

Refuting a Standpoint by Appealing to Its Outcomes: *Reductio ad Absurdum* vs. Argument from Consequences

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Abstract: Used informally, the *Reductio ad Absurdum* (RAA) consists in reasoning appealing to the logically implied, absurd consequences of a hypothetical proposition, in order to refute it. This kind of reasoning resembles the Argument from Consequences, which appeals to causally induced consequences. These types of argument are sometimes confused, since it is not worked out how these different kinds of consequences should be distinguished. In this article it is argued that the logical consequences in RAA-argumentation can take different appearances and that it therefore must be concluded that RAA cannot be characterised by a specific content, but must instead be characterised as an argument *form*. Furthermore, clues are provided to distinguish RAA reasoning from the Argument from Consequences.

Résumé: Selon son usage informel, le *reductio ad absurdum* (RAA) est un raisonnement qui réfute une proposition hypothétique en déduisant logiquement de celle-ci des conséquences absurdes. Ce genre de raisonnement ressemble à l'argument fondé sur des conséquences, qui repose sur l'induction de conséquences causales. Parfois on confond ces genres de raisonnements parce qu'on n'a pas résolu comment on devrait distinguer ces différents types de conséquences. Dans cet article on avance que les conséquences logiques dans les arguments RAA peuvent prendre différentes formes, donc ces arguments ne s'identifient pas par leur contenu spécifique, mais plutôt par une *forme* logique. D'ailleurs, on propose des indices pour distinguer les arguments RAA des arguments fondés sur des conséquences.

Keywords: analogical argument, argument form, argument from consequences, argument scheme, argument from causality, hypothetical reasoning, pragmatic argumentation, *reductio ad absurdum*, slippery slope, symptomatic argumentation

1. Introduction

The aim of this article is to characterise the argument called *Reductio ad Absurdum* (RAA) when it is used informally and to clarify the distinction between such an argument and the Argument from Consequences. This aim is motivated by the fact that these ways of reasoning are rather similar and can be (and are) therefore

confused. Both forms of reasoning are based on a premise consisting of a hypothetical antecedent that is the denial of the proposition expressed in the standpoint, and a consequent appealing to negatively evaluated consequences that are supposed to be entailed by what is expressed in the antecedent. Formalized in the Pragma-Dialectical way (1. being the standpoint, 1.1 the explicit premise and 1.1' the unexpressed premise; van Eemeren & Grootendorst, 1992) these arguments run:

1. Not X, for
 - 1.1 if X, then Y¹, and
 - 1.1' Y is undesirable/absurd²

The difference between the Argument from Consequences and the RAA concerns the kind of consequences that are being appealed to: causally induced consequences in the Argument from Consequences and logically implied consequences in the RAA. (Both kinds of consequences fall within the meaning of the general expression 'consequences'; in this article I will use the appropriate modifier 'logical' or 'causal' to denote the one or the other.) However, this difference is not always recognised. For example, in jurisprudential literature, the expression *Reductio ad Absurdum* is used to indicate reasoning that makes an appeal to consequences that are unacceptable, meaningless, incomprehensible or the like (Alexy, 1989, p. 283; Golding, 1984, p. 38, 59; MacCormick, 1978, p. 114 ff).³ First, this definition leaves room for types of arguments by which an appeal is made to undesirable consequences that are causally induced. An example is that a given legal claim should not be granted, for if we do so the legal system will be overwhelmed by similar claims (the so-called 'floodgate argument'; an Argument from Consequences). Second, the definition covers arguments that appeal to a logical relationship between the attacked viewpoint and its supposed consequences, as in the following argument concerning the interpretation of a legal rule that regulates grounds for divorce: 'Artificial insemination by a donor cannot be a ground for adultery, for, if it were, a consequence would be that it is possible to commit adultery with a dead person' (in the case of insemination with the semen of a man who has died after his donation) (MacCormick, 1978, p. 148). In this example a certain interpretation is denied because its consequence creates an impossibility (a *Reductio ad Absurdum*).

It is not only in jurisprudential literature that the Argument from Consequences and the RAA are confused, but also sometimes in modern argumentation theory. For example, Little (1980, p. 139) has the same broad concept of kinds of consequences as can be found among the legal authors mentioned above, and Crossley & Wilson (1979, p. 166) call examples RAA which are in fact Arguments from Consequences. Considering the apparent similarity of an RAA argument and

the Argument from Consequences—which is also acknowledged by Walton (1992, pp. 47, 74, 129, 154, 257, 259)—this is not surprising, especially since the difference between logical and causal consequences is nowhere fully explored.⁴ However, in order to adequately evaluate an argument, one must know what the argument precisely amounts to. One of the things to be known is what a ‘logical consequence’ may signify and what (other) clues can distinguish the RAA from the Argument from Consequences.

I will answer this research question by first describing how the RAA was originally understood and how it is generally understood in modern literature. On the basis of these results, I will relate the RAA to the concept of argument scheme and to the Pragma-Dialectical classification of types of argument based on this concept. In Pragma-Dialectics, argument schemes define the pragmatic relationship between a premise and its conclusion reflected in the inference license: i.e., a symptomatic relation, a relation of comparison or a causal relation. Accordingly, the Pragma-Dialectical classification of types of argument consists of the Argument from Sign, the Argument from Comparison, and the Argument from Causality (including its subclass: the Argument from Consequences) (van Eemeren & Grootendorst, 1992).⁵ The application to the RAA of the Pragma-Dialectical classification of argument types enables me to (1) give a characterisation of the RAA and (2) distinguish it from the Argument from Consequences. Note that I do not assess the validity of the arguments presented below, even though some of the examples given might appear somewhat weak; my interest here lies in their classification.

2. Historical background

The roots of the RAA lie in ancient Greek mathematics (Kneale & Kneale, 1962, p. 7 ff.), where the argument is known as reducing a certain view to the impossible (in Greek *hê eis to adumatôn apagôgê* [Aristotle, *Prior Analytics* 29b6]). It is the method of indirect proof that consists in assuming the contradictory of what one wants to prove and then deducing logical implications from this assumption that are incompatible with each other. By thus showing that the assumption entails a logical impossibility it is shown to be false, and thus the statement one wants to prove is shown to be true. It is characteristic of this form of mathematical argument that the hypothesis turns out to be self-contradictory.⁶

The method of deducing absurd consequences can also be recognised in ancient Greek philosophy, especially in the Socratic elenchus characterized in Plato’s dialogues. Time and again Socrates makes use of the RAA to refute his adversary’s statement by inducing concessions that show the consequences of this statement to be false. In *Meno*, Plato uses the example that virtue is not teachable, for, if it were, there must (by logical implication) be teachers of virtue who are capable of instructing their sons likewise. However, this implication is refuted by empirical observation, since Pericles, Themistocles and Aristides did not succeed in making

their sons virtuous (Kneale & Kneale, 1962, p. 9). Socrates's use of the RAA differs from the mathematical use described above in that the consequences need not be contradictory but may just involve a falsity. Kneale & Kneale (1962, p. 7, 10) suggest that this method of refutation is what Plato in his middle period considers to be dialectic.⁷

According to Kneale & Kneale (*ibid.*) the expression *reductio ad impossibile* suits the mathematical type best, whereas *Reductio ad Absurdum* may be more appropriate in the broader, dialectical sense. On the other hand, Rescher (2002) thinks the term *ad absurdum* more suitable for a self-contradiction (the strict, mathematical use), whereas, to convey a looser sense of the absurdity of the consequence, he would apply the expressions *ad falsum* and *ad impossibile* when the consequence is a falsehood, or *ad ridiculum* and *ad incommodum* when it is an implausibility or anomaly. In the following we will see that the two types of RAA mentioned here are also distinguished in modern argumentation theory—although in a slightly different sense.

3. Types of *Reductio ad Absurdum* in modern argumentation theory

Like in the classical period, some modern authors make a distinction between types of RAA based on the kind of (logical) consequences they entail.⁸ Ryle (1945, p. 6) distinguishes between a 'strong' and a 'weak' version of the RAA. His strong version more or less refers to the ancient mathematical type: it 'consists in deducing from a proposition or a complex of propositions consequences that are inconsistent with each other or with the original proposition'. His weak version consists in drawing a falsehood. In the formulation of Ryle, the falsehood consists in a conflict with the system of which the statement to be proven is part, or with consequences drawn from the system.

Groarke, Tindale & Fisher (1997, p. 177-178) also distinguish between a strong and a weak version. Like Ryle's, their strong version also points to a self-contradiction on the part of the refuted statement. Following the formulation they use, the strong form 'attacks an opponent's view by demonstrating that he or she is committed to contradictory views'. In their weak version, the consequence that is implied by the attacked view is a falsehood in the sense that it conflicts with beliefs that are generally accepted. This consequence contradicts views 'that others (ourselves, the universal audience, those participating in discussion) accept as true'.

In my view, the two classifications of types of RAA just described show enough resemblance to each other and to the classic distinction between a mathematical and a dialectical type to treat them as prototypes. The strong version of the RAA resembles the mathematical type and can be said to point out inconsistencies in the commitments of the opponent. The inconsistency arises from his stance and therefore results in a refutation of this stance. This can be demonstrated by an example concerning reasoning about the mind/body problem (Crossley & Wilson,

1979, p. 164-166) involving the refutation of the traditional view of the interaction between (the non-physical) mind and (the physical) body.⁹ The implication is that if the body is physical, then the mind must be also, since a physical object can only be causally affected by another physical thing. Since this implication contradicts the original view, in which the mind is not physical, that view is not tenable.

The weaker version of the RAA consists in deducing from the opponent's claim a falsehood or a statement that contradicts *communis opinio*. Although Ryle has formulated his weak version with respect to the mathematical use of the RAA by Euclid and therefore describes the deduced consequence to be in conflict with a (mathematical) system, 'system' can easily be understood more broadly as a set of starting points about facts and norms upon which the proponent and the opponent have agreed. Understood this way, the weak version of the RAA can be considered to consist of deducing from the statement one wants to attack consequences that are in conflict with generally held opinions about facts or norms that serve as starting points in a discussion.

Examining the examples of RAA that are found in the literature, it seems that the logical consequences of the weak form of RAA can take different appearances. I have gathered two types from this examination. One instance is the counterexample. Jensen (1981, p. 271) gives the example that a sign on a grocery store, which states that under no condition are animals allowed in the store, is untenable, for this would mean that a blind person who depends on his seeing-eye dog can never be permitted to go into the store and thus must presumably starve. Barnett & Bedau (1993, p. 189-190) present an example in which firearms control is defended. The argument runs as follows. Suppose one is opposed to firearms control, then one is bound to support the sale of firearms in any store, also to children, to lunatics, etc., and this is obviously intolerable. In an RAA that states a counterexample, the falsity of a theory¹⁰ (or, in less high-flown terms, the falsity of a general statement), is proven by showing an absurd implication (the counterexample) of the theory. The counterexample describes a case that is not acceptable according to generally held opinions.¹¹

The other instance of the 'weak' RAA that I gathered from the examples in the literature concerns a specific use of the Argument from Comparison: refutational analogy.¹² The line of reasoning followed in this argument is that if one accepts a certain way of thinking, one should also accept a comparable, but absurd way of thinking. And since one does not accept the absurd idea, one cannot accept the initial idea. McBurney & Mills (1964, p. 288) give an example in which the reasoning that a corporation can make no oral contract because it has no tongue is refuted with the counter-analogy that according to this argument a corporation could not make a written contract because it has no hand. Freeley (1981, p. 230) presents an example in which the reasoning that the United States should not favour self-determination for Third World countries because the peoples of those countries lack successful experience in democratic government is refuted. The argument

runs as follows: if this principle were accepted, then no one should go near water without successful experience in swimming.¹³

This review of modern literature has revealed one type of strong RAA-argumentation and two types of weak RAA-argumentation. Reconstructions of these types show that only the weak variant causes confusion with the Argument from Consequences. I'll start with a reconstruction of strong RAA. As is described above, this strong version of the RAA points out an inconsistency in the opponent's commitments. In order to make clear the contradiction between the attacked standpoint and its consequences, the argument contains two hypothetical statements, each of which is the other's opposite. These need to be reconstructed as two coordinatively compound premises, which will be demonstrated on the basis of the example concerning reasoning about the mind/body-problem:

1. The traditional view of interaction between (the non-physical) mind and (the physical) body is untenable, because
 - 1.1a If the element of a non-physical mind were true, then no interaction exists, and
 - 1.1b If the element of interaction were true, then no non-physical mind exists, [because (1.1a-b.1) a physical object can only be causally affected by another physical thing]
 - 1.1a-b' That is absurd [these premises are contradictory].

In contrast to this argument, an Argument from Consequences only contains one conditional premise. Weak RAA also contains only one conditional premise, as can be pointed out by a reconstruction of two of the examples mentioned in the latter section. A reconstruction of the RAA based on refutational analogy gives the following picture:

1. The reasoning that the United States should oppose self-determination for Third World countries because the peoples of those countries lack successful experience in democratic government is incorrect, because
 - 1.1 If one opposes self-determination for those countries, one should also never go near water without successful experience in swimming, and
 - 1.1' That is absurd [for (1.1'.1) then no one would ever learn to swim].

The other instance of the weak RAA—the counterexample—can be reconstructed likewise:

1. The sign on a grocery store that under no condition are animals allowed to go into the store is untenable, because
 - 1.1 If it were legitimate, then a blind person who depends on his seeing-eye dog would never be allowed to go into the store and thus would presumably starve, and
 - 1.1' That is absurd [no one would think that such a blind person should not be permitted to go into the store].

Since only weak RAA causes confusion with the Argument from Consequences, I will focus on this variant in the rest of this article. In the next section I will try to characterise weak RAA by examining the appearances a logical consequence can take. I will do so by using the concept of the Pragma-Dialectical argument scheme.

4. A characterisation of the *Reductio ad Absurdum*

In order to examine the logical implication of RAA argumentation, I will compare the inference license appealed to in such an implication with the typology of inference licenses set out by the Pragma-Dialectical argument schemes. The most striking use of an argument scheme can be found in the RAA based on refutational analogy, which is a specific use of the comparative argument scheme. In the first premise of this argument, the logical consequence that is drawn from the assumption that the opponent's statement is true consists in an analogical relationship. The refutation goes like: if one thinks the proposition in question to be true, one must also necessarily accept this comparable but absurd proposition. That this argument scheme is used can be made more apparent by restating the argument into a 'normal' argument form. By 'normal' I mean the way an argument is usually reconstructed in many textbooks: starting with the standpoint, then mentioning the explicit premise and then adding the implicit premise: an 'if...then'-sentence that forms the bridge between the direct premise and the standpoint.¹⁴ In the 'normal' form the comparable case is presented directly in the argument as something that is contradictory to facts or norms, instead of being presented as a consequence that follows in the hypothetical context of the antecedent. The comparison is made in unexpressed premise 1.1':

1. The reasoning that the United States should oppose self-determination for Third World countries because the peoples of those countries lack successful experience in democratic government is not correct, because
 - 1.1 One should also not oppose going near the water without successful experience in swimming [for (1.1.1) then no one would ever learn to swim], and

- 1.1' If one should not oppose going near the water without successful experience in swimming, then the reasoning that the United States should oppose self-determination for Third World countries because the peoples of those countries lack successful experience in democratic government is incorrect. (The two are comparable.)

The other instance of the weak RAA—the counterexample—can also be identified as an instance of a Pragma-Dialectical argument scheme. In this instance of the RAA, the kind of relationship between antecedent and consequent that is expressed in the conditional statement is one of sign (symptomatic reasoning). The counterexample is presented as a sign (an indication) of the weakness of the opponent's theory.¹⁵ This is also apparent when the counterexample RAA is reconstructed as a 'normal' instance of the symptomatic argument scheme. Also here, the argument scheme is situated in premise 1.1':

1. The sign on a grocery store that under no condition are animals allowed in the store is untenable, because
 - 1.1 A blind person who depends on his seeing-eye dog must be allowed in the store if one does not want him to starve, and
 - 1.1' If a blind person who depends on his seeing-eye dog must be allowed in the store if one does not want him to starve, then the sign on a grocery store that under no condition are animals allowed in the store is untenable. (The antecedent is a sign of the consequent.)

Having noticed that the logical consequence of weak RAA can consist in two of the three main types of argument schemes distinguished in Pragma-Dialectics, there is no reason to suppose that those are the only argument schemes to be used in an RAA. It should also be possible for the conditional premise in an RAA to express a causal relationship. That this is indeed the case is apparent from the following example, taken from a Dutch newspaper (the *NRC-Handelsblad*, March 2005). In this argument a causal explanation is offered for the standpoint that humans and other meat eaters are innately friendly:

1. Humans and other meat-eaters are innately friendly, because
 - 1.1 If they were not innately friendly, they would have eaten their offspring and would have died out long ago, and
 - 1.1' They did not die out long ago.

The reasoning presented here is causal: absence of friendliness leads to eating

one's offspring, which results in dying out. This causal relationship also appears from the restatement of the RAA-argumentation into a 'normal' argument form:

1. Humans and other meat-eaters are innately friendly, because
 - 1.1 They did not eat their offspring and did not die out, and
 - 1.1' That humans and other meat-eaters did not eat their offspring and did not die out a long time ago, is a result of their innate friendliness. (Friendliness causes/leads to survival.)

The foregoing shows that the logical consequences of a weak RAA can take different appearances. We may conclude that any type of inference license can occur in an RAA.¹⁶ The logical consequences of a weak RAA may be based on an inference license of sign, as well as an analogical or a causal one. As a result, we may also draw a more far-reaching conclusion about the characterisation of weak RAA. Since weak RAA is not a type of argument that is defined by a specific pragmatic content (the type of content of the inference license), we can say that it is characteristic of this type of argument is that it is a *form* of argument. Judging from the reconstructions made above this form resembles *modus tollens*, at least with regard to the examples from the literature that are cited here. This holds especially for refutational analogy. In the case of a counterexample, in RAA the argument structure is a bit more complex though. In many of the examples presented in the literature, the argument goes from the one consequence to the other before ending in the ultimate absurd consequence. In a modest way this is shown by Jensen's example, in which the direct consequence is that the blind person cannot go in the store, and the further consequence, which makes the argument absurd, is that the person may starve. This more complex form of the RAA suits Hoaglund's description of the RAA as 'an extended version of the *modus tollens*' (2004, p. 421). Although many examples in the literature contain an extension, not all do.¹⁷

In contrast to the RAA-form, which resembles *modus tollens*, its 'normal' counterpart resembles *modus ponens*. The relation between the two forms is that they more or less contain the same elements, however in a different order and with a slightly different wording. For example, in the case of refutational analogy, premise 1.1 of the RAA is the counterpart of premise 1.1' of the 'normal' instance of the analogical argument scheme: both contain a comparison. The difference is that each is the other's counterpart by contraposition. That means: the propositions of the antecedent and the consequent have changed places and each is the other's negation. The remaining premises are also the other's counterpart. Both premise 1.1' of the RAA argument and premise 1.1 of the normal argument state the unacceptability of the analogical case—the view that one should never go near water without successful experience in swimming. This kind of reshuffling and rephrasing of elements also holds for the counterexample and the causal argument.

Since the implicit premise in the one argument is the counterpart of the explicit premise of the other argument and the other way around, the sub-premise that supports the implicit premise in the analogical RAA argument is a sub-premise of the explicit premise in the normal argument. Note however that a sub-premise is an addition to the single argument form and not an inherent part of it. The single argument form consists in the standpoint (1), the explicit argument (1.1) and the implicit argument (1.1'). Sub-premises can be added to 1.1 and to 1.1', which turns a single argument form into complex argumentation. It is important to realize that the comparisons made in this article revolve single argument forms.

The conclusion of this section is that the weak RAA is a *form* of argument, in which all kinds of relationships between antecedent and consequent can be expressed. This form consists of *modus tollens* (whether or not extended) and has its counterpart in *modus ponens*. The simple, unextended weak type of RAA in particular resembles the Argument from Consequences.

Since any type of pragmatic content can be expressed in RAA-argumentation, the question comes up how one can distinguish between instances of an RAA relying on a causal inference, and the Argument from Consequences. After all, the Argument from Consequences has the same form and appeals to causally induced consequences. The question now is how the causally induced consequences can be demarcated from the 'logical-causal' consequences of RAA-argumentation. This question will be addressed in the next section.

5. *Reductio ad Absurdum* as opposed to the Argument from Consequences

A first distinction between a weak, causal RAA and the Argument from Consequences is founded on the type of standpoint being expressed in the argument and, related to this, on the kind of consequences that is appealed to. The Argument from Consequences always has a normative standpoint (evaluative or incitive¹⁸), whereas a causal RAA always contains a descriptive standpoint.¹⁹ The kind of standpoint influences the kind of consequences that are appealed to. In a causal RAA a descriptive—factual—standpoint is connected with factual consequences: consequences that point to a falsehood or an impossibility, a state of affairs that is opposite to reality. In contrast, the consequence in the Argument from Consequences is always presented as something that is undesirable.²⁰

Second, the weak causal RAA and the Argument from Consequences can be distinguished on the basis of the nature of the causal relationship being expressed in the inference license. The logical-causal relationship between antecedent and consequent in a causal RAA is always imaginary, because (according to the speaker) the antecedent expresses non-reality, being mentioned for the sake of argument only, while the consequent is supposed to be contradictory to what we know about the real world. In contrast, the hypothetical relationship of the Argument from Consequences is a causal chain that could be situated in the real world. The

antecedent is introduced as a potential action (or as refraining from this action) and the consequent is presented as a potential result from this action—a result that could actually happen in the future if the proposed action were performed. In short, the Argument from Consequences involves a conditional prediction, whereas the causal RAA is about how something would have to have turned out (if the antecedent were true), but in fact did not.²¹

The criteria mentioned above are adequate for defining both a causal RAA and the Argument from Consequences. In fact, it is often harder to distinguish the Argument from Consequences from the RAA based on a symptomatic or on an analogical relationship. This is because these two instances of RAA argumentation may contain not only a descriptive standpoint, but also a normative one. In the earlier reconstructed analogical RAA, the standpoint that the United States should oppose self-determination for Third World countries (because the peoples of those countries lack successful experience in democratic government) is incorrect, can be interpreted as an evaluation ('it is undesirable to oppose this') or as an incitive standpoint ('this should not be opposed'). The same goes for the standpoint of the reconstructed counterexample RAA. Saying that it is untenable that under no condition are animals allowed in the store is an evaluation, but this statement can also be interpreted as incitive, namely, as the prescription that we should not forbid animals in the store unconditionally. Note that a formulation such as 'this reasoning is incorrect', present in the above standpoint about opposing self-determination, suggests a descriptive standpoint, but it is not descriptive because the standpoint does not express a view on something factual but rather on how something should be judged.

Not only can the symptomatic and analogical RAA have the same standpoint as the Argument from Consequences, making it sometimes hard to identify the kind of argument being used, but they also seem to convey the same kind of consequences. The RAA with a normative standpoint has consequences in which views are expressed that contradict generally held opinions about values and norms. These views are perceived to be absurd because they are extremely undesirable, just like the undesirable consequences of the Argument from Consequences. The difference between the RAA undesirability (i.e., so undesirable that it is absurd) and the undesirability of the Argument from Consequences may lie in the degree of intersubjective agreement about this judgement. How undesirable a consequence in the Argument from Consequences is, is open to discussion. The speaker may well be aware that apart from one or more undesirable consequences the action proposed might also entail some desirable consequences that other people might think outweigh the undesirable one(s). In contrast, the consequence in an RAA argumentation is meant to be so absurd that it can never be outweighed: no sensible person would accept this consequence.

However, the degree of undesirability cannot constitute a reliable criterion for deciding which type of argument has been used in a given case. After all, since the

indication of undesirability occurs in the implicit argument, it cannot be known what degree an RAA arguer himself may have meant. For an analyst it may thus sometimes be very difficult to identify the argument being used, especially when a choice must be made between the Argument from Consequences and a symptomatic RAA. After all, facing this choice one should be able to rely on the kind of relationship being expressed in the argument—causal or symptomatic—but it is precisely these two kinds of relations that it is hard to distinguish. For this reason, more specific clues than those offered by van Eemeren, Houtlosser & Snoeck Henkemans (2005) with regard to this distinction are not possible.

6. Conclusion

In this paper I have characterised the argument called *Reductio ad Absurdum* by examining its relation with the Pragma-Dialectical argument schemes and I have tried to distinguish this kind of argument from the Argument from Consequences. A review of literature revealed that two versions of the RAA exist. There is a strong, mathematical form, revolving around an inconsistency in the commitments of a speaker, and a weak, dialectical form, revolving around a contradiction between consequences of a speaker's standpoint and generally held opinions about facts or norms. The form of strong RAA does not resemble the Argument from Consequences, but the form of weak RAA does. This holds especially for simple cases of weak RAA argumentation, in which the absurd consequence is more or less presented as a direct result of the attacked viewpoint, not needing extra steps before ending up with this consequence, since these can be reconstructed in a way that exhibits *modus tollens*.

An analysis of examples of weak RAA has shown that the relation between the hypothetically stated situation and its logical consequences can take the appearance of any of the three types of relationships that make up the Pragma-Dialectical classification of argument schemes. As a result, I have concluded that an RAA argument cannot be classified on the basis of its pragmatic content, but must, instead, be characterised as an argument *form*. This is also shown by the fact that RAA-arguments can be restated into 'normal' argument form (based on *modus ponens*), resulting in an argument that contains the same elements, however in a different order and with a slightly different wording.²²

Weak RAA argumentation can be distinguished from the Argument from Consequences in following way. The Argument from Consequences is based on a causal relationship, whereas the RAA can be based on any of the three types of relationships that make up the Pragma-Dialectical classification of argument schemes. However, more specific clues are necessary, especially in the case of RAA argumentation based on a causal relationship. These clues consist of the type of standpoint used in the argument (descriptive in a causal RAA vs. normative in the Argument from Consequences), the kind of consequence that is appealed to

(an actual falsehood in the RAA vs. an undesirability in the Argument from Consequences) and the nature of the hypothetical (a counterfactual in the RAA vs. a genuine prediction concerning the real world in the Argument from Consequences).

A systematic classification of types of arguments is a prerequisite for a satisfactory analysis and evaluation of argumentation. A different argument type is involved as soon as different evaluation criteria are needed; this rationale founds the Pragma-Dialectical classification of argument schemes. The findings in this article offer an elaboration of the evaluation criteria for RAA argumentation mentioned in the reviewed literature. These criteria primarily focus on the contradiction between the consequence appealed to in the argument and the generally presumed facts or generally held opinions. This contradiction should not be just a simple contrary; it must exhaust the possibilities (Nolt, 1984, p. 158-159; Tindale & Gough, 1987, p. 16; Hoaglund, 2004, p. 424). Another criterion is that the conclusion is actually absurd²³ (Barnett & Bedau, 1993, p. 190; Crossley & Wilson, 1979, p. 166; Tindale & Gough, 1987, p. 17) or likely to be connected to the attacked viewpoint (Jensen, 1981, p. 271-272). Hoaglund also requires that 'the inference from one step to the next must be strong' (see also Tindale & Gough, who nevertheless call this inference the causal development that leads to the conclusion, and Jensen, who only mentions criteria that apply to analogical and counterexample-RAAs). The findings in this article contribute to this last requirement. My analysis has shown that the evaluation criterion that addresses the inference from the hypothetically stated attacked viewpoint to the logically implied consequence must be related to the criteria for the evaluation of the argument schemes that I have distinguished. Thus, an analogical RAA must be evaluated on the basis of criteria for judging an analogy, a symptomatic RAA must be judged on the basis of critical questions concerning sign and a causal RAA on the basis of causal criteria.

Notes

¹ Note that the logical notion 'consequent' (the 'then'-part of the conditional sentence in 1.1) is not the same as the consequence or outcome an arguer may refer to, but that these happen to coincide in RAA argumentation and in the Argument from Consequences.

² The Argument from Consequences can also consist in an appeal to the positively evaluated consequences of the proposed standpoint: *Let's go by car, then we won't be late*. No confusion exists between this version and RAA. The type dealt with in this article concerns an appeal made to the negatively evaluated consequences of the opposite of the defended standpoint: *Let's go by car, otherwise we'll be late*.

³ Jurisprudential literature on RAA is described and commented on by Kloosterhuis (2004); a short discussion of Kloosterhuis can be found in Jansen (2005). Jansen (2005) is an abstract of my lecture about RAA presented at an OSSA-conference in Hamilton (Ontario, Canada). Since this publication I have gained a much deeper understanding of RAA and developed more worked-out views of it. To a great extent this is due to remarks received from hearers and readers of presentations of my research in the last two years, of whom I gratefully mention Erik Krabbe and Jan Albert van Laar for their very elaborate comments by on earlier versions of this article. I am

also grateful to Anthony Blair, who helped me to present this paper's content in a clearer way.

⁴ Walton mentions a connection between an RAA and a Slippery Slope argument, a type of argument he considers to be based on the Argument from Consequences (Walton, 1996, p. 203).

⁵ Of course other classifications exist (e.g., Perelman en Olbrechts-Tyteca, 1969; Schellens, 1987; Kienpointner, 1992 and Walton, 1996). For the purpose of this paper the Pragma-Dialectical typology will do.

⁶ A classic example is proving the irrationality of $\sqrt{2}$ by assuming that $\sqrt{2}$ is rational. Supposedly the Pythagoreans invented this proof (Kneale & Kneale, 1962, p. 8). Ambrose (1944) describes the proof in detail; see also Rescher (1964, p. 6).

⁷ See Freeman (1991, p. 223-228) for a detailed description of how arguments involving suppositions function in a dialectical exchange.

⁸ A different classification is made by Schwed (1999, p. 734), who distinguishes three types of RAA, originating from a formal rationale. The first mode of RAA that he distinguishes is a mathematical use in which the entailed consequence is necessarily false. In the second mode the falsehood of the consequence can only be established to a certain degree. In the third mode, the weakest form, the falsehood of the consequence is only used to argue that the initial premise does not hold, instead of arguing that the opposite holds.

⁹ Examples can also be found in Nolt (1984, p. 160); Crossley & Wilson (1979, p. 165); Fogelin & Sinnott-Armstrong (1991, p. 132—although they do not call this RAA); Gerlofs (1997, p. 230) and Groarke, Tindale & Fisher (1997, p. 177-178).

¹⁰ Fogelin & Armstrong (1991, p. 135) remark that arguing by means of counterexamples is especially useful in attacking ethical theories.

¹¹ For other examples of counterexample RAA see Crossley & Wilson (1979, p. 161, 164), Barnett & Bedau (1993, p. 189), and Groarke, Tindale & Fisher (1997, p. 179), all describing the same example taken from Plato's *Republic*. Fogelin & Sinnott-Armstrong (1991, p. 134-136) also mention instances of the counterexample, but they do not call those RAA.

¹² For a treatment of this kind of argument see Govier (1985/1988), who calls this kind of argumentation 'refutation by logical analogy' and Whaley (1998), who calls it 'rebuttal analogy'.

¹³ Other examples can be found in Thompson (1971, p. 223), Hollihan & Baaske (1973, p. 153), Crossley & Wilson (1979, p. 139-141), Jensen (1981, p. 271) and Tindale & Gough (1987, p. 11, p. 13).

¹⁴ For that matter, it should be noted that in actual occurrences of argumentation it is possible that the 'normal' form contains an explicit inference license and an implicit direct premise instead of the other way around or can even contain both premises explicitly. In case of a refutational analogy an explicit inference license instead of an explicit direct premise may be unlikely though (see Jansen, 2006b), whereas it may be more likely in case of sign argumentation (see Jansen, forthcoming 2007).

¹⁵ There is a thin line between an argument based on an example (Argument from Sign) and an argument based on an analogy (Argument from Comparison), as well as there is between an argument based on a counterexample and an argument based on a refutational analogy. According to van Eemeren, Houtlosser & Snoeck Henkemans (2005, p. 235-236; compare Garssen 1997, p. 76) these types of argument can be distinguished on the basis of the nature of the standpoint. An argument is based on an example if the standpoint expresses a general statement. An argument is based on an analogy if the standpoint involves a statement about a specific case. These findings can be illustrated by the following RAA-argument, taken from a Dutch newspaper (December 2002): *1. The contention that threats (like warnings on a package of cigarettes) do not have the desired consequences or even invite the opposite, is not true, for 1.1 If it were true, penal law might as well be repealed (in other words: penal law would also be ineffective), and 1.1' That is absurd (no one thinks that penal law is that ineffective).* When formulating the standpoint with the phrase between parentheses left out, the argument expresses a counterexample. Instead, when the

standpoint is formulated focussing on the specific case of threats on a package of cigarettes—‘The assurance that warnings on a package of cigarettes do not have desired consequences or even invite the opposite, is nonsense’—it expresses a counteranalogy.

¹⁶ For that matter, this is also true for strong RAA. In the mind/body-example both premises 1.1a and 1.1b express a relationship of causality, which is recognisable from the sub-premise. Jansen (2006a) shows an example of strong RAA with premises that express a symptomatic relationship. However, it is not these relations that define the argument scheme used in strong RAA, but the relation expressed in the implicit premise. This premise states that the contradiction being expressed by the coordinatively compound premises *points to* the untenability of the standpoint: a symptomatic relationship.

¹⁷ Walton’s distinction between arguments from consequences and Slippery Slope-arguments is also based on the amount of steps that are taken before reaching the unacceptable consequence: ‘(...) this argument [the Slippery Slope/HJ] turns out to be an extension of argumentation from consequences. In a Slippery Slope argument, a chain of consequences is driven onward from a given “first step” of action toward some dangerous or “horrible” ultimate outcome’ (1996, p. 203). Although, according to Walton, the Argument from Consequences and the causal Slippery Slope are based on causal consequences, the other Slippery Slope types (*sorites*/linguistic and precedent) are based on logical consequences (Walton, 1992, p. 74; 1996, p. 203). In my view, these non-causal types must be regarded as RAA argumentation. Walton himself points out the connection between these types and RAA, but according to him these types of Slippery Slope are ‘not the same as the familiar type of *reductio*, where a proposition is reduced to absurdity by deducing a contradiction from it’ (1992, p. 259); apparently because he holds the mathematical view on RAA.

¹⁸ ‘Incitive’ is the Pragma-Dialectical expression for ‘prescriptive’.

¹⁹ Compare van Eemeren, Houtlosser & Snoeck Henkemans (2005, p. 200), who also perceive a connection between the argumentation scheme based on causality and a descriptive standpoint. The criteria concerning the standpoint and the kind of consequences are also mentioned in Kloosterhuis (2004). However, Kloosterhuis connects the Argument from Consequences only to an incitive standpoint, whereas I take the broader category of normative standpoints, also including evaluative standpoints which can be easily translated into incitive standpoints: *It is a good plan to go by car > We should go by car*.

²⁰ Relating undesirable consequences to a descriptive standpoint makes an *ad consequentiam* fallacy: ‘Evolution theory is wrong, because if it were true we would descend of apes, and that would be horrible’ (van Eemeren, Garssen en Meuffels, 2003, p. 119).

²¹ In English, these differences are often reflected in the mood of the premise with the conditional statement: indicative mood in the Argument from Consequences *versus* subjunctive mood in RAA. However, the Argument from Consequences can also be formulated in the subjunctive mood: *We shouldn’t accept this policy. Suppose we were to accept it. Then that would cause even more suffering in group G. And nobody wants this group to suffer any more than they already do* (example borrowed from Jan Albert van Laar).

²² This finding raises the question why an arguer would make use of one form instead of another. The choice is presumably motivated by rhetorical considerations. This issue is addressed in Jansen (2006b) and Jansen (forthcoming 2007).

²³ This criterion relates to observations made by Woods (2003, p. 14-17; 76-78), when he deals with the classic argument for determinism. According to Woods, the outcome of RAA may also be considered to be a surprising truth instead of an absurdity (a transparent falsehood). The premises that, 1. all human actions are (macro-) natural events, 2. all (macro-) natural events have a cause, and 3. if there any free actions, they are uncaused, together entail the conclusion that no free actions exist. Determinists consider this conclusion to be a surprising truth, whereas anti-determinists consider it to be false and thus think that one or more premises must be false.

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