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Commentary on “Constructing a *Periodic Table of Arguments*”

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1. Introduction

In contemporary argumentation theory, the classification of arguments has long been an issue of great interest to many scholars, and discussions on this issue have boosted developments in this field. On the one hand, the dissatisfaction with the deduction and induction dichotomy has inspired informal logicians to reflect the inadequacy of formal logic as a theory of argument, and to propose some new typology by exploring some possible Third Type of argument. This endeavor has enriched our argumentation studies, particularly, with a thorough examination on the merits of analogical arguments and conductive arguments. On the other hand, researches on argumentation schemes in last two decades has substantially deepened our understanding of the ways of arguing in real life, and shed new lights on the theory of argument evaluation and fallacies. Moreover, recent studies on argumentation schemes have also established a solid connection between the field of argumentation studies and that of artificial intelligence.

However, argumentation scholars have quite different answers to the most fundamental question in their discussions on the issue of argument classification: *how can arguments be classified?* In current argumentation literature, there are several different theories developed with regard to argument classification, all of which have their own proposal to categorize arguments in distinct ways. Here by this paper, Prof. Jean Wagemans intends to bring forward another theory of argument classification, since he found that “the existing classifications of arguments are unsatisfying in a number of ways,” and it especially “poses a problem for researchers who want to use a classification of schemes as a starting point for their research” (Wagemans, p. 1). And this new way of classifying arguments is believed to be desirable, because it uses more solid distinctions as ordering principles to form a more satisfactory theory, and it could likewise characterize the existing dialectical and rhetorical accounts of arguments, fallacies and means of persuasion in an adequate way.

2. The periodic table of arguments

In the beginning of this paper, in order to show the problematic aspects of the existing classifications of arguments, Wagemans gives an analysis on the New-Dialectical approach and the Pragma-Dialectical approach to argument classifications (a more detailed account could be found in Hitchcock & Wagemans 2011). He found that these two theories were unsatisfactory from both theoretical and practical point of views, and his diagnosis is that there is an “absence or inconsistent application of an ordering principle for classifying arguments” (Wagemans, p. 3). Therefore, he contends that a classification of arguments should be developed “based on a set of formal ordering principles” (p. 3), if it is aiming to avoid the similar problems encountered by the New Dialectics and the Pragma-Dialectics. Accordingly, Wagemans proposed a new approach for classifying arguments which he called *The Periodic Table of Arguments*. The

theoretical framework of this table consists of three fundamental distinctions on the types of argument, each of which has used some linguistic or pragmatic insights as a formal ordering principle for classifying arguments.

The first distinction is made between *subject* arguments and *predicate* arguments. Based on the assumption that “the propositional content of standpoints and arguments can be expressed in the form of a categorical proposition...[which] consists of two elements, namely that of which something is said -the ‘subject’- and that what is said about the subject -the ‘predicate’” (p. 4), arguments are to be divided into four types from a formal point of view, by checking whether the subjects and the predicates in the categorical propositions expressing the standpoint and the argument are identical or not. However, since the increasing of acceptability of the standpoint “can only be accomplished if the propositional content of the argument has at least one element in common with that of the standpoint without coinciding with it completely” (p. 5), then only two types of argument can be distinguished: (1) predicate argument, which takes the form of “S is P, because S is Q,” and (2) subject argument, which takes the form of “S is P, because T is P.” The former tries to increase the acceptability of the standpoint by making use of a relationship between the predicates, while the latter tries to do that by making use of a relationship between the subjects.

The second distinction is made between *first-order arguments* and *second-order arguments*. This distinction is aiming to reflect the complexity of some arguments (such as argument from authority) in which a categorical proposition as a whole should be reconstructed as the subject of the standpoint. In particular, if the predicate of the argument does not relate directly to the predicate of the original standpoint defended by the speaker, it should be distinguished as a second-order argument; otherwise it is simply a first-order argument. In abstract terms, a second-order argument has the form of “(S is P) is Q, because (S is P) is R” (p. 6), in which a categorical proposition “S is P” as a whole is the subject of the standpoint, and the predicate of the argument (R) does not relate directly to the predicate of the originally defended standpoint (P).

The third distinction is borrowed from debate theory, which is made between three types of proposition: proposition of policy (P), proposition of value (V), and proposition of fact (F). For each of these types, the proposition can also be formulated into a categorical form with a subject and a predicate: for proposition of policy (P), its subject is “act A”, and its predicate is “should be carried out”; for proposition of value (V), its subject is “entity E (thing, event, person, act)”, and its predicate is “is judged as J”; for proposition of fact (F), its subject is “entity E (thing, event, person, act)”, and its predicate is “has property P”.

When all three distinctions are taken together, according to Wagemans, it constitutes a theoretical framework for argument characterization. “Within this framework, types of argument are described as (1) subject arguments or predicate arguments; (2) first-order or second-order arguments; and (3) instantiating the combination of propositions PP, PV, PF, VP, VV, VF, FP, FV, or FF” (p. 8). As is shown in this paper, a number of well-known argument types and fallacies can be reconstructed by characterizing them along the lines of these distinctions. For instance, “argument from sign” can be characterized as a first-order predicate argument instantiating the combination FF, “pragmatic argumentation” can be characterized as a first-order predicate argument instantiating the combination PF, and “the *argumentum ad hominem*” can be characterized as a second-order predicate argument instantiating the combination PV (pp. 8-9).

On this basis, then, it is possible to construct the *Periodic Table of Arguments* as a new approach to classifying arguments. This Periodic Table of Arguments would provide us with a

unified classification that can accommodate in principle all different types of arguments in the literature. I myself sometimes also found it annoying to have different accounts of argument typology, especially when the same argument might be possibly categorized into different types within different classifications, and is then given dissimilar interpretations about its justificatory mechanism. Therefore, I am very happy to see this innovation of a *Periodic Table of Arguments* that aims to present a tabular arrangement of all kinds of arguments, ordered by their specific ways of increasing the acceptability of the standpoint (subject and predicate argument), the complexity of arguments (first-order and second-order argument), and the types of proposition involved (combinations by P, V, F). This table represents a comprehensive argument classification, with only three very simple ordering principles. I really look forward to seeing the final version of the table.

However, I also found some parts of this proposal might still leave some room for doubt. Here I would like to raise some of my concerns, which are particularly pertinent to the distinction between *subject* and *predicate* argument, and the identification of specific combination of types of propositions in argument.

3. Categorical proposition from a logical point of view

As we have seen, in making the distinction between *subject* and *predicate* arguments, it is taken for granted that the propositional contents of the argument and the standpoint are simply two categorical propositions consisting of, respectively, a subject and a predicate. Then, only two types of arguments (*subject* and *predicate* arguments) are distinguished because the acceptability of the standpoint can be established only if the categorical proposition of the argument has exactly the same subject, or the same predicate, with that of the standpoint. Here it is easy to see that Wagemans has based his analysis upon a grammatical understanding of categorical proposition: a categorical proposition consists of two elements: the “subject” (that of which something is said) and the “predicate” (what is said about the subject). However, interpreting categorical proposition in this way might have just oversimplified the structure of categorical proposition, and therefore veiled some complexity in our ways of arguing for a standpoint.

From a logical point of view, a categorical proposition joins together exactly two categorical terms and asserts that some relationship holds between the classes they designate. A categorical proposition is *affirmative* if it states that the class designated by its subject term is included, either as a whole or only in part, within the class designated by its predicate term, and it is *negative* if it wholly or partially excludes members of the subject class from the predicate class. Moreover, a categorical proposition is *universal* if the asserted inclusion or exclusion holds for every member of the class designated by its subject term, and it is *particular* if it merely asserts that the relationship holds for some members of the subject class. Therefore, four types of categorical proposition could be identified: “All S are P,” “No S is P,” “Some S are P,” and “Some S are not P.” If we take this logical, rather than the grammatical, interpretation of categorical propositions as the starting point, then the distinction between *subject* and *predicate* argument would appear to be unwarranted.

As is shown by the Categorical Logic developed by Aristotle and the medieval logicians, there are so many different “methods of proof” on the basis of categorical propositions, for example, the Square of Opposition, Conversion, and Syllogism. Therefore, when Wagemans tries to divide arguments into different types by checking only the identity of subjects and

predicates between the categorical propositions expressing the standpoint and the argument, he might have simplified the matter and overlooked some other possible ways of arguing.

For the first, it seems to me quite strange that Wagemans has taken every argument to be composed of only two propositions: a standpoint and one argument. It is so common in reality that an argument can have more than one premise, all of which need to hang together in order to establish the conclusion. Therefore, I am wondering how Wagemans could accommodate in his proposal a syllogistic argument such as “All men are mortal, Socrates is a man, therefore Socrates is mortal,” or a linked argument such as “Capital punishment is desirable, because it is a deterrent to crime, and a deterrent to crime is a good thing.”

For the second, the distinction between *subject* and *predicate* argument is made because Wagemans holds that only arguments in the forms of “S is P, because S is Q” and “S is P, because T is P” are possible when considering the increasing of acceptability of the standpoint. However, this might have failed to capture the variety of ways of increasing the acceptability of a standpoint. For example, we could argue in the forms of “Some S are P, because all S are P,” “Some S are P, because all P are S,” or “No S is P, because no P is S.” All of them are increasing the acceptability of the standpoint not by sharing exactly one element in their subjects and predicates, but by employing a relationship between the two types of quantifier.

Moreover, it also seems to me a little odd that arguments in the form of “S is P, because T is Q” are judged by Wagemans as incapable of leading to increasing the acceptability of the standpoint, simply because of a lack of common element in their subjects and predicates. More often than not, the probative relevance between a premise and the conclusion does not consist in having a common element, but depend on some more information that needs to be provided as another premise. For example, an argument like “Abortion (S) should be prohibited (P), because taking the life of an innocent person (T) is totally wrong (Q)” does make sense to many of us, because we could easily supplement the missing premises that establish the connection between these two propositions. This again returns to my former doubt concerning Wagemans’ preference to take every argument as being composed of only two propositions.

4. The combination of three types of proposition in argument

My last concern is regarding to the identification of combination of types of proposition in an argument. Given that all propositions are divided into three types, P, V, F, then every argument would of course instantiate a combination of propositions among PP, PV, PF, VP, VV, VF, FP, FV, or FF. But Wagemans also contends that “In principle, every type of argument distinguished in the literature can be characterized by identifying *the specific* combination of propositions that is instantiated” (p. 8, italics mine). As I understand his proposal, every type of argument needs to have a specific combination of propositions in order to be incorporated into the Periodic Table of Arguments at a *unique* place. As Wagemans has tried to show in this paper, a number of commonly known argumentation schemes have its own combination of propositions, and are located somewhere in the table.

However, I suspect that it is quite possible that some argument schemes could instantiate more than one combination of types of proposition. For instance, in Wagemans’ analysis, “pragmatic argumentation” has instantiated the combination PF:

- 1 Act A should be carried out (P)
- 1.1 Act A leads to result R (F)

But it seems to me that a “pragmatic argumentation” could also instantiate the combination PV, in the following way:

- 1 Act A should not be carried out (P)
- 1.1 The result R that Act A will lead to is terrible (V)

For another example, “argument from authority”, according to Wagemans, has instantiated the combination VF:

- 1 (The economy will grow in 2016) is true
- 1.1 (The economy will grow in 2016) is put forward by the FED

But I believe it could also instantiate the combination PF, as in an argument like “You should take this medicine, because it is prescribed by your doctor”:

- 1 (The act of taking this medicine) should be carried out
- 1.1 (The act of taking this medicine) is prescribed by your doctor

This complexity, if it is real, could cause some difficulty for Wagemans’ ambition to incorporate the existing argument typology into his framework. If an argumentation scheme could instantiate more than one combination of types of proposition, then it cannot be located in the Periodic Table of Arguments at a unique place. Consequently, we might either need to reconsider the identification of combination of types of proposition as determinant factor for recognizing argument types, or we will have to discard some types of argument that have already been commonly recognized in the literature.

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