Informal Logic

INFORMAL LOGIC

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Argumentation par analogie et pesée des raisons

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Alhambra, J. (2022). Argumentation by Analogy and Weighing of Reasons. *Informal Logic*, *42*(4), 749–785. https://doi.org/10.22329/il.v42i4.7143

Résumé de l'article

La théorie de John Woods et Brent Hudak sur les arguments par analogie (1989), bien que correcte dans son approche méta-argumentative, pose problèmes quand on considère la possibilité de peser les raisons. Je soutiens que c'est le résultat d'interpréter la relation entre les prémisses et la conclusion dans l'argumentation par analogie comme une inférences. Une interprétation en termes de raisons est proposée ici. L'approche fondée sur les raisons résout ces problèmes et permet d'étendre la théorie pour rendre compte d'une variante particulière de l'argumentation par analogie dans laquelle les sujets de comparaison ne sont pas des arguments, mais des pesées de raisons.

Argumentation by Analogy and Weighing of Reasons

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Abstract: John Woods and Brent Hudak's theory on arguments by analogy (1989), although correct in its meta-argumentative approach, gives rise to problems when we consider the possibility of weighing reasons. I contend that this is an outcome of construing the relationship between the premises and the conclusion of arguments compared in argumentation by analogy as inferences. An interpretation in terms of reasons is proposed here. The reasons-based approach solves these problems and allows the theory to be extended to account for a particular variant of argumentation by analogy in which the subjects of comparison are not arguments, but weighings of reasons.

Résumé: La théorie de John Woods et Brent Hudak sur les arguments par analogie (1989), bien que correcte dans son approche méta-argumentative, pose problèmes quand on considère la possibilité de peser les raisons. Je soutiens que c'est le résultat d'interpréter la relation entre les prémisses et la conclusion dans l'argumentation par analogie comme une inférences. Une interprétation en termes de raisons est proposée ici. L'approche fondée sur les raisons résout ces problèmes et permet d'étendre la théorie pour rendre compte d'une variante particulière de l'argumentation par analogie dans laquelle les sujets de comparaison ne sont pas des arguments, mais des pesées de raisons.

Keywords: argumentation by analogy, inference model, reason model, weighing of reasons

1. Introduction

Analogy is a fundamental resource for understanding the world. The ability to project what we know about something onto unfa-

miliar situations is behind many of our everyday practices: we have explanations by analogy, analogical reasoning, case-by-case information processing, legal procedures based on precedent, and even humour by analogy. The concept is so broad that we can use it to express this very idea: analogy is like sex, everyone talks about it, nobody knows quite how to do it properly, and it is easier when done with people who know what its purpose is. This plurality of uses, as well as the plethora of theories it brings about, requires some delimitation work. In this paper, I will focus on argumentative uses of analogy and their role in the logical evaluation of arguments. This means that the subject of my research will be argumentative practices and its scope will be current argumentation theory, the origin of which is typically identified in the second half of the 20th century (see Vega 2014).

Using this general framework, we can distinguish several ways of approaching the study of argumentation. The standard practice is to take the classical trichotomy as a starting point and distinguish three approaches: rhetoric, which conceives of argumentative exchanges as communicative processes focused on the purposes of the arguer; dialectics, which studies argumentation as a procedure subject to a series of rules aimed at achieving the goal shared by the discussants; and logic or argument theory, which studies the products of argumentation—that is, arguments, and their relations (see Wenzel 2006). In this paper, I will adopt a fundamentally logical approach and study analogy from the perspective of argument theory. In particular, I will rely on the so-called 'argument dialectics' developed by Hubert Marraud (Marraud 2013, 2021; Leal and Marraud 2022).

I will take as a starting point the following definition of arguing: "to argue, in its most general sense, is to present something to someone as a reason for something else" (Marraud 2021, p. 11, translation is mine). Bearing in mind that logic focuses on the products of argumentation—as distinct from processes and procedures of discussion—we can characterize an argument as a compound of two elements: the consideration presented as a reason, and that for which that consideration is a reason (i.e., the claim or thesis). This should not make us forget that an argument is always a result of practices that are both public and normative; if we want

to find standards or criteria for evaluation, we must look for them in those practices and not in the abstract features of arguments themselves. I will refer to the statements that together comprise a reason as 'premises' and to the statements that comprise the thesis as 'conclusions.' To depict an argument, I will use the system of diagrams used in (Marraud 2013, 2021); a simple argument (i.e., one that puts forward a single reason) is depicted by two rectangles joined by the standard argumentative connector 'so':
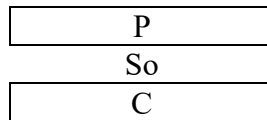
P
So
C

Figure 1: Simple argument

As we will see below, diagrams can be combined as the complexity of argumentation increases.

When we argue, then, we give others reasons to defend a certain claim or thesis, but not only that; in arguing we also make commitments. Whoever presents an argument "*A* so *B*" agrees that it is the case that *A* and that, given *A*, there is a reason for *B*. The second commitment can be expressed in isolation by resorting to the conditional 'if A, then B,' which functions as a sort of argumentative instruction.[1] In the course of the discussion, our interlocutor may ask us to justify these elements, and this gives rise to a 'chaining' and a 'warrant.' A chaining arises when we give a reason to justify a consideration that we had previously presented as a reason. A warrant is a general principle or rule that justifies the conditional associated with the argument, that is, it tells us that generally cases like *A* function as a reason for cases like *B*. If someone argues, for example,

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[1] These conditionals, which are fundamental for understanding my thesis, express the relation between the premises and the conclusion of a particular argument, but they do not add anything to that argument. That is, the conditional associated with an argument is neither a premise nor a warrant in the sense we will see below, but rather an expression of what the arguer does in presenting something as a reason for something else. I will call the relations expressed by the associated conditional 'argumentative relations' and I will distinguish them from 'inter-argumentative relations,' that is, from relations between arguments (*see* Section 6 below).

> [1] You promised that you would go to the cinema, so
> you ought to go to the cinema

they may be asked to present evidence that the promise was actually made or to justify the conditional 'if you promised that you would go to the cinema, then you ought to go to the cinema' (e.g., by appealing to a principle such as 'promises must be kept'). The warrant may in turn be justified, and that results in a chaining-like structure called 'backing.'

   Although chainings, warrants, and backings are not part of an argument in the same sense as reasons and theses are—since we can argue without them but not without a reason and a thesis—they play a fundamental role in the logical evaluation of arguments. A good argument from a logical point of view is one that puts forward a good reason, and a good reason is one that stands up to criticism. From the perspective of argument dialectics, criticisms are raised mainly through counterarguments. A counterargument to an argument *A* is an argument whose conclusion is incompatible with some element or commitment associated with *A*. If someone presents argument [1], we can imagine three replies: (a) "that's not true, I just said that 'maybe I would go'"; (b) "I made the promise only because you threatened me," or (c) "it's true, I promised to go to the cinema, but a friend of mine has just had an accident and I have to go to the hospital." In (a), we give a reason to defend that a premise in [1] is not true; in (b), we appeal to a condition that needs to be fulfilled—but has not been—in order for what has been said to constitute a reason for that claim, and in (c), we give a stronger reason to do something else. They are an 'objection,' a 'rebuttal,' and a 'refutation,' respectively.[2] If

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[2] These main types of counterarguments can be subdivided according to the scope of the attack. For example, one may rebut an argument by giving reasons for rejecting the warrant that justify the associated conditional (*plain refutation*) or accept it but mention a consideration that prevents its application (*exception*). Similarly, someone may refute an argument by presenting a stronger consideration that favours an incompatible conclusion (*contradicting refutation*) or by presenting a consideration for an incompatible conclusion as having equal strength and argue that no conclusion can be drawn from the weighing (*cancelling refutation*). Broadly speaking (see note 9), exceptions and contradicting

an argument withstands objections and rebuttals, we say that it is 'correct' and that it puts forward a *pro tanto* reason (i.e., a reason worthy of consideration); if it also resists refutations, we say that it is not only correct but also 'conclusive' and that it puts forward a strong reason. Conversely, if an argument does not resist objections or rebuttals, we say that it is 'incorrect' and if it does not resist refutations, we say that, although it is correct, it is not conclusive (i.e., it puts forward a reason worthy of consideration, but a weak one). Chainings, warrants, and backings can be seen as responses to (possible or actual) criticisms of an argument. Note that logical evaluation is a complex process in which we use available information to establish the acceptability of a position; the result is not so much a single, good argument but a solid case in the legal sense—that is, a constellation of considerations that together favour (or not) the thesis under discussion.

Once we have delimited the theoretical framework, the following question arises regarding the research subject: what is an argumentation by analogy? I will propose that it is an argumentation in which the similarity between two elements (which I will call 'source' and 'target') is presented as a reason to assign one of them (target) a property of the other (source). These elements can be objects, sets of objects, situations, relations, arguments, and so on. Taking this characterization as a reference, two general positions can be distinguished depending on how this similarity is understood. On the one hand, there are those who claim that it is a similarity of properties: two elements share certain properties, one of them has an additional property, and, based on the commonalities, it is concluded that the other probably has the additional property as well. Here is a typical example:

> [2] Humans and mice share certain physiological characteristics; drug x has a particular effect on mice, so it is possible that it will have the same effect on humans.

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refutations coincide with what (Pollock 1987) called an 'undercutting defeater' and a 'rebutting defeater.' For more on counterarguments, see (Leal and Marraud 2022, pp. 305-322).

On the other hand, there are those who argue that argumentation by analogy is based not on a relation of similarity, but on a similarity of relations. Here is an example:

> [3] In the same way that we would not force anyone to follow a balanced diet, as we would be restricting their basic freedom, we should not force anyone to take drug x either.

In this case, we are not comparing the properties of two things, but the reasons we have for not doing something; that is, we are comparing argumentative relations.[3] If we consider that these relations can be expressed by using the associated conditional, we can represent an argumentation by analogy as follows (I depict the warrant together with the 'so,' which it justifies):

C is to D as A is to B:

If A, then B (source)
So
If C, then D (target)

Regarding this way of understanding argumentation by analogy, two things must be borne in mind. First, although the scheme is a simple argument, it stands in for a complex structure since both the thesis and the reason that supports it are conditionals that represent the relations between the premise(s) and the conclusion of other arguments (that is why I speak of 'argumentation' and not 'argument' by analogy). This, as we shall see, is called 'meta-argumentation' and is essential to understand the theses of this paper. Second, the meta-argumentative character of argumentation by analogy allows me to integrate it into the process of the logical evaluation of arguments: the relation expressed by the associated conditional can be justified by providing a warrant or arguing by analogy. In [1] we can appeal to the moral principle 'promises must be kept' or argue, for example, that

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[3] The distinction between a relation of similarity and a similarity of relations can be found not only in argumentation theory (e.g., Perelman and Olbrechts-Tyteca 1971; Woods and Hudak 1989), but also in cognitive science (Gentner 1983), (Holyoak and Thagard 1995), or (Gentner and Markman 1997).

[4] For the same reason that I had to go to your birth-
day party, which was that I told you I would go, you
should go to the cinema now.

In what follows, I will assume the meta-argumentative interpreta-
tion as a hypothesis and try to explain how it works.

2. The meta-argumentative theory

The pioneers in proposing an openly meta-argumentative theory of
argumentation by analogy were John Woods and Brent Hudak.[4] In
"By Parity of Reasoning," (1989) they argue that theories that base
argumentation by analogy on a relation of similarity of properties
are not so much incorrect as they are not very explanatory:

> A characterization of analogical argument cannot be theo-
> retically illuminating until the appropriate connection is
> made between the factors of *similarity* and the *inconsisten-*
> *cy* of resisting the conclusion (Woods and Hudak 1989, p.
> 126).

The "inconsistency of resisting the conclusion" is a key element in
Woods and Hudak's theory. If we accept that source and target are
analogous and that source has a certain property but still resist
attributing the same property to the target, we can be accused of
being inconsistent. In argument [4], for example, if we accept that
saying that you will go to the birthday party is an appropriate
reason for having to go to the birthday party and that both situa-
tions are analogous, then we must conclude that saying you will go
to the cinema is an appropriate reason for having to go to the
cinema on pain of being accused of inconsistency (which is not the
case in [3]).

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[4] A precedent can be found in (Perelman and Olbrechts-Tyteca 1971, pp. 371-
398) or (Govier 1985), although in these cases meta-argumentation as such is
not mentioned at any point. Moreover, Govier (1985) seems to limit her theory
to arguments by counter-analogy, in essense, arguments in which one argument
is criticised by comparing it with a parallel argument that is patently incorrect.

To explain this peculiarity of argumentation by analogy, Woods and Hudak (1989) propose to interpret the source and the target as arguments: "The analogical argument, let us repeat, is a meta-argument, an argument to the effect [...] that another argument – let's call it a 'comparison' argument– shares an identical form with the original argument" (p. 128). According to this theory, when we argue by analogy, we transfer certain logical properties from one argument to another on the basis of structural parallel-ism. Since this parallelism is interpreted as an identity of logical form,[5] what we do in an argument by analogy is to say that the source argument deserves some evaluation based on its logical form, that the target argument exhibits the same logical form, and that, therefore, the target argument deserves the same evaluation. The scheme that Woods and Hudak propose is the following:

> 1. Argument *A* possesses a deep structure whose logical form provides that the premisses of *A* bear relation *R* to its conclusion.
> 2. Argument *B* shares with *A* the same deep structure.
> 3. Therefore, *B* possesses a deep structure whose logical form provides that its premisses likewise bear *R* to its con-clusion.
> 4. Hence, *B* is an analogue of *A*. *A* and *B* are good or bad arguments, by parity of reasoning, so-called (1989, p. 127)

A real example—somewhat less artificial than the previous ones—may clarify the issue:

> [5] I'm reading the following news item in the newspaper: "this Monday NATO Secretary General Anders Fogh Ras-mussen called on European governments not to use the eco-nomic crisis as an excuse to cut defence spending and warned that Europe must 'look outwards' and be prepared to intervene in the event of new conflicts".

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[5] As will be seen below, Woods and Hudak understand logical form in the broad sense of an abstract structure that determines the logical evaluation of the argument that exhibits it: "the structure of modus ponens deserves the name of logical form because it is an abstraction that determines the logical appraisal for any argument exhibiting it" (1989, p. 129).

> Let's grab onto this phrase, tweaking it, and say:
> "This Thursday citizens called on European governments not to use the economic crisis as an excuse to cut spending on education and have warned that Europe must 'look to the long term' and equip itself with a human and scientific capital prepared for the challenges of a globalized economy" (Pasquau 2012, translation is mine).

In this piece, Miguel Pasquau compares two situations: Rasmussen's advocacy of the thesis that Europe should not reduce spending on defence and the hypothetical citizens' advocacy of the thesis that Europe should not reduce spending on education. What he is telling us is that "for the same reason"—this is precisely the title of the article—that Rasmussen's position can be supported by reasons, the position of the citizens can also be supported. To use Woods and Hudak's (1989) terminology, if we admit that Rasmussen's argument deserves a favourable logical evaluation on the basis of the logical form of its deep structure—whatever that may be—and that the citizens' argument exhibits the same logical form, then we must accept that the citizens' argument deserves the same logical evaluation since the logical evaluation of an argument—Woods and Hudak assume this without discussion— depends only on its logical form. Thus, the charge of inconsistency is explained by recourse to identity of logical form: Rasmussen's argument and the citizens' argument are the same with respect to their form.

Before proceeding further, a couple of clarifications should be made about this way of understanding argumentation by analogy. First, although the logical properties that are transferred from source to target depend on the relations between the premise(s) and the conclusion of source and target arguments, these relations need not be formal implications based on *modus pones*-type rules. In Pasquau's (2012) argumentation, for example, the compared arguments are not 'formal' in the restricted sense of the term and yet we can speak (without committing ourselves on its quality) of argumentation by analogy. Second, and for the same reason, logical properties transferred from source to target can vary: "whatever verdict –whether of deductive validity, inductive strength or whatnot– that is conferred upon a given argument by virtue of the

logical form" (Woods and Hudak 1989, p. 126). In any case, all these properties have to do with entitlement to draw a conclusion on the basis of the relation between the premise(s) and the conclusion that is fixed by the logical form.

At this point, we can formulate the thesis of this paper: although Woods and Hudak are right when they interpret argumentation by analogy as based on a similarity of argumentative relations, they are wrong in understanding these relations in terms of inferences. The notion of inference is almost as difficult to define as the notion of analogy. The general idea is that to infer is to extract certain information from prior information, that is, to move from one belief to another in a recognizable pattern that may or may not be justified. Although Woods and Hudak (1989) defend that an argument is not an inference, they reject the identification of the argument with the psychological process of revising and retaining beliefs while still conceiving of argumentative relations as the entitlement to extract or derive the conclusion from the premises. Turning again to conditionals we can say that Woods and Hudak (1989) understand the relation between the premise(s) and the conclusion of an argument "*A* so *B*" as an inferential instruction of the type: "if it is the case that *A*, then extract (or you can extract) *B*." The justification for these inferential instructions would be given by their relation to *modus ponens*-type logical rules or analogous rules in the case of non-deductive inferences.

3. The issue: Weighing of reasons

The thesis of the paper then is that the interpretation of argumentative relations in terms of inferences gives rise to problems when we introduce weighing of reasons. By 'weighing' I mean the comparison of the relative strength of two correct arguments, that is, two arguments that put forward *pro tanto* reasons. As mentioned, a *pro tanto* reason is one that, in a specific evaluation context, resists both objections and rebuttals. If we conceive of the evaluation context as a set C of considerations accessible to arguers at a given time, we can say that an argument "*A* so *B*" is correct—in C—if and only if there is no consideration that shows that the premises A are false or unacceptable (objection) or that the

relation expressed by the conditional "if *A*, then *B*" is not justified (rebuttal).

Although there are situations in which we would weigh the strength of two or more arguments with the same conclusion, here I am interested in the weighing of arguments with incompatible conclusions. This, as we have seen, is the case of refutation. In a refutation, we criticise the reason given for an argument by giving a stronger reason to defend the opposite. The refutation is usually marked by using argumentative connectors such as 'but,' 'however,' or 'although.' When someone says "*A* but *B*" they assume that both *A* and *B* are reasons worthy of consideration, that *A* and *B* support incompatible theses and that *B* is stronger than *A* and therefore imposes its thesis. For example:

> [6] In many respects, Jimi [Hendrix] changed the sound of rock far more than the Beatles. You know, they brought songwriting to rock and roll, but Jimi changed the sound of the guitar. (Obrecht 2018, p. ix)

In this excerpt, Pete Townshend concludes that in many respects, Jimi Hendrix modified the sound of rock more deeply than the Beatles, and he does so by weighing the importance of two considerations: bringing composition to the genre and modifying the sound of the guitar. Through the use of the connector 'but,' he means that he considers the sound of the guitar to be more important than composition when it comes to modifying the sound of rock. The structure of the fragment is *Thesis. Reason 1, but Reason 2*.[6]

Given this notion of weighing, the question is, in what sense is Woods and Hudak's (1989) theory of argumentation by analogy incompatible with the possibility of weighing reasons? To answer

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[6] This understanding of weighing of considerations that favour incompatible claims brings it closer to the notion of argumentation structure, understood as a combination of single reasons, rather than to a set of premises (see Juthe 2019, p. 432-435). Therefore, when dealing with argumentation by parity of weighings, I will speak not of argumentative relation, but of 'inter-argumentative' relations (see Section 6). I would like to thank one of the reviewers for highlighting this idea.

this question, let us consider the following counterargument. Let us start from the hypothesis that (1) the associated conditional expresses "if it is the case that *A*, then extract (or you can extract) *B*." Let us take Pasquau's (2012) argumentation from the previous section as a case study. If we apply the scheme proposed in the introduction, we will have the following diagram (to make the reading easy I do not represent the warrant):

If Europe must look outwards and be prepared to intervene in the event of new conflicts, then Europe should not reduce spending on defence
So
If Europe must look to the long term and equip itself with human and scientific capital prepared for the challenges of a globalized economy, then Europe should not reduce spending on education

Now let us suppose that (2) this argument is correct (that is, its premises are true or acceptable and the inference that it draws is a good one—whatever that means). Suppose, further, that (3) the premises of the target argument are also true or acceptable. In this case, we can say that the argument

Europe must 'look to the long term' and equip itself with human and scientific capital prepared for the challenges of a globalized economy
So
Europe should not reduce spending on education

is also correct: by (3), it has true or acceptable premises and, by analogy, it has a good inference (remember that the conclusion of Pasquau's argumentation is the inference of this argument). Thus, based on (1), we draw or can draw its conclusion: Europe should not reduce spending on education.

So far, we have simply applied the assumptions of Woods and Hudak's (1989) theory to Pasquau's (2012) case. Let us now consider the possibility of incorporating weighing of reasons as we

have outlined above into this theoretical framework. Suppose that
(4) the following argument is presented:

> Europe must get its budget deficit under control

So

> Europe should reduce spending on education.

And suppose both that (5) this argument is also correct and that (6)
it is—in the context of the discussion—stronger than the previous
one; that is, it refutes it. Following Pete Townshend's example, we
can paraphrase the case as follows: "Europe should cut spending
on education. You know, it must 'look to the long term' and equip
itself with a human and scientific capital prepared for the chal-
lenges of a globalized economy, but it must control its budget
deficit." Therefore, by (1, 4, 5, and 6), we are entitled to claim that
Europe should reduce spending on education. The problem is that,
if we apply Woods and Hudak's (1989) theory, we are being in-
consistent since we accept that the argumentation by analogy is
correct (by 2), but we deny its conclusion, since we do not and
cannot draw the conclusion from the target argument, even assum-
ing that its premises are true or acceptable (by 3), because we have
a stronger argument (by 4, 5, and 6) to defend an incompatible
conclusion.[7]

 This inconsistency can be neutralised in three ways: (i) by
denying some assumption; (ii) by explaining the strength of the
counterargument by appealing to some hierarchy of inferences that
tells us how refutation imposes its conclusion without invalidating
the inference of the target argument (which recall is the conclusion
of the analogy); or (iii) by rejecting the starting hypothesis and
interpreting the associated conditional in another way.

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[7] It is worth noting that the problem with weighing that we are tracing in Woods
and Hudak's (1989) theory is not due to arguments compared in an argumenta-
tion by analogy proposing deductive inferences. The counterargument applies to
any kind of inferences, not only deductive ones. In fact, we could say that in the
case of deductive inferences the counterargument does not fit very well, since
these inferences cannot, by definition, be weighed and, therefore, do not pose
any problem.

The first approach does not seem very promising since there is nothing inconsistent or contradictory in the assumptions made. One could obviously criticise my interpretation and argue that Woods and Hudak (1989) do not understand conditionals in the way I attribute to them. If this means that they do not do so explicitly in their paper, the criticism is fair but irrelevant because my argument stands anyway. If on the contrary, this remark means that they interpret argumentative relations in another way, I must admit that I am open to suggestions, but based on what they defend in "By Parity of Reasoning," my 'inferencist' hypothesis seems reasonable. In any case, the correctness of my criticism depends on the appropriateness of this hypothesis and the available alternatives.

Regarding the second strategy, I see at least three challenges. First, there is far from a consensus in argumentation theory about a hierarchy that establishes the relative strength of different types of inferences. In fact, we do not even have a unified typology: there are different classifications—from reductionist ones, which only admit of deductive inferences, to pluralist ones, which admit of more types—but often the coincidence is just terminological. To this claim, one could reply that we do not yet have such a hierarchy, but we could have one as studies on argumentation advance and our knowledge of argumentative practices is gradually sharpened. My rejoinder is that there are reasons to doubt that such a research programme can succeed. The strength of an argument depends to a large extent on contextual considerations and requiring these considerations to be encoded as part of the inference creates more problems than it solves. First, there is an 'inflation' of the notion of argument, as we are forced to include among its premises any consideration that alters the strength of the argument (not to mention exceptions that may rebut it) (Dancy 2004, pp. 95-99) (Bader 2016, pp. 45-47); and second, there is an unnecessary multiplication of arguments as the same consideration in different contexts would give rise to different arguments, something that overburdens the theory and is unintuitive (Dancy 2004, pp. 47-48), (Bader 2016, pp. 47-49).

To this one can in turn respond that there is no need to codify the information within the inference or to create any definitive

hierarchy; it is sufficient to understand weighing as a procedure of prioritisation of inferences on the basis of reasons (see Horty 2012). In the same way that we give reasons to defend a statement, we can give reasons to defend the priority of one inference over another without the need to commit to any definitive hierarchy, which would solve the problems of encoding information within the inference. This is certainly the most interesting alternative, but it has a problem: if we conceive of weighing as an 'activation/deactivation' of inferences depending on available reasons, we do not solve the problem with Woods and Hudak's (1989) theory since we still have to explain why we cannot draw the conclusion of the target argument even though it has a good inference and its premises are true or acceptable. To solve this problem, we need to maintain the distinction between an incorrect argument and a weak argument, and for that purpose, the most promising strategy is to reject the starting hypothesis and interpret argumentative relations in another way.

4. Arguments and reasons

I said that to argue is to present something to someone as a reason for something else. When we argue, we also make commitments and our interlocutor may ask us to give additional reasons to justify them, or they may give us reasons to reject them, committing themselves in the discussion. In short, to argue is to exchange reasons. This way of understanding argumentation may give us the key to solve the problem with Woods and Hudak's (1989) theory: instead of understanding argumentative relations in terms of inferences, we can explore an interpretation in terms of reasons. In this case, argumentative relations would be expressed by the conditional "if it is the case that *A*, then you have a reason for *B*." The question now is what a reason is; or rather, what it is for a consideration to be a reason for something else.

To answer this question, we must leave the field of argumentation theory for a moment and turn to the theory of reasons or the theory of moral reasoning, a branch of moral philosophy in which special attention has been paid to the notion of reason. In this field Thomas M. Scanlon proposes the following definition:

> To claim that some consideration 'is a reason' is to claim that it counts in favour (or against) an agent in certain circumstances holding a certain attitude, such as, for example, a certain belief or intention (Scanlon 2004, p. 238).

For a consideration to be a reason, then, it must count in favour of something; that is, it must favour a certain attitude or, in our case, a certain thesis or position. Moreover, a consideration is always a reason *for* someone, that is, it is a relation between three elements: the consideration presented as a reason, the attitude that this consideration favours, and the agent for whom this consideration is a reason to adopt the attitude. A distinction must be made in this regard. That a consideration is a reason for someone can be understood in at least two ways: as the consideration that moves someone to do or to believe something or as the consideration that justifies their action or belief. Consequently, two types of reasons are usually distinguished: 'motivating reasons' and 'normative or justifying reasons' (see Álvarez 2017). Here we are interested in the latter, although what we are about to say can be applied, *grosso modo*, to motivational reasons as well.

The definition of 'being a reason' highlights the link between reasons and arguments. In fact, we can make both notions coincide if we include in Scanlon's definition the agent who asks for and receives reasons. In that case, to argue would be to present something to someone *as favouring* something else; that is, to show someone that there are reasons to defend or reject a certain position or thesis. In fact, if we take into account that whoever asserts something is committed to what they assert and therefore has to give an account of it if someone asks them to do so (see Searle 1975, p. 354 or van Eemeren and Grootendorst 1983, pp. 19-23), we can say that the definition of arguing is already implicit in the definition of being a reason. To the extent that reasons are asserted, they enter the domain of argumentation, that is, the realm of public and normative practices that require a certain time and space for discussion.

On the other hand, being a reason for something is a relation that occurs "in certain circumstances." This nuance is important,

because depending on how we understand these circumstances, the relation that we are delimiting may acquire certain features. In what follows, I will distinguish four properties: revocability, weight, reversibility, and non-additivity. In the literature on reasons, there is usually agreement about the first two—although each author certainly uses their own terminology. The last two, on the other hand, are much more problematic. In any case, to solve the problem with Woods and Hudak's (1989) theory, as we shall see, it suffices to stress that reasons are revocable and can be weighed, so the discussion of the other properties does not affect my argument.

In the first place, as just mentioned, reasons are revocable: if a consideration *A* is a reason for *B* in a context *C1*, it may be the case that in another context *C2* there is a consideration *D* which prevents *A* from being a reason for *B*. That patient *x* has a streptococcal infection is a reason to treat them with penicillin, unless we discover that they are allergic to penicillin, in which case the reason we had for treating them with penicillin disappears; in essence, it is revoked. This property has been given different names: in non-classical logics, it is called 'non-monotonicity' (Strasser and Antonelli 2017); in epistemology, John Pollock coined the notion of 'defeasible reasoning' (Pollock 1987)[8]; in the field of moral reasoning, Jonathan Dancy and Ralph Bader speak of 'enabling conditions' (Dancy 2004, pp. 38-43; Bader 2016, pp. 3-5); and in the terminology of argument dialectics we speak of 'rebuttals by exception' (Leal and Marraud 2022, pp. 313-314). In any case, the basic idea is that the relation of 'being a reason for,'

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[8] As mentioned, Pollock (1987) distinguishes between 'undermining defeaters' and 'rebutting defeaters'; the latter attacks the relation between a reason and its claim, and the former attacks the claim, giving a reason for its negation. At first glance, it seems natural to identify rebutting defeaters with what I have called contradicting refutation (e.g., Juthe 2019, p. 436). However, I am hesitant to do so, because Pollock's definition of 'defeater' seems to be incompatible with the idea that both reasons weighed in a refutation still favour its respective claims (see note 9 below): "R is a *defeater* for P as a prima facie reason for Q if and only if P is a reason for S to believe Q and R is logically consistent with P but (P & R) is not a reason for S to believe Q" (Pollock 1987, p. 484). This is why I have preferred not to mention the distinction here.

unlike a relation such as 'being deduced from,' can be cancelled by introducing new information into the equation.

Second, reasons can be weighed: if a consideration A is a reason for B in one context $C1$, it may be the case that in another context $C2$ there is a consideration D that strengthens or weakens A as a reason for B relative to other possible reasons against it. The trite example of moral philosophy illustrates this idea: I promised a friend that I would meet him at the faculty this afternoon, but on the way, I come across a drowning child, so I have a stronger reason to do something else. If in trying to help the poor boy I find that ten other people are trying to do the same, that circumstance, without being a reason for one thing or the other, influences the weight of the reasons and tips the balance back in favour of going to the faculty.

The characterisation of weighing that I propose here combines two ideas that are worth separating—if only in an analytical way. First, there is the idea that we can compare the strength of two considerations that function as reasons, either for the same thesis or for incompatible theses. As we saw with refutation, whoever does this assumes that the considerations put forward have not been revoked; otherwise, there would be no point in comparing their strength[9]. A similar idea underlies William D. Ross's distinction between 'prima facie duties' and 'proper duties' and the thesis that in the moral evaluation of an action, prima facie duties do not disappear even if, after weighing all considerations, we conclude that we have only one proper duty. Second, the definition takes into account the possibility that a weighing of reasons may be altered when introducing new contextual considerations. Authors such as Bader (2016, pp. 3-5) or Marraud (2019, pp. 7-8) call them 'modifiers' and, following Dancy (2004, pp. 4043), distinguish

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[9] André Juthe makes a similar point regarding what he calls 'pro/con argumentation': "the basic intuition of pro/con argumentation is, rather, that the function of the pro-considerations is to support the conclusion, not to defeat the inferences of the counter-considerations" (Juthe 2019, p. 437). And so does Marraud for refutations: "refutation is an attempt to show that a *pro tanto* reason is outweighed by other consideration, so that it is inconclusive. Thus, it is part of the pragmatics of refutation that its target be an argument that is acknowledged to present a *pro tanto* reason" (Leal and Marraud 2022, p. 316).

between 'intensifiers' and 'attenuators.' The issue of whether or not this information should be incorporated as part of the reason is something I will not discuss here, but it has generated a whole discussion in the theory of reasons parallel to the issue of encoding weighing factors within inference conditions. The basic idea is that considerations that favour a position can be weighed, that this presupposes that they have not been revoked, and that this process can be altered by considering additional information.

Third, the favouring relation is reversible. This property is associated with the so-called 'holism of reasons'; that is, the thesis that "a feature that is a reason in one case may be no reason at all, or an opposite reason, in another" (Dancy 2004, p. 7). We can characterise this idea as follows: if a consideration A is a reason for B in one context $C1$, it may be the case that in another context $C2$ there is a consideration D that makes A a reason not to B. Being a violation of the law is a reason not to perform an action, but if the law is unjust and has been enacted by an illegitimate government, then the same feature becomes a reason to perform the action. The main problem with reversibility is that not everyone accepts the holism of reasons, and those who accept it sometimes limit its scope to certain kinds of reasons (e.g., reasons to believe and practical reasons but not moral reasons, and so on). Moreover, this property can be interpreted in the light of the previous ones: that the law is unjust and has been enacted by an illegitimate government can be seen both as a consideration that revokes the reason we had not to do the action and, at the same time, as a reason to do it. In the terminology of argument dialectics, we would have a consideration that functions both as a rebuttal and as a reason to defend the contrary.

Finally, the relation of favouring is not additive: if a consideration A is a reason for C and another consideration B is a reason for C as well, it may be the case that the conjunction "A and B" is weaker than A or B separately or it may even be a reason against C. This is the problem of 'reason amalgamation' (see Horty 2012, p. 59-61). Let us imagine that I am discussing with my partner whether to go for a walk or to stay at home and watch The Sopranos. We both agree that heat and rain are, separately, two reasons not to go for a walk; however, the day has been extremely hot and

while we are discussing, a fine, refreshing rain begins to fall, encouraging us to go out. In this case, two considerations that separately function as reasons against an action become a reason in favour of the same action when we consider them together.[10] One solution to this problem is to interpret the conjunction as something completely different from the considerations taken separately (see Horty 2012, p. 61, note 17). The drawback with this solution is that it is unintuitive to speak of a conjunction of reasons as something completely different and independent of the reasons that compose it.

As has been said, the properties that we call reversibility and non-additivity are rather problematic and very few authors defend that they are properties that apply to reasons in general. I will opt for a pragmatic solution: since my aim is not to establish a general theory of reasons, I will skip this issue and focus on what I need to solve the problem with Woods and Hudak's (1989) theory; that is, the need to account for revocability and weighing. Thus, I will argue that the relation between the premise(s) and the conclusion of an argument is expressed by the conditional "if it is the case that *A*, then you have a consideration that favours *B*" where favouring is a revocable and weight-sensitive relation. Following the terminology given in the introduction, I will call a counterargument that revokes the reason given by another argument a 'rebuttal' and a counterargument that weighs two reasons that support incompatible theses and attributes more weight to one of them a 'refutation.' An argument that has been rebutted is incorrect, and an argument that, although correct, has been refuted, is weak or inconclusive.

5. Argumentation by analogy as parity of reasons

The thesis of the article, let us recall, is that the meta-argumentative theory of arguments by analogy generates problems when we incorporate the possibility of weighing reasons. These problems are due to the interpretation of the argumentative relations, that is, the relations between the premise(s) and the conclu-

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[10] Sometimes the amalgamation of reasons has comic effects, as in the joke:
+ The food in this hotel is horrendous!
- Yes, and the portions are so meagre!

sions of the source argument and the target argument in an argumentation by analogy. Using conditionals to express this relation, we have distinguished two interpretations:

1. *Interpretation in terms of inferences*: argumentative relation may be expressed by the conditional "if it is the case that *A*, then you draw (or can draw) *B*."
2. *Interpretation in terms of reasons*: argumentative relation may be expressed by the conditional "if it is the case that *A*, then you have a consideration that favours *B*."

We have seen that if we take the first interpretation as a hypothesis, accept the meta-argumentative assumptions of Woods and Hudak's (1989) theory and incorporate weighing of reasons, we reach a dead end: a situation in which, even if we have a good argument by analogy, we cannot draw its conclusion.

This problem disappears if we interpret argumentative relations in terms of reasons. To see this, let us go back to Pasquau's (2012) argumentation and take as a hypothesis that (i) the conditional expresses "if it is the case that *A*, then you have a consideration that favours *B*." Let us assume as before that (ii) Paquau's argumentation is correct and (iii) that the premises of the target argument are true or acceptable. In this case, again, the target argument

> Europe must 'look to the long term' and equip itself with a human and scientific capital prepared for the challenges of a globalized economy

So

> Europe should not reduce spending on education

is also correct. However, the situation is now different. In contrast to what happened with the interpretation in terms of inferences, the hypothesis (i) does not allow us to draw the conclusion of the target argument but only to claim that we have a reason that favours it. In order to be able to conclude the thesis of the target argument, we still have to check whether there are stronger con-

siderations that favour a different conclusion, that is, whether in the context in which we are evaluating the argument there is any refutation. In other words, in an argumentation by analogy of this kind (see the next section), the logical property that is transferred from the source to the target—assuming the truth or justification of the premises—is correctness, not conclusiveness.[11] Therefore, if we continue with our counterargument and add the refutation of (4, 5, and 6) that we saw in the previous section, we are not denying the conclusion of the argumentation by analogy because the target argument is still correct, even if it is not strong enough to impose its thesis. What we have is an argument that puts forward a *pro tanto* but weak reason.

This strategy not only solves the problem but maintains the advantages of Woods and Hudak's (1989) theory since the charge of inconsistency remains in force. If we accept that the source argument puts forward a worthwhile reason for its thesis and that it is analogous to the target argument, we must accept that the target argument does so as well on pain of being accused of inconsistency. In Paquau's (2012) example, if we accept that Rasmussen's argument puts forward a worthwhile reason and that it is analogous to the citizens' argument, we must accept that the citizens' argument does so as well. In other words, if we refuse to transfer the correctness verdict from the source to the target without presenting either a rebuttal to the source argument or a rebuttal to the target argument, we risk being accused of inconsistency. Therefore, if we replace the interpretation of argumentative relations in terms of inferences with an interpretation in terms of reasons, we solve the problem with weighing and maintain the *raison d'être* of the meta-argumentative position, that is, the inconsistency factor.

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[11] Correctness, as defined above, has to do with resistance to both objections and rebuttals, that is, whether or not the evaluated argument has true or acceptable premises and the relation between the premise(s) and the conclusion is justified. One would have to say that the logical property that is transferred from the source to the target is the justification of that relation, that is, the resistance to rebuttals—irrespective of the truth or acceptability of the premises. Nonetheless, for the sake of clarity, I will use the term correctness even if I am referring only to resistance to rebuttals.

To summarize, argumentation by analogy does not rely on a relation of similarity but rather on a similarity of relations, specifically, of argumentative relations. When we argue by analogy, we say that the relation between the premise(s) and the conclusion of the target argument is acceptable because it is analogous to the relation between the premise(s) and the conclusion of the target argument, which, we assume, it is. These relations are understood in terms of reasons and can be expressed by the conditional "if it is the case that A, then you have a consideration that favours B" where A is the premise(s), B is the conclusion and 'favouring' is a revocable and weighing relation. Thus, the logical property transferred from the source to the target in an argumentation by analogy is correctness—assuming the truth or justification of the premise(s).[12]

6. Varieties of argumentation by analogy

The problem we have traced in Woods and Hudak's (1989) theory is even more evident in situations where the source and the target of the analogy are not arguments but weighings of reasons. Taking as a reference the distinction between similarity and analogy that authors such as (Gentner 1983; Holyoak and Thagard 1995; or Gentner and Markman 1997) propose in the field of cognitive sciences, it can be distinguished at least two varieties of argumentation by analogy. I have called the first one 'argumentation by parity of reasons'; it concerns the claim that an argument puts forward an acceptable reason because it is analogous to another argument that does so. The scheme proposed in the introduction and the cases that we have been considering so far correspond to

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[12] My proposal has two readings, one particular and one general. The first one is the thesis of the paper: the problems that arise with Woods and Hudak's (1989) proposal can be solved by replacing an understanding of the associated conditional based on inferences with one based on reasons. The general reading is one of the assumptions of argument dialectics. If we define arguing as to present something to someone as a reason for something else and, in turn, define reasons as revocable and weighed, then weighing becomes a fundamental part of the practice of arguing. This thesis is beyond the scope of the paper. For more details, see (Leal and Marraud 2022, Chapters 9-13). Thanks to one of the reviewers for pointing this out to me.

this variety. Pasquau's (2012) argumentation, for example, claims that if we accept that the reason posed by Rasmussen's argument is worthy of consideration, we must accept that the reason posed by the citizens' argument is also worthy of consideration because both arguments are analogous. In these cases, as we have seen, the subject of the analogy is what I have been calling argumentative relations, that is, the relations between the premise(s) and the conclusions of the source argument and the target argument.

Nonetheless, argumentation by analogy can also operate on what I will call here 'inter-argumentative relations,' that is, relations between arguments. This is precisely the variety that I have called 'argumentation by parity of weighings.' To better appreciate what I mean, let us look at an example:

> Well, I have just had a pang of regret, yes: since Cardinal Cañizares said the other day that cells from aborted foetuses are being used to make a vaccine against Covid-19. [...] Respected Monsignor, imagine that you have just spiritually assisted a youngster who has been "legally" executed, horror, and that in a hospital bed there is a person whose life depends on the youngster's heart, or his kidneys. Would your eminence authorise the transplantation of his organs? [...] I think so. Does your eminence not find any similarity between the youngster's corpse and the aborted foetuses? I do, with apologies (López Villa 2020, translation is mine)

In this fragment, Agapito López Villa responds to Cardinal Cañizares' indignation about the alleged use of cells from aborted foetuses in the search for a vaccine against Covid-19. The author does not directly state his position on the matter but uses a hypothetical case in which we have, on the one hand, someone in need of an organ transplant and, on the other hand, a youngster who has just been executed and whose organs could save the life of the former. The question is whether it is legitimate to authorise the transplantation in such circumstances, and López Villa's answer is yes, it is. Once this verdict is taken for granted in the hypothetical case, the argumentation by analogy is posed by a question: "does your eminence not find any similarity between the youngster's corpse and the aborted foetuses?" (López Villa 2020). The answer

to this question, again, is affirmative, and the author uses that response to imply that the same verdict applies to the case of vaccines. Relying on the parallelism between both situations, we may reconstruct López Villa's position as follows: "it is true that aborted foetuses have suffered a horrible and immoral death, but the use of their cells in searching for a vaccine against Covid-19 can save the lives of people that need it, so it is legitimate to use these cells in searching for a vaccine against Covid-19."

What is interesting about López Villa's argumentation, apart from the fact that it is based on a hypothetical case, is that the subject of the analogy is not arguments, as in Paquau's (2012) example, but weighings of reasons, or more specifically, refutations. As we saw in Section 3 with Pete Townshend's argumentation, in a refutation we weigh two reasons that support incompatible theses, assign more weight to one of them, and conclude by accepting the thesis that the stronger reason favours. Refutations are usually marked by argumentative connectors such as 'but,' 'however,' 'although,' etc. Using 'but' as a standard weighing connector, we can depict López Villa's position on vaccines as follows:

Aborted foetuses have suffered a horrible and immoral death	But	The use of cells of aborted foetuses in searching for a vaccine against Covid-19 can save the lives of people that need it
So		So
It is not legitimate to use cells of aborted foetuses in searching for a vaccine against Covid-19		It is legitimate to use cells of aborted foetuses in searching for a vaccine against Covid-19

As we have just seen, López Villa justifies this argumentation by relying on the imaginary case of the executed youngster and the organ transplantation. An important point to understand how this case is used in the argumentation by analogy is to bear in mind that the inverted commas in the sentence a youngster who has been "legally" executed' indicate an ironic use of the word 'legally,'

implying that the execution is immoral to say the least. Interpreting the fragment in this way, the parallelism between situations is much better appreciated:

The youngster executed suffered a horrible and immoral death	But	The organs of the youngster executed could save the life of the needed
So		So
It is not legitimate to transplant the organs of the youngster executed.		It is legitimate to transplant the organs of the youngster executed

As we saw, in argumentation by parity of reasons, the relations between the premise(s) and the conclusion of source and target arguments are compared and, on the basis of their parallelism, the logical property of correctness is transferred from source to target, but what kind of relations are compared in an argumentation by parity of weighings, and, consequently, what logical property is transferred from source to target? The answer is easy in light of López Villa's example: in this type of argumentation, analogy operates on relations between reasons, that is, on inter-argumentative relations, and, therefore, the logical property transferred is the relative strength of reasons. In other words, while argumentation by parity of reasons serves to justify the "so" of target argument, argumentation by parity of weighings serves to justify the "but" of target argumentation. The following diagram depicts López Villa's argumentation:

The youngster executed suffered a horrible and immoral death	But	The organs of the youngster executed could save the life of the needed
So		So
It is not legitimate to transplant the organs of the youngster executed		It is legitimate to transplant the organs of the youngster executed

So

Aborted foetuses have suffered a horrible and immoral death	But	The use of the cells of aborted foetuses in searching for a vaccine against Covid-19 can save the lives of people that need it
So		So
It is not legitimate to use cells of aborted foetuses in searching for a vaccine against Covid-19		It is legitimate to use cells of aborted foetuses in searching for a vaccine against Covid-19

Taking as a reference the scheme of argumentation by parity of reasons, I will propose the following scheme for this second variety:

A	But	B
So		So
C		Non-C

Reason D is to reason E as reason A is to reason B:

So

D	But	E
So		So
F		Non-F

This scheme shows well the complexity of argumentation by parity of weighings. Both varieties are forms of meta-argumentation, but while argumentation by parity of reasons compares argumentative relations, argumentation by parity of weigh-

ings compares inter-argumentative relations, and consequently, the logical properties transferred from the source to the target are different. This scheme has an additional advantage, it allows us to explain cases in which the source and the target of the analogy are comprised of more complex structures, as in the example below.[13]

The problem with Woods and Hudak's (1989) theory is that it does not—and, in fact, cannot—distinguish these two varieties of argumentation by analogy. Again, the problem is their understanding of argumentative relations. To make this second thesis clear, let us look at the example they discuss in "By Parity of Reasoning": Judith Jarvis Thomson's famous argumentation in favour of abortion in cases of rape.

> You wake up in the morning and find yourself back to back in bed with an unconscious violinist. He has been found to have a fatal kidney ailment, and the Society of Music Lovers has canvassed all the available medical records and found that you alone have the right blood type to help. They have therefore kidnapped you, and last night the violinist's circulatory system was plugged into yours, so that your kidneys can be used to extract poisons from his blood as well as your own. The director of the hospital now tells you, "Look, we're sorry the Society of Music Lovers did this to you –we would never have permitted it if we had known. But still, they did it, and the violinist now is plugged into you. [...] Is it morally incumbent on you to accede to this situation? No doubt it would be very nice of you if you did, a great kindness. But do you have to accede to it? What if it were not nine months, but nine years? Or longer still? What if the director of the hospital says, "Tough luck, I agree, but you've now got to stay in bed, with the violinist plugged into you, for the rest of your life. Because remember this. All persons have a right to life, and violinists are persons.

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[13] I have found a similar interpretation in two authors. Lamond (2005) argues that when a judge appeals to a precedent in common law, what they do is compare two weighings: the weighing of the circumstances that determined the verdict in the precedent case and the circumstances of the current case. On the basis of this comparison, they make a decision. Marraud (2021, pp. 181-184) analyses a case very similar to that of López Villa and interprets it within the framework of argument dialectics.

> Granted you have a right to decide what happens in and to your body, but a person's right to life outweighs your right to decide what happens in and to your body. So you cannot ever be unplugged from him... (Thomson 1971, p. 49)

As López Villa (2020) did, Thomson relies on an analogy to defend her position. In this case, the target is the legitimacy of abortion in cases of rape and the source is the legitimacy of disconnection in the hypothetical violinist's case. The argumentation is that, although abortion involves the death of the foetus, there are reasons that justify it in the case of a pregnancy resulting from rape, just as in the case of the kidnapping, disconnection would be justified even if it means the death of the violinist. The structure is very similar to the López Villa (2012) case. The only difference is that in Thomson's argumentation, more than one consideration may be discerned to tip the balance towards one of the alternatives: both the abducted person and the rape victim have been put in that situation against their will, and the situation interferes with their economic independence and constitutes a public humiliation. I will assume that Thomson puts forward these considerations as a sum of reasons, so to speak, and not as several independent defences of the same thesis. To represent the structure of such argumentation, which in argument dialectics is called 'conjunction of reasons' (Leal and Marraud 2022, pp. 327-330), I will use the connector 'and.' Thus, the source of the analogy is the following weighing of reasons:

Disconnection means the death of the violinist	But	The abducted has been put in the situation against their will	And	The situation interferes with the economic independence of the abducted	And	The situation constitutes a public humiliation for the abducted
So		So		So		So
The abducted does not have the right to disconnect themselves from the violinist		The abducted has the right to disconnect themselves from the violinist				

And the target of the analogy is the parallel weighing:

Abortion involves the death of the foetus.	But	The woman who is pregnant as a result of rape has been put in the situation against her will.	And	The situation interferes with the economic independence of the woman who is pregnant as a result of rape	And	The situation constitutes a public humiliation for the woman who is pregnant as a result of rape
So		So		So		So
The woman who is pregnant as a result of rape does not have the right to have an abortion		The woman who is pregnant as a result of rape has the right to have an abortion.				

If we unify these diagrams, we have Thomson's argumentation:

Disconnection means the death of the violinist	But	The abducted has been put in the situation against their will.	And	The situation interferes with the economic independence of the abducted	And	The situation constitutes a public humiliation for the abducted
So		So		So		So
The abducted does not have the right to disconnect themselves from the violinist		The abducted has the right to disconnect themselves from the violinist				

So

Abortion involves the death of the foetus	But	The woman who is pregnant as a result of rape has been put in the situation against her will	And	The situation interferes with the economic independence of the woman who is pregnant as a result of rape	And	The situation constitutes a public humiliation for the woman who is pregnant as a result of rape
So		So		So		So
The woman who is pregnant as a result of rape does not have the right to have an abortion		The woman who is pregnant as a result of rape has the right to have an abortion				

As Woods and Hudak (1989) rightly point out, there is no perfect parallelism between source and target since there are considerations relevant to the thesis in the violinist's case that are not present in the rape case. For example, the pregnancy is not indefinite, it does not endanger the locomotion or mobility of the pregnant woman, and it does not involve an invasion of privacy (at least in

the same sense as in the violinist's case). These differences could be used to criticise the argumentation by analogy, but this is not my aim here. I am interested in Woods and Hudak's (1989) interpretation of this example.

First, they do not distinguish between simple argument and complex argumentation, so they reconstruct the violinist's case as an argument with six premises (i.e., the three reasons of my diagram and the three differences I just mentioned). Second, they argue that the logical form of that argument can be found by generalising those six premises (see Woods and Hudak 1989, p. 135). If the argumentation by analogy were correct, the target argument should exhibit the same logical form, which is not the case in Thomson's example. Third, they argue that the logical evaluation of the violinist's case depends on its logical form. That is, they do not consider as relevant to the verdict the reasons that may be put forward against it (i.e., the reason before the 'but' in my diagram). This is not at all surprising if we take into account what we have said about their interpretation of argumentative relations. If we understand these relations in terms of inferences, the logical evaluation of an argument is a procedure by which we determine which inference is the best one available and discard the others. In other words, logical evaluation is conceived of as the activation/deactivation of inferences or, in more complex cases, of chains of inferences. This way of understanding logical evaluation, which is a clear projection of the evaluation procedures of formal logic, is precisely what generates problems when we incorporate the notion of weighing: if we conceive of argumentative relations in terms of inferences, it is not understood in what sense the inferences that we have discarded can be relevant for the final conclusion. If this is our understanding of argumentation in general, and of the arguments compared in an argument by analogy in particular, the distinction between argumentation by parity of reasons and argumentation by parity of weighings that we have drawn in this section is irrelevant because, essentially, the notion of weighing does not fit very well into this scheme. Thus, the absence of the distinction is consistent with the assumptions of Woods and Hudak's (1989) theory that we have seen in previous sections.

7. Conclusions

The thesis I have defended is that John Woods and Brent Hudak's (1989) theory of arguments by analogy, while correct in its meta-argumentative approach, generates problems when we introduce weighing of reasons. I have identified these problems in their interpretation of the argumentative relations upon which analogy operates, that is, the relations between the premise(s) and the conclusion of the source argument and the target argument. Using conditionals, I have distinguished two ways of interpreting these relations: in terms of inferences expressed by the conditional "if it is the case that A, then extract (or you can extract) B" and in terms of reasons expressed by the conditional "if it is the case that A, then you have a consideration that favours B." We have seen that if we take as a hypothesis the first interpretation, accept the meta-argumentative assumptions of Woods and Hudak's (1989) theory, and incorporate weighing of reasons, we encounter situations where, even if we have a good argument by analogy, we cannot draw its conclusion. If we take as a hypothesis the second interpretation, understanding the relation of 'being a reason for' as revocable and weight-sensitive, then we can accommodate the meta-argumentative interpretation and the weighing of reasons without problems: the conclusion of an argument by analogy would be that the target argument puts forward a correct reason—assuming the premises are true or acceptable—but not that we can conclude its thesis. That is, in such an argument, the logical property transferred is correctness (see note 12) not conclusiveness.

This way of understanding argumentative relations allows me to distinguish two varieties of argumentation by analogy: argumentation by parity of reasons and argumentation by parity of weighings. In the former, we rely on a parallelism of argumentative relations (i.e., relations between the premises and the conclusion of source and target arguments) and transfer the logical property of correctness from source to target—assuming the premises are true or acceptable. The scheme proposed has been the following:

C is to D as A is to B:

If A, then B (source)
So
If C, then D (target)

On the other hand, in argumentation by parity of weighings, analogy operates on a parallelism of relations of argumentative relations (i.e., relations between arguments) and transfers the logical property of 'relative strength of reasons.' The scheme is as follows:

A	But	B
So		So
C		Non-C

Reason D is to reason E as reason A is to reason B:

So

D	But	E
So		So
F		Non-F

Woods and Hudak's (1989) theory does not, and cannot, distinguish these varieties of argumentation by analogy for the same reason that it has problems when incorporating weighing of reasons: they understand argumentative relations as inferences. If we conceive of the relation between the premise(s) and the conclusion of an argument in terms of inferences, in the sense defined here, the inferences discarded in the drawing of a conclusion have no relevance to that conclusion. If we add to this the lack of a clear distinction between simple argument and complex argumentation, the result is that there is only one kind of argument by analogy. This is a problem when we look at actual cases of argumentation by analogy as I hope has become clear from the examples presented throughout this paper.

Acknowledgements

References

Alhambra, José. 2021. El argumento por analogía en la teoría de la argumentación. *Quadripartita Ratio* 5(10): 1-20. <http://www.quadripartitaratio.cucsh.udg.mx/index.php/QR/article/view/117/424>.

Álvarez, María. 2017. Reasons for action: Justification, motivation, explanation. *The Stanford encyclopedia of philosophy*, (spring 2017 edition), ed. Edward N. Zalta. URL accessed 18 January 2022: <https://plato.stanford.edu/archives/spr2017/entries/reasons-just-vs-expl/>

Bader, Ralf M. 2016. Conditions, modifiers and holism. In *Weighing reasons*, eds. Errol Lord and Barry Maguire, 27-55. Cambridge: Cambridge University Press.

Dancy, Jonathan. 2004. *Ethics without principles*. Oxford, New York: Clarendon Press, Oxford University Press.

Eemeren, Frans H. van and Rob Grootendorst. 1983. *Speech acts in argumentative discussions: A theoretical model for the analysis of discussions directed towards solving conflicts of opinion*. Dordrecht: Faris Publications.

Gentner, Dedre. 1983. Structure-mapping: A theoretical framework for analogy. *Cognitive Science* 7(2), 155-170.

Gentner, Dedre, and Arthur B. Markman. 1997. Structure mapping in analogy and similarity. *The American Psychologist* 52(1), 45-56.

Holyoak, Keith J. and Paul Thagard. 1995. *Mental leaps. Analogy in creative thought*. Massachusetts: MIT Press.

Horty, John F. 2012. *Reasons as defaults*. Oxford: Oxford University.

Juthe, André. 2019. Reconstructing complex pro/con argumentation. *Argumentation,* 33(3): 413-454.

Lamond, Grant. 2005. Do precedents create rules? *Legal Theory*, 11(01): 1-26.

Leal, Fernando and Hubert Marraud. 2022. *How philosophers argue. An adversarial collaboration on the Russell-Copleston debate*. Switzerland: Springer.

López Villa, Agapito. 2020, June 21. El diablo y las vacunas [The devil and the vaccines]. *Hoy*. URL accessed 15 January 2022: <https://www.hoy.es/extremadura/diablo-vacunas-20200621112832-nt.html>.

Marraud, Hubert. 2013. *¿Es lógic@? Análisis y evaluación de argumentos*. Madrid: Cátedra.

—2019. Holism of reasons and its consequences for argumentation theory. In *Reasons to dissent. Proceedings of the 3rd ECA Conference. Vol. III*, eds. C. Dutilh Novaes, H. Jansen, J. A. van Laar, and B. Verheij, 167-180. London: College Publications

—2021. *En buena lógica. Una introducción a la teoría de la argumentación*. Guadalajara: Universidad de Guadalajara.

Obrecht, Jas. 2018. *Stone free*. North Carolina: The University of North Carolina Press.

Pasquau, Miguel. 2012, May 24. Por las mismas razones [By the same reasons]. *Cuaderno de Notas*. URL accessed 14 January 2022: <https://www.miguelpasquau.es/por-la-misma-razon/>.

Perelman, Chaïm and Lucie Olbrechts-Tyteca. 1971. *The new rhetoric. A treatise on argumentation*. Notre Dame: University of Notre Dame Press.

Pollock, John L. 1987. Defeasible reasoning. *Cognitive Science* 11(0): 481-518.

Scanlon, Thomas M. 2004. Reasons: A puzzling duality? In *Reason and value: Themes from the moral philosophy of Joseph Raz*, eds. R. Jay Wallace, Philip Pettit, Samuel Scheffler and Michael Smith, 231-246. Oxford: Clarendon Press.

Searle, John R. 1975. A taxonomy of illocutionary acts. In *Language, Mind and Knowledge*, ed. K. Gunderson, 344-369. Minneapolis: University of Minnesota Press.

Thomson, Judith J. 1971. A defense of abortion. *Philosophy and Public Affairs* 1(3): 47-66.

Strasser, Christian and G. Aldo Antonelli. 2017. Non-monotonic Logic. In *The Stanford encyclopedia of philosophy* (spring 2017 edition), ed. Edward N. Zalta. URL accessed 10 January 2022:

<https://plato.stanford.edu/archives/spr2017/entries/logic-nonmonotonic/>.

Toulmin, Stephen E. 2003. *The uses of argument*. New York: Cambridge University Press.

Vega Reñón, Luis. 2014. El renacimiento de la teoría de la argumentación. *Revista Iberoamericana de Argumentación* 1(9): 1-41.

Wenzel, Joseph. 2006. Three perspectives on argument. Rhetoric, dialectic, logic. In *Perspectives on argumentation: Essays in honor of Wayne Brockriede*, eds. R. Trapp and J. H. Schuetz, 9–26. New York: Idebate Press.

Woods, John and Brent Hudak. 1989. By parity of reasoning. *Informal Logic* 11(3): 125-139.