The Role of Argumentation Schemes in Writing Argumentative Texts

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RESUMEN

El interés por comprender el papel que desempeñan los esquemas argumentativos en la práctica de la argumentación está aumentando en campos diversos como, por ejemplo, en entornos de aprendizaje o en sistemas de programación para la cooperación entre varios agentes en Inteligencia Artificial. En este trabajo analizamos el papel de los esquemas argumentativos y su interacción con otros aspectos del acto argumentativo en el marco de una estrategia de resolución de problemas que incluye módulos relativos al conocimiento y organización de la información sobre el tema de discusión, la motivación para participar en la tarea propuesta, la adaptación al auditorio y el uso del lenguaje. Nos centraremos principalmente en la argumentación escrita ya que, en nuestra opinión, el papel y la importancia de los elementos citados varían en función de su uso en discusiones orales o en textos argumentativos.

PALABRAS CLAVE: esquema argumentativo, acto argumentativo, argumentación escrita, educación

ABSTRACT

The interest in understanding the practical role that argumentative schemes play in arguing is increasing in different settings, for instance, in educational contexts and in cooperative interactions between multiple agents in Artificial Intelligence settings. We analyze the role of argumentation schemes in the act of arguing and their interaction with other aspects of argument production. This analysis is carried out in a problem-solving strategy framework, which includes different modules that differ depending on the knowledge held by the arguer and the organization of the information concerned with the issue, the motivation to participate in the task, the adaptation to the addressee and the argumentative context, as well as on the use of language. We will focus on written argumentation given that, in our opinion, the role and importance of the above-mentioned elements differ between their use in oral discussions and in written argumentative texts.

KEYWORDS: argumentation scheme, act of arguing, written argumentation, pedagogy

1. INTRODUCTION

A look at the literature should be sufficient to clarify that argumentation is a very complex phenomenon with many aspects and manifestations, and that many of the divergences between the different theoretical approaches have their source in this complexity.

Although many authors define argumentation as an activity, most of the work in the field is devoted to the analysis and evaluation of argumentations, that is, to review and assess argumentative products. We should pay more attention to the act of arguing because reconstruction of the reasoning carried out in the practice of argumentation, although helpful to assess it as a product, does not generally include all the aspects that are to be taken into account when we actually argue.

2. ARGUING AND ANALYZING ARGUMENTATIONS

Actual acts of arguing differ from the way normative theories explain them in many aspects; for example, «resolution, when it occurs at all, is rarely if ever absolute» (Jackson, 2008: 217). In negotiations in particular, but also in other kinds of dialog, both parts may reach an agreement that they might consider acceptable even if they maintain their initials points of view. Even in more knowledge-related environments, such as scientific discovery, the selection of the most promising path for an investigation, for instance, can be provisional, with the parts maintaining their opposite views in the meantime.

In real argumentations, uncertainty is the rule rather than the exception; therefore, the recourse to inductive inferences and the use of heuristics, best explanations, analogies, and other resources is necessary and frequent. Reconstruction of the argumentations as deductive is helpful to assess them, but it is difficult to accept as a realistic descriptive form of ordinary argumentations.

What can be an important step for the analysis and the evaluation of the product of an argumentation may be unconscious and fully implicit in the act of arguing because it is the outcome of an "intuitive" kind of inference that works well in familiar cognitive settings. These kinds of inference are different from the "reflective" inferences that deal with unfamiliar or more complex problems. Both terms are suggested by Mercier & Sperber (2011) as an attempt to clarify the dual system view of reasoning proposed by several researchers in the field of psychology (Evans, 2003). This theory

distinguishes two systems of reasoning: system 1 processes are taken as automatic, mostly unconscious and heuristic; they work efficiently in ordinary circumstances but they are inappropriate to deal with novelty or complexity; system 2 cognitive processes are slower and require more effort, but they are more reliable. Evaluation of the argumentation helps to trigger this kind of conscious process, while in oral discussions system 1 processes are likely to play a more important role.

It is also important to consider actively the particular controversial environments that give rise to different kinds of argumentative dialog. Each type of argumentative dialog calls for different requirements and dialectical moves. Some of these moves would be unacceptable or even fallacious in one type of dialog, but acceptable in another context (Walton, 1989; Walton, Reed and Macagno, 2008). Even in scientific practice, in which we work under high logical standards and methodological constraints, we find examples of the powerful influence of contextual factors. The requirements for justification of the same statement may be quite different when we consider it as a valuable hypothesis or as a scientific conclusion.

There are also noticeable differences in everyday argumentations due to epistemological attitudes and motivations. For example, Schwarz and Glassner (2003) prove that students in ordinary contexts of argumentation do have better dialectical skills than the products they achieve; the contrary happens in scientific domains:

> …in everyday issues we are generally highly skilful in challenging, counterchallenging, justifying or agreeing during conversation but the arguments we hold are mediocre according to analytical criteria…We know "to move forward" but we don't know very well "where to go", … In contrast, in scientific domains we are used to accept well-made arguments, but generally do not use them in further activities to convince, challenge or justify our view points. We "see the point" but "cannot move forward";" (Schwarz and Glassner, 2003: 232).

Moreover, important differences can be found between oral and written argumentations. As Johnstone (2008) states, oral discourse takes place in real time and involves relatively little planning. Therefore, arguers tend to rely on the immediate context, rather than on syntax, to express their ideas: the statements are generally shorter and the discourse is less compact. Repetition is necessary to help the addressee keep in mind new ideas, but also, we have immediate feedback from the opponent that helps us to find the path to retrieve the necessary information and also to decide the next move. It is almost always possible to give some kind of answer to the objections that the opponent raises, by weakening, repairing, or negotiating our point to accommodate the challenges, to facilitate communication, and to build consensus. Finally, our performance has to take into account both the objections that shift the

burden of proof back and forth between the two parts in the dialog and the turns of the conversation. In written argumentation, the opponent is not present and the abstraction required to represent her makes articulation of arguments more difficult. The physical absence of the audience is one of the most salient characteristics of written argumentations (Bereiter and Scardamalia, 1987; Kellogg, 1994). Writing arguments is a difficult cognitive activity appearing many years after children are able to defend their own points of view in oral discussions (Golder and Coirier, 1994; Golder and Puit, 1999). We need to use more stylistic resources to make our point because there is no access to non-verbal communication; finally, the ordering and linearization of the text has to make sense.

These different factors interact among themselves in different ways and also with other elements of the social context, such as the status of the participants and their interest in maintaining the quality of the relationship between the interlocutors. Arguing is an interaction in which a person tries to persuade someone of something, but, at the same time, the interlocutors are strengthening or weakening the bonds between them. In many everyday discussions, the two components are of similar importance and, thus, we cannot significantly improve our argumentative skills by only focusing on the cognitive side of the activity.

In our opinion, it would be useful to explore the integration of psychological frameworks that focus on the communicative properties of the messages used in the acts of arguing with the more philosophically oriented, pragmatic, and dialectical approaches to argumentation. These interdisciplinary frameworks, as the "normative pragmatics" proposed by Jacobs (2000), should inspire the design of protocols and other tools for the different tasks involved in the practice of arguing.

3. ARGUMENTATION SCHEMES.

Argumentation schemes are forms of arguments that explore stereotypical patterns of human reasoning (Walton, 1996). When used properly, that is, in a critical way, argumentation schemes help to transfer the acceptability of the premises to the point under discussion.

Consideration of the argumentation schemes as an input in the process of elaboration of argumentations has its grounds in the venerable tradition of classical rhetoric (Tindale, 2004; Walton et al., 2008; Rubinelli, 2009). The Aristotelian notion of topoi and its correlative notion of loci in the Roman rhetorical tradition, as in the influential work of Cicero, were purported as tools to help future orators to find

arguments for different kinds of dialectical discussion or rhetorical setting. They were part of a system of invention intended to provide guidelines for finding and selecting the proper arguments to support a claim. The term "argument scheme" was first used by Perelman and Olbrechts-Tyteca in French, but, by then, several other authors had used this ancient notion under different names (Garssen, 2001: 82).

Several works on argument schemes, such as those of Hastings (1963), Kienpointner (1992), van Eemeren and Grootendorst (2004), Walton (1996), and Walton, Reed and Macagno (2008), have tried to put some order in this field, proposing different criteria to ensure appropriate use and, as a consequence, cogency of argumentations based on different schemes. There have also been several attempts to find a useful classification of them. Nevertheless, the criteria of classification and the number of schemes taken into account vary largely, including from deductive patterns such as modus ponens, to, in some cases, some of the classical rhetorical figures.

Presumptive argumentative schemes (Walton 1996; Walton et al. 2008) have their source in actual examples of commonly used patterns of human reasoning. They correspond to defeasible patterns of reasoning and, although they can be sufficiently strong to support a claim in a definite argumentative situation, the support can be weakened and the claim defeated if the circumstances change. Following Hastings (1963), the usual presentation of a scheme comes together with a set of critical questions that help to guarantee its correct application. The questions are to be used by an interlocutor in the dialectical process, and when asked, the burden of proof automatically shifts to the other part in the dialog.

The pragma-dialectical classification of the schemes (see, for instance, van Eemeren and Grootendorst, 2004) states three main categories and is coherent, easy to grasp, and can be sufficient to apply to the evaluation of arguments. Nevertheless, this typology clearly becomes insufficient when we try to use it to generate new arguments.

The proposals of Walton (1996) and Walton et al. (2008) are on the other side of the balance. Following Aristotle's idea of rhetorical topics, they gather an extended list of argument schemes, each of which with its corresponding set of critical questions. This exhaustive classification is an attempt at systematization that simultaneously explores the uses of argumentation schemes in artificial intelligence settings. Nevertheless, we consider –as Blair (2001) did about Walton's previous book on schemes (Walton, 1996)– that there are still many unanswered questions in this new work of Walton et al.; for instance, whether their proposal is meant to be descriptive or normative because some of the schemes are more used and intuitively more

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acceptable than others. In addition, the level of generality a scheme should exhibit is unclear because the number of schemes presented in this classification makes it difficult to decide which scheme an actual argumentation is linked to, owing to the fact that some of the categories in the classification overlap with each other.

Tindale (2004) thinks of argumentation as essentially rhetorical and, following Perelman's constructive conception of argumentation, he considers it a kind of communicative practice that helps us to modify or change our points of view and directs our actions. Tindale's rhetorical view extends the typology of schemes to some of the rhetorical figures that appear initially in the work of the sophists and that were considered useful strategies or argumentative techniques to persuade the audience.

Nevertheless, Garssen (2001; 2009) thinks that figures have probative force but they are not actual schemes because, on the one hand, the figures have no associated critical questions, and, on the other, argumentation schemes do not possess the changes of language use that characterize rhetorical figures. Kraus (2007) also shows that, in general, figures are poorly warranted, but they exert enough psychological or moral pressure on the audience to make it accept the implicit warrants without any protests or further requests for argumentative backing, and thus they become, in some cases, actual fallacies.

Several authors maintain that a strategy to be used to help arguers to deal with fallacies follows the critical questions procedure, but as the association of an actual argumentation with a scheme depends on the classification chosen, it is often difficult to link a definite argument with a unique label and, thus, the application of the critical questions to it can also be an object of discussion. For example, Blair (2001) extracts from Walton (1996) different examples of the argument from sign scheme and asks for clarification of why those somehow different contents of reasoning should be classified as belonging to instantiations of a single argumentation scheme and, more specifically, as instantiations of the argument from sign scheme.

We think that the use of the schemes and critical questions is important and in many cases necessary to strength the cogency of the argumentations, but that it is not sufficient. In our opinion, we should look at their use as part of a broader context, in which argumentation is considered as a special communicative act.

4. ARGUING AS A COMMUNICATIVE ACT

Arguing is a linguistic activity that takes place in a definite context. As Johnstone (2008) states, when we actually argue we are creating and aggregating knowledge

rather than analyzing it. Moreover, as many analysts of discourse point out, we are socially conditioned by the context in which the discourse takes place; therefore, approaching argumentation as a discursive practice means that we have to link the text to its context.

The evaluation of argumentation is often approached from a logical, formal, or informal perspective that usually presupposes a schematization of the argument that eliminates most of the "rhetorical" or communicative elements of it, sketching mainly its dialectical skeleton. The role of the context is in many cases reduced to help to fulfill the implicit premises necessary to complete (mainly in a deductive sense) the inferences.

If we consider arguing as a communicative act, it is necessary to integrate several aspects into the same act simultaneously, that is, we have to formulate the arguments to perform not only their intended probative function but also their communicative function in an ordinary natural language and, thus, we have to include relevant peculiarities of the arguer, the audience, and the cognitive and social environments of both parts.

In order to persuade the audience, many strategic decisions have to be made about the selection of the arguments, their order, the choice of words, and the amount of information that will remain implicit, and these choices depend on broader contextual elements. As Jackson (2008: 217) states, «naturally occurring arguments are subsumed by and subsume other contexts of action and belief. »

Data and other kinds of information about the topic that are available to the arguer and the intended audience are the first constituents of the context; the second and not less important element refers to the audience's views about the issue and the rules and boundaries of reasonableness accepted in the social environment in which the dialog should take place.

The act of arguing can be better understood in a problem-solving framework with different levels of cognitive processing. Much of the work is carried out more or less automatically using competences mastered in the past as a consequence of maturing or learning processes. Other work has to be done consciously and requires careful planning, monitoring, and revising. Different types of argumentative task (face-to-face debates, forums on the Internet, argumentative essays, etc.) activate different cognitive resources.

Analyzing and writing argumentative texts have some cognitive activities in common. The contrary would be uneconomical, «and it seems highly implausible that

language users would not have recourse to the same or similar levels, units, categories, rules and strategies in both the productive and the receptive processing of discourse» (van Dijk & Kintsch, 1983: 262). Moreover, the advances in terms of becoming a critical reader and an argumentative writer interact with each other in a complex way, making their combination a good pedagogical strategy (Hatcher, 1999). However, having something in common does not mean that we are dealing with the same task.

If, for example, we attempt to design a protocol putting forward the steps necessary to analyze an argumentative essay, and another one suggesting a procedure to write an argumentative text, differences soon arise. In fact, the suggestions to direct the production of written argumentations inspired in analytical procedures, as in the critical thinking approaches, go beyond the model of analysis, and introduce other aspects of argumentative writing that are usually considered as rhetorical.

Writing is clearly an open-ended task; there are many different ways to write an argumentation that would successfully achieve the intended goal of persuading the audience and the writer has to choose among them. When we analyze a text, these choices are made and the task of the reader is reduced to checking the reasonableness of the argumentation in order to accept or disregard its claim.

When we analyze a text, before we accept or disregard the standpoint of an argumentation by weighing the strength of the given arguments, we bring together the relevant information from the text (or the conversational context) in order to decide whether it convinces us. However, as writers, we also need to keep in mind all the communicational, stylistic, and rhetorical elements useful to maintain the attention of the reader, to keep a positive atmosphere in the relationship, and to allow the reader to negotiate the outcome, among others. All these ingredients are necessary to allow the communication to flow and to reach the persuasive goal of the text. Certainly, the reader will focus her attention on the claim and on the strength of the reasons to defend it, and she will be less conscious of the role of these other elements, especially if the communicative quality of the text is adequate. Nevertheless, these elements are necessary to achieve the communicative purpose of the writer. The weight of these factors is relative to contextual circumstances related to the topic, the social context and the idiosyncratic features of the interlocutors.

A comprehensive view on how to write argumentative texts has to integrate not only the traditional logical, dialectical, and rhetorical elements, but also inputs relative to the textual linearization and linguistic coding, as well as some other psychological

and social considerations such as the motivation and goals of the arguers. Neither cognitive psychology nor argumentation theory alone has given a satisfactory explanation on this issue. For instance, the motivation of the arguers or the importance that the issue at stake has for them is a crucial factor that determines much of the depth of the argumentation. Igland (2009) shows that adolescent students argue differently according to the challenges they face: arguing about a practical matter, a more abstract point, or about a question related to similar controversies and discussions in the social environment. She also shows that they react differently when they think that there is some space for negotiation or when they see that the matter is not negotiable.

Writing an argumentation requires the monitoring of the different steps needed to reach the goal of the argumentation: planning the general strategy of the argumentation, translating to words, checking for local coherence, and finally reviewing the resultant text using linguistic, epistemological, and rhetorical criteria (Kellogg, 1994).

Another ingredient is the acquisition of knowledge about the issue and about the specific argumentative situation in which it occurs: this includes social context, audience's characteristics, time constraints, possible sources of information and means to obtain, to understand and to organize it. The more the arguer masters the topic under discussion, the better the product will be.

A third focus of attention should be the epistemological or dialectical space: this ranges from the most automatic reasoning, followed by logic inferences and pragmatic processing, to more conscious reflection about the global structure, argumentative stages, and the adequate and reflexive use of argumentation schemes to support the claim.

Last but not least, we need to integrate the rhetorical dimension of the argumentation in order to negotiate with the audience. As Golder (1996) states, the negotiation with the addressee is one of the principal constituents of the argumentation because the argumentative discourse is by itself polyphonic. Anscombre & Ducrot (1983) stated that, even in writing argumentation, the voice of the reader(s) needs to be integrated into the text. The use of communicational and rhetorical devices to shape the disposition and style of a text, first studied in classical rhetoric, is also needed to clarify the content of the argumentation, to maintain the attention of the reader, and to develop a positive ethos for the writer, and, as a consequence, a receptive attitude in the audience.

Briefly, writing a persuasive text is by itself an activity open to a rich variety of possible outcomes that could match the goals and intentions of the writer. Therefore, the procedures to deal with one or another of the above tasks have to show substantial differences.

5. SCHEMES AND ARGUMENTATIVE WRITING.

There is not a definitive psychological explanation of the way in which our brains or cognitive systems realize ordinary inferences; nevertheless, accumulating evidence suggests that some of the skills that interact in the argumentative process are unconscious and automatic (see, Mercier & Sperber, 2011, for references). Most of the time, readers do not need to make all the elements of an argument explicit to grasp the logic of the inference, that is, the link between the reasons and the claim. They do it in an automatic way using pragmatic principles and linking them with knowledge from the cognitive environment of the partners in the conversation; the process occurs rapidly and unconsciously. (As an example, we think that the premise stating that "smoking is unhealthy" could be sufficient reason to discourage smoking without any other implicit premise such as "anything that is a danger to health should be avoided.") Besides, even if we try to make some of the information needed to strengthen the inferential nature of the argument explicit, in many cases, it is quite difficult to decide where to stop (Jacobs, 2000).

Some of the argumentation schemes, such as appeals to authority and argumentation by examples or analogy, are known and used by very young children in oral discussions with peers in a natural and unconscious way. Three-year-old children are able to justify their proposals when they are questioned, if sufficiently motivated and if they can understand the aspects of the issue (Golder, 1996). It is important, however, to make conscious use of those schemes and to learn, in a practical way, when they lack the strength necessary to support a claim or even when they can become fallacies.

Nevertheless, even in Aristotle's pioneering works, knowledge of the schemes, by itself, was not sufficient to find the arguments necessary to justify a claim. As Rubinelli (2009) states,

> …arguments ultimately derive from premises that put forward specific contents, and it is the ability to find these premises that enables speakers to argue actual cases. Readers can experience this for themselves. Try to use any of the topoi listed in the Topics to discuss a certain subject with someone. If you do not master a body of relevant material on the topic at stake, any topos chosen will be of no

> use; if you use inadequate material, your efforts will be vain! But if speakers have adequate material at their disposal, knowing the topoi will help them structure this material in an efficient argumentative framework. (Rubinelli 2009: 32).

To write a meaningful argumentative text, a sequence of ordered arguments is not sufficient, but other communicative elements such as explanations and clarifications are required to persuade the audience. A minimal argumentation will use a unique scheme, but in an elaborate written argumentation, there are always several arguments, each of them using one or a combination of schemes to justify the claim. There should also be other arguments to answer to presupposed objections and criticisms.

The writer has to cope simultaneously with linguistic requirements and rhetorical strategies that introduce elements of our actual real-world experiences. The dialectical and rhetorical spaces can be dissociated for theoretical purposes, but, as Leff (2002) stated, in practice they have to interact if we want to achieve "effective" persuasion.

The use of the schemes depends on the choice of the arguments, and this task is decided based on a general strategy. This, being a challenging cognitive process, could be made easier if we practiced beforehand with some ad hoc prepared cases of the most used schemes and their fallacious counterparts, asking in a definite setting the critical associated questions to strengthen or discard weak arguments. Having a set of critical questions in mind when we plan to write argumentation, our arguments will be stronger because we can anticipate possible criticisms by adding some additional premises to reinforce or to warrant the argument, answering, in this way, some of the foreseen questions the addressee can have in mind. Some critical questions appear intuitively in an actual dialectical situation when we argue orally. For example, if we think that the claim maintained by an expert is questionable, we will always ask for more information about her. However, in writing, the audience is not present, so it is good to have in mind some of these intuitively natural questions associated with the most used schemes.

A pedagogical design that aims not only at the mere reproduction of the contents of the curriculum has to include argumentative skills as a basic goal. To reinforce automatic and effective arguing skills, it is necessary to provide time and opportunities to practice oral and written argumentation. Debate could be used as an opportunity to direct the attention of the students to the questions that could jeopardize an argumentation or, when adequately answered, to strength weak arguments, maybe having being prompted by unconscious use of an argumentation scheme. Instructors should intervene only to prompt those questions that do not appear initially in the

interaction and that should be asked to reinforce the arguments. After oral discussion and the revision of the issues and different points of view, students would be more prepared to begin the more demanding task of writing an argumentative essay because then they could better justify their claim and anticipate the different positions on the issue.

We think that a useful list of schemes depends on the field in which they will be used: classroom, legal argumentation, software design, science, humanities, and so on. For pedagogical purposes, it would also be better to adapt the list to the age of the students and to adopt the pedagogical approach known as constructivism. Constructivism proposes that new knowledge has to be built on the basis of the actual knowledge of the learner; that is, as much of the mastering of the use of the schemes is grasped simultaneously with the natural process of learning the language, if we want to teach a more efficient use of them, we should relate their use in debate or in writing to the actual abilities of the students, making the topic knowledge understandable to arouse their interest and motivation. As a consequence, the decision of including or not including different argumentation schemes among the teaching strategies should be the result of empirical research that determines the more used forms at different ages of development and relative to different subjects.

Another source to select the schemes and their fallacious counterparts is a revision of the lists proposed by critical thinking, rhetoric, and argumentation courses and textbooks. To give an example, in *Rationale*, one of the software tools designed to facilitate the analysis of argumentations and the production of good reasoning in learning environments, there is a simple and reduced list of sources for arguments to support a claim (assertions, definitions, common beliefs, data, examples, expert opinions, personal experiences, publications, the Internet, quotes, and statistics). Not every source has the same strength for supporting a point, and some of the possible reasons to support it could usually be presented using arguments from more than one of the categories. The list proposed by *Rationale* includes sources that appear in the different classifications of argumentation schemes, such as expert opinions and statistics. Other elements they use, such as common beliefs or personal experiences, are more related to the topoi of classical rhetoric, and, finally, others are linked to common scientific methodology or epistemological approaches. Nevertheless, this list and the critical questions associated with every item offer a practical minimal guide for students and people looking to improve their arguing skills. Many critical thinking textbooks offer similar strategies.

6. CONCLUDING COMMENTS.

The goal of instruction should be to foster the argumentative skills of the writer. Argumentative discourse is more elaborate than narration, in which temporal markers help the linearization of the story. In argumentative texts, the writer has to commit to a claim and to use modal markers to define her position; she has to use several and multiple argumentative lines to support the claim, making reasonable use of argumentation schemes, among others, and integrate all these factors into a linear text. As Kunh (1991: 271) points out, «argumentative discourse implies being able to think in both a metacognitive and a metalinguistic framework. »

The choice of a scheme is decided according to a general strategy that includes, among other factors, linguistic requirements, relevant knowledge about the topic and the intended audience, and rhetorical strategies. The title, the style, the introductory paragraphs, the length of the text, the use of reiterations, the emphasis, the order of the arguments, and the use of metaphors are to be decided to adapt the text to the audience, and all these elements need to be considered when writing argumentative texts.

The role of instruction on argumentative writing should be to introduce the students to observant and appropriate uses of the argumentation schemes and, at the same time, to help the students to integrate the schemes in argumentative texts.

We consider it necessary to link the learning of appropriate use of argumentative schemes to the progressive acquisition of different communicative skills of language. In general, we think that it is better to introduce the different argumentation schemes after their use and strengthening in oral argumentations, by means of strategic critical questions prompted by the debate. After the students make conscious and critical use of a scheme in dialectical oral settings, they should use the scheme in writing in order to reinforce previously made argumentations.

REFERENCES

Anscombre, J. C. and O. Ducrot (1983). *L'Argumentation dans la langue.* Bruxelles: Mardaga.

Blair, J.A. (2001). "Walton's Argumentation Schemes for Presumptive Reasoning: A Critique and Development". *Argumentation* 15, 365-379.

Bereiter, C. and M. Scardamalia (1987). *The psychology of written composition.* Hillsdale, New Jersey: LEA.

Eemeren, F.H van. and R. Grootendorst (2004). *A systematic theory of argumentation. The pragma-dialectic-approach.* Cambridge: Cambridge University Press.

Dijk, T.A. van and W. Kintsch (1983). *Strategies of discourse comprehension.* London: Academic Press Inc.

Garssen, B. (2001). "Argument Schemes". In: F.H van Eemeren (Ed.), *Crucial Concepts in Argumentation Theory* (pp. 81-99), Amsterdam: Amsterdam Univ. Press.

  - (2009). "Comparing the Incomparable: Figurative Analogies in a Dialectical Testing Procedure". In: F.H. van Eemeren and B. Garssen (Eds.), *Pondering on Problems on Argumentation* (pp. 133-140), Amsterdam: Springer.

Golder, C. (1996). *Le développement des discours argumentatifs.* Laussane: Delachaux et Niestlé.

Golder C. and P. Coirier (1984). "Argumentative text writing: developmental trends". *Discourse processe*s 18, 187-210

Golder, C and D. Pouit (2000). "For a debate to take place the topic must be debatable. Developmental evolution of the negotiation and debatability of arguments". In: J. Andriessen and P. Coirier (Eds.) *Foundations of argumentative text processing* (pp. 136-148), Amsterdam: Amsterdam University Press.

Hatcher, D.L. (1999). "Why critical thinking should be combined with written composition?" *Informal Logic* 19, n. 2&3, 171-183

Hastings, A. C. (1963). *A reformulation of the modes of reasoning on argumentation.* PH.D. dissertation. Evanston, IL: Northwestern University.

Igland, M. (2009). "Negotiating Problems of Written Argumentation". *Argumentation* 23, 495-511.

Jacobs, S. (2000). "Rhetoric and Dialectic from the Standpoint of Normative Pragmatics". *Argumentation* 14, 261-286

Jackson, S. (2008). "Predicaments of politicization in the debate over abstinence-only sex education". In F.H. van Eemeren and B. Garssen (Eds.), *Controversy and Confrontation* (pp. 215-230), Amsterdam: John Benjamins.

Johnstone, B. (2008). *Discourse analysis.* Malden, MA.: Blackwell Pb.

Kuhn, D. (1991). *The skills of argument.* Cambridge: Cambridge University Press.

Katzav, J.R. and C.A. Reed (2004). "On argumentation schemes and the natural classification of arguments". *Argumentation* 18, 239-259.

Kellogg, R.T. (1994). *The Psychology of writing.* New York: Oxford University Press.

Kienpointner, M. (1992). *Alltagslogik: Struktur und Funktion von Argumentationsmunstern.* Stuttgart: Fromman-Holzboog.

Kraus, M. (2007). "From Figure to Argument: *Contrarium* in Roman Rhetoric". *Argumentation* 21, 3-19.

Leff, M. (2002). "The Relation between Dialectic and Rhetoric in a Classical and a Modern Perspective". In: F.H. van Eemereen and P. Houtlosser (Eds.) *Dialectic and Rhetoric: The Warp and Woof of Argumentation Analysis* (pp. 53-63), Dordrecht: Kluwer Academic.

Perelman, Ch. and L. Olbrechts-Tyteca (1958). *Traité de l'Argumentation: La Nouvelle Rhétorique.* Paris: P.U.F.

Rigotti, E. (2009). "Whether and How Classical Topics can be Revived Within Contemporary Argumentation Theory". In: F.H. van Eemeeren and B. Garssen (Eds.), *Pondering on Problems on Argumentation* (pp. 157-178), Amsterdam: Springer.

Rubinelli, S. (2009). *Ars Topica. The Classical Technique of Constructing Arguments from Aristotle to Cicero.* Dordrecht: Springer.

Mercier, H. and D. Sperber (2011). "Why do humans reason? Arguments for an argumentative theory". *Behavioural and Brain Sciences* 34, 57-111. http://www.dan.sperber.fr/wp-content/uploads/2009/10/MercierSperberWhydohumansreason.pdf

Schwarz, B.B. and G.A. Gassner (2003). "The blind and the paralytic: fostering argumentation in social and scientific issues". In: J. Andriessen, M. Baker and D. Suthers (Eds.), *Arguing to learn: Confronting cognitions in computer-supported collaborative learning environments*

R I A

(pp. 227-260), Dordrecht: Kluwer Academic.

Tindale, Ch. (2004). *Rhetorical Argumentation*. Thousand Oaks: Sage.

Walton, D. (1996). *Argumentation Schemes for Presumptive Reasoning.* Mahwah, NJ: Lawrence Erlbaum.

Walton, D., Ch. Reed and F. Macagno (2008). *Argumentation Schemes.* Cambridge: Cambridge University Press.

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