CHILDREN'S ARGUMENTS AND SOME MAJOR INFORMAL FALLACIES: AN INFORMAL LOGICAL APPROACH TO PERSUASION DIALOGUES

ARGUMENTOS EN NIÑOS Y ALGUNAS FALACIAS INFORMALES: UN ACERCAMIENTO LÓGICO INFORMAL A LOS DIÁLOGOS PERSUASIVOS

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Abstract: This article aims at providing some guidelines about the development of argument skills among 5 year-old Argentine children. Our main objective in principle is to establish that 5 year-old children can have a critical discussion with their peers, and to state that, as a consequence, their arguments can be assessed by examining (some of the major) informal fallacies proposed by Walton (2008). The corpus of analysis for this paper corresponds to a conscientious selection of some (significant) fragments from another corpus (Molina, 2010). All the dialogues were part of bigger dialogues. The context of all of them is the same: interaction among peers during an art class in a public elementary school of the south of Tucumán (Argentina). The children are 5 years old. From the analysis of the corpus, we claim that these young children are able to take part in persuasion dialogues (critical discussions) with their peers. As a result of that, we want to prove that the arguments advanced in those critical discussions consisted of, more often than not, valid arguments at a logical level. In this case, our theoretical framework will be the informal logical approach to argumentation (Walton, 2008; Tindale, 2007).

Keywords: Children's arguments, persuasion dialogues (or critical discussions), and fallacies.

Resumen. Este artículo intenta proveer algunas pautas sobre el desarrollo de las habilidades argumentativas en niños argentinos de 5 años. Nuestro principal objetivo, en principio, consiste en establecer que los niños de 5 años estudiados pueden sostener una discusión crítica con sus pares y postular que, en consecuencia, sus argumentos pueden evaluarse mediante el examen de (algunas de las principales) falacias informa-

les propuestas por Walton (2008). El corpus de análisis de este trabajo corresponde a una selección cuidadosa de algunos fragmentos significativos de otro corpus (Molina, 2010). Todos los diálogos forman parte de diálogos mayores. El contexto de todos ellos es el mismo: interacción entre pares durante una clase de artes plásticas en una escuela primaria pública del sur de la provincia de Tucumán (Argentina). Los niños tienen 5 años de edad. A partir del análisis del corpus, sostenemos que estos niños pequeños son capaces de participar en diálogos de persuasión (discusiones críticas) con sus pares. Como resultado de esto, deseamos probar que los argumentos avanzados en esas discusiones críticas consisten de, con mucha frecuencia, argumentos válidos a nivel lógico. En este caso, como marco teórico, utilizamos el enfoque lógico informal a la argumentación (Walton, 2008; Tindale, 2007).

Palabras clave: Argumentos, niños, diálogos de persuasión (o discusiones críticas), falacias.

1. Introduction

Nowadays, it is widely known that many authors from different disciplines focus their research on argumentation. It is also undeniable that the term "argumentation" is almost everywhere. Sometimes overused, sometimes as a key concept in a well-explained theory, this term appears in books or papers about Philosophy, Law, Linguistics, Psychology, etc. However, despite all this attention paid to the subject, we believe that the development of argument skills in children, in particular, has not still been studied sufficiently (Piaget, 1969; Vygotsky, 1978; Maier, 1991; Miller 1987; McCall, 1991; Brutian, 2007; Ochs, 2007; Ortega de Hocevar, 2007; and others).

Therefore, this article aims at providing some guidelines about the development of argument skills among 5 year-old Argentine children. Our main objective in principle is to establish that 5 year-old children can have a critical discussion with their peers, and to state that, as a consequence, their arguments can be assessed by examining (some of the major) informal fallacies proposed by Walton (2008). In other words, our goal is to defend the hypothesis that young children are able to take part in persuasion dialogues (critical discussions) with their peers. As a result of that, we want to prove that the arguments advanced in those critical discussions consist of, more often than not, valid arguments at a logical level. In this case, our theoretical framework will be the informal logical approach to argumentation (Walton, 2008; Tindale, 2007).

In the next section of our work, we distinguish a persuasion dialogue (or a critical discussion) from other types of dialogues (Walton, 2008) and we offer a brief summary about the informal logical approach to argumentation. In the section that we called "Methodology and Exposition of the Results", we provide some examples of arguments advanced in a critical discussion among 5 year-old Argentine children. Then, in the fourth section, we analyze those cases and we postulate that children's arguments are part of a reasoned dialogue. In the last section of this paper, we try to sum up some of the pros and cons of our work, but most important, we try to draw some conclusions (for the time being) about children's arguments and about the possibility to assess them from an informal logical point of view.

2. State of the Art: Carrying out a Persuasion Dialogue (or a Critical Discussion)

Douglas Walton (2008) defines the term *dialogue* as follows:

> Dialogue is a sequence of exchanges of messages or speech acts between two (or more) participants. Typically however, dialogue is an exchange of questions and replies between two parties. Every dialogue has a goal, and requires co-operation between the participants to fulfill the goal. This means that each participant has an obligation to work towards fulfilling his own goal in the dialogue, and also an obligation to co-operate with the other participant's fulfillment of his goal. The basic reason why any argument can be criticized as a bad argument always comes down to a failure to meet one of these basic obligations (2008: 3).

From this definition, it becomes clear that a dialogue is a sequence of speech acts, as other scholars (e.g. van Eemeren and Grootendorst, 1984) have already described. This (complex) sequence of speech acts takes place during an exchange between two parties. Walton, in particular, goes further and describes several types of dialogues. These types of dialogues differ from one another on the basis of the initial situation (the starting point of the dispute), the participant's goals (what they are seeking when they engage themselves in a dialogue) and the goal of the dialogue itself (the overall objective of engaging in such a dialogue). Walton represents this in the following table, where he shows concisely the main differences among the several types of dialogues.

Table 1.1. Types of dialogue (2008: 8).

Type of dialogue	Initial situation	Participant's goal	Goal of dialogue
Persuasion	Conflict of opinions	Persuade other party	Resolve or clarify issue
Inquiry	Need to have proof	Find and verify evidence	Prove (disprove hypothesis)
Negotiation	Conflict of interests	Get what you most want	Reasonable settlement both can live with
Information-seeking	Need information	Acquire or give information	Exchange information
Deliberation	Dilemma or practical choice	Co-ordinate goals and actions	Decide best available course of action
Eristic	Personal conflict	Verbally hit out at opponent	Reveal deeper basis of conflict

Walton (2008: 9) points out that, among all these types of dialogues, the most important one is the persuasion dialogue (or critical discussion). However, he puts the stress on the fact that it is crucial to differentiate one type of dialogue from the others, because this could help us to avoid significant errors and misunderstandings that may occur when there is a dialogue shift (dialectical shift) from one type of dialogue to another. Being aware of the different types of dialogues enables us to notice these kinds of dialogue or dialectical shifts. And this is extremely important due to the fact that if such shifts go unnoticed; they can lead to misinterpretations, errors, and fallacies of argumentation.

Having described briefly the different types of dialogue, we may concern ourselves, as Walton does, with the most important type of dialogues: the persuasion dialogue.

Once again, Walton (2008: 10-11) provides a clear definition of what he calls a *persuasion dialogue.* He claims that each participant in a persuasion dialogue is supposed to use arguments exclusively composed of premises that are commitments of the other participant. These commitments and, as a result, the obligations involved are an essential feature of a persuasion dialogue. It is an important kind of failure –if not the major one– to advance an argument that is not based on such premises, but on propositions that the party whom it is intended to persuade does not accept.

Walton adds to this characterization of a *persuasion dialogue* that this type of dialogue "can be of two types. In an asymmetrical persuasion dialogue, the type of obligation of the one participant is different from that of the other. In the symmetrical persuasion dialogue, both participants have the

same types of obligations" (2008:11). It is important to make clear that, in a persuasion dialogue, the basic goal is to prove a thesis in order to resolve an issue. Therefore, the primary obligation in a persuasion dialogue is a *burden of proof,* which means that the participant with an obligation has the "burden" (or the obligation) to prove his thesis. In contrast, in a symmetrical persuasion dialogue (or dispute), both parties share the burden of proof. Furthermore, the goal of a persuasion dialogue sets this burden of proof. However, it has to be clearly recognized that there can be different standards of strictness for meeting this requirement. For that reason, the arguments can be, for example, *deductively valid arguments* (which means that it is logically impossible for the conclusion to be false where the premises are true), *inductively strong arguments* (in the sense that if the premises are true, then it is probable that the conclusion is true) or *plausible arguments* (in the sense that if the premises are plausibly true, then the conclusion is as plausibly true as the least plausible premise).

To conclude our brief characterization of the informal logical approach to argumentation, we can say one more thing about *persuasion dialogues* or *critical discussions.* One decisive component of a persuasion dialogue is the arguer's position. This means that the participants (or arguers) have a position defined by those commitments, which they have incurred in their questions and replies.

The distinctions among the different types of arguments advanced in a critical discussion by 5 year-old Argentine children constitute the basis of our analysis. We will put the stress on how Argentine children carry out the task of being arguers in a critical discussion with their peers, and which are the arguments that they are able to advance in order to support their own points of view.

As far as the development of argument skills in children is concerned, we have already proved in a case study that Argentine children from 4 to 7 years old are able to discuss critically with their peers (Molina, 2010, 2011). Furthermore, at the same time, they are also able to follow one or more of the rules for a critical discussion proposed by van Eemeren, Grootendorst y Snoeck (2006). This does not mean, under any circumstances, that young children's arguments are always perfect and logically valid. In everyday discussions, flawless arguments are extremely difficult to find. However, this means that young children can engage themselves in critical discussions with their peers in order to resolve a difference of opinion, and that they can do this with arguments that are, more often than not, well-constructed at a logical level. Young children produce arguments that, in general, are effective and reasonable, connected with the thesis they are

trying to prove, and -most important- they produce arguments that, in the context of the discussion, are directly aimed at resolving the difference of opinion (Molina, 2010; 2011).

3. Methodology and Exposition of the Results

The corpus of analysis for this paper corresponds to a conscientious selection of some (significant) fragments from another corpus (Molina, 2010). All the dialogues that we analyze here were parts of bigger dialogues. The context of all of them is the same: interaction among peers during an art class in a public elementary school of the south of Tucuman (Argentina). In order to understand these dialogues, it has to be explained that the province of Tucumán is the most densely populated and the smallest by land area, of the provinces of Argentina. Tucumán is also one of the poorest provinces of Argentina. Located in the northwest of the country, the capital is San Miguel de Tucumán, often shortened to Tucumán. Neighboring provinces are, clockwise from the north: Salta, Santiago del Estero and Catamarca. It is nicknamed *El Jardín de la República (The Republic Garden)*.

After having provided this background information, now we can describe the main characteristics of our corpus. The children are 5 years old. The original records are in Spanish, so a translation of each example is offered as a footnote. It may also be noticed that, despite our best endeavors of being non-participant researchers, the children knew that they were being recorded, and -as a result- the researcher is sometimes included in the discussion. However, this participation is a minor one and does not interfere with our purpose of analyzing children's critical discussions *among peers*. Each example will be partially analyzed in the next section.

Example 1

> **Boy 1 (Nahuel):** mi juego preferido es el ladrón y el policía porque me gusta correr / y me gusta Tom y Jerry porque mi mamá lo veía.
> **Boy 2 (Rodrigo):** mentira! A vos te gusta Bent 10!
> **Boy 1 (Nahuel):** NOOO!!! Tom y Jerry!!! Yo no veo Bent 10 porque eso no lo dan en mi tele, lo conozco de los cumpleaños nomás

Example 2

> **Boy 1 (Nahuel):** acá estamos hablando cosas de terror
> **Boy 2 (Rodrigo):** porque nosotros hemos visto cosas / se lo han llevado a mi primito

Girl 1 (Karen): y el de abajo lo ha matado a los sobrinos de nosotros

Girl 2 (Brisa): vos conocés Medinas /porque ahí trabaja mi tío / ahí él me ha llevado en su auto ( ) y a la mañana yo me he despertado y ahí yo he visto la remera y la nariz de la cosa / del enanito de abajo pero no la cara //

I (Interviewer): ¿en serio?

Girl 2 (Brisa): si me he asustado

Boy 1 (Nahuel): mi hermanita / y yo ha visto la película de Chuki / estaba viendo con mi hermanita / con mis dos hermanitos / y ha venido Chuki y los ha matado a mis dos hermanitos / el enanito es como Chuki / los dos son petisos y feos y te matan / yo les digo es así / yo he sufrido mucho la muerte de mi hermanito

Girl 1 (Karen): sabés que nosotras yo y ella no los chicos se hemos encontrado y hemos subido a la camioneta del tío padrino yo no sé qué cosa y no ha aparecido el duendecito y casi no ha matado / pero al final ha matado a los dos sobrinitos de nosotros / verdad?

Girl 2 (Brisa): (()) asiente con la cabeza

Girl 1 (Karen): y después cuando nostras hemos ido a comprar los trabajos para mi papá yo he visto a alguien que andaba atado a la bicicleta y yo le he dicho a mi mamá y ella no me creía.

Girl 2 (Brisa): era el duende abajo! / que ha llegado en la bicicleta por allá cuando nosotras hemos ido a comprar cosas para mis clases

Girl 1 (Karen): a mí me da miedo porque nos puede aparecer /verdad?

I (Interviewer): y si les aparece a los otros…

Boy 1 (Nahuel): y conoce también las casas / las casas de los que están ( ) /porque ellos a veces escuchan cuando nosotros estamos hablando de ellos

Boy 2 (Rodrigo): mi papá dice que en el 2001 le ha aparecido una luz que era el enanit**o**

Boy 1 (Nahuel): ¿verdad que el que vive acá abajo nos está escuchando? / si se portamos mal nos aparece pero si se portamos bien no aparece

Girl 1 (Karen): a los varones se les va a aparecer entonces porque los varones se portan requete recontra mal / todos los varones se portan mal y abajo está el enanito y la mujer

Girl 2 (Brisa): no, no, EN MEDINAS vive el que te escucha, acá no / está enterrado pero vivo en Medinas

Girl 1 (Karen): ¿quién te ha dicho eso?

Girl 2 (Brisa): mi tío que trabaja en Medina y él sabe mucho / si no me crees andá a dormir a Medina y vas a ver cómo te aparece el duendecito

Example 3

Boy 1 (Nahuel): sabes que ha fallecido una chiquita y le estamos por hacer una canasta de comida / para toda la familia /porque la chiquita venía a la escuela / era de la tarde

Girl 2 (Brisa): acá le ha entrado el virus (())

> **Girl 1 (Karen):** tenía varicela y se ha rascado y le ha entrado un virus por la pierna y se ha fallecido
>
> **Girl 2 (Brisa):** porque si vos te sacás el cuerito, te entra el virus, te enfermás más, no te podés curar y te podés morír.

4. Analyzing the Results: Children's Arguments as Part of a Reasoned Dialogue

From Antiquity onward, several important kinds of errors of argumentation are considered to be especially significant. They have traditionally been labeled as (major) *informal fallacies*. This label might be too strong or not, but the true is that, as far as argumentation is concerned, *fallacy* has always been a key concept and not always a positive, but a stigmatizing one. If someone wants to cast doubts on the other party's argumentation, he just has to blame the other party for having been fallacious. This hardly ever fails.

In this section, the major informal fallacies are outlined. For each of these fallacies, we will indicate if young children were able to carry out the task of proving their thesis without using fallacies. The dialogues provided in the section III would be the sources of our examples here. In each dialogue, there are some standpoints at stake that need to be proved, but the question is how young children construct their arguments in order to prove their thesis and to resolve the differences of opinion.

A (non-exhaustive) list of (some of the) major fallacies and the examples gives form to the exposition of our results.

1. *Fallacy of many questions (complex questions)* occurs, as Walton (2008:18) points out, where a question is posed in an overly aggressive manner, presupposing commitments to prior answers to questions not yet asked. The strategy here is to try to trap or confuse the answerer into incurring damaging commitments that can be used to defeat him.

This kind of fallacy is not common among children. In fact, children are not accustomed to pose questions in an aggressive manner, and they cannot understand the speech act of "posing a question" (or "asking") as a strategy to try to confuse the answerer. From what we have observed, children do not always understand that prior answers to question not asked yet could presuppose certain commitments.

We can conclude that young children do not use the fallacy of many questions (complex questions), because –in general– they are still unable

to understand that some answers to different questions may imply commitments and obligations. Children use questions as a form of seeking information, like in the following example:

> **Girl 2 (Brisa):** no, no, EN MEDINAS vive el que te escucha, acá no / está enterrado pero vivo en Medinas
> **Girl 1 (Karen):** ¿quién te ha dicho eso?
> **Girl 2 (Brisa):** mi tío que trabaja en Medina y él sabe mucho / si no me crees andá a dormir a Medina y vas a ver cómo te aparece el duendecito

2. *Fallacy of ignoratio elenchi (fallacy of irrelevant conclusion or fallacy of ignoring the issue).* This fallacy occurs where an argument is directed towards providing the wrong, or an irrelevant conclusion. The problem in fact is that the argument, albeit being valid, has strayed from the point.

Generally speaking, children do not use the fallacy of *ignoratio elenchi*. They tend to avoid conversations and discussions about subjects they completely ignore. In fact, they change (sometimes abruptly) the subject of a dispute if they do not know anything about that. This makes possible to claim that, when young children engage themselves in a critical discussion, they do that because they know they have a standpoint about a certain issue, and –the most important- they know they can give some arguments to prove this particular thesis.

The argumentation given by Nahuel in the *Example 1* illustrates perfectly what we mean. Nahuel defends his point of view with arguments strictly connected with his standpoint.

> **Boy 1 (Nahuel):** mi juego preferido es el ladrón y el policía porque me gusta correr / y me gusta Tom y Jerry porque mi mamá lo veía.
> **Boy 2 (Rodrigo):** mentira! A vos te gusta Bent 10!
> **Boy 1 (Nahuel):** NOOO!!! Tom y Jerry!!! Yo no veo Bent 10 porque eso no lo dan en mi tele, lo conozco de los cumpleaños nomás

3. *Fallacy of the argumentum ad baculum.* This fallacy consists of appealing to force. This means that an *argumentum ad baculum* is committed by appeal to force or the threat of force (intimidation) to gain acceptance of a conclusion, of course, without providing proper or adequate arguments for it.

As far as we are concerned, this kind of argument is not common among young children, despite the fact that other authors claim so. According to

Brutian (2007), the use of the *argumentum ad baculum* is extremely rare among young children. In the cases we have provided, there are no examples of *argumentum ad baculum* at all. However, several reasons to explain this lack of *argumentum ad baculum* could be found. The main reason could be the fact that these cases were recorded in the context of a class, under the presence of a teacher, so the children are -in some way- inhibited by this "omnipotent" presence. Young children, also generally speaking, seem to respect their teacher and they try to behave well in front of her. They know they will be punished if they try to appeal to force (or treat of force) to gain acceptance of a conclusion.

In other words, we believe that the context of these critical discussions may have limited the use of *argumentum ad baculum*. Nevertheless, some authors, like Brutian (2007), argue that expecting the (over)use of *argumentum ad baculum* by young children is a major prejudice, because we assume beforehand that those children are unable to provide logically valid arguments.

4. Fallacy of the argumentum ad misericordiam is simply the appeal to pity.

Young children use this kind of fallacy. They consciously appeal to pity as a strategy to gain acceptance to a particular conclusion. In the *Example 2,* Nahuel clearly appeals to pity when he tries to prove his thesis that "Chuki" is a real monster, like the "Enanito" (the "Dwarf"). He wants to prove that both can kill (innocent) people.

> **Boy 1 (Nahuel):** mi hermanita / y yo ha visto la película de Chuki / estaba viendo con mi hermanita / con mis dos hermanitos / y ha venido Chuki y los ha matado a mis dos hermanitos / el enanito es como Chuki / los dos son petisos y feos y te matan / yo les digo es así / yo he sufrido mucho la muerte de mi hermanito.

Obviously, Nahuel has made up a whole story about the tragic death of his siblings, but the last sentence "yo he sufrido mucho la muerte de mi hermanito" shows us a clear appeal to pity in order to prove his thesis. In other article (Moilina, 2011), we analyze the connections between emotions and arguments in young children. We conclude that these appeals to pity, in particular, and the use of the *argumentum ad misericordiam*, in general, do not automatically imply that a fallacy has occurred. When an *argumentum ad misericordiam* is used properly and there is enough evidence that the point

of view is not entirely based on this appeal to pity, but primarily on logically valid arguments, we cannot conclude that this appeal to pity is a *fallacy*.

Like the *argumentum as misericordiam*, the *fallacy of the argumentum ad populum* is the appeal to emotions, enthusiasm, or popular feelings of a particular audience. Again, its uses of emotional appeals in argument are said to be fallacies where they are used to gain acceptance to a conclusion without fulfilling the obligation of supporting the conclusion by giving not only strong, but also relevant evidence to meet the burden of proof.

It is widely believed that the emotional appeal, generally speaking, hides a lack of solid evidence and arguments. We think that this is not always the case. When the defense of a standpoint is entirely based on the appeals to pity, we can say that a fallacy has been made. However, as we pointed out above, as long as the *argumentum ad misericordiam* or *argumentum ad populum* are used to reinforce a certain standpoint that can be supported by logical arguments, there seems to be no problem appealing to emotions. In fact, a discussion without appealing to emotions can be seen as almost alexithymic and, therefore, pathologic.

In this example, it should be mentioned that children also use arguments from analogy. Even at a very early age, children reason by analogy (see Brown, 1989, 369-412). Many scholars have observed this fact. In this case Nahuel, besides appealing to pity, introduces correctly an argument by analogy. The analogy between Chuki and the Dwarf (Devil) is quite valid. The similitude is obvious: both are short, ugly, and -at least based on what the most of Hollywood's movies show- they kill (innocent) people.

5. Fallacy of the argumentum ad hominem is said to be committed when one person criticizes an argument by attacking the arguer personally instead of considering his argument on its real merits.

Like the *argumentum ad baculum,* and against all the expectations, this kind of fallacy is not extremely common among young children who discuss in an institutional context (during a school class). Again, many reasons for the lack of this kind of argument could be given. However, we are trying to explain what we have seen. It is not our intention to hypothesize about what could have been if the contexts of the discussions were different.

6. Fallacy of the argumentum ad verecundiam (or *appeal to modesty*). The misuse of expert opinion or authority-based sources consist in trying to

suppress someone's opinion in argument by suggesting that they should not dare to oppose the word of an authority on an issue.

According to Walton (2008), some arguments based on the say-so of authorities can be highly reasonable, even excellent arguments. He adds to this idea that "the point is then that appeals to expertise are not intrinsically fallacious, even if they can be erroneous in some cases, when misinterpreted, taken too seriously, or taken uncritically" (2008:211).

Like Walton (2008), Tindale (2007:129) supports this idea as follows: "Modern Appeals to Authorities, then, may often be appeals to experts. One source of fallacy is suggested here. It may be possible for an audience to mistake a person's status as an authoritative figure for expertise in a field. When only the first exists but the second is understood, then error could arise."

In order to establish whether an appeal to expert opinion is fallacious or not, Walton (2008:217) proposes a set of critical questions. These critical questions for the appeal to expert opinion help us to sort out the fallacious or questionable instances from the more reasonable instances of the appeal to expert opinion. In the end, like in other fallacies we have studied, this is *quid* of the question.

A reasonable appeal to authority must satisfy all the requirements quoted in these six questions. If a particular requirement is violated by an appeal to authority, then the appeal should be criticized or questioned in this regard. Concisely, the six questions are:

I. *Expertise Question:* How credible is E as an expert source?
II. *Field Question:* Is E an expert in the field that A is in?
III. *Opinion Question:* What did E assert that implies A?
IV. *Trustworthiness Question:* Is E personally reliable as a source?
V. *Consistency Question:* Is A consistent with what other experts assert?
VI. *Backup Evidence Question:* Is E's assertion based on evidence?

The following example shows us how children can appeal to expert opinion. Next, an analysis is provided.

> **Boy 1 (Nahuel):** ¿verdad que el que vive acá abajo nos está escuchando? / si se portamos mal nos aparece pero si se portamos bien no aparece
> **Girl 1 (Karen):** a los varones se les va a aparecer entonces porque los varones se portan requete recontra mal / todos los varones se portan mal y abajo está el enanito y la mujer
> **Girl 2 (Brisa):** no, no, EN MEDINAS vive el que te escucha, acá no / está enterrado pero vivo en Medinas

> **Girl 1 (Karen):** quién te ha dicho eso?
> **Girl 2 (Brisa):** mi tío que trabaja en Medina y él sabe mucho / si no me crees andá a dormir a Medina y vas a ver cómo te aparece el duendecito.

In this conversation, Brisa introduces an argument of authority and she uses it correctly. Brisa invokes in him a genuine authority and uses it in the relevant field. Her appeal to expert opinion can answer the six critical questions proposed by Walton.

I. *Expertise Question: How credible is the uncle as an expert source?* He is extremely credible because he is not only a grown-up, but also a worker in a sugar factory in Medina.

II. *Field Question: Is the uncle an expert in the field that Brisa is in?* Yes, he has spent his entire life in Medina and, therefore, he knows everything about the Dwarf.

III. *Opinion Question: What did the uncle assert that implies Brisa?* The uncle claims that he has seen the Dwarf repeatedly, and Brisa considers this as a proof of the fact that the Dwarf actually exists.

IV. *Trustworthiness Question: Is the uncle personally reliable as a source?* Yes, the uncle is extremely reliable as a source for the 5 year-old children.

V. *Consistency Question: Is the uncle consistent with what other experts assert?* Yes, many sugar workers claim that they have seen the Devil (or a Dwarf as a representation of the Devil) in the sugar factories of Medina (Tucumán, Argentina). This kind of supernatural presences are an essential part of the most popular legends and culture of the Northwest of Argentina.

VI. *Backup Evidence Question: Is the uncle's assertion based on evidence?* Yes, the uncle swears that he has seen the Dwarf with his own eyes.

Brisa finally makes a valid argument of consequence, "mi tío que trabaja en Medina y él sabe mucho / si no me crees andá a dormir a Medina y vas a ver cómo te aparece el duendecito". This argument reinforces the thesis that the Dwarf is buried in Medina and we only need to go to that city in order to see him.

7. Fallacy of argumentum ad ignorantiam (or argument from ignorance) could, as Walton (2008:21) says, be illustrated by the argument that ghosts must exist because nobody has ever been able to prove that ghosts do not exist. This type of argument is a perfect example of the danger of arguing from ignorance. Furthermore, this example also shows that the failure to disprove a proposition does not necessarily prove it.

This kind of fallacy is not extremely frequent among young children. The *Example 2* illustrates this perfectly. Children are not trying to prove that monsters like "Chucki" or the "Enanito" exist, although no one has ever been able to see them. On the contrary, theirs attempts are directed towards providing that this kind of monsters are part of our (real) everyday life, and-as a result- they make up stories to support their thesis. Undeniably, children may overuse their imagination when arguing, but they are trying to defend a standpoint in the most logical, coherent and cogent way they can. Learning to argue is a long process, and they are just at the beginning of a long path. However, they seem to be eager to share the journey with their peers, to discuss points of view and to resolve the differences of opinions at stake.

Children's behavior in critical discussions and their eagerness to solve problems with others support Tomasello's hypothesis that "human communication is a fundamentally cooperative enterprise, operating most naturally and smoothly within the context of (1) mutually assumed common conceptual ground, and (2) mutually assumed cooperative communicative motives" (2008:6). This fundamentally cooperative nature of human communication, of course, has been already pointed out by Grice (1975) and by others who follow in this tradition such as Clark (1996), Sperber and Wilson (1986), and Levinson (2006). However, as Tomasello (2008) claims, if we want to understand the ultimate origins of human communication, both phylogenetically and ontogentically, we must look outside of communication itself and into human cooperation more generally, because cooperation has shown to be the key to communication.

8. The straw man fallacy occurs where an arguer's position is misrepresented, by being misquoted, exaggerated, or otherwise distorted, and then this incorrect version is used to attack his argument and try to refute it.

This kind of fallacy is more frequent among young children. They tend to misrepresent, misquote, exaggerate or distort the point of view of the other party. One perfect example of this is given in the first dialogue (*Example 1*). Rodrigo misrepresents or distorts Nahuel's point of view. The true is that Nahuel has never watched the *Bent 10 TV Show* because he has no cable television at home. Nahuel defends his standpoint arguing that he only knows Bent 10 from the birthday's parties (where there are always thousands of pictures of this cartoon character), because otherwise he cannot watch the TV show of *Bent 10* at home. However, he *can* watch *Tom y Jerry* and he enjoys this TV show due to the fact that he can watch this with his mother.

Rodrigo, therefore, seems to be unable to find the proper arguments to refute the defense advanced by Nahuel, so he changes the subject abruptly.

> **Boy 1 (Nahuel):** mi juego preferido es el ladrón y el policía porque me gusta correr / y me gusta Tom y Jerry porque mi mamá lo veía.
> **Boy 2 (Rodrigo):** mentira! A vos te gusta Bent 10!
> **Boy 1 (Nahuel):** NOOO!!! Tom y Jerry!!! Yo no veo Bent 10 porque eso no lo dan en mi tele, lo conozco de los cumpleaños nomás

9. The fallacy of arguing in a circle (also called *petitio principii* or begging the question) is when the conclusion to be proved is already presupposed by the premises.

As in any other case study, we can only draw conclusions from what we have actually observed. In the examples provided, there is no evidence of such kind of fallacy. However, once again, we could speculate about this lack of *petitio principii*. Arguing in circle means that the premises already presuppose the conclusion, and in principle this does not seem to be the case in the arguments provided by young children. Our statements here, obviously, are limited by the corpus.

10. The slippery slope fallacy occurs where a proposal is criticized, without sufficient evidence, on the grounds that it will lead, by an inevitable sequence of closely linked consequences, to an end result that is catastrophic.

The following example shows that this kind of fallacy is not a common one among young Argentine children:

> **Boy 1 (Nahuel):** sabes que ha fallecido una chiquita y le estamos por hacer una canasta de comida / para toda la familia /porque la chiquita venía a la escuela / era de la tarde
> **Girl 2 (Brisa):** acá le ha entrado el virus (())
> **Girl 1 (Karen):** tenía varicela y se ha rascado y le ha entrado un virus por la pierna y se ha fallecido
> **Girl 2 (Brisa):** porque si vos te sacás el cuerito, te entra el virus, te enfermás más, no te podés curar y te podés morír.

In this example, recorded during a conversation among kindergarten children (5 year-old) within a public elementary school in Tucumán (Argentina), we observe that the girls do not incur in any fallacy. A fallacy would occur only if the reasoning made explicit after all that had been left

implicit, is still invalid. At the end, fallacies have to do with the logical form of reasoning that underlies the argument. The two best-known forms of fallacious reasoning in this case would be the *assertion of the consequent* and the *denial of antecedent*. These are the invalid counterparts of the *modus ponens* and *modus tollens*. The error that takes place in both forms of invalid reasoning is that a sufficient condition is treated like a necessary condition.

In the example provided, it can be observed how the girls do an excellent inference. Using a *modus ponens,* they argue properly. The *modus ponens* (*ponere*: to state) has the following form of reasoning: if **p** then **q**. **p** therefore **q**. For example:

Si tenés varicela y te rascás una roncha y te entra un virus.	**(p) Antecedent**
Entonces podés enfermarte más, no te curás y te morís.	**(q) Consequent**
La compañerita tuvo varicela, se rascó y le entró un virus.	**(p) Affirming the Antecedent**
Por lo tanto, la compañerita se enfermó más, no pudo curarse y murió.	**(q) Affirming the Consequent**

The logical reasoning is clear, the inference obvious. Children use arguments that are logically valid or capable of being validated by the explicitation of one or more implicit assumptions. In this case, that is what the children did.

5. Conclusions

In this article we have tried to demonstrate something that we have been observing in our past case studies: children are capable of carrying out critical discussions with their peers. Furthermore, children are fully-fledged language users, and we have to observe their arguments as part of reasoned dialogues. They are learning to argue, just as they are also learning to speak, to write, or to be part of a society. However, the most important thing is that they are learning with others, so the peers play a fundamental role in the development of argument skills among young children.

As we have pointed out, children can use and construct arguments that are logically valid. They do not (over)use fallacies in order to prove their thesis. They try to be as rational and reasonable as they can. They appeal to emotions, and they-in some cases- misrepresent the other's points of view, but they do not try to appeal to force or intimidation, they do not use *argu-*

mentum ad hominem, ad baculum, or *ad ignorantiam*. Children are trying to be effective and reasonable. In fact, they try to convince others while being reasonable. And this is not a meaningless thing. Nowadays, when many grow-ups willingly avoid reasonability in order to reach effectiveness, this endeavor of joining reasonability and effectiveness carried out by young children seems to be nothing less than an oasis in a huge dessert.

If we try to penetrate into child logic and reasoning, we can see the desire of a child to comprehend the surrounding world. That is why the notion of "children's argumentation" should be clearly distinguished from that of "childish argumentation", the latter characterizing some adults.

References

Brown, A. (1989). Analogical Learning and Transfer: What develops? In Vosniadou, S. and Ortony, A. (eds.) *Similarity and Analogical Reasoning.* Cambridge: Cambridge University Press.

Brutian, L. (2007). Arguments in Children Language. In van Eemeren, F.H.; Blair, J.C.; Willard, C.A y Garssen, B. (Eds.) (2007) *Proceedings of the Sixth Conference of the International Society for the Study of Argumentation.* Amsterdam: SIC SAT.

Clark, H. (1996). *Using Language.* Cambridge: Cambridge University Press.

Grice, P. (1975) Logic and Conversation. In Cole, P. and Morgan, J. (Eds.) *Syntax and Semantics,* vol. 3. New York: Academic Press.

Levinson, S. (2006). Cognition at the Heart of Human Interaction. *Discourse Studies*, 8 (1), 85-93.

Maier, R. (1991). Argument and Power. In F. van Eemeren et al (Ed.), *Proceedings of the II International Conference on Argumentation* (pp. 108-116). Amsterdam: SIC SAT.

McCall, C. (1991). Reasoning and Young Children. In F. van Eemeren et al (Ed.), *Proceedings of the II International Conference on Argumentation* (pp. 1190-1197). Amsterdam: SIC SAT.

Miller, M. (1987). Argumentation and Cognition. In M. Hickmann (Ed.), *Social and Functional Approaches to Language and Thoughts* (pp. 225-249). New York: Academic Press.

Molina, M. (2012) .Estudio de las emociones en la argumentación infantil. *RILL*, 17, 1-11.

Molina, M. E. (2010) Argumentación en frasco chico. Estudio de caso: argumen-tación en niños de 4 a 6 años. In *Actas del XVIII Jornadas de Jóvenes Investiga-dores de la AUGM (Asociación de Universidades Grupo Montevideo).* Santa Fe: Universidad Nacional del Litoral (October, 2010).

Ochs, E. (2007). Talking to Children en Western Samoa. In T. van Dijk, (Ed.), *Discourses Studies*. *Volumen IV.* London: SAGE Publicantions.

Ortega de Hocevar, S. (2007). La génesis de la argumentación. In C. Padilla, S.

Douglas, E. López (Coord.) *Lectura y escritura críticas: perspectivas múltiples*. Tucumán: Facultad de Filosofía y Letras UNT, INSIL, Cátedra UNESCO.

Piaget, J. y Inhelder, B. (2007 [1969]). *Psicología del niño*. Madrid: Morata.

Sperber, D. and Wilson, D. (1995). *Relevance: Communication and Cognition.* Oxford: Blackwell.

Tindale, C. W. (2007). *Fallacies and Argument Appraisal.* New York: Cambridge university Press.

Tomasello, M. (2008). *Origins of Human Communication.* Boston: The MIT Press.

Walton, D. (2008). *Informal Logic. A Pragmatic Approach.* New York: Cambridge University Press.

van Eemeren, F., Grootendorst, R. y Snoeck, F. (2006). *Argumentación. Análisis, evaluación, presentación*. Buenos Aires: Biblos.

van Eemeren, F. and Grootendorst, R. (1984) *Speech Acts in Argumentative Discussions.* The Netherlands: Foris Publications Holland.

Vygotsky, L. (1978). *Pensamiento y lenguaje*. Madrid: Paidós.