Buletinul Ştiinţific al Universităţii Politehnica Timişoara
Seria Limbi moderne

Scientific Bulletin of the Politehnica University of Timişoara
Transactions on Modern Languages

Vol. 24, Issue 1 / 2025

Analysis and Evaluation of Toulmin's Model of Practical Argumentation

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Abstract: Our paper aims with a discourse investigation tool: the model of argumentation proposed by the British philosopher Stephen Toulmin. Knowing the context of the emergence, the theoretical stakes, the analysis of the components and the evaluation of the effectiveness are necessary for a better understanding in the argumentative rhetorical analysis. On the one hand, we present a description of the six components: claim, data, warrant, backing, qualifier and rebuttal useful in the critical analysis of reasonings. On the other hand, we identify the presuppositions and provide a critical analysis of the advantages and limitations of the model in the research of practical argumentation in fields such as rhetoric, communication or critical thinking.

Keywords: model of argumentation, theory of argumentation, argumentative discourse, practical argumentation, argumentative analysis, justification.

1. Argumentative Discourse

The argumentative discourse can be easily identified and interpreted through the component elements and indicators. The argumentative discourse either in oral or written form is structured in a set of sentences or statements. "The argumentative text" has two main elements: the thesis or conclusion that the speaker wants to support (or reject), and the premises or grounds offered for support (or rejection). In discursive practice, the argumentative text is not exclusively made up of argumentative parts, but it is also composed of non-argumentative parts, such as storytelling, description, narrative, etc. However, we can easily identify it because it signals the logical links between statements. Argumentative indicators or

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argumentative markers are the signs that logically structure the argumentative discourse.

According to their role, argumentative indicators can be classified as (Cazacu, 2007, 47-50): 1) conclusion indicators, such as so, therefore, consequently, it follows that, thus, thereby, then, which implies that, which proves that, from where we can deduce that, etc. They all emphasize the idea that the following statement introduces a conclusion or a thesis; 2) premise indicators, such as because, as, since, whereas, in view of, as shown by, as demonstrated by, etc. All of them clearly show that the following statement introduces a ground or a premise. Apart from these distinctions, for a more accurate characterization of the argumentative discourse, it is necessary to make *a few* observations: a) not in all argumentative texts the claim indicators or premises are explicit or visible. Therefore, depending on the content and the order of the disposition, the argumentative analysis aims to make explicit links that logically structure the argumentative text; b) some words or expressions (for example "because", "as" and "so") have some other uses, not only to introduce a statement with the status of premise or claim. Consequently, in practice we must be careful whether these words really introduce a premise, a conclusion or they are only indicators of a causal relationship between two statements or of a relationship between the act and its reasons; c) argumentative indicators may also express the force or the way attributed to the logical relationship between statements, as in the case of the expressions "it necessarily results", "it follows absolutely conclusively" or "it seems to result", "it is possible to conclude", "it would be hazardous to conclude"; d) some words or expressions do not have a strict role of argumentative indicators, but they may indicate some logical relationships. The phrase "if…, then" shows the logical connection, called implication, between two statements. The phrase "or... or" shows the logical connection, called disjunction, between two statements. Similarly, the word "but" when it has an argumentative function shows the opposition between one or more statements regarding the content.

2. Toulmin's Analytical Model of Argumentation

The modern theory of argumentation dates back to 1958, when the book *The Uses of Argument* was originally published, and a revised edition appeared in 2003. Toulmin's approach to argumentation assumes that analytic or theoretical arguments are irrelevant or almost irrelevant to everyday practice. Thus, syllogism as a method of reasoning based on two premises and the corresponding logical analysis are sterile for supporting a real conclusion. Therefore, Toulmin proposes other names for the elements of argumentation to emphasize their role in practical argumentation.

Before Toulmin's concept is introduced, a few clarifications regarding his theoretical standpoint are necessary. Toulmin considered that formal logic or Aristotelian logic cannot clarify the problems concerning the validity of argumentation and the contexts of argumentation, which are too complex to be analysed with the tools of classical logic. Specifically, Toulmin attacks classical logic based on at least two major objections. Firstly, the deductive syllogism (which can

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take the form: (PM) Where's smoke, there's fire. (Pm) I see the smoke. (C) So, something is burning.) is not a model of concrete rationality. The major premise (PM) has at least one exception, a fog machine that produces the smoke, and the minor premise (Pm) provides only one proof. For that reason, the two premises require to be supported, not merely asserted and taken as objectives. Secondly, the conclusion (C) of a warrant or argument is a starting point in practice. Therefore, when we argue in our daily life, the process is the reverse of the one suggested by classical or formal logic: the claim is the first statement we formulate and support. Consequently, the issue of argumentation is circumscribed to the applied logic, not to the formal logic, and this can be visible through the concept of the "argumentative field". While the argumentation is generally an abstraction used only by theorists, it is usually "contextual" and used in various argumentative "fields", such as legal, political, scientific, etc. The argumentative field determines the logical type of argumentation, and "what we find in reality constitutes the contextual argumentation" (Sălăvăstru, 2003, 67). However, we can consider argumentation used in a given field as argumentation of the same logical type and subject to standards of evaluation common to the field of knowledge.

Stephen Toulmin (2003, 7-8) begins his investigation by drawing a parallel between logic with its procedures of rational evaluation and jurisprudence with its legal procedures. This analogy is powerful insofar as both are concerned with the critical function of reason. Conclusions can be compared with each other; confirmations can be made in support of them. Thus, a strong argument, a well-founded support or a justified conclusion is the one that stands up to criticism or the "Court of Reason". Logic as general jurisprudence provides the testing of ideas in the context of practical argumentation. The main function of arguments is to justify assertions. This practical model of justification is opposed to ideal argumentation, dominated by the idea of logical form.

The so-called "Toulmin's model" is described in the third essay of the book under the title "The Layout of Arguments" where the British philosopher describes the fundamental elements and the scheme of practical argumentation (Toulmin, 2003, 87-134). The analytical model of the syllogism indicates the logical structure and the basic elements of argumentation. Briefly, the model has the following structure: D → (so) C; (because) W. In Toulmin's original example: "Harry is a British citizen" (C), "Harry was born in Bermuda" (D), and "A man born in Bermuda should be a British citizen" (W). Where symbols designate: (C) conclusion, (D) data and (W) warrant.

Conclusion (C) or thesis, that is, the statement to be supported or proved. The conclusion can be proved as a true one if both the grounds and the justification have been proved. Thus, without foundation we cannot consider a statement as the conclusion of an argument, but only a simple belief, opinion or conviction. The thesis of the initial argument is good or valuable if it is supported by relevant and sufficient facts, evidence or justifications. Similarly, a challenge to the thesis in an argumentative and persuasive manner involves the production of evidence.

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Data (D), ground or grounds, i.e. the particular sentences, facts, evidence or information which have the status of means of grounding. More often the ground or grounds are explicit premises, i.e. they are explicitly present in the argumentation. The foundational datum of argumentation provides reasons (in the form of information, facts, evidence, actions, or states) in support of the thesis of the argumentation. Without providing grounds or finding facts to support the conclusion there is no argumentation, there are only unfounded beliefs and opinions. To speak in argumentative terms that every belief, opinion or simple assertion must be substantiated (by justifications, facts, data, or evidence), and according to these the assertion is true, probable, false or impossible. In practice one can say both "C, because D" and "D, so C". If, after the appearance of the founding reason (D) someone questions or challenges the conclusion (C) an additional element of the argument is needed.

Warrent (W), justification or foundation, the guarantee of foundation, i.e. the general sentence, principle or law. In practice, in most cases justification is a premise that is not explicitly mentioned. It is therefore wrongly assumed that there is a direct inference from the ground to the conclusion. The warrant differs from conclusion and grounds because it shows the connection or inference established between them. And this "leap" requires the appeal to sentences or authorities of a different type, such as rules, principles or standards of inference. Establishing the guarantor depends on the different argumentative fields of science, ethics, law, art criticism, or judgment of a person's character. Therefore, the Court of Reason is not limited to analytic arguments and the eternal truths of mathematics.

The invariants or the three component elements of the logical structure of argumentation represent an explanatory paradigm of argumentation and are referred to in the literature as "Toulmin's argumentation model". As a general form of analytical arguments, we can write "D; W; so, C". With the help of this model we can define argumentation as a structuring relation in the direction (the arrow indicates the sign of grounding): warrant → data → conclusion: "the explicit appeal in this argument goes directly back from the claim to the data relied on as foundation: the warrant is, in a sense, incidental and explanatory, its task being simply to register explicitly the legitimacy of the step involved and to refer it back to the larger class of steps whose legitimacy is being presupposed" (Toulmin, 2003, 92). Symbolically argumentation can be understood as: W → D → C.

To conclude, the analytical model of the syllogism makes us understand that an argumentation is of an analytical type when the argumentation proceeds with necessity. In other words, the analytical reasoning offers a guarantee similar to a demonstration or an explained syllogism. For example: All citizens of Romania have the right to participate in the election of the country's president (major premise); Popescu is a citizen of Romania (minor premise); So, Popescu has the right to participate in the presidential election (conclusion).

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3. The Substantial Model of Toulmin's Argumentation

Briefly, the substantial or material model of the argumentation has the following form: D → (probably) Q → (so) C; (because) W (unless) R; (on the based on of) B. In Toulmin's example, Q means "probably", B indicates "Under the following statutory provisions and other legal devices" and E stands for "Both his parents are aliens" or "He was naturalized American". Compared to the three previous elements this new model nuances things and adds three components: the qualifier (Q), additional backing (B) and rebuttal (R).

The qualifier (Q) is generally expressed as "probably". It may be encountered some other forms such as "almost certain", "in 99% of cases", "in most cases", etc. Modal operators are characterized by the strength or force and criterion of use, practice in different contexts. The degrees of strength of the expression show that the conclusion is possible, probable, or certain, and consequently the argument is weak, strong or conclusive. The quality of the evidence or argument determines the speaker to choose one or the other of the modal operators he uses in his statements. Thus, the speaker's authority is more or less trustworthy to the audience depending on the addition of certain modal operators to the conclusions or assertions. If Q is in the realm of the possible, the grounding relation presupposes another additional element.

Additional backings (B) support the general statement, justifying the argument and they are generally expressed as "on the basis of" or "in accordance with", "given that", etc. If someone challenges the application of warrant (W) or norm, then one must be shown the factual, conventional or contextual backing (B) that enriches the argument. The authority's backings are those that support the justification against some possible criticism. They depend on specific argumentative fields. Thus, justification is supported or grounded by an additional backing, which often remains implicit in the argumentation; it only becomes explicit when the justification is challenged by criticism.

Rebuttal or reservation (R) represents exceptional conditions, which are generally expressed by some expressions "unless..." or "provided, if not..." etc. If the warrant provides the necessary transition from the ground to the thesis, then there are no exceptions. On the other hand, if the transition is possible or probable, the rebuttal conditions must appear in the argument structure. As a parallel to the scientific method, by R, some possibility is opened for tests to disprove the hypothesis or thesis of the research.

If we take the sentence "Petersen is almost certainly not Catholic, since he is Swedish, and about Swedes it is almost always certain that they are not Catholic", we can isolate the invariants as follows: C = "Petersen is not Catholic"; D = "He is Swedish"; W = "About Swedes it is almost always certain that they are not Catholic"; Q = "almost certainly"; B = "In Sweden, Catholics account for only 2%"; R = "Petersen is the son of a Catholic priest"; G = "In Sweden, Catholics represent only 2 %"; E = "Petersen is the son of a Catholic priest".

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We consider an argumentation to be of an analytic type only when the additional backing of the justification already contains (explicitly or implicitly) the information in the conclusion. In contrast, an argumentation is of a substantial type when the additional warrant of justification does not (explicitly or implicitly) contain the information in the conclusion. In the case of analytical argumentation, the argumentation proceeds with necessity, as in a demonstration while for substantive argumentation, which is probable, its purpose is not only to persuade, but also to produce knowledge. Critical thinking and rhetoric are concerned with the class of possible arguments, which encompasses the wide range between the necessary and impossible argument classes. The argumentation is a relation structured in such a way that the foundation has the direction: backing (B) → warrant (W) → grounds (D) → conclusion (C). Argumentative methods are not limited to innovations in logic, but they should include innovations in science, morality, law or politics, being not only more empirical but also more contextual or historical depending on the different fields of justification.

4. Evaluation of the Explanatory Model

The analytical explanatory paradigm on argumentation aims to be a methodological tool for analysing argumentative practice. Firstly, the explanatory model of argumentation proposed by Toulmin can be evaluated from the perspective of the operational and instrumental possibilities. The indisputable merit of the explanatory model is that it presents in a colloquial language any form of argumentation as a justification relation between the three main elements, i.e. between the thesis of the argument (C), the ground of the argument (D) and the foundation of the ground of the argumentation (W).

Toulmin's model of practical argumentation involves six interconnected elements. The first three are the basic elements: the conclusion (it is the answer to the question "Where are we going?"), the grounds (provide the answer to the question, "What do we have to go on?") and the justification (answers the question "How do you justify the move from these grounds to that claim?" or "What road should be taken?"). The following three components complete the model and emphasize the way in which the contextualization of the practical (substantial) arguments as opposed to the theoretical (analytic) arguments: backing (answers the question, "Why is this road a good one?"), modal qualifiers (answer the question, "How certain are we of arriving at our destination?"), and the rebuttal (answers the question, "Under what circumstances are we unable to take this trip?").

Later, the six-element model was applied to the casuistry (Jonsen and Toulmin, 1988), and the elements were reduced to four: "grounds apply to the general warrant as well as to the claim, thus eliminating the backing and the modality, or the degree of certainty, has been incorporated into the claim with the phrase presumably so" (Foss, Foss, and Trapp, 2014, 136). Therefore, by the phrase "Toulmin's model of practical argumentation" we refer to the standards and values of practical reasoning (for simplification, called the "substantial model"). Toulmin proposed the model as a

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variant that would oppose the abstract and formal criteria of mathematical logic and the twentieth-century epistemology, so that "its method was to be comparative, empirical and historical" (Hitchcock and Verheij, 2006, 1).

The model was introduced in the United States in the second half of the twentieth century by Wayne Brockriede and Douglas Ehninger as a useful tool for communication, rhetoric, and argumentation specialists as rhetorical arguments could be analysed and evaluated (Foss, Foss, and Trapp, 2014, 117). Thus, Toulmin (1990, 187) recognizes the revival of rhetorical studies due to "American colleges and universities have departments devoted to 'communication studies,' or 'speech'. These departments are responsible for college debating teams, but their faculty members do serious research on different aspects of oral communication and argumentation". In other words, the model did not become a school in philosophy, but it was received as a "theory of communication" (Toulmin, 2006, 26) applied in studies of practical argumentation and rhetoric by the schools of Speech, English, and Law.

Thus, it was used not only by those interested in argumentation or debate, but also by those who teach argumentative speeches, persuasion, or attitude change (Foss, Foss, and Trapp, 2014, 140-141). Toulmin's model of argumentation has become very popular for at least two reasons. Firstly, it allows each person to isolate and discuss the components of everyday argumentation. Secondly, the model coupled, with the analysis of qualifiers and argumentation fields, provides an effective way of evaluating everyday argumentation.

In our interpretation, the simplicity and the application in terms of Q and R in the case of micro-arguments (Toulmin, 2003, 131) are the main merits of the method. On the one hand, the modal operator "possible/probable" placed in front of a conclusion indicates that this is part of an inductive, causal argument by analogy or an inference of the best explanation. In other words, qualifier Q indicates a certain uncertainty that governs not only everyday argumentation, but also scientific discourse paradigmatically based on the inductive argumentation. On the other hand, we interpret the rebuttal R critical-rhetorically, in the sense of the "dialogico-rhetorical" approach: "Lending the voice of the other an ear is acknowledging the substantial function of counter considerations" (Slob, 2006, 180). Thereby, the argumentation as a space of the possible, between the extremes of certainty and the impossible, emphasizes through R the role of a sceptic, an opponent with whom we dialogue, or a critical test in science. In this logico-dialectical interpretation R can be both the voice of the "devil's advocate" and the voice of the other who deserves to be heard in order to avoid dogmatism.

Over the years, several criticisms have been made of Toulmin's model of argumentation. Without claiming to be exclusive, we would like to note some of the difficulties this model faces. The objections are related to (Sălăvăstru, 2003, 79-84; Hitchcock, David and Verheij, Bart, 2006; Foss, Foss, and Trapp, 2014, 139-143). The functional ambiguity of the elements of the model: the function of each argument is not determined clearly enough in the organization of the layout which leads to confusion between warrants and backings or between justification and ground; the

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practical irrelevance of the last three elements of the substantial model; it concerns more micro-argumentation or minimal argumentation than macro-argumentation or complex argumentation so that, for the second case, its applicability is more difficult. The descriptive nature of the model: being a descriptive (not procedural) model, it follows that the analysis or criticism of the argumentation begins when the argumentation has ended, not in the actual time of its use. However, argumentative fields can influence a stronger argumentative force (as in science or law) or a weaker argumentative force (as in ethics or aesthetics) in various contexts. Difficulties of practical application in everyday speech: on the one hand, the impossibility of always clearly distinguishing between ground and warrant; and on the other hand, the additional backing (B) is conventional, context-dependent, and changes over time. Therefore, if the argumentation depends on the argumentative field, then this model cannot explain all argumentative fields as it claims. Moreover, if the ground (B) is problematic, the very element that ensures the distinction between analytic (theoretical) arguments and substantial (material) arguments, between logic that concerns what ought to be and argumentation as an approach oriented towards what is, collapses.

Scanning, standardizing, and diagramming are the three basic tools for breaking down, analysing, and evaluating arguments. Toulmin's model is an alternative to standardizing argumentation. Its basic elements lead to a better understanding and evaluation of the rhetorical arguments we hear or read. In addition, based on the structure, the missing elements of argumentation can be found to understand someone's argument based on a few rules: a) put on only statements that seem to be part of the argument; b) attempt to interpret the argument in its strongest form; and c) try to keep a balance of the text in supplying assumptions or missing reasons (Herrick, 2004, 43). For the disciplines of critical thinking, communication, or rhetoric, the basic seven-step format (Tittle, 2011, 17) can represent a valuable pedagogical and methodological alternative for the critical analysis of any type of argumentative approach.

5. Conclusions

Stephan Toulmin's book *The Uses of Argument* focused on the concept of "argumentation" and succeeded in reorienting not only rhetoric, but also logic towards criteria for validating reasoning recognized in practice, that is towards what was later to be called informal logic or critical thinking.

As it has been described in the paper, Toulmin's main contribution to the field of rhetoric is his classification of the two types of arguments. The philosopher distinguishes between what he calls analytic or theoretical arguments and substantial or practical arguments. The former are evaluated by form, and the latter by content. A substantial argument involves an inferential leap from some facts or evidence to a probable conclusion. In contrast, the conclusion of an analytical argument does not require such a leap because the conclusion does not go further than the information contained in the premises of the argument. Thus, analytical arguments are employed

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by individuals who rely on principles that remain unchanged and universal. On the other hand, those who use substantial arguments, ground their claims in the context of a particular situation, rather than in abstract principles.

According to the model, the argumentation is a relationship between six component elements: claim (C), data (D), warrant (W), backing (B), qualifier (Q) and rebuttal (R). The direction that structures the meaning of the grounding is the following: backing (B) → warrant (W) → data (D) → claim (C). Several legitimate objections can be made to the explanatory model: the ambiguity of the component elements, the descriptive nature or the difficulties of practical application in everyday discourse. Nevertheless, for disciplines such as communication, rhetoric or critical thinking, Toulmin's method remains a valuable methodological tool for analysing argumentative practice. In addition, identifying argumentative statements in the context of justification allows an understanding of the connections between components by referring to qualifiers, conclusion indicators and premises. Also, the complexity of the argumentative process is emphasized not only by the interrelation of the explicit elements (Q, C, D), but especially of the implicit ones (R, W, B), which must be formulated and highlighted for a better understanding of the reasoning. In our critical-rhetorical interpretation, the role of rebuttal (R) is significant insofar as it ensures through counter considerations the role of a sceptic, of an opponent with whom we dialogue imaginary or real in a debate.

The analysis of practical argumentation is intended to be an epistemological alternative to syllogistic or logical analysis, which can bring the philosophical approach closer to the analysis of argumentation (Toulmin, 2006, 29). As an explanatory paradigm of an analytical type on argumentation, the model is more valuable for use in the case of inductive arguments, through analogies or abduction that reach probable conclusions. Hence, the increased interest of researchers in the field of rhetoric or communication studies in a method of analysing practical, personal arguments. In opposition to theoretical, impersonal arguments and *a priori* standards, *a posteriori* inductive-critical procedures offer a methodological tool for analysing verbal statements and everyday arguments in a certain historical-cultural context.

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