# ISSA Proceedings 2014 – The Integration Of Pragma-Dialectics And Collaborative Learning Research: Argumentation Dialogue, Externalisation And Collective Thinking

*Abstract:* This paper describes extensions of pragma-dialectical theory for analysing learning processes in students' argumentation dialogues. It is argued that although pragma-dialectics is the most appropriate theory in this context, it needs to be 'psychologised' by the consideration of additional discursive, dialogical, epistemological, interpersonal and affective dimensions of dialogue. In conclusion, prospects for new rapprochement between argumentation theory and psychology are discussed.

*Keywords*: collaborative learning, argumentation dialogue, pragma-dialectics, psychology, externalisation principle

1. *Introduction*

Over the past two decades, a specialised subfield of collaborative learning research (Dillenbourg, Baker, Blaye & O'Malley, 1996) has emerged, called "collaborative argumentation-based learning" (see, for example, the collective works: Andriessen & Coirier, 1999; Andriessen, Baker & Suthers, 2003; Muller Mirza & Perret-Clermont, 2009). Its general aims are to understand how and what students could learn (apart from argumentation competencies themselves) from engaging in pedagogical activities based on argumentation, such as debates, writing argumentative texts, or joint problem-solving that involving spontaneous phases of argumentative interaction. However, collaborative argumentation-based learning research has been mostly carried out either on the basis of everyday notions of what "argument" is, or else by drawing on a limited set of argumentation theories (e.g. the model of Toulmin, 1958) that that are not necessarily well adapted to the task at hand, i.e. analysing argumentative

interaction.

This paper explores the relevance and utility of the pragma-dialectical theory of argumentation (e.g. van Eemeren & Grootendorst, 1984) for analysing students' argumentation dialogues in a way that brings to light interactive learning processes. I propose firstly that the pragma-dialectical theory of argumentation is the most appropriate approach to analysing students' argumentation dialogues given — quite simply — that it is a theory of argumentation in *dialogue*, and that the components of the theory are generally applicable to the data. Secondly, I propose that in order to understand collaborative arguing to learn, within a specific domain, notably with respect to conceptual elaboration, a broad pragma-dialectical framework is also well fitted to the task, provided that additional dimensions of social interaction are taken into account. For the empirical support of the relevance of these dimensions to analysing students' argumentation dialogues, this paper draws on the author's previously published work (for example, Baker, 1999, 2002, 2003, 2009) on the analysis of corpora of students' problem solving dialogues in physics, biology and geography.

In the first section below, the main components of pragma-dialectics are discussed with respect to their degrees of correspondence with processes at work in students' argumentation dialogues. In the ensuing section, additional dimensions of dialogue that need to be taken into account in educational situations — beyond the pragmatic and the dialectical — are described, in relation to interactive learning processes. In conclusion, relations between pragma-dialectics and psychology are discussed, together with the extent to which the set of dimensions of dialogue discussed in the paper could be combined in a coherent theoretical and methodological approach.

## 2. *Components of the pragma-dialectic model and their correspondences with students' argumentation dialogues*

For reasons stated in introduction, the components of the pragma-dialectical model do provide an appropriate general framework for understanding how students' argumentation dialogues have potential for learning. However, each of the components needs to be 'psychologised' (or 'naturalised', to use the terminology of Grize, 1982, 1996) in order to understand relations between dialogue and (changes in) thinking. As discussed in conclusion, pragma-dialectics explicitly eschews consideration of psychological change 'outside' the dialogue. Below, each of the following main components of the pragma-dialectical model

are discussed (stages of discussion, speech acts and perlocutionary effects, rules of conduct for reasonable argumentation, and methods for reconstructing argumentative discourse) in terms of their correspondences with the reality of students' argumentation dialogues.

*Confrontation phase*. This phase usually does not exist in students' dialogues: students often just move straight into opening and argumentation; or if the confrontation phase does exist, it is often reduced to a repetition of the same proposal with repeated refusals to accept.

*Opening phase*. In students' problem-solving dialogues, dialectical roles are unlikely to be so clear as those of "proponent" and "opponent", with their strong degrees of commitment. This is because in a learning situation, given that knowledge is supposed to be under co-construction, it is not realistic for students to have clear commitments to the tentative solutions that they propose (Nonnon, 1996). In pedagogical debates, concerning issues where personal value systems are at stake (e.g. ecology), such commitments can occur, and typically, students' views become more polarised. But in more scientific domains, such as physics, students may often shift from opponent to proponent roles, for a given thesis, as they explore around the question.

*Argumentation phase*. Without specific pedagogical preparation — asking students to read texts, multimedia materials on the topic, analyse possible arguments, in short, to invent or activate their arguments — this phase may often be very short indeed, simply because students are not able to find arguments with respect to topics which are new to them (i.e. to be learned).

*Concluding phase*. In students' dialogues, this phase is often simply left out: the students just stop arguing, moving onto something else. Perhaps interpersonal relationships between adolescents preclude making explicit who has "won" or "lost? Adolescent 'cultures' may even preclude conflict and argumentation altogether, being more oriented towards what young people share (such as taste in rock music, hair and clothes styles) rather than what divides them (Pasquier, 2005).

In sum, the main phases of pragma-dialectics are in fact relevant and useful for analysing students' argumentation dialogues, provided one bears in mind that the phases can be more or less extended (or even deleted), depending on the more

global pedagogical sequence in which the argumentation dialogue occurs. Extensive preparation, and framing or scripting of the debate will often be required in order to elicit argumentation at all.

There are two main questions with respect to *perlocutionary effects* (convincing, belief, acceptance, …) of argumentative speech acts: what is the nature of students' attitudes in argumentation dialogue? And, how do attitudes change as a result of argumentation dialogue?

Along with Edwards (1993), I would concur that the question "what do children really think?" when they engage in dialogue is either unanswerable or else meaningless: the relation between language and thought is not so simple (see the conclusion to this paper). Even with interview techniques, or questionnaires, we cannot escape the circle of dialogue (despite methodological precautions, interviews and experiments are also social encounters); and what is expressed in dialogue by each interlocutor is a function of mutual adaptation as well as individual thought. What students "really" think is not the point of dialogue analysis: the point is what interlocutors do and say, and how this evolves.

This view is coherent with the meta-theoretical principle of "externalisation" in pragma-dialectics; but this does not mean that psychology is necessarily 'external' to the dialectical process since, under a suitable analytical approach, dialogue 'is' collective thinking. The theory of learning in and by argumentation dialogue that would be coherent with pragma-dialectics would therefore be one of stabilised evolution of the nature of dialogue, across situations.

But this view is not incoherent with the very idea of cognitive and dialogical attitudes. Thus the philosopher of language L. Jonathan Cohen (1992) has proposed a distinction between belief and acceptance: belief is a disposition to think or feel (it can not be decided upon), acceptance is a decision to reason with what is proposed by the interlocutor, to take it as a premise, 'as far as it goes'. This seems to correspond better with students' engagement in collaborative problem solving, where — since by hypothesis or design, we are concerned with learning situations — none of the students really knows 'the answer' and so can not adopt a firm standpoint.

The second question mentioned above was: how do attitudes change as a result of argumentation dialogue? One approach to answering this question is to record

individual students' opinions regarding a thesis before debating, together with their arguments, then to ask individuals to update their views (opinion, arguments) in the light of a debate (Baker, 2003, 2009). The changes before and after can be correlated with characteristics of the debates. Results show that students' changes in attitudes are almost never as clear as dialectical theories would like: one never sees students straightforwardly dropping their proposals once refuted, nor does one see them straightforwardly accepting successfully defended proposals of their opponents. Students may, of course, be constrained to concede or accept, on the scale of a specific argumentation sequence; but usually, each student will persist in maintaining his or her own views, throughout the dialogue. In other terms, it takes more than a short argumentation sequence, whatever its characteristics, to change deep-seated views. It is possible that this relates to the maintenance of the self, as a relatively stable self-construction: what would a person be like who radically and irrevocably changes his or her fundamental beliefs, on the basis of every dialogue they engage in? Beliefs surely change over a longer period of time than the usually short interactions that are considered in educational research. But changes do occur, and they are usually much more subtle than definitive acquisition or abandonment of proposals: for example, "realising that what one thought was true for certain might not be", or "maintaining one's position, but in a more open, subtle, nuanced form, that recognises possible counter-arguments". Unwillingness to lose face (Brown & Levinson, 1987) by admitting defeat is also an explanatory factor of the persistence of views across dialectical outcomes.

With respect to the famous 'ten commandments' of pragma-dialectics (van Eemeren & Grootendorst, 1984, pp. 151-175), two questions arise in this context: do students' dialogues largely conform to these rules? And, what is the nature of the rules themselves? The following dialectical rules are particularly relevant:

• "participants must be able to freely state their views" — obviously, in larger groups, it is is rarely the case that all participants can freely express their views, for reasons because of "production blocking";
• "attacks must be defended" — this is a rule that is generally followed and explicitly enforced (otherwise, someone is likely to say "well, what do you have to say to that?"). An exception often occurs in the case of simple conflicts, where one student simply refuses to accept a proposal, without giving reasons;
• "attacks must not be repeated" — they often are repeated, but in a reformulated

way, which can be positive for learning to the extent that it corresponds to negotiation of meaning of key domain concepts.
• "dialectical outcomes must be made explicit" — this is rarely followed, probably because of the need to preserve face, to not too explicitly push home the victory and make the other look stupid; usually, the students just stop, think again and move onto something else.

In sum, it is difficult to reply definitively to the question "do students argumentation dialogues generally conform to the ten pragma-dialectical commandments?", because of the necessarily limited number of cases that can be analysed. The main rule that is respected is the one concerning the necessity to defend against attacks. But then, if this is not respected, there could probably be no argumentation dialogue at all. This may relate to the second question mentioned above, concerning the nature of pragma-dialectical rules. According to dialogic logic (Barth & Krabbe, 1982), the purpose of dialectical rules is to ensure convergence on a determinate outcome (a winning or losing proposal) in the most efficient way. But if it is generally the case that the rule requiring defenses against attacks is the most basic or fundamental, then this amounts to the necessity for achieving agreement on what type of dialogue (Walton & Krabbe, 1995) is being engaged in (argumentative). In other terms, pragma-dialectical rules can be seen as special cases of a general "cooperative contract", according to which, 'as everyone knows', you should not waste other people's time (e.g. by stalling), and you should generally put the group objective — finding the most acceptable solution — before personal misgivings.

Finally, the aim of reconstructing argumentative discourse is to 'uncover' the pragma-dialectical structure from the inter-discursive texture, for the purposes of evaluating it (van Eemeren, Grootendorst, Jackson & Jacobs, 1993). This involves, for example: deletion (of repetitions, of parts irrelevant to argumentative structure); addition (of missing premisses and reasoning); permutation of the linear structure towards an argumentative structure; substitution (of clearer expressions of ambiguous statements). But it is possible that the 'deleted parts" are those where the factors that are most important for learning may reside. These include processes of negotiation of meaning of proposals (e.g. in repeated attacks in a reformulated form) that, whilst they can be used to abusive ends (such as avoiding the issue, or defeat), constitute the principal vehicles of conceptual change.

In summary, although pragma-dialectics is the most appropriate theory of argumentation for understanding collaborative argumentation-based learning, each of its components needs to be transformed, or 'psychologised', for this purpose. Nearly all stages of discussion can be omitted by students, and even the argumentation phase itself often depends on preparatory activation of arguments. Students' cognitive and dialogical attitudes are characterised by weak commitment and volatility, given that it is difficult to adopt firm stances with respect to knowledge that is undergoing co-construction in the learning situation. Only the most basic pragma-dialectical rule, requiring defense against attack, is generally respected.

Certainly, such a large gap between what students' argumentation dialogues and the pragma-dialectical model is not a criticism of that model, since it aims to be both descriptive and normative. Rather, it indicates the necessity for research on collaborative argumentation-based learning to integrate other dimensions of dialogue, beyond the pragmatic and the dialectic, into a coherent theory and model of learning in and by argumentation dialogue. These additional dimensions, discussed below, include the discursive negotiation of meaning, the interactive regulation of emotions and the nature of the interpersonal relation.

3. *Other dimensions that need to be taken into account for arguing to learn*
Pragmatic and dialectical dimensions of students' dialogues are at the heart of collaborative argumentation-based learning. They relate to pragmatic (perlocutionary) effects of argumentation dialogue mentioned above (change in view) in relation to dialectical processes and outcomes, and to learning to engage in such types of interaction (learning of dialectical rules and strategies). But in order to study a broader range of attendant learning processes, five other dimensions need to be considered, as follows.

The *epistemological* dimension refers to the nature of what is being discussed within a particular domain — based on perception in the current situation, on reasoning, having a particular social origin (e.g. what the teacher previously said) — or across specific domains — for example, scientific versus socio-technical domains. It is important in determining how students' attitudes are likely to change ("epistemic entrenchment": Gardenförs, 1988) and the weight that will be given to arguments. In addition, in scientific domains, students have difficulty in achieving coherence (cf. "knowledge in pieces", to use diSessa's, 1988, formulation), whereas with respect to societal issues, value systems and

ideologies come into play, in which case, these systems will be more resilient to change and must be considered as wholes.

The *discursive* dimension concerns the ways in which 'work' is done on cognition through language, by the performance of cognitive-linguistic operations (Grize, 1982; Vignaux, 1988) in dialogue. This includes making new conceptual distinctions (argument by dissociation), reformulating, generalising, predicating, inferring, and so on. Interactive pressures relating to verbal conflicts of opinions may particularly stimulate this.

The *dialogical* dimension concerns the interplay of socially inscribed discourse genres, the more or less reformulated expression of what one has already heard (Bakhtine, 1977). Learning in educational dialogue can be seen, at least partially, as the appropriation of, or the articulation between, students' everyday discourse genres and school genres (Wertsch, 1991), such as the very specific genre "argumentative discourse" (e.g. Baker, Bernard & Dumez-Féroc, 2012).

The *interpersonal* dimension refers to the relationship between students, more or less friendly, as well as their different social identities (e.g. male or female) influence the extent to which they can and will deepen verbal conflicts, possibly endangering their relationships (e.g. Kutnick & Kington, 2005).

The *affective* dimension is highly important in the case of argumentative interactions, given the threat to the interpersonal relation imposed by the thematisation of verbal conflicts. Affective regulation will interact with knowledge co-elaboration and the determination of the argumentative outcome (Baker, Andriessen & Järvelä, 2013). Affect enters into the very heart of argumentation, in that the choice of argumentative strategy (direct defense, or else attack the attack?) has been shown, experimentally, to correlate with the extent to which the attack is perceived as aggressive (Muntig & Turnbull, 1998).

Therefore, in order to understand the full range of types of learning processes and outcomes relating to students' argumentation dialogue, it is necessary to study the relations between the seven dimensions of dialogue described above (pragmatic, dialectical, discursive, epistemological, dialogical, interpersonal and affective). This enables the study, in relation to the ongoing pragma-dialectical process (relating to change in view), of conceptual learning (discursive dimension), broadening of the field of knowledge taken into consideration

(epistemological dimension), the appropriation and articulation of school and everyday discourses (dialogical dimension), as well as the influence of the interpersonal relation, with all the affects that will be associated.

The integration of such dimensions into a coherent theoretical approach is, I believe, possible and useful, but would constitute a major research programme. It would require at least the integration of pragma-dialectics with theories of belief revision and cognitive dissonance, theories of discourse, of Bakhtinian dialogism, of interpersonal relations, facework and emotion. But that is what would be required in order to more fully understand the learning potential of engaging in argumentation dialogue.

4. *Conclusion*

In this paper I have discussed the extent to which the normative aspect of pragma-dialectical theory is descriptive with respect to students' argumentation dialogues, and the additional dimensions of dialogue that would need to be integrated with this theory in order to come to a fuller understanding of the learning potential of these types of dialogues. By way of conclusion, I shall mention a few more general considerations on a theoretical level, in terms of the possible marriage between argumentation theory and psychology, beginning with the view from argumentation theory. I propose that argumentation theory has a too restricted view of the psychology to which it could relate: other — discursive, dialogical — psychologies could make a better fit.

The role of psychology in relation to argumentation theory is seen by the "new rhetoric" (Perelman & Olbrechts-Tyteca, 1958, p. 12: my translation) as follows:

*The theory of argumentation, aiming, thanks to discourse, to obtain an efficacious action on minds, could have been treated as a branch of psychology. (…) The study of argumentation would thus become one of the objects of experimental psychology, where varied argumentations would be tested with varied groups of listeners, sufficiently well known so that one could, on the basis of these experiments, draw conclusions of a certain generality.*

This is learning from argument as accepting or acquiring theses by being persuaded by arguments. But as described above, argumentation, whether in discourse or dialogue, can have many more varied effects on speakers, hearers and interlocutors; for example, it can change the way they conceptualise the

domain of discourse, or broaden their perspectives on the range of points of view pertaining to a debate, or even enable them to appropriate the discourse genre. In other terms, this vision of the role of psychology in relation to argumentation is too restricted. Turning to pragma-dialectics (Van Eemeren, Groodendorst & Snoeck Henkemans, 1996, pp. 276-277),

*[t]he study of argumentation should not concentrate on the psychological dispositions of the people involved in an argumentation, but on their externalized — or externalizable — commitments.*

But this vision of argumentation and psychology depends on a view that psychology is only concerned with the 'inner' mental states of individuals. Such a distinction between language and thinking has been largely criticised by philosophers of language (Wittgenstein, 1978, 109e, 339):

*[t]hinking is not an incorporeal process which lends life and sense to speaking, and which it would be possible to detach from speaking, rather as the Devil took the shadow of Schlemiehl from the ground.*

Some recent psychological theories also call into question such a vision, in considering dialogue itself as a process of collective thinking (e.g. Allwood's, 1997, theory of dialogue as collective thinking; the discursive psychology of Harré and Gillett, 1993; Fernyhough's, 1996, Vygotskian theory of thinking as internalised dialogue; or Lave and Wenger's, 1991, theory of situated cognition and learning). According to these approaches, 'private' thoughts — whilst their existence is intersubjectively undeniable — have nevertheless no role to play in the analysis of thinking in and by dialogue, unless they become intersubjectively known, and influence the course of the dialogue itself. Lapidary statements of this position would be: the thinking is 'in' the dialogue, or even dialogue 'is' collective thinking. There is therefore no necessity to expel thinking from pragma-dialectics, or to restrict it to direct effects of persuasion. In other terms, the relations between argumentation, dialogue, thinking and learning do not have to be only conceived in terms of the 'outer' as the province of argumentation and the 'inner' being relegated to psychology, because there are psychologies that aim to cross-cut the inner/outer divide.

The analysis of students' argumentation dialogues, integrating the seven dimensions described above, would therefore constitute at the same time an

analysis of public, externalised commitment and of the evolution of thinking, learning, as a collective process. This would form the basis for a new *rapprochement* between argumentation theory and psychological theory.

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