

ISSA Proceedings 2010 - Argumentation Schemes In The Process Of Arguing



1. Introduction

A look to the literature of the last years should be enough to realize that argumentation is a very complex phenomenon with many sides and manifestations and that many of the, some times, contradictory considerations about several aspects relative to the matter have their source in this complexity.

The definition of argumentation, provided by van Eemeren (2001, p. 11), constitutes a good place to start our reflection now, i.e. *“argumentation is a verbal, social and rational activity aimed at convincing a reasonable critic of the acceptability of a standpoint by advancing a constellation of propositions justifying or refuting the propositions expressed in the standpoint”*.

In this definition van Eemeren stresses the role of the argumentation as an activity, but most of the work done in the field is devoted to the analysis and evaluation of argumentations.

We want to stress here that the expressions “rational activity” or “reasonable critic” are related, most of the time, with probable or defeasible truth (Walton, Reed & Macagno, 2008). As Zarefsky (1996, p. 53) pointed out *“argumentation should be regarded as the practice of justifying decisions under conditions of uncertainty”*. The uncertainty may be relative to *the cognitive environment* of the interlocutors, as defined by (Tindale, 1999), or it could be an intrinsic quality of the issue in question, as a consequence of the influence of many unknown or difficult to foresee factors. Even if some times there is enough data to reach an unarguable conclusion, the opposite is much more frequent in everyday situations because ordinary argumentations deal, in most of the cases, with issues in which ethical or aesthetic values, personal tastes and other subjective feelings play a decisive role.

The uncertainty involved in much of the argumentations of real life makes difficult to fulfill the demands of deductive reasoning and, even after a careful

reconstruction of the argument, we think that it is problematic to consider most of the ordinary reasoning as deductive, as proposed by the rules for a critical discussion of the pragma-dialectic. We think that in the practice the recourse to inductive inferences and to the use of heuristics, best explanations, analogies and other resources to achieve the resolution of the argumentation is necessary and frequent. The reconstruction of the reasoning done in practical argumentation as deductive, although helpful to assess it, in general does not correspond to what happens in actual practice.

The end of an argumentation may, as well, differ from the resolution defined by the ninth rule of the pragma-dialectic, "resolution, when it occurs at all, is rarely if ever absolute" (Jackson, 2008, p. 217). In negotiations, especially, but in other kind of dialogs also, both parts may reach an agreement considered acceptable for both sides, even if they maintain their initial points of view. But even in more knowledge related environments, as scientific discovery, the selection of the most promising path for an investigation can be provisional, maintaining the parts, in the while, their opposite views.

One of the aspects we should pay more attention to is the substantive differences between argumentation considered as a process and argumentation taken as a product. First of all, we need to note that for 'process' we will take a slightly different meaning from the one used in the literature (Tindale, 1999) and that, for our purposes, we won't be differentiating the dialectical and the rhetorical sides of the argumentation. We will take the word process to include roughly all the aspects to consider when producing an argumentation.

To illustrate the kind of differences we mean, we can mention, for example, that 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 process or arguing. For instance, we use fast and incomplete inferences that are the outcome of "intuitive" processes of reasoning and that work efficiently in cognitive familiar settings. These kinds of inferences are different from the "reflective" inferences that deal with unfamiliar or more complex problems. Both terms are proposed by (Mercier & Sperber, in press) 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: the system 1 processes are taken as automatic, mostly unconscious and heuristic; they work efficiently in ordinary circumstances but are inappropriate to deal with

novelty or complexity; the system 2 cognitive processes are slower and require more effort but they are more reliable. The evaluation of the argumentation and the planning of written argumentations, stress the view of argumentation as a product, and help to trigger this kind of conscious processes, while in oral discussions and when we spontaneously recall an argument to justify a claim, the system 1 processes are likely to play a more important role.

It is important, as well, to take care of the particular controversial environments which give rise to different kind of argumentative dialogs as critical discussions, scientific inquiries, negotiations, debates etc. Nowadays it is widely accepted, that each type of argumentative dialog (Walton, 1989; Walton et al., 2008) calls for different requirements and dialectical moves, and that some of these moves would be unacceptable or even fallacious in one type of dialog but would be acceptable in another context. 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. Take for instance the logical form of what is generally known as an abductive argumentative scheme and that the philosopher of science Marcello Pera (1994) puts in the class of the inductive arguments:

“an argument with this form: $((p \rightarrow q) \& q) \rightarrow p$. Should we say it is deductive and invalid according to deductive logic, or that it is inductive and correct according to inductive logic? Only the context provides an answer. If it is used to prove a proposition p , then the argument is deductive and deductive logic is pertinent to it. If it is used to confirm a hypothesis p , then it is inductive and falls within the legislation of inductive logic. Thus the very same argument with the very same form is potentially fallacious if it is used for one purpose and potentially good if used for another”. (Pera, 1994, p. 109).

We have to take into account also the noticeable differences that arise 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 finished products they present; the contrary happens in scientific domains.

“...in every day issues we are generally highly skilful in challenging, counterchallenging, justifying or agreeing during conversation but the argument 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, p. 232).

Besides, there are important differences between oral and written argumentation. To cite some of the more compelling, we note that in oral argumentation the statements are generally shorter; we have an immediate feedback from the opponent that helps us to find the path to retrieve the necessary information from our long term memory and also to decide the next move; it is almost always possible to give some kind of answer to the objections the opponent raises, often weakening or negotiating our point to accommodate the challenges, and to facilitate the communication and build consensus; and finally, our performance has to take into account both, the objections that make shift the burden of the proof back and forth between the two parts in the dialog, and the conversational turns of it; In written argumentation, the opponent is not present and the abstraction to represent him/her makes more difficult the articulation of the arguments. The physical absence of the audience is one of the most salient characteristics of written argumentations (Bereiter & Scardamalia, 1987; Kellogg, 1994); and it is also well known that writing arguments becomes a difficult cognitive activity appearing many years after the children are able to defend their own points of view on oral discussions (Golder & Coirier, 1994, Golder & Puit, 1999). We also need to use more stylistic resources to make our point, because we have no access to non-verbal communication; and finally, the ordering and linearization of the text has to make sense, because there is no chances to improve it with the immediate feed-back of the opponent.

Furthermore, it is necessary to consider that these different factors interact among themselves in different ways and also with other elements of the social context, as, for instance, 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, on the other hand, the interlocutors are simultaneously strengthening or weakening the bonds between them. In many everyday discussions the two components are of similar importance and, so, we can't improve adequately our argumentative skills looking only to the cognitive side of the activity.

Pragma-dialectic provides a good framework for critical discussions that explains

much of the complexities of argumentation, especially with the progressive inclusion of strategic maneuvering in the theory (van Eemeren & Houtlosser, 2002, 2009). Nevertheless it seems necessary some kind of expansion of this theory for practical or didactical purposes, namely, considering adaptations for types of argumentative dialogs different from critical discussion and including some more specific steps than those they already consider, to account for the differences between written and oral argumentations and also for those found between the production and the analysis of argumentation.

Furthermore, it would be useful, as well, to explore the integration of psychological frameworks and problem solving strategies used in the argumentative process with the more philosophical oriented, pragmatic and dialectical approaches to argumentation. These interdisciplinary frameworks should inspire the design of protocols and other tools for the different tasks involved in the practice of argumentation.

2. Argumentation as process

Considering the argumentative process as explained above, we think that it can't be understood if we don't consider its rhetorical perspective. The evaluation of argumentation is often approached from a logical, formal or informal, perspective that usually presupposes a schematization of the argument that eliminates all the "rhetorical" elements of it, sketching mostly its dialectical skeleton. The role of the context is almost reduced to help to fulfill the implicit premises necessary to complete (mostly in a deductive sense) the inferences. Nevertheless, the study of argumentative processes is not possible without the integration of the arguer, the audience, the uttered arguments and the cognitive and social environment.

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

Data and other kind of information about the topic 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 because, as we acknowledged, the difference of opinion that triggers the argumentation has its source in the existence of different points of view about an issue or even in a

conflict of interests. Even in this last situation, when the parts agree to resolve their differences by argumentative means, they implicitly accept some rules and boundaries of reasonableness in which the dialog should take place.

The monitoring of the process can be better understood in a problem solving framework that integrates different levels of cognitive processing. Much of the work is made more or less automatically using competences mastered in the past, as consequence of maturing or learning processes. Other work has to be done consciously and requires careful planning, monitoring and revising. These processes change in function of the type of argumentative task: it is different to participate in a face to face debate, in a forum in the Internet, to write an argumentative essay, or to simply read an argumentative text.

In the next passages we will stress some differences between the processes of reading and analyzing a text, and that of writing one, before we focus in the role of the argumentative schemes in the process of writing.

The processes of reading 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, p. 262) and the advances as critical reader and as argumentative writer interact with each other in a complex way, making their combination a good pedagogical strategy (Hatcher, 1999).

Nevertheless, even if we accept the fact that the writer or the speaker follows pragmatic rules, as, for instance, Grice’s conversational rules to make communication possible, and that the reader uses those same rules to interpret the intentions of the writer, it doesn’t mean 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, the differences soon arise, and in our opinion, both processes have remarkable differences that difficult their reduction. In fact, the suggestions to direct the production of written argumentations inspired in analytical procedures, as in the critical thinking approaches, go usually far away from the previous model of analysis, and introduce the inputs

relative to other specific aspects of argumentative writing that are usually considered as rhetoric.

To review an argumentation is a better-defined task than to write an argumentative text. Even if analyzing a text requires always some grade of interpretation of the sentences, and delicate decisions about which implicit premises need to be made explicit before checking the relevance, the sufficiency and the acceptability of the premises, the existence of fallacies, or the soundness of the inference, writing is a far more open-ended task. There are many different ways to write an argumentation that would reach successfully the intended goal of gaining the audience's adherence, and the writer has to choose among these different possibilities. When we analyze a text, these choices are done and the task of the reader is reduced to check the reasonableness of the argumentation in order to accept or not its claim.

Second, before we accept or not the standpoint of an argumentation, weighing the strength of the given arguments, we bring together the relevant information from the text (or the conversational context) in order to decide if it convinces us. But as writers we need also to keep in mind all the communicational and stylistic and rhetorical elements useful to maintain the attention of the reader, to keep a positive atmosphere in the relationship, to allow the reader to negotiate the outcome, etc. All these ingredients are necessary to allow the flow of the communication, and to reach the persuasive goal of the text. Certainly, the reader will focus his/her attention into the claim and into the strength of the reasons to defend it, and he/she will be less conscious of the role of those other elements, especially if the communicative quality of the text is adequate. Nevertheless, these elements are very important in the production and subsequent manipulation as a writer, of the text. A writer reviewing her/his argumentation needs to consider carefully not only the epistemological quality of the reasons and the soundness or reasonableness of his/her reasoning, but a much broader set of elements which are necessary to achieve her/his communicative purpose.

Briefly, the analysis and evaluation of the argumentation deals with the argumentation as a product, but writing a persuasive text is by itself a process 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 of the tasks or with the other have to show substantial differences.

3. Argumentive schemes

It is not necessary to tell that when we argue to defend or to rebut a definite standpoint, the arguments we provide have to be somehow linked to the standpoint. This link, which is currently known as the argumentative core of the argumentation, if adequate, assures the arguer that the acceptability of the arguments is transferred to the standpoint.

The consideration of argumentative 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 the future orators to find arguments for different kinds of dialectical discussions or rhetorical settings. It was, then, a system of invention intended to provide guidelines for finding and selecting the proper arguments to support a claim. The actual term “argument scheme” was first used by Perelman and Olbrechts-Tyteca in French, but, by then, several other authors used this ancient notion with different names (Garssen 2001, p. 82)

Garssen (2001) gives an overview to the most important, classical and modern, approaches to this subject. He explains that the argumentative schemes can be used also as tools for the evaluation of argumentation and as a starting point for the description of argumentative competence in a certain language.

Several works on argument schemes as (Hastings, 1963), (Kienpointner, 1992), (van Eemeren and Grootendorst, 2004), (Walton, 1996), (Walton et al., 2008), among several others, have tried to put some order in the field, proposing different criteria to assure their cogency and to classify them. Nevertheless, both the criteria and also the amount of schemes taken into account vary largely, considering among them, for instance, from deductive patterns 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 reasoning. They correspond to defeasible reasoning and although they can be sufficiently strong to support a claim depending on the argumentative situation, the claim they support can be defeated if the circumstances change.

In the pragma-dialectical typology three main categories are considered,

symptomatic argumentation, comparison argumentation and instrumental argumentation. Following (Hastings, 1963), each scheme comes together with a set of critical questions that helps to guarantee the correct application of the scheme. The questions are to be used by the antagonist in the dialectical process in case of doubt, and if asked, they automatically shift the burden of the proof from the antagonist to the protagonist. The pragma-dialectical classification is coherent, easy to grasp and fulfills its main function, i.e., help the user to assure the transference of the acceptability of the premises to the standpoint and, generally speaking, it can be sufficient to apply to the evaluation of arguments. Nevertheless this typology becomes clearly insufficient if we try to use it in the process of generating new arguments.

If we take into account the number of schemes proposed, we could put (Walton, 1996) and (Walton et al., 2008) proposals on the other side of the balance. Following Aristotle's idea of rhetorical topics and also most of the works above cited, they gather an extended list of argument schemes (around 60 in the last typology), each of what comes together with its corresponding set of critical questions; these questions are to be used in the same way as in the pragma-dialectic approach. In (Walton et al., 2008) they also attempt to provide a more systematic, if tentative, classification of the schemes, and to explore the use of them in artificial intelligence settings. Although, they also say, that much more work should be done to improve the proposals in this field, they mention the progress made in the use of the schemes and their critical questions in software designed to help arguers to analyze and to write new argumentations, and in multi-agent systems and automated reasoning.

Tindale (2004) thinks that argumentation is essentially rhetorical and, following Perelman's constructive conception of the argumentation, he considers it as a kind of communicative practice that helps us to change our point of view and directs our actions. He maintains that "elements of argumentative speech must have occurred as long as language has been in use" (Tindale 2004 p. 32) Argumentation as a form of communication invites collaboration; the arguer and the audience interact in a way that makes them coauthors of the argumentation. Tindale's rhetorical view extends the typology of schemes to some of the rhetoric figures that appear in the work of the sophists as set of strategies or types of arguments. For example he includes figures like the *peritrope*, which involves the reversal of positions that can be traced "in the writings of current argumentation

theorists who advocate the importance and value of considering all sides of an issue, including that of ones opponent” (Tindale, 2004, p. 46).

For Garssen (2001; 2009) figures have probative force but they are not real schemes: figures have no associated critical questions, and the schemes don't possess the changes of language use that characterize rhetorical figures. Kraus (2007) analyzes in detail one rhetorical figure (*contrarium*) and shows that in general they are poorly warranted and based on defeasible commonsense arguments, but that they exert enough psychological or moral pressure on the audience to make them accept the implicit warrants without any protest or further request for argumentative backing, and so, becoming then, in some cases actual fallacies.

In his book *Fallacies and argument appraisal*, (Tindale, 2007) considers the relationship between argumentative schemes and fallacies, and stresses, as some other authors also do, that the deceptive nature of some fallacies comes from the illegitimate use of an argumentative scheme that is in principle acceptable in other circumstances. Nevertheless, he also says that there are fallacies, as the *straw man*, which does not correspond with legitimate argumentative schemes. In any case, the criteria of appraisal call for a careful analysis of the rich and varied contexts in which they occur. The strategy to help arguers dealing with fallacies follows the critical questions procedure proposed by many other researchers for the evaluation of argumentative schemes.

Coming back to the beginning of this work, and without any doubts of the interest of the use of the schemes and critical questions to appraise the cogency of the argumentations, in the following section, we will be concerned mostly with the use of them in the first sense, i.e. as argument generators.

4. The role of the argumentative schemes in the process of writing.

In order to study the role of the argumentative schemes in the process of writing we need to overview the process as a whole. As we have seen, the process is the result of the interaction of multiple factors that have a different weight in the various stages of the writing process. The relative importance of these factors depends, as well, of contextual circumstances related to the topic, the social context and the idiosyncratic features of the interlocutors. In consequence, the process of writing argumentation should integrate besides the traditional logical, dialectical and rhetorical elements, also inputs relative to the textual linearization

or linguistic coding, the motivation and goals of the arguers and some other psychological and contextual considerations. Nor cognitive psychology nor argumentation theory alone have given a satisfactory account of the process of writing argumentative texts. As we have said the motivation of the arguers or the importance the issue at stake has for them is a crucial factor that determines much of the depth of the argumentation. For example (Iglund, 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 that the matter is not negotiable.

In the first place, 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).

A second ingredient is the acquisition of the knowledge about the issue and about the concrete argumentative situation in which it occurs: social context, audience's characteristics, time constraints, possible sources of information, means, helps... The more the arguer masters the topic under discussion, the better the product will be.

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

And last but not least, the integration of the rhetorical space in order to negotiate with the audience, As (Golder, 1996) says, the negotiation with the addressee is one of the principal constituents of the argumentation, because the argumentative discourse is by itself polyphonic (Anscombe & Ducrot, 1983): even in writing argumentation the voice of the reader or the readers needs to be integrated in the text. The use of communicational and rhetorical devices designated in classical rhetoric as disposition and style, is also needed to make clear the content of the argumentation, to maintain the attention of the reader, to develop a positive ethos for the writer, and, as a consequence, a receptive attitude in the audience.

There is not a definitive psychological explanation of the way in which our brain or cognitive system realizes ordinary inferences, nevertheless, there are nowadays more and more suggestions to indicate that some of the skills that interact in the argumentative process are unconscious and automatic; others, nevertheless, as the overall planning, for example, require constant attention and monitoring.

Writers most of the times don't need to explicit all the implicit premises to grasp the logic of the inference, that is, the link between the reasons and the conclusion. They do it in an automatic form linking it with common knowledge taken from the actual situation in which they place themselves and the audience; the process occurs fast and unconsciously. (As an example, we think that the premise that states that "smoking is unhealthy" is enough to discourage smoking without any other implicit premise as "anything that is a danger to the health should be avoided"). Besides, even if we try to explicit some of the information needed to strength the inferential nature of the argument, in many cases, it is quite difficult to decide where to stop it.

Some of the argumentative schemes are known and used by very young children in oral discussions with peers. To make the use of them conscious and to learn in a practical way when they lack the strength necessary to support a claim or even when they can become fallacies is important, but, nevertheless, even in Aristotle's pioneering works the knowledge of the schemes, by itself, was not a sufficient help to find the necessary arguments to justify a claim. As Rubinelli (2009) says, *"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, p. 32)

The goal of written argumentation is to produce a meaningful text containing not only a sequence of ordered arguments but also other communicative elements as explanations, clarifications, etc., directed to persuade the audience of a standpoint supposedly in doubt or in dispute. A minimal argumentation will use a

unique scheme, but in an elaborate written argumentation, due to the debatable character of the subject, there are always several arguments, each of them using one or a combination of schemes to justify the claim. There will be also 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 and real world experiences. The dialectical and the rhetorical space can be dissociated for theoretical purposes but as Leff (2002) said, in the practice they have to interact if we want to achieve “effective” persuasion.

The use of the schemes depends on the choice of the arguments. But this task is decided in function of a general strategy that integrates the relevant knowledge about the topic, the appropriate use of the schemes and their rhetorical properties. This, being a challenging cognitive process, could be made easier by the systematic learning of some of the schemes, *topoi* and fallacies with their respective critical questions. If we have a set of critical questions in mind when we plan to write argumentation, our arguments will be stronger and we could be ready to anticipate a rebuttal and to add some additional premises to reinforce or to warrant an argument. Some critical questions appear intuitively in the actual dialectical situation when we argue orally. For example, if we think that an “expert” can’t be considered as such and if we are interested in arguing, we will always ask for more information about him/her. But in writing the audience is not present, so it is good to have in mind some of these intuitively natural questions associated to the most used schemes. But once again, the study of the schemes should be integrated in a more general framework and to learn in an effective way it should be completed with intended practice, using debate first to reinforce our arguments and afterwards writing the corresponding argumentative texts.

We also think that a useful list of schemes depends somehow on the field, in which they will be used, be it legal argumentation, software design, education, etc. For pedagogical purposes it would be better than the use of a whole list of argumentative schemes, the adaptation of it to the age of the students and the adoption of the pedagogical approach known as constructivism. As much of the mastering of the use of the schemes is grasped simultaneously with the natural process of learning the language, the teaching of the schemes would be more efficient if we could relate them to the actual abilities of the students, making the topic knowledge affordable to them and arousing their interest and motivation.

The new knowledge, as proposed by constructivism teaching, should be built on the actual knowledge of the learner.

As a consequence, the decision of including or not different argumentative schemes among the teaching strategies should be the result of empirical research. A good point to start the selection could be the study of the argumentative schemes used by arguers at different ages in natural environments both in oral and in written argumentations.

Another source to select the schemes and their fallacious counterparts, considered as wrong inferential moves, is a revision of the lists proposed by critical thinking, rhetorical and argumentation courses and textbooks and software tools for argumentation.

For instance, *Rationale* is a software tool, based on research done at the University of Melbourne that helps students grasp the essence of good essay-writing structure. *Rationale*, is designated to facilitate the analysis of argumentations and the production of good reasoning in learning environments, so, there is a simple list of sources for arguments to support a claim (assertions, definitions, common beliefs, data, example, expert opinion, personal experience, publications, web, quote and statistics). Not every source has the same strength supporting a claim, and some of the possible reasons to support it could be presented using more than one of the categories. Nevertheless, the list and the critical questions associated with every item, offers a practical guide for students and people looking for an improvement of their arguing skills. Many critical thinking textbooks offer similar strategies.

The list proposed by *rationale* includes sources that appear in the classifications of argumentative schemes quoted above, as expert opinion and statistics. Other elements they use, as common beliefs or personal experiences, are more related to the topics of classical rhetoric, and finally, others are more linked to common scientific methodology or epistemological approaches.

Summarizing, we consider necessary to link the learning of the argumentative schemes to the progressive acquisition of them when acquiring the different communicative skills of the language. In general, we think that it is better to introduce them after their use and strengthening in oral argumentations, by means of strategic critical questions prompted in the debate. After being made conscious in these dialectical settings, they should be used for argumentative writing and marked by the teacher with more critical questions, if the arguers

themselves have not given enough thought to the most salient of them, in order to reinforce the argumentation.

As an example, we can look at the argument from expert opinion (*ad verecundiam* in the rhetorical tradition). It is one of the schemes that appear in almost every classification of the different traditions, because it is one of the most used schemes. The argument from expert is presented by Tindale (2007), Walton et al. (2008) and many others as one of the defeasible argumentative schemes that could be a fallacy, if improperly used. The ubiquity of this scheme, even in early stages of the development of oral argumentation, and its persuasive efficacy justify its treatment in a pedagogical program of argumentative writing. First, we should confront the students with good and bad uses of the scheme and facilitate, with the help of critical questions, their thoughts and conscious grasping of it. Then we would have to discuss the relative strength of expert opinion, compared with arguments from other sources, as data or personal experience, considering the adequacy of the choices for the intended audience.

The goal of instruction is then to foster the metacognitive skills of the writer, *“argumentative discourse is one of the most subtle and most elaborate ways to use language. In contrast to narration, in which temporal markers are often sufficient, it is more highly structured, containing many more modal expressions (might, may, sure, seem, likely, certainly, proves), that is, those in which speaker is implicated. In sum, argumentative discourse implies being able to think in both a metacognitive and a metalinguistic framework.”* (Kuhn 1991, p. 271)

The argument could be used to justify the claim or to reply to possible objections of the audience, but the argument needs to be integrated in an argumentative essay that has to fulfil all the communicative goals of the writer with respect to an intended audience. The choice of the title, the style, the introductory paragraphs, the length of the text, the use of reiterations, the emphasis, the order of the arguments, the use of metaphors are to be decided to adapt the text to the audience. In sum, all those elements that will be part of the argumentative text need to be considered in the process of writing.

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