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There is More to an *Argumentum Ad Ignorantiam* than Epistemic Considerations

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ABSTRACT: Instances of the *argumentum ad ignorantiam* are recognized as cogent if the *epistemic closure principle* holds: ‘if p were true, then p would be known to be true’. This explains why mainstream treatments pursue an epistemic approach. An epistemic approach, however, cannot explain the cogency of ignorance-based arguments where the epistemic closure principle need not hold. We review the epistemic approach and present instances of ignorance-based arguments the cogency of which challenges the epistemic approach.

KEYWORDS: absence of evidence reasoning, argument from ignorance, epistemic closure principle, negative practical reasoning scheme, presumption of innocence

1. INTRODUCTION

When John Locke coined the term ‘*argumentum ad ignorantiam*’ (aka ‘the argument from ignorance’), he introduced it as follows: “[a]nother way that Men ordinarily use to drive others, and force them to submit their Judgments, and receive the Opinion in debate, is to require the Adversary to admit what they alledge [sic] as a Proof, or to assign a better” (Locke, 1975 [1690], 4.17.20; 686).¹ For Locke, arguing *ad ignorantiam* was to pursue a *dialectical strategy* demanding that an opponent provide a new, improved justification for their standpoint or, when ignorant thereof, accept the proponent’s opposing standpoint. On the question of how to spend the weekend, for instance, one might argue: ‘We should go to the park on Saturday because for Sunday a massive temperature drop is forecasted. If you (the opponent) lack a better justification for *not* going to the park on Saturday, you should accept my standpoint’.

The *cogency*, respectively the *fallaciousness*, of this argument form is what Locke took to depend on its specific applications, a stance he_{th} adopted towards all *ad* arguments (Hamblin, 1970, p. 41). Yet, by the latter half of the 20th century, scholars shifted to a *new* argument form—namely ‘A proposition p is not known, or proved, to be true (false); so p is false (true)’ (Walton, 1999, p. 368). Given abundant counter-examples to this form, many scholars evaluated it as *inherently* fallacious (e.g., Copi, 1953; Carney & Scheer, 1974; Manicas & Kruger, 1976; Machina, 1982; Kelley, 1994). For instance, until Wiles (1995)

¹ ‘4.17.20; 686’ refers to Locke’s (1690) *An Essay Concerning Human Understanding*, book 4, chapter 17, section 20, page 686. We cite Nidditch’s (1975) edition.

published the first widely accepted proof of Fermat's last theorem (formulated in 1637), a transition from the *true* premise 'the mathematical community is ignorant of the truth of Fermat's theorem' to the conclusion 'the theorem is false' made for an *invalid* argument.

Today, instead, most argumentation scholars would agree with Locke that *ad ignorantiam* instances require a contextually sensitive evaluation. For instance, imagine that Bill sits in a warehouse with a thin roof and no windows (Walton, 1996, p. 1). Under normal conditions (e.g., good hearing and sparse ambient noise), the transition from 'I do not hear any rain falling on the roof' to 'it is not raining' has positive inductive strength because, given Bill's evidence, the conclusion 'it is not raining' is more supported than its negation. Whereas if other things are equal, but the roof is very thick or even sound-proof, then Bill's evidence ceases to support the conclusion more than its negation.

This explains why the cogency of an *ad ignorantiam* is widely acknowledged to depend on the conditional premise 'if *p* were true, then *p* would be known to be true'. This premise relates to the 'negation as failure' rule in logic programming, stating that items that are non-derivable from a finite database may be negated because only (all) true items are derivable (Reiter, 1978). The content of this rule can alternatively be expressed as the *epistemic closure principle* (Walton, 1996, p. 147). This principle explains the cogency of reasoning: 'if ACME Airlines offers a scheduled flight between locations A and B tomorrow, then the flight list on ACME's website would indicate it today; but no such flight is indicated there; so, I know that there is no such flight'. The epistemic principle thus precludes that there is such a flight one is ignorant of. In other words, if there were such a flight, one would know it.

The cogency of such reasoning depends on having *thoroughly* examined a *reliable* knowledge base (here: a flight list). If these two conditions hold, then cogent instances of ignorance-based arguments are readily found—at times under the name 'absence of evidence reasoning'—in such contexts as medical or public policy decision-making (Cummings, 2020; Andone & Lomelí Hernández, 2022; see our Sect. 2.1), legal reasoning (Tuzet, 2015), or archeology (Stephens, 2011). What makes these instances particularly acceptable is a *categorical* epistemic closure principle because instances then instantiate the logically valid *modus tollens* rule. And even if the epistemic closure principle is *gradable*, a Bayesian approach offers models for *ad ignorantiam* arguments that are inductively strong (Oaksford & Hahn, 2004; Hahn et al., 2005; Stephens, 2011).

In both the categorical and the gradable case, if ignorance that *p* is taken to support the possession of knowledge that *not p*, then because the *ad ignorantiam* argument form is understood to "carry epistemic load" (Woods & Walton, 1978, p. 91), it qualifies as an *epistemic* argument type. Proponents of the currently dominant epistemic (or knowledge-based) approach to the *ad ignorantiam* accordingly forwarded an epistemic argument scheme that invariably leverages some variation on '*p* is not known, or proved, to be true (false), therefore *p* is false (true)' while relying on the epistemic closure principle as an evaluative criterion to determine whether its instances are cogent (Hinton, 2018, p. 196; Walton, 1996, pp. 150f.).

Yet, if the term '*ad ignorantiam* argument' is interpreted literally—as an argument featuring an ignorance-expressing premise—then the corresponding argument can instantiate forms *other than* '*p* is not known, or proved, to be true (false), therefore *p* is false (true)'. Given these forms yield cogent instances, too, the epistemic approach would fail to cover *all* cogent *ad ignorantiam* arguments.

An example of such a form is the following instance of the *deliberative* type of the *ad ignorantiam*, pivoting on ignorance of a gun being unloaded.

“[...] John is a member of a shooting club, and he is approaching a firing point where several pistols are laid out. When John picks up one of the pistols, he refrains from pointing it anywhere except down the range toward the targets, and he carefully opens the chamber to see whether the weapon is loaded or empty.”
(Walton, 1985, p. 266; 1996, p. 86)

Prima facie, the epistemic approach may suggest that ‘the gun is unloaded because John does not know it is loaded’. But this is absurd. Besides, instead of reasoning about the state of the gun, John would simply check its chamber. And for good reasons, too, because John can prudentially reason: ‘I am ignorant of whether the gun is loaded; so I should act as if it were loaded’.

No doubt, the type of argument falling within the scope of the term ‘*ad ignorantiam*’ depends on how analysts define the referent. Hinton’s (2018) treatment of the *ad ignorantiam*, for instance, excludes the deliberative type by fiat (see our Sect. 2.3). Our treatment, by contrast, is inclusive. It seeks to cover *any* argument featuring an ignorance-expressing premise signaling an absence or shortage of knowledge, regardless of whether the argument’s conclusion refers to an item of knowledge or a proposed action.

We begin by introducing the epistemic approach to the *ad ignorantiam* (Sect. 2), then discuss three examples of ignorance-based arguments that the epistemic approach does not cover (Sect. 3). Our conclusions are in Sect. 4.

2. THE EPISTEMIC APPROACH TO ARGUING FROM IGNORANCE

2.1 *Extant schemes for the argumentum ad ignorantiam*

As indicated, the cogency of the *ad ignorantiam* pivots on a *normally implicit* premise expressing the epistemic closure principle (e.g., Woods & Walton, 1978), captured by the major premise of the following argument scheme (Walton *et al.*, 2008, p. 327).

The scheme of the argument from ignorance (Walton et al., 2008, p. 327)

Major premise: If *A* were true, then *A* would be known to be true.

Minor premise: It is not the case that *A* is known to be true.

Conclusion: Therefore, *A* is not true.

The motivation for this scheme relates to how Walton characterizes the argument’s premises:

First, every argument from ignorance starts from a lack-of-knowledge (lack of proof, lack of evidence, failure to establish) premise that is inherently negative. It is inherently negative in the sense that the negation operator goes before (and governs) the knowledge claim. [...] [T]he second characteristic [...] is the presence of the conditional or search premise, of the form ‘If *A* were true (false), it would be known to be true (false)’. (Walton, 1996, pp. 245f.)

As Walton observes, scholars who regard the *ad ignorantiam* as an unconditional

fallacy rightly object “that once you have added in the conditional [or search] premise [as the major premise], it is no longer an argument from ignorance [but rather] a species of argument from (positive) knowledge” (Walton, 1996, p. 249). However, this objection fails to acknowledge that, for any given argument type, one may construct two versions of an argument scheme (Yu & Zenker, 2023b). In the case of the *ad ignorantiam* argument, the scheme’s *normative* version, which represents how this argument *should* be used, includes the search premise that expresses the epistemic closure principle. Whereas this premise is omitted from the scheme’s *descriptive* version, which (roughly) captures how the *ad ignorantiam* argument is conventionally used and would normally appear in reasoned discourse. So, although arguers may conventionally *avoid* the search premise, it nevertheless can (indeed should) feature in the argument scheme’s normative version.

To appreciate why including the search premise does not alter the argument type, it should suffice to cite the analytical distinction between argument *identification* (or argument *recognition*) and argument *evaluation* (Yu & Zenker, 2023a; 2023b). In line with this distinction, we can define the minimal union of argument scheme components that are individually necessary and jointly sufficient to identify the argument type as the *argument scheme core*. As is easy to verify, what suffices to *identify* the *ad ignorantiam* argument type are instances of ‘*p* is not known to be true (false); so *p* is false (true)’. Whereas instances of the epistemic closure principle are to this end non-necessary. So, the principle fails to be a component of the *ad ignorantiam*’s argument scheme core.

Although the identification of the *ad ignorantiam* argument type thus fails to require a reference to the epistemic closure principle, the principle’s (in-)validity is nevertheless precisely what analysts must establish to *evaluate* instances of the *epistemic* type of the *ad ignorantiam*. Whereas the epistemic closure principle is again non-necessary to evaluate instances of the *deliberative* type. (We return to this in Sect. 3).

In slightly revised form, Walton’s argument scheme for the *ad ignorantiam* has been adopted by Hinton (2018, p. 201), who explicitly expresses the *reliability* of available evidence. (The “negative” version of this scheme simply replaces ‘*p*’ with ‘not-*p*’, so that both versions are inter-derivable):

The scheme of the argument from ignorance (Hinton, 2018, p. 201)

1. There is no reliable evidence available to us of *p*.
 2. It is reasonable to expect that if *p* were true, there would be reliable evidence available to us of *p*.
- Therefore: *p* is not true.

Unlike Walton, who presented only the argument scheme, Hinton proposes two CQs, each associated with one of the premises:

CQ-1: Is such evidence, in fact, not available to us?

CQ-2: Is it reasonable to expect such evidence to be available to us?

Since answering CQ-1 does not only present an empirical problem but also calls for an analyst’s judgments concerning the reliability of evidence (Hinton, 2018, p. 201), CQ-1 can be split into three sub-CQs: CQ-1.1 *Is there evidence?*; CQ-1.2 *Is this evidence reliable?*; and CQ-1.3 *Is this evidence available to us?* (ibid.).

Hinton’s scheme improves upon Walton *et al.*’s (2008) in two ways. First, insofar as proponents are typically reluctant to accept an opponent’s premises, replacing ‘it is not the

case that *A* is known to be true' with 'there is no reliable evidence available *to us* of *p*' means that "only evidence *available to both parties* is of relevance" and "[a]vailable, reliable evidence is clearly the key factor" (Hinton, 2018, p. 205; *italics added*). Hinton's (2018) second improvement is to add the *subject* of ignorance. For it is of relevance "by whom would [*p*] be known [to be true or false]?" (Hinton, 2018, p. 197).

2.2 *The limits of the epistemic closure principle*

Hinton (2018) likewise includes the epistemic closure principle in the argument scheme for the *ad ignorantiam*. But he submits that if "the arguer is *not* ignorant of any relevant information at all," then the argument expresses the logical *modus tollens* rule (ibid., p. 194; *italics added*). If so, then the following argument, which fails to express a form of ignorance because a lack of relevant information is not mentioned, would fail to be an *ad ignorantiam* argument.

(A1) FIFA argument (Hinton, 2018, p. 194; *italics added*)

I have here a list of *all* the FIFA World Cup winners since the competition began.

Poland is not on that list.

I conclude that Poland has never won the FIFA World Cup.

However, a case is to be made that A1 *is* an *ad ignorantiam* argument. A motivated way of showing that A1 expresses a form of ignorance after all is to make it more explicit, as A2.

(A2) A more explicit version of the FIFA argument

1. Poland has never won the FIFA World Cup.

1.1 I do not know whether Poland has ever won the FIFA World Cup.

1.1.1 Poland is not on the list of FIFA World Cup winners.

1.1' If Poland had won the FIFA World Cup, then I would know it.

1.1'.1 The list includes all winners of the FIFA World Cup since the competition began.

A2 not only clarifies that the ignorance-expressing premise is 1.1 rather than 1.1'.1 (both of which are premises in A1). A2 also helps to appreciate the risk of conflating the related, but analytically distinct tasks of argument *identification* and argument *evaluation* (see Sect. 2.1), potentially explaining why Hinton had *not* recognized A1 as an *ad ignorantiam* argument. The main explanatory reason would be that the *identification* of A1 as an *ad ignorantiam* argument leaves it irrelevant whether the list of FIFA World Cup winners is complete; whereas this information is relevant to *evaluate* the argument as a cogent *ad ignorantiam* instance.

To see this, consider the support relations in A2 as diagrammed in Fig. 1. The first premise in A1 ('Poland is not on that list') supports the ignorance-expressing premise 1.1 in A2 ('I do not know whether...'). And the premise stating the list's completeness in A2 (1.1'.1) supports the epistemic closure principle in A2 (1.1'). So, to identify the argument type, premise 1.1'.1 (stating the list's completeness) is non-necessary.



Fig. 1 The structure of argument A2

Minding the distinction between argument identification and argument evaluation also clarifies a secondary meaning that Walton associates with the use of ‘*ad ignorantiam*’, namely ignorance of *the validity of an inference rule*. For Walton, after all, “presumptive reasoning in general [is] [sic] a kind of reasoning from ignorance” (Blair, 1999, p. 339; see Hinton, 2018, p. 192). Presumptive reasoning mirrors *non-monotonic* inference, where the addition of new information alters an extant conclusion (Walton, 1996). And what normally fails to be known about non-monotonic inferences is their validity. A case in point is the inference rule expressed in premise 1.1’ (‘If Poland had won the FIFA World Cup, then I would know it’). For that rule’s validity stands or falls with *knowing* that the list of FIFA World Cup winners is (in-)complete.

2.3 *Ad ignorantiam* argument types

Although Walton and colleagues (Walton *et al.*, 2008) construe the *ad ignorantiam* scheme by narrowly relying on the epistemic approach, Walton had previously identified three sub- types of the *ad ignorantiam*: *dialectical*, *epistemic*, and *inductive* (Walton, 1996, pp. 143- 6, pp. 277- 9). The dialectical type mirrors how Locke understood a shift of the burden of proof in a dialogue (see Sect. 1). The epistemic type is what Walton associates with the use of an epistemic operator (e.g., ‘know’, ‘believe’, “guess”). And the inductive type he associates with the confirmation of a scientific hypothesis (e.g., hypothesis *H* counts as unconfirmed because evidence confirming or disconfirming *H* is lacking’; see Woods & Walton, 1978, p. 91).

Yet Walton’s (1996, p. 144) example of the inductive type—“there is no green marble in the box, because when taking out a large handful of marbles randomly from the box, no marble in the hand is green” —features neither ‘confirmed’ nor ‘unconfirmed’. Moreover, the distinction between the epistemic and inductive types is blurry because the same example can exemplify the epistemic type: ‘It is false that there is a green marble in the box because that is not known to be true’. Indeed, a clear classification criterion for the three sub-types is

what Walton does not offer (Hinton, 2018, p. 196). The gun case is what Walton *et al.* (2008, p. 327) treat not just as an *ad ignorantiam* argument but specifically as an instance of the negative practical reasoning scheme, the very scheme underlying *Pascal's wager* (Woods, 2004, p. 67). (Confusingly, Walton *et al.* (2008, p. 327) do at the same describe the negative practical reasoning as a type of *ad ignorantiam* argument.)

Negative practical reasoning scheme (Walton et al., 2008, p. 327) Premise 1: I do not know whether *A* is true or not.
 Premise 2: I have to act on the presumption that *A* is true or not true.
 Premise 3: If I act on the presumption that *A* is true, and *A* is not true, consequences *B* will follow.
 Premise 4: If I act on the presumption that *A* is not true, and *A* is true, consequences *C* will follow.
 Premise 5: Consequences *B* (*C*) are more serious than consequences *C* (*B*).
 Conclusion: Therefore, I act on the presumption that *A* is not true (true).

However, treating the gun case as an instance of the negative practical reasoning scheme violates Walton's three types (dialectical, epistemic, and inductive). Given how the three types are described, the gun case cannot instantiate the dialectical or the inductive type in the first place. And unlike what is required to fit with the epistemic type, the conclusion of the negative practical reasoning scheme is an *act* (rather than a factual proposition). To Hinton (2018), this indicates that the negative practical reasoning scheme does *not* represent "an attempt at a persuasive argument, [but] merely a principle of precaution" (*ibid.*, p. 197)

A superficial difference between the negative practical reasoning scheme and the epistemic *ad ignorantiam* scheme is the use of 'I do not know *whether* *A* is true or not' as opposed to 'I do not know *that* *A* is true'—the latter formulation fitting better with the *ad ignorantiam* argument scheme. By contrast, it is a substantial difference that in the negative practical reasoning scheme "the *action* [itself] has become [the conclusion of] the inference' (Hinton, 2018, p. 191; *italics added*; see Woods, 2004, p. 86).

We now turn to three cases of ignorance-based arguments that raise doubt about the generality of the epistemic approach to the *ad ignorantiam* because while each of these arguments is cogent, none of them has a factual conclusion. Moreover, none of these arguments assign an obvious role to the epistemic closure principle.

3. THREE CASES FAILING TO FIT THE EPISTEMIC APPROACH

3.1 *The gun case*

As stated in Sect. 1, constructing an argument from ignorance in the gun case as 'the gun is unloaded, because I do not know that it is loaded' is implausible because, rather than reasoning about whether the gun is loaded, one would simply check the gun's chamber. It is nevertheless undeniable that what the gun case features is an *ignorance-expressing premise* and that its conclusion is *prescriptive* rather than factual. This suggests (to us) what literally is an argument *from* ignorance, namely: 'I should act as if the gun were loaded because I do not know that it is unloaded'.

This argument can be reconstructed as follows:

(A4) *The argument from ignorance, the gun case*

- 1.1 I should act as if the gun were loaded. I do not know that the gun is unloaded.
 (1.1') (Acting as if the gun were unloaded may incur serious negative consequences
 I cannot afford.)

The form of this argument from ignorance breaks with the epistemic approach. First, the conclusion (1) is prescriptive. Second, the inference rule (1.1') bears no similarity to the epistemic closure principle. So, the epistemic approach cannot apply to the gun case.

3.2 *The Presumption of Innocence*

The *presumption of innocence* principle states that a suspect must be presumed innocent unless proven guilty. The principle holds not only for a *legal* but also for a *pragmatic* reason (deriving from the legal reason) because a court violating this principle can be charged with misconduct or discrimination. While several scholars deny that an argument citing this principle instantiates an *ad ignorantiam* argument (e.g., Davis, 1986, pp. 59f.; Engel, 1982, p. 189; Fearnside, 1980, p. 20; Little, Wilson & Moore, 1955, p. 20; Runkle, 1978, pp. 291f.; see Walton, 1996, pp. 48-52), others see in it the *only* instance of a *non-fallacious* ignorance-based argument (e.g., Copi, 1953, p. 56).

The presumption of innocence principle has it that *S* being *ignorant* of a suspect's guilt (*p*) implies the suspect's innocence (not *p*). So, *prima facie*, 'since *S* cannot prove that *p* is true, *p* is false'. But the important distinction here is between 'actual innocence' (read: 'it is false that *p*') and 'legal innocence' (read: 'a proper legal process failed to show that *p*'). This distinction can be elucidated as follows:

It is presumptuous to say that a claim is false because unproved or that a claim is true because not disproved. Is this presumption ever justified? It is sometimes said that such presumption is properly made in courts of law: if a person's guilt cannot be proved, he is presumed innocent. This presumption, however, is made possible by a special legal principle and establishes the fiction that the defendant is innocent. *Failure to prove guilt does not mean that the person is innocent*; it only means that society is directed by law to treat him as if he were innocent. (Runkle, 1978, pp. 291f.; *italics added*)

The actual vs. legal innocence distinction entails that arguments citing the presumption of innocence principle cannot have a conclusion stating the factual proposition '*S* is (actually) innocent'. For this conclusion, Walton (1996, p. 50) proposes several reasonable alternative candidates: 'the defendant is *presumed* to be innocent', 'the defendant is innocent *is presumably justified*', or 'the defendant *is* legally innocent'.

The upshot of this specification of 'legal innocence' is that the argument scheme for an ignorance-based argument citing the presumption of innocence principle is not an epistemic scheme. Moreover, in the construction and evaluation of such arguments, the epistemic closure principle does not play any obvious role.

3.3 *The hungry man*

Our last case is loosely based on Victor Hugo's novel *Les Misérables*, set in late 19th- century France. Imagine that Jean—described in that novel as a very thin young man seeking to feed himself, his sister, and her seven children, who are all facing a hard winter—is *likely* to have stolen a loaf of bread. While there is no *direct* evidence (e.g.,

witness testimony identifying Jean), assume that the available *circumstantial* evidence makes the argument ‘although it is not known that Jean stole the loaf of bread, he did’ *epistemically more compelling* than the argument ‘because Jean is not known to have stolen the loaf of bread, he hasn’t’. Thus, one would be inclined to accept that it was Jean who stole the loaf of bread.

Morally, however, the second argument *becomes* more compelling than the first upon assuming that accepting the first argument entails that Jean will be punished. (In Hugo’s novel, Jean is sentenced to five years of hard labor.) This is equivalent to accepting the ignorance-based argument: ‘because Jean is not known to have stolen the loaf of bread, one should act as if ‘Jean stole the loaf of bread’ is false’. Once again, we face an ignorance- based argument the conclusion of which is not a factual proposition.

The hungry man case not only reminds us that moral considerations can trump epistemic ones. The case also makes it doubtful that explaining the cogency of this ignorance-based argument *requires* citing the epistemic closure principle. For, even if it were beyond *all possible* doubt that Jean stole the loaf of bread—wherefore, if he did, one would know it—it becomes no less moral to treat Jean as if he had *not* done so. (Legally, this is unproblematic: *nullo actore, nullus iudex*—“no prosecutor, no judge.”) To be sure, to disregard what is beyond all possible doubt cannot be morally impeccable either. But this does not affect the validity of the claim that explaining the cogency of an ignorance-based argument invoking moral considerations *fails* to require reference to the epistemic closure principle.

In sum, while the three cases present *cogent* ignorance-based arguments, none of them fits the epistemic *ad ignorantiam* argument scheme because their conclusions do not express a factual proposition, nor does explaining their cogency require reference to the epistemic closure principle on which the epistemic approach to the *ad ignorantiam* argument pivots. So, to model these cases we require a different argument scheme.

4. CONCLUSION

When interpreted narrowly, the term ‘*argumentum ad ignorantiam*’ denotes an argument referencing a state of ignorance to generate argumentative support for the *factual* proposition ‘*p* is true (false)’. This argument form is what scholars today recognize as the *ad ignorantiam* argument’s *epistemic* type. We have argued for a wider interpretation, thus extending the scope of ‘*argumentum ad ignorantiam*’, because a reference to a state of ignorance can also be used to generate argumentative support for the *normative* proposition ‘*S* should act as if *p* were true (false)’. According to this wider interpretation, ‘*argumentum ad ignorantiam*’ denotes any argument featuring an ignorance-expressing premise. Future research should develop a corresponding argument scheme and CQs.

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