense. But even a functioning instrument is not apt to fulfil its standard function in every situation; it may be *inadequate* in this situation. All this is true for arguments as well. A functioning argument, i.e. an argument which can fulfil the standard function of arguments in at least one situation, I call "(argumentatively) valid". Argumentative validity is different from logical validity. In deductive arguments argumentative validity includes logical validity but it also includes the truth of the premisses and more. In non-deductive arguments argumentative validity does not include logical validity. 'Argumentatively valid' is a one-adic notion: Arguments are valid or they are not. 'Adequate' instead is a three-adic notion: 'Instrument x is adequate in a situation l for fulfilling the function f.' But if I speak about the adequacy of arguments I often omit the third variable, presupposing that the standard function of arguments is meant, i.e. to convince rationally. A valid argument may be adequate in one situation but inadequate in another, e.g. if the addressee does not know the reasons to be acceptable. But, according to what I have said about the functioning of instruments, valid arguments must be adequate in at least one situation; this requirement I call "adequacy in principle". Circular arguments are not adequate in principle and therefore not valid: Nobody could be rationally convinced by such arguments; either he has not yet accepted the thesis, then he has neither accepted one reason of the argument yet, so that he cannot immediately check if all the conditions of the criterion of acceptability are fulfilled; or he has already accepted the thesis, then he cannot get convinced of it by the argument.

4. The General Criteria for the Validity and Adequacy of Arguments

The exposition given so far should suffice for understanding the following definitions of 'valid argument' and 'argument' in general and the adequacy criterion for arguments. The definition of 'valid argument' and the adequacy criterion are the positive criteria on the basis of which the single types of fallacies will be defined.

x is a valid argument, i.e. an argument in the narrow sense :=
A0: Domain of definition: x is a triple i p_,*i*,*q*, consisting of
A0.1: a set *p_* of judgments a_1, a_2, ..., a_n,
A0.2: an indicator *i* of argument, and
A0.3: a judgment *q*;
a_1, ..., a_n (the elements of *p_*) are called the "reasons for *q*" and *q* is called "the thesis of *x*".
A1: Indicator of argument: i indicates that *x* is an argument, that a_1, a_2, ...,a_n are the reasons and that *q* is the thesis of *x*; in addition *i* can indicate the type of argument, i.e. the epistemological principle the argument is based on.
A2: Guarantee of acceptability: There is an epistemological princi-

ple *e* and a criterion *c* for the acceptability which fulfil the following conditions:
A2.1: Efficient (epistemological) principle: the epistemological principle *e* is efficient; and
A2.2: Concretization (of the principle): the criterion *c* is a concretization of the principle *e* for the thesis *q*, and the reasons a_1, a_2, ..., a_n are judgments claiming of at least a part of the conditions of *c* that they are fulfilled; and
A2.3: True reasons: all conditions of *c* are fulfilled.
A3: Adequacy in principle: x fulfils the standard function of arguments; i.e.: there is a subject *s* and a time *t* for which holds:
A3.1: the subject *s* at the time *t* is lingustically competent, open-minded, discriminating and doesn't know a sufficiently strong justification for the thesis *q*; and
A3.2: if at *t x* is presented to *s* and *s* closely follows this presentation this will make *s* know that the thesis *q* is acceptable; this process of cognition will work as follows: *s*, using *e* and *c*, will recheck - among others - those conditions for the acceptability of the thesis *q* which are claimed to be fulfilled in a_1, a_2, ..., a_n, thereby coming to a positive result.
x is an argument (in the broad sense) :=
A4.0: Domain of definition: The domain of definition is the same as that of valid arguments.
A4.1: Valid argument: x is a valid argumentation, or
A4.2: Seemingly valid argument: there is a person *s* and a moment *t* with *s* at *t* believing or (explicitly or implicitly) holding the view that *x* is a valid argument.

A valid argument *x* is *adequate* for rationally convincing an addressee *h* (hearer) at *t* of the thesis (*q*) of *x* iff condition A5 holds:
A5: Situational adequacy:
A5.1: Rationality of the addressee: The addressee *h* (at *t*) is linguistically competent, open-minded, discriminating and does not know a sufficiently strong justification for the thesis *q*. And
A5.2: Argumentative knowledge (of the addressee): A5.2.1: The addressee *h* at *t* knows at least implicitly the underlying epistemological principle *e* of the argument *x*; and A5.2.2: at *t* he (*h*) is able to develop the criterion *c* of acceptability (which is intimated in *x*) by means of his knowledge of the principle *e* if all the reasons of an ideal version of *x* are presented to him. And
A5.3: Acceptance of the reasons: The addressee *h* at *t* knows that the propositions p_1, ..., p_m are true, with p_1, ..., p_m being the conjuncts of the antecedent of the criterion *c* of acceptability (intimated in *x*). And
A5.4: Expliciteness: If in the reasons of *x* not all conditions of the criterion *c* of acceptability (intimated in *x*) are claimed to be fulfilled the addressee *h* at *t* is able to add the most important conditions of acceptability.
A5.5: Sufficient argumentative power: The criterion *c* of acceptability (intimated in *x*) together with the subjective probabilities of the addressee (*h* at *t*) that the conditions of *c* are fulfilled provide a sufficiently high degree of probability of the thesis (*q* of *x*) - sufficiently high according to the desires of the addressee (*h* at *t*).

5. Fallacies of (Argumentative) Validity

The criteria presented in the last section provide that standards the violation of which lead to fallacies. This means all fallacies are and can be characterized as being violations of at least one of the specified conditions. And the easiest (and perhaps the only) way for arriving at a complete taxonomy of fallacies is to define main groups of fallacies the elements of which violate one of the general conditions for the validity or adequacy of arguments. Then more subgroups or more specific fallacies can be defined following the pattern of *genus proximum* and *differentia specifica* where the *genus proximum* always is a fallacy of the main group. Logically there is no limitation in inventing more and more fine grained types of fallacies. Pragmatically one should define and invent names for special types of fallacies only if their extension is big enough or if it explains what type of error the fallacy stems from. Doing this one must not look for a further form of (non-trivial) completeness because completeness is already reached on the level of the main groups. Unfortunately, there is no traditional name for any of the main types of fallacies. So please excuse me for having invented names for them; but these names lean on the names for the conditions just outlined. Astonishingly, even for many of the second order types of fallacies we have no traditional names.

Some of the traditionally known fallacies can only be defined in a way that their differentia specifica refers to conditions of the validity or adequacy of specific types of arguments, such as deductive or genesis of knowledge arguments. One such type-specific fallacy is the *non sequitur* which can occur only in deductive arguments. Defining these type-specific fallacies exactly, requires reference to the positive conditions of the appertaining type of argument. Here is not enough room for specifying these conditions; therefore, the description of these type-specific fallacies here often will be rather sketchy.

But before discussing the single types of fallacies I would like to mention some moves or arguments which according to some theories are treated as "fallacies" but which according to my definition are not. *Argumenta ad baculum* or a simple *ad hominem* attack (which I distinguish from an *argumentum ad hominem*, cf. below) normally not even look like arguments; there is no indicator of argument saying that because of a threat or negative properties of an opponent a thesis is true. They are types of incorrect debating. The dialogical *tu quoque*, that an opponent points out to the fact that the proponent is acting against his own advices or claiming something which he has earlier denied, is a dialogical move too and, therefore, not an argument; but it is a quite legitimate move which should be understood as a request to the proponent to clear up this contradiction. (Later on I shall discuss an argumentative tu quoque, which is a fallacy.) Finally, *argumenta ad verecundiam* or *ad misericordiam* are arguments but *as such* are not fallacies, though certain forms of them are fallacies.

According to the two types of requirements for good arguing we must distinguish between fallacies of validity, which affect the argument as such and in any situation in which it is used, and fallacies of adequacy, which only can be attributed to the use of an argument in a given situation. The zero-condition for a valid argument (A0) requires that valid arguments must belong to a certain domain of definition. But this condition holds for invalid arguments as well. Because, according to my definition of 'fallacy', a fallacy must at least be an argument, there is no fallacy consisting of a violation of condition A0. According to the condition A4.0, even unvalid arguments consist of *judgements*, i.e. meanings of declarative utterances, (and an indicator of argument) and not of utterances or sentences themselves. That means before arriving at the argument much work of interpretation already may have been done; and a given sequence of utterances may be interpreted in two or more ways, thus providing two or more arguments. Such unclarity of meaning (with its many subforms like equivocation, vagueness etc.) by itself would not be a fallacy but a semantic error, situated on a level already before the level of meaning on which arguments are located; the resulting arguments however may be fallacious. So later on we shall get to know the *fallacy* of ambiguity, which not consists of the ambiguity itself but of some other distortion resulting from the ambiguity of the utterances used to express the argument.

F1: False indicator: The indicator of argument *defines* which judgement is the thesis and which judgements are the reasons for it. Therefore, here is not much room for fallaciousness. But an indica-

tor may be false in specifying a different epistemological principle than the argument is actually relying on, e.g. if in a non deductive argument 'from this follows' is used.

F2.1: Error of (epistemological) principle: One major class of fallacies consists of arguments relying on no epistemological principle at all (F2.1.1: lack of principle) or on an epistemological principle which is not suited as basis for rational justification. The latter may occur in two ways: The principle appealed to is not efficient (F2.1.2: inefficient principle), or the arguer is alluding to an efficient principle but does not know it exactly and that is why his argument is grossly impaired (F2.1.3: distorted principle). Often it will not be clear to which of these subclasses a given argument belongs: The argument may be so confused that it is difficult to say if the arguer had no principle at all in mind, not even vaguely, or if he was relying on a confused principle; and if he had some form of principle in mind this must not have been a clear one. In such cases the argument itself often does not help very much to answer these questions. Lack of principle is not very interesting theoretically.

F2.1.2: Inefficient (epistemological) principle: Inefficient principles e.g. are: 1. 'If x and y are analogous with respect to F_1, ..., F_n they are also analogous with respect to F_{n+1}.' That two things are analogous in certain respects is only a *heuristic* that they are analogous in further respects but no proof. 2. 'If an event e has very negative consequences then it cannot happen.' 3. 'If an opponent s holds that p but earlier has held that not p then not p is true.' Arguments based on these epistemological principles are fallacies and are called: 1. "argument from analogy", 2. "*argumentum ad consequentiam*", 3. "*tu quoque*-argument", respectively.

F2.1.3: Distorted (epistemological) principle: The standard case of the fallacy of distorted principle is not that the arguer has a specific principle in mind but that he has only some vague idea of how one could argue; and this idea gets some backing by its resemblance to an efficient principle. Most often important parts are lacking, which would be necessary for the validity of the argument; this type of the fallacy of distorted principle could be called "grossly insufficient evidence". E.g. a practical argument pleading for a certain alternative may contain reasons which could only prove that this alternative has positive value; i.e. the comparison to other alternatives is completely missing. Or in an interpretative argument the fact that a set of hypotheses would explain some known fact is already taken as a proof that these hypotheses are true; i.e. the comparison with other possible explanations and the consideration of their probabilities is missing. The fallacies just described have no traditional names (though the last one in modern psychological literature is named "baseline fallacy"); but there are some types of arguments from distorted principles with conventional names. For some of them one can construct the distorted epistemological principles they seem to appeal to: The *argumentum ad hominem* seems to rely on the principle: 'If subject s is not reliable or a bad person and s holds that p then p is false.' Here one can find elements of a (negative) genesis of knowledge principle. The emotional *argumentum ad personam* or appeal to emotion seems to reason from the principle: 'If somebody s desires / appreciates that p and q would imply or make it more probable that p then it would be optimum for s to make efforts that p.' This would be a distorted version of a practical principle. Another type of practical argument with grossly insufficient evidence is the narrowing *argumentum ad misericordiam* which unduly ignores other relevant aspects of the considered alternative. The fallacious *argumentum ad ignorantiam*, which simply appeals to the principle: 'If it is not known / proved / ... that not p, then p.', is a case of grossly insufficient evidence in the domain of genesis of knowledge arguments. And hasty generalization is a form of grossly insufficient evidence in the domain of generalizing arguments.

F2.2: False concretization: Conretizing a principle of knowledge means to fill in its variables with singular terms in such a way that the same variables must be substituted by the same singular terms; and this may go wrong. There are three main classes of such false concretization: 1. F2.2.1: Insufficient evidence: At least one reason which, according to a correct concretization, must be part of the argument is missing. In a deductive argument this occurs in the form that one premise which, according to the judgement on the logical implication, is necessary is not contained by the argument: '$p_1\&...\&p_n{}^a q$; p_1; ...; p_{n-1}; therefore, q.' Insufficient evidence is different from enthymematic argument: The missing reason, according to the rules of enthymematic argument, may not be omitted. But because in valid deductive arguments the judgement on the logical implication may be dropped we often cannot decide if the argument is a case of insufficient evidence, false reason or *non sequitur*. In non-deductive arguments there are less problems of differentiation. 2. F2.2.2: *Ignoratio elenchi*: The reasons are reasons for a different thesis than that of the argument. In the deductive case we have an argument of the form: '$p_1\&...\&p_n{}^a q$; p_1; ...; p_n; therefore, r.' Subtypes of the *ignoratio elenchi* are the straw man fallacy (the thesis of the argument is that a certain claim or theory is false; but what is actually criticized is a different claim or theory) and fallacious ambiguity of the thesis with its subforms fallacious equivocation and fallacious amphiboly (i.e. the *ignoratio* results from the fact that the expression of the thesis has two meanings, one actually being the thesis and the other being argued for). F2.2.3: Missing fit: One intension which, according to the epistemological principle, should be held identical in two places in the reasons of the argument actually is exchanged. The deductive version of missing fit looks like this: '$p_1\&...\&p_n{}^a q$; p_1; ...; p_{n-1}; r; therefore, q.' In the deductive argument the intensions which are exchanged, against the principle, are complete propositions; in other arguments these may be only parts of propositions, e.g. numbers in practical or probabilistic arguments. A subtype of missing fit is fallacious ambiguity of the reasons (again with the subforms of fallacious equivocation and fallacious amphiboly of the reasons); in this case the missing fit stems from the fact that some expression for the reasons has two meanings; one meaning occurs in one part of the argument, the other meaning in another part, though it should be the same meaning.

F2.3: False reason: The reasons of an ideal argument are judgements that the propositions p_1, ..., p_n are true where p_1, ..., p_n are all the conditions of a criterion of acceptability for the thesis. If one of these reasons actually is not true the argument cannot support the thesis. A traditionally known fallacy which is a subtype of the fallacy of false reason is a certain form of the *argumentum ad populum* which I call "emotional *argumentum ad populum*": The reason is false but popular and it is already accepted by the addressee. Another subtype of this kind is the descriptive *argumentum ad personam*: The reason is false, and the arguer knows it, but the addressee accepts the reason. These two types of fallacies do not refer to any specific type of reason; other subtypes of false reason however do. The reasons which can be part of an argument are quite heterogeneous. But a good first distinction is that between formal and material reasons; formal reasons should be analytically true and they judge the structural conditions of the criterion of acceptability to be fulfilled. The formal reason of a deductive argument is the judgement that the premises logically imply the thesis; of course, this formal reason usually is omitted. The material reasons in a deductive argument are the single premises, including the implicit premises. The deductive version of the fallacy of false *formal* reason then is the *non sequitur* (with many subforms like affirming the consequent or denying the antecedent); and the deductive version of the fallacy of false *material* reason is the fallacy which could be named "false premise"; one special case of such a false premise is *post hoc ergo propter hoc*. Non-deductive arguments have a more complex structure than deductive; therefore for the non-deductive arguments we have much more (type-specific) subtypes of the fallacy of false reason, though there are only few

traditional names for them: e.g. appeal to false authority, which occurs in genesis of knowledge arguments and means that the (implicit) material reason that the witness being the source of the thesis is an expert in this field is false. A special case of appeal to false authority is the form of the argumentum ad populum which I call "winning *argumentum ad populum*": The argument tries to win a not yet convinced addressee for supporting the thesis by pointing out the popularity of the thesis; i.e. the *populus* is taken as an authority.

F3: Fundamental inadequacy: "Fundamental inadequacy" means that an argument though it may fulfil all the other validity conditions is not apt to lead anybody in the standard way to a new and rational conviction. Of course, the most prominent type of fundamental inadequacy is circular reasoning, one necessary reason - this may be an implicit reason - of the argument being identical with the thesis. Often circular reasoning is identified with the *petitio principii* or begging the question. But I would like to distinguish a strict *petitio*, which is identical with an explicit circularity and which is a fallacy of validity, from the soft *petitio*, which is a fallacy of adequacy and will be treated below. I had introduced the requirement of non-circularity with instrumental reasons: If an argument is circular there is no situation where it could be used as an instrument for rationally convincing somebody of the thesis who is not already convinced (s. above and Lumer 1990: 55 f.; 68-70). A criterion for the strict deductive *petitio* exactly on this line has been formulated by Jacquette and interpreted and defended by McGrath: A deductive "argument begs the question if it contains a premise which it is not possible to be justified in believing unless one is also justified in believing in the conclusion" (McGrath 1995: 351; cf. Jacquette 1993: 322). This criterion leaves open if there are instances of the strict petitio different from formal circularity. But I conjecture that there are not: If the suspicious reason is different but quite similar to the thesis and even if it seems too natural to justify the reason starting from the thesis and not vice versa, e.g. in the case of '$p\&q$' being the reason and 'p' being the thesis, one might have arrived at the reason on a justified but unusual way, e.g. by an argument from authority, which does not take the route via the thesis.[319] - But apart from circular reasoning there are other forms of fundamental indadequacy: absolute shortness, i.e. the argument does not provide enough information for putting an experienced addressee in a position to unproblematically, i.e. using standard techniques of interpretation, complete the argument to an ideal argument. There is a difference between only *inspiring* an intelligent addressee to find the complete argument and providing him with sufficient information for constructing the complete version according to standard rules of interpretation. Only the latter form of argument is valid. Another form of fundamental inadequacy is disarray: Ideal arguments may contain very different forms of reasons and closed subsets of reasons which should be arranged in a connected way. Otherwise the addressee cannot be guided by the argument in recognizing the acceptability of the thesis.

6. Fallacies of Adequacy

F5.1: False rationality: Arguments are instruments for rationally convincing people. But if an addressee in the specific situation is not rational in the specified sense of A5.1 (i.e. not linguistically competent, not open-minded, not discriminating or does already know a sufficiently strong justification for the thesis), then it is useless to present to him an argument with the aim of convincing him.

F5.2: Excessive (argumentative) demand: A similar form of inadequacy is excessive argumentative demand: The addressee does not know the underlying epistemological principle, or the argument is too difficult for him to be followed.

F5.3: Unaccepted reason: Adequate use of arguments for rationally convincing presupposes that the addressee already knows the reasons of the ideal version of the argument to be true; "already" here shall include an acquisition of that knowledge in the moment of arguing. The knowledge must rely on some sort of justification, but this justification may be rather weak. If the reasons e.g. report only facts rather simple to verify the addressee may accept them because they are claimed by the arguer and because he trusts the arguer in this respect. If the addressee does not know one necessary (implicit or explicit) reason to be true even in this weak form then I speak of an "unaccepted reason", which is a fallacy of adequacy. The most prominent subtype of unaccepted reason is the soft *petitio principii*. Walton is right in arguing (with the help of a good example) that the same argument may be petitious in one situation but not in another (cf. Walton 1995: 230-233) - but this is true only of the soft petitio. And it is difficult to spell out the conditions of a soft petitio. I do it this way: An argument x with the thesis q is a soft *petitio principii* in the situation l if x contains an unaccepted reason (in the sense just explained) a and 1. the (for the addressee) most obvious attempts to find a valid and adequate argument for (the unknown reason) a all contain the thesis q as reason, or 2. the unknown reason a is similar to the thesis and the (for the addressee) most obvious attempts to find a valid and adequate argument for a are to a great extent identical with the (for the addressee) most obvious attempts to find a valid and adequate argument for the thesis q itself, in particular they contain some same unknown reason. The point of this definition is not to refer to absolute possibilities of justification for the unaccepted reason, but to possibilities of justification which are at hand for the addressee. These possibilities may be different for different addressees.

F5.4: Relative shortness: One of the fallacies of validity was absolute shortness. 'Absolute shortness' is defined with respect to an *expert*. But what is a not too short version of an argument for an expert might be still too short for an addressee not being an expert: He cannot follow the argument in the sense of being able to fill in the omitted reasons. The argument then is an instance of relative shortness.

F5.5: Unaccepted weakness: Arguments differ in strength, i.e. the resulting degree of subjective probability which they can provide for their respective theses may be quite different. If the resulting subjective probability is to low with respect to the degree desired by the addressee using this argument is an instance of the

319 Walton holds that not all forms of circular reasoning are fallacious; and he defends this view with several examples. But, I think, none of these examples is correct: 1. In the case of the economist (Walton 1995: 233 f.), if he really wants to defend his factual claim that people are leaving the state by pointing to the poor economy, so if this really shall be an argument, then it is fallacious. This does not exclude that the same sequence of sentences is a valid explanation. 2. When only proving the equivalence of A and B by proving that A implies B and vice versa (Walton 1995: 234) one does not use A as a reason, one does not affirm A to be true even if one uses the formula 'suppose A to be true'. The reasons in such arguments instead are judgements on implications, e.g.: 'A → C1; C1 → C2; ...; Cn → B; therefore, A → B' etc. So in this case there is no circularity. 3. If we have independent reasons for R and then additionally want to defend R in a circular way (Walton 1995: 236), this second argument is fallacious; it gives no further evidence for R and cannot raise its probability. – But Walton is right in claiming that the same argument may beg the question in one situation but not in another. This may occur in cases of the soft petitio, which is a fallacy of adequacy (cf. below).

fallacy of unaccepted weakness. Low probability of the thesis stems from the low probability of the reasons, which then is transferred to the thesis. Genesis of knowledge arguments, and arguments from authority in particular, are notoriously weak arguments; they are always considerably weaker than the direct argument or verification they are reporting on. In many situations in science the strongest available evidence is demanded. Then arguing from authority, which is one level more indirect, hence weaker, than the argument developed by the authority himself, is an instance of unaccepted weakness, which can be named "false appeal to authority" (which is different from appeal to false authority).

I am at the end of my rush through the main groups of fallacies, which are defined following the positive conditions for the validity and adequacy of arguments, given by the practical theory of arguments. I hope to have shown that taking this theory as basis the reduction of fallacy theory works and provides reasonable and exact definitions also of the major types of traditionally known fallacies.

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