Informal Logic

INFORMAL LOGIC

The Analysis of Implicit Premises within Children's Argumentative Inferences

Sara Greco, Anne-Nelly Perret-Clermont, Antonio Iannaccone, Andrea Rocci, Josephine Convertini et Rebecca Gabriela Schär

Aller au sommaire du numéro

Découvrir la revue

Citer cet article

Greco, S., Perret-Clermont, A.-N., Iannaccone, A., Rocci, A., Convertini, J. & Schär, R. (2018). The Analysis of Implicit Premises within Children's Argumentative Inferences. *Informal Logic*, *38*(4), 438–470. https://doi.org/10.22329/il.v38i4.5029

Résumé de l'article

Cette contribution présente les résultats préliminaires du projet «Analyse de l'argumentation implicite des enfants: reconstruction des prémisses procédurales et matérielles». Ce projet interdisciplinaire s'appuie sur la théorie de l'argumentation et sur la psychologie socioculturelle du développement pour étudier l'argumentation des enfants. Nous reconstruisons les inférences des enfants dans des interactions dialogiques au cours de conversations adulte-enfant et enfant-enfant dans différents contextes. En particulier, nous nous concentrons sur les prémisses implicites en utilisant le Argumentum Model of Topics (AMT) pour la reconstruction de la configuration inférentielle des arguments. Nos résultats révèlent que les sources de malentendus résident le plus souvent dans le non-alignement des prémisses des adultes et des enfants; et que ces non-alignements concernent plus souvent les prémisses matérielles que les procédures inférentielles.

érudit

The Analysis of Implicit Premises within Children's Argumentative Inferences

SARA GRECO

Institute of Argumentation, Linguistics, and Semiotics
Università della Svizzera italiana (USI)
Lugano, Switzerland
sara.greco@usi.ch

ANNE-NELLY PERRET-CLERMONT

Institute of Psychology and Education
University of Neuchâtel
Neuchâtel, Switzerland
anne-nelly.perret.clermont@unine.ch

ANTONIO IANNACCONE

Institute of Psychology and Education
University of Neuchâtel
Neuchâtel, Switzerland
antonio.iannaccone.@unine.ch

ANDREA ROCCI

Institute of Argumentation, Linguistics, and Semiotics
Università della Svizzera italiana (USI)
Lugano, Switzerland
andrea.rocci@usi.ch

JOSEPHINE CONVERTINI

Institute of Psychology and Education
University of Neuchâtel
Neuchâtel, Switzerland
josephine.convertini@unine.ch

Rebecca Schär

Institute of Argumentation, Linguistics, and Semiotics
Università della Svizzera italiana (USI)
Lugano, Switzerland
rebecca.schaer@usi.ch

Abstract: This paper presents preliminary findings of the project "Analyzing children's implicit argumentation: Reconstruction of procedural and material premises." This interdisciplinary project builds on argumentation theory and developmental sociocultural psychology for the study of children's argumentation. We reconstruct children's inferences in adult-child and child-child dialogical interaction in conversation in different settings. In particular, we focus on implicit premises using the Argumentum Model of Topics (AMT) for the reconstruction of the inferential configuration of arguments. Our findings reveal that sources of misunderstandings are, more often than not, due to misalignments of implicit premises between adults and children; these misalignments concern material premises rather than the inferential-procedural level.

Résumé: Cette contribution présente les résultats préliminaires du projet «Analyse de l'argumentation implicite des enfants: reconstruction des prémisses procédurales et matérielles». Ce projet interdisciplinaire s'appuie sur la théorie de l'argumentation et sur la psychologie socioculturelle du développement pour étudier l'argumentation des enfants. Nous reconstruisons les inférences des enfants dans des interactions dialogiques au cours de conversations adulte-enfant et enfant-enfant dans différents contextes. En particulier, nous nous concentrons sur les prémisses implicites en utilisant le *Argumentum Model of Topics (AMT)* pour la reconstruction de la configuration inférentielle des arguments. Nos résultats révèlent que les sources de malentendus résident le plus souvent dans le non-alignement des prémisses des adultes et des enfants; et que ces non-alignements concernent plus souvent les prémisses matérielles que les procédures inférentielles.

1. Introduction

This paper will show that a careful reconstruction of children's inferences and their implicit premises in natural conversations

helps to understand children's contributions to dialogical argumentative activities. Of the growing studies on argumentation in context in the last decade, a large majority concentrates on adults' argumentation and largely, though not exclusively, on professional contexts such as juridical or political argumentation (see criticism in Schwarz and Baker 2017).

However, we find studies about children's argumentative skills abundant in psychology and education, rather than argumentation. The field of argumentation in education is growing; with a particular focus on the relationship between *argumentation and learning* (Rapanta, Garcia-Mila, and Gilabert 2013), scholars distinguish between *learning to argue* and *arguing to learn* (Andriessen *et al.* 2003; Schwarz 2009). The former process involves the acquisition of skills of reasoning and argumentation, while in the latter students use argumentation to "achieve a specific goal," which often means "to understand or to construct specific knowledge" (Schwarz 2009, p. 92). Although argumentation and learning is not the subject of our study, it is important to recall the content of this research stream because it is one of the fields in which children's arguments have been studied extensively. Often, there is a focus on the individual child's reasoning skills and on how to improve them. As Rapanta, Garcia-Mila, and Gilabert (2013, p. 483) put it, "argumentation is one of the most discussed competencies in the educational field, due to its proven relationship with critical and higher-order thinking." Ultimately, the "fostering of students' rationality is a fundamental educational aim" (Siegel 1995, p. 161). Because of the focus on learning, educational studies often investigate teacher-student interactions (oral and written) in a *classroom* context (to mention a few examples of a broad literature, see Kuhn 2010, 2016; Felton *et al.* 2015; Osborne, Erduran and Simon 2004; Schwarz 2009; Kuhn, Hemberger and Khait 2017).[1]

---

[1] It is also worth mentioning that literature on children's classroom argumentation concerns different local educational systems; arguably, this is because argumentation in the classroom heavily depends on how the educational system is designed. Notably, to name but a few languages and traditions in Europe other than English, studies on children's argumentation exist in German (Hannken-Illjes 2004; Hauser and Luginbühl 2017), French (Dolz-Mestre and Toubola Couchepin 2015), Italian (Ajello, Pontecorvo and Zucchermaglio 2004; Santi

Children's argumentative skills can be enhanced by appropriate educational interventions. Consequently, as Rapanta and Macagno (2016, p. 142) note, "a growing number of scholars is focusing on the strategies for implementing argumentative tasks in the classroom and analyzing and/or assessing their effects" (see also Andriessen and Schwarz 2009).

The interest in argumentation in the classroom is also partially due to a widespread perception that having children engage in an argumentative discussion in a school context is not always an easy task (see the discussion in Muller Mirza and Buty 2015; Schwarz and Baker 2017). However, the concept that children's skills need improvement partially conflicts with other studies[2] that have demonstrated with qualitative as well as quantitative methods that children do naturally engage in argumentation in educational settings (e.g., Kuhn 1991; Kuhn and Udell 2003; Psaltis and Duveen 2006; Migdalek *et al.* 2014; Schwarz and Baker 2017). Research on informal family conversations undertaken in argumentation and socio-cultural psychology reinforce these positive findings. Some studies point at surprisingly developed logical and pragmatic skills of children who present their own arguments (Völzing 1982; Pontecorvo and Sterponi 2006; Bova and Arcidiacono 2013; Anderson *et al*. 1997). These partially conflicting findings invite further research on children's argumentation, inside but also outside the classroom.

In this paper, we are interested in children's argumentation in natural conversation with no specific focus on learning or classroom contexts. We adopt a *dialogical* perspective, trying to understand what happens in a micro-setting of social interaction rather

---

2006). This list is certainly not complete, and we only mentioned a few exemplary references within the many possible.

[2] It is only a partial conflict since children's argumentative skills can exist and still be in need of improvement. Strikingly, however, some studies start from a deficiency/insufficiency attributed to children (see the discussion in Muller Mirza and Buty 2015); other studies transmit a much more positive interpretation of children's contributions to argumentative discussions (see for example Anderson et al. 1997).

than focusing on the child's individual skills.[3] We leave the question: "how can educators improve or facilitate children's argumentative skills?" aside, although this remains a legitimate and widely discussed question in education.[4] We want to contribute by answering other questions informed by the literature on developmental sociocultural psychology, namely: "what do children do when they contribute to argumentative discussions?" and in particular, "do implicit premises explain some possible misunderstandings between children and adults?" We do not assume any particular model about the skills that children should display at their age—rather, we want to observe how the conversation unfolds and how they contribute to argumentative discussions. Such is the rationale behind the project "Analyzing children's implicit argumentation: Reconstruction of procedural and material premises" (henceforth: ArgImp project), on which the authors of this paper are collaborating.[5] This project delves into children's inferences and their implicit premises in "spontaneous" conversations, operating at the intersection between studies in developmental socio-cultural psychology and Argumentation theory. This paper presents some preliminary findings of the project.

In this paper, we base our study on contexts other than the classroom and take into account small children (from 2 to 6 years). We adopt a micro-approach to the dialogical interaction between adults and children in specific interactional settings. In particular, we argue that reconstructing children's inferences and their *implicit premises* within dialogical contexts contributes to explain how (some) children's interventions might *prima facie* appear as reason-

---

[3] For a discussion on the complex interrelation between the individual's own development and the social setting and interaction, see Iannaccone and Perret-Clermont (1993).

[4] Consequently, our study takes a different perspective from the field that is usually referred to as "argumentation and education". However, there are potential implications of our approach for educational settings; these are touched upon at the end of the paper, but they are not the center of our analysis.

[5] Applicants of this project, funded by the Swiss National Science Foundation (grant n. 100019_156690), are Anne-Nelly Perret-Clermont, Sara Greco, Antonio Iannaccone, and Andrea Rocci. Josephine Convertini and Rebecca Schär participate as PhD students and have collected the data analyzed in this paper.

ing "mistakes" to teachers or researchers, when in fact they are not if one considers the child's perspective. Some of these "mistakes" depend on implicit starting points that are not shared by the interlocutors. These misalignments in implicit premises might partly explain why, in some situations, children's argumentation skills appear less developed than adults expect.

The remainder of this paper will be organized as follows: In section 2, we will discuss the reconstruction of children's inferences and the theoretical instruments that we will use for this study. Section 3 briefly outlines the different contexts in which our data on children's argumentation have been collected. Section 4 analyzes examples of children's argumentation in which we intend to show how a careful reconstruction of implicit premises within inference is subservient to a better understanding of children's starting points and of their arguments altogether. These results are discussed in section 5. Finally, section 6 has the function of drawing some preliminary conclusions, as well as of situating the present paper in the context of our broader research line on this topic.

2. Theoretical starting points of this study

2.1 The analysis of children's inferences between argumentation and psychology

Some studies on children's argumentation, conducted mainly in psychology, indicate that it is important to reconstruct implicit premises in order to understand the rationale behind children's arguments, including those that appear *prima facie* weird, wrong, or underdeveloped. Piaget (1926) suggested that it was important to study children's specific representations of the world. Later, also in the field of psychology, Hundeide (1992, pp. 143-144) reports that Norwegian children reason much better on a Piagetian task when the premise of their discourse involves considering snowballs and not white and black abstract circles. He comments:

> The difficulty of a problem cannot be assessed from an analysis of the logical structure of the problem or question as such. We have instead to uncover the nesting of premises through microanalysis of message structure. Through this procedure it may be possible to

identify alternative sequences of cognitive steps bound to different interpretive premises in relation to the 'same problem' (...) an attempt at portraying thinking from the 'insider's point of view' (Shotter 1985).

Through an analysis of naturally occurring talk between children in the 4th grade at school, Anderson *et al.* (1997) show that children's arguments might seem elliptical but often are "as informative as they needed to be" (Anderson *et al.* 1997, p. 138). In fact, apparently missing premises are actually supplied either by the preceding discussion or by general principles, both available to a cooperative listener.

These findings show that a careful reconstruction of inference should precede the evaluation of children's arguments. This reconstruction should go hand in hand with a pragmatic account of what is happening in the here-and-now of the interaction, including preceding discussions and the expectations set by the context. Research in psychology has shown that children are likely to give quite different meaning to the same questions asked in teaching or testing situations, depending on the events and narratives involved (Donaldson 1978), the setting, and the relational context (Light and Perret-Clermont 1989; Iannaccone and Perret-Clermont 1993). As a result, their cognitive performances are quite different—a matter known to skilled clinicians (Grossen 2014). Other studies show that there is a great deal of information that adults leave implicit and take for granted, albeit it is not necessarily accessible to children. Elbers (2004) draws attention to the importance of the conversational asymmetry that might lead to neglecting children's perspectives and underestimating their skills. If the child is considered a partner in conversation rather than an object of research, a different account of children's reasoning skills emerges (Pramling and Säljö 2015; Mauritzson and Säljö 2001).

On the basis of these considerations, in our research on children's argumentation, we have adopted a principle of pragmatic and inferential integrity. By pragmatic integrity, we mean that children's argumentative contributions should not be considered as "isolated" argumentative productions to be evaluated independently from the interaction with other children and adults, or from the

context in which the interaction takes place. On the contrary, children's arguments should be seen as part of an ongoing discussion, which must be comprehensively taken into account in order to understand their inferences. In other words, we interpret argumentation from a dialogical viewpoint (Nonnon 1996, 2015; Plantin 1996). In particular, we assume a general pragma-dialectical framework (van Eemeren and Grootendorst 1984, 2004) to analyze adult-children and child-child discussions as argumentative discussions. The pragma-dialectical model of a critical discussion is normative in the sense that it offers a grid for analyzing how an argumentative discussion should proceed in order to resolve a difference of opinion between the interlocutors on the merits (cf. van Eemeren and Grootendorst 2004). This is a normative aspect in our study, which is related to our interpretation of argumentation. On the contrary, we do not have any normative expectations about how children should behave in order to display their argumentative skills, we simply want to reconstruct what they are doing with their arguments.[6]

By inferential integrity, we mean that we intend to carefully reconstruct children's contributions to argumentative discussions from an inferential viewpoint; we carefully reconstruct the arguments proposed by the children, including their implicit premises. Following Anderson *et al.* (1997), we assume that a careful reconstruction of implicit premises might shed light on what children are trying to do with their interventions and what types of starting points they take for granted.

2.2 Reconstructing children's inferences through the Argumentum Model of Topics

Our analysis will be guided by the Argumentum Model of Topics (AMT, Rigotti and Greco Morasso 2010) for the study of inference and the reconstruction of implicit premises. The choice of this

---

[6] In our view, the term *normative* model has a different meaning in argumentation and in studies on children in the field of education. In this paper, we adopt a normative model of argumentation, but we do not have a normative model (in the educational sense) of how children should behave or what level of competence they should have.

model is mainly motivated by the fact that the AMT offers the advantage of clearly distinguishing two different types of premises when analyzing the relation between an argument and the standpoint it supports. Two components make up the inferential configuration of every single argument: an *inferential-procedural* and a *material-contextual* component.

The inferential-procedural component represents the inferential principle, which the argument relies on. The inferential-procedural component includes the *locus*, i.e., the relation that is at the origin of inference (e.g., locus from cause to effect or effect to cause). Moreover, at the level of premises that are activated in each argument, the inferential-procedural component includes the specific inferential rule (*maxim*) derived by the locus and used as an often implicit premise in argumentation (e.g., "if the cause is present, the effect will be present"). Real life arguments, however, are not only based on abstract inferential principles, they need to be grounded in a *material-contextual* component, made up of premises linked to the cultural and contextual background of the interlocutors. The AMT distinguishes these two types of premises and explains how they interact in argumentation.[7]

Distinguishing between inferential-procedural and material premises is particularly important in the context of the present research. This allows us to understand where potential differences or even misunderstandings between children and adults might lie, without confusing the logical form of their reasoning and the inferential starting points with the material-contextual premises. In particular, the reconstruction of material-contextual premises, especially if they are left implicit and considered as taken for granted, gives a perspective on what is or is not inter-subjectively shared by the interlocutors. We expect that a careful reconstruction of young children's implicit material premises will be important to

---

[7] A more detailed presentation of the Argumentum Model of Topics and a discussion of the advantages it offers to reconstruct implicit premises are beyond the scope of this paper. For a more detailed discussion on the model, see Rigotti and Greco Morasso (2010) and Rigotti and Greco (2019). For a discussion on the distinction between inferential-procedural and material-contextual premises, see Bigi and Greco Morasso (2012) and Musi (2014).

understand their starting points, when they differ from their adult interlocutors' expectations (and vice versa) and why they are different. The reconstruction of implicit starting points in this sense connects the reconstruction of inference with the reconstruction of the pragmatics of the conversation: in fact, some implicit premises might be explained not as missing parts of an argument but as parts that are left unsaid because they are considered common knowledge.

3. Empirical data

The data discussed in this paper have been collected within the ArgImp project in two different settings, both of which involve adult-child argumentation. The first context is unstructured ("spontaneous") discussions in a family context. The second context is made up of conversations taking place during semi-structured play activities in a kindergarten. Although different, these two settings share some common traits that make the two corpora homogeneous. First, they both include preschool children (from 2 to 6 years); second, the conversation often includes not only children but also adults. In the case of family discussions, the adults normally include one or both parents, other relatives and sometimes the researcher, who is asked by children to take part in the discussion or play with them. In the case of play activities, the children are interacting with each other, and, at times, with the researcher. The researcher both presents the task and, at the end of the activity, debriefs the activity and task with the children.

The data on everyday conversations in a family setting has been collected from 12 families in three different linguistic regions of Switzerland. No specific task was given to the families, they were free to choose what to do.[8] Our goal was to observe natural occurring discussion in the families' everyday life. Sometimes, the chil-

---

[8] This study of families' spontaneous argumentation was initially inspired by Pontecorvo and Arcidiacono (2007). However, these authors analyze family discussions *at the dinner table*. In our research project, because our focus is on much younger children, we decided to avoid conversation at dinnertime and concentrate on other moments of family life. In our pilot study we found that younger children were often too tired to have discussions during dinner.

dren asked the researcher to play with them. We noticed that the children did not see the presence of an extraneous person in the family home as intrusive. More often than not, they interpreted the researcher as a friend of their parents who was visiting them and even played with them.

The data on semi-structured play activities have been collected in two different kindergartens. The first one is located in the French-speaking part of Switzerland and the second one in Italy. The researcher met the children in their usual playroom at the kindergarten. She introduced specific activities, which were intended to make them discuss and reason. Most of these activities were inspired by Piaget (1974) or by the foundation *La main à la pâte*.[9] They are activities of construction based on building blocks or other toys. Each activity included a semi-structured task for the children to complete. More details about the specific activities will be given in section 4.

Family conversations were recorded by audio; play activities at the kindergarten were recorded in both audio and video. In both cases, the researchers were present during the interaction. The data have been transcribed according to a slightly adapted version of the notation system proposed by Traverso (1999). Because all the extracts analyzed in this paper are in languages other than English, we provide the original text together with our own translation in section 4.

4. Analysis: Preliminary findings of the ArgImp project

In this section, we will discuss the main findings obtained so far in the ArgImp project, concerning the analysis of children's partially implicit inferences as contributions to an argumentative discussion. We have chosen three examples, each has an illustrative and representative function. The examples were chosen in accordance with two main criteria. First, we have chosen representative cases in the sense that the dynamics observed in these cases are also

---

[9] See http://www.fondation-lamap.org/en/international, last visited September 2017.

present in other examples found in our corpora.[10] Second, we have included both naturally occurring family conversations and semi-structured play activities in the kindergarten in order to have a way to show whether or not it is possible to retrace similar dynamics in different settings.

In line with Anderson *et al.* (1997), we found that children's arguments are often elliptical because there are implicit premises and sometimes the standpoint is also implicit. More often than not, children make explicit the datum, that is, the factual material premise supporting the standpoint in the framework of an inferential configuration that is often largely implicit. This is not different from what happens with adults' conversations. In both cases, a pragmatic principle implies that what is taken for granted is superfluous and should not be repeated, as this would go against a cooperative principle in conversation (Grice 1975).

In AMT terms, we found that maxims, i.e., inferential-procedural starting points, are always left implicit. Material starting points such as *endoxa* might be made explicit by children if they are controversial (e.g., when they are challenged by adults), which confirms the findings by Anderson *et al.* (1997). Moreover, we analyzed cases of children's inferences that come to the "wrong"

---

[10] In order to give a picture of the examples that are present in our corpora, we might refer to some approximate figures. We counted 202 episodes of argumentative discussions in the two corpora analyzed in this paper. Focusing on children's contributions within these discussions, we counted around 208 examples of a child's single argumentation (standpoint + argument). Now, 55 of these 208 examples (around 26.5% of the total), in our interpretation, are cases in which material-contextual premises of adults and children are divergent and children's endoxa might seem 'bizarre' from an adult's perspective; but the procedural-inferential part of children's argument is correct. On this basis, we claim that the phenomenon of divergent material-contextual premises, but 'correct' procedural-inferential premises is recurrent in our data. Therefore, it is worth having a closer look at it. The three examples discussed in this paper are chosen as representative of these 55 cases. Needless to say, our calculations are dependent on our interpretation as analysts of argumentation (for example, what we calculate as an "argumentative discussion"). Therefore, these figures might be subject to debate. However, they are meant to give a rough idea of how the three analyses in this paper are actually representing a recurrent phenomenon that is worth investigating.

conclusions (or to conclusions that are interpreted as "wrong" by the adults who are taking part in the conversation). In these cases, more often than not the reason is to be found in the material premises, particularly in the *endoxa*. The procedural-inferential starting points tend to be applied correctly and tend to be based on a principle of support that is acceptable. In contrast, the children's *endoxa* sometimes refer to a "worldview" that is partial or in the course of development or is different from what their adult interlocutors expected.

A first illustration of this kind of result has been discussed in Greco (2016). In this work, the example is given of a toddler, slightly older than two, who maintains that the bottom part of an apple (remnants of calyx) is a bee because it stings. We know that it is not a bee, but what is interesting is to understand where the child's "mistake" lies. The principle (locus from definition) is correctly applied, and we can agree with the definitional maxim stating that "If x has got the specific and exclusive characteristic of a species A, then x is an A." However, the *endoxon*, namely that "the specific and exclusive characteristic of the species 'bee' is 'stinging' (all that stings is a bee)" is based on a partial view of reality, probably depending on the child's limited experience of this subject. Presumably, the child will revise this *endoxon* over time, as his experience grows. From a psychological perspective, it is very interesting to distinguish the child's reasoning (successfully making an inference) from his factual knowledge (about bees and insects).

This kind of dynamic is often present in our data and represents a central finding of the ArgImp project. We will now discuss three examples taken from the corpora introduced in section 3.

4.1 The TUC® example

The first example is taken from the corpus of conversations in a family setting collected by R. Schär. The discussion was recorded in the Swiss-German-speaking region of Switzerland in February

2016. The participants of this discussion are Levin,[11] who is three years and two months old, and his mother. They talk about the researcher (R.), who on that afternoon visited them for the second time at their home. The conversation took place immediately after the researcher arrived at the family's home. When sitting down in the living room, the mother asks the researcher whether she would like to have a cup of tea, since the mother and Levin were having tea and biscuits as the researcher arrived. While the mother fills a cup with tea for the researcher, Levin starts talking.

Table 1 The TUC® example. Participants: Levin, mother

Turn	Speaker	Transcript	Our Translation
1	Levin	d R. wett äu ä chli tee (1.0)	R. also wants some tea (1.0)
2	Mother	m:hm	m:hm
3	Levin	die do=	these ones=
4	Mother	und no es Tuc ((keks)) chaschere äno geh	and a Tuc ((cookie)) you can give her one too
5	Levin	es↑	a↑
6	Mother	es Tuc (3.0)	a Tuc (3.0)
7	Levin	nid ade erwachsnig gschider	better not to adults
8	Mother	momol die sind ä für die erwachsnige	Yes, they are for adults too

---

[11] All names mentioned in this paper have been changed to protect the privacy of the participants. All identifying information has been removed.

Levin transforms this exchange into an argumentative discussion at turn 7 [12] when he problematizes his mother's request to give a TUC® cookie to the researcher (turn 4).
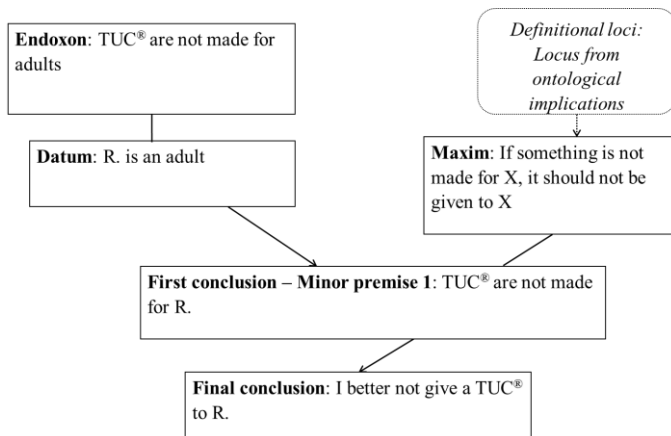

Figure 1 AMT representation of the TUC® example (Levin's argumentation)

Figure 1 is a graphical representation of the AMT analysis of Levin's argumentation in extract 1. On the right, the procedural premises of this argument are represented. In this case, the argument is based on the *locus from ontological implications* (Rigotti and Greco forthcoming). This *locus* builds on the relation between the nature of an entity (in this case, cookies) and what this nature implies. Or, more precisely, the end for which this entity has been designed. In the AMT, the *locus* from ontological implications is part of the category of definitional *loci*. Some definitional procedures derive from the purpose of an object (e.g., when we say that a yoga mat is a type of mat designed for practicing yoga, we give a definition based on the goal of the yoga mat). The ontological implication on which this argument is built derives from this kind of functional definition.

The maxim, in this case, is formulated on a negative variant: "if something is not made for x, it should not be given to x." We have reconstructed this maxim, which is actually implicit. We could

---

[12] For a typology of how argumentative discussion are opened within adult-children conversations, see Schär (2018) and Schär and Greco (2018).

speculate that the child might have derived this maxim indirectly, starting from cases in which he is denied access to things that are "not for children"—such as alcohol, to mention an obvious example in the domain of food and beverages. In any case, this principle, *per se*, might be correctly applied, despite some limitations, in a series of everyday situations. Think for example of cars, which are not meant for children to drive.

While the maxim, thus, can be correctly applied at least in some domains, the material premises of this argument—in particular the *endoxon*—require a more nuanced appreciation. The datum "R is an adult" is not explicitly said by the child, arguably because it is visible to everybody in the here-and-now of the conversation. The *endoxon* is made explicit by the child as a reaction to his mother's request (turns 4 and 6): "[TUC® cookies are] better not for adults." Apparently, this *endoxon* is not shared by the mother, although it is true that there are types of sweets and cakes that are made especially for children (in terms of marketing, packaging, etc.). For the mother TUC® cookies are for anyone.[13] In this sense, example 1 is exemplary of a situation that we often find in our data: the child's argument appears "wrong," not because of a logical mistake but because the *endoxon* is different from what an adult would expect.

4.2 The LEGO® example

We find a similar dynamic in a different situation, taken from the corpus of semi-structured play activities and recorded in November 2016 in a kindergarten in Italy by one of the authors (J. Convertini). The researcher introduces an activity to the children, inspired by Piaget (1974). In this activity, they have to play with LEGO®. In particular, the researcher asks a dyad of children (a 6-year-old male and a 5-year-old female) to build a bridge. She explains that two friends are waiting in their cars on opposite edges of a lake, they want to meet, and they need a bridge to do so. The two friends are LEGO® characters, a blue and a red one, respectively. The former is taller than the latter. All the materials have been

---

[13] The mother might be aware that TUC® cookies are not advertised as children's cookies.

placed on a little table, around which children are free to move. The lake has been cut out from blue construction paper. After presenting the activity to the children, the researcher steps away from the table but stays in the room. It is not until the end of the construction activity that the researcher goes back to the children.

Extract 2 reproduces the final moments of the discussion. When the children have completed the task, the researcher asks them to explain what they have been doing. After some discussion on the task, one of the children (Max) digresses and talks about the LEGO® figures that they have been playing with (see table 2).

Table 2 The LEGO® example. Participants: Max, researcher

Turn	Speaker	Transcript	Our Translation
1	Max	questo qui ((prende in mano la sagoma lego di colore rosso, gli cade e lo riprende in mano e lo solleva)) questo qui è una femmina è un bimbo perché è più basso di lei (1.0)	this one ((takes the red lego figure into his hand, the figure falls down, and he takes it into his hand again and lifts it up)) this one is a female and it is a child because it's shorter than her (1.0)
2	Researcher	ah::	ah::
3	Max	questo qui ((indica il lego di colore rosso))	this one ((indicates the red lego figure))
4	Researcher	per l'altezza↑	because of the height↑
5	Max	um um ((suono usato in senso affermativo))	um um ((affirming))

Although the text transcribed in table 2 is partially ambiguous, it is clear that Max is comparing the two LEGO® figures. In the following, we give a possible interpretation of Max's argumentation, which could, of course, be subject to further discussion. Max makes a comment based on the size of one of the two characters, which is smaller than the other one, and argues that therefore it must be "a female, a child,"[14] because "it's shorter than her" (i.e., shorter than the other figure). In our interpretation of turn 1, two different reasons are given. The LEGO® figure might be shorter than the other figure either because it is a female or because it is a child. In general, this is a definitional argument relying on size as an indicator of something else. At the level of *endoxa*, we would have, "a property of children is to be smaller than adults", which is generally acceptable (up to a certain age and with nuanced individual variations). Or, "a property of female persons is to be smaller than males", which is not so obvious and not valid for each case. Both interpretations of Max's endoxon are included in figure 2 in an AMT graphical representation. If the first interpretation is correct, the child is comparing children to adults and saying that children are smaller than adults. If the second interpretation is correct, then the child is adopting an *endoxon* that is not correctly describing all possible male-female combinations in terms of height. However, even if partial, this *endoxon* might come from the child's personal experience (e.g., his mother being shorter than his father?) or from children's books or other cultural representations. Moreover, we might discuss whether Max is making a comparison between the two figures in the world of LEGO® or he is thinking of the "real world" of human children and adults.

---

[14] Turn 1 is not completely clear, because Max is comparing two figures and says that one is smaller than the other because it is female or because it is a "bimbo". In Italian, "bimbo" is a male child; but a masculine noun can also be used for both male and female children. We opt for the second interpretation: in our view, Max is saying that one character is smaller than the other "because it is a female" or "because it is a child" (not a *male* child). In the following of the conversation, the researcher picks up one of these interpretations, namely that the character is a female, and Max confirms it. However, we are not commenting on this part, because this confirmation has been guided by the researcher's interpretation.
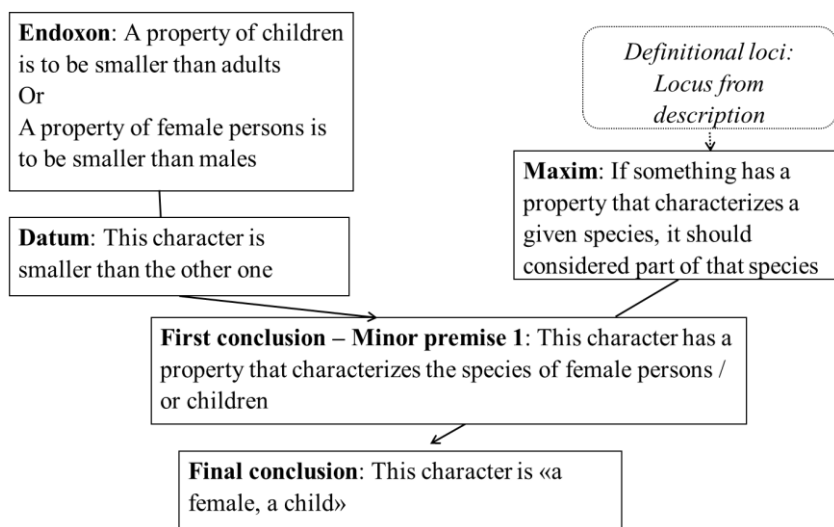
Endoxon: A property of children is to be smaller than adults
Or
A property of female persons is to be smaller than males

Datum: This character is smaller than the other one

Definitional loci: Locus from description

Maxim: If something has a property that characterizes a given species, it should considered part of that species

First conclusion – Minor premise 1: This character has a property that characterizes the species of female persons / or children

Final conclusion: This character is «a female, a child»

Figure 2 AMT representation of the LEGO® example (Max's argumentation, both interpretations of the endoxon are included)

This example shows how an AMT analysis may help reconstruct different possible endoxa that are at the basis of children's arguments. Notably, as in the previous example, although the *endoxon* adopted by Max might be questionable if he is really taking for granted that "a property of female persons is to be smaller than males" in all cases, the inferential-procedural dynamics of the argument are correct. Again, this tells us that children's arguments, at least in some cases, even when they appear as "bizarre" or come to a wrong conclusion, are not necessarily wrong altogether. A clue to further understand children's argumentative skills and their contributions to an argumentative discussion seems to lie in a nuanced and careful consideration of material premises.

4.3 The Fireman Sam example

The third example also comes from the corpus of semi-structured play activities and has been recorded in a kindergarten in Italy in November 2016 by one of the authors (J. Convertini). This example is particularly interesting, in our view, because it shows that some-

times a child's refusal to respond to the adult's task is due to a misalignment of implicit premises.

The task, in this case, is to build a tunnel with building blocks in such a way that toy cars can drive through it. The children (Mia, five years and six months old; and Tom, four years and two months old) are sitting around a table on which four pictures representing tunnels, some LEGO® bricks, and a red toy car are placed. At the beginning of the interaction (which we are not reporting in table 3), the researcher shows the pictures to the children. At some point, she talks about the red toy car. In previous interactions, the children referred to this same toy car as "Fireman Sam's car," alluding to an animated character that they probably know because of the TV series.[15] Arguably, the red car "looks like" Sam's car because of its color; Sam and his fellow firemen drive a red truck and a red car in the TV series. In this interaction, the adult researcher picks up this interpretation, although she is not familiar with the world of Fireman Sam. Therefore, while introducing this new task, she presents the red toy car as "Sam's car" and the task as "building a tunnel for Sam's city."

Table 3 The Fireman Sam example. Participants: Mia, Tom, researcher

Turn	Speaker	Transcript	Our Translation
1	Researcher	e ci sono le luci dentro il tunnel perché altrimenti (.) non si vede niente è buio no dentro il tunnel (.) se non ci sono le luci non riusciamo a vedere (.) allora visto che avete	and there are lights in the tunnel because otherwise (.) you cannot see anything it's dark inside the tunnel is it (.) if there are no lights we won't be

---

[15] Fireman Sam is an animated comedy for children, originally produced and broadcast in the UK. The series has been translated into Italian and broadcast in Italy since 2006. In the original story, Sam lives in the fictional village of Pontypandy (see https://en.wikipedia.org/wiki/Fireman_Sam, last visited September 2017).

		visto il tunnel io vi ho portato qua la macchinina di Sam il pompiere ((avvicina la macchinina ai bambini e Mia la prende in mano)) che la conoscete tutti e vi chiedo di costruire il suo tunnel ((prende la macchinina in mano)) allora il tunnel per essere utile	able to see (.) so since you have seen the tunnel I brought to you Fireman Sam's car ((holds the car closer to the children and Mia takes it into her hands)) that you all know and I'll ask you to construct his tunnel ((takes the car into her hands)) so the tunnel in order to be useful
2	Mia	deve passare sotto	must go under it
3	Researcher	deve passare [sotto	must go [under it
4	Tom	[ma ma] ma ma ma ma la città di Sam il pompiere u un c'ha u un u un c'ha un tunnel	[but but] but but but but the city of fireman Sam does n no does n no not have a tunnel
5	Researcher	ed è per quello che noi lo facciamo perché non ce l'ha (.) è per quello che noi lo facciamo (.) vai siediti Tom ((la ricercatrice fa sedere Tom)) però bisogna stare bene attenti che la nostra macchina riesca a passare sotto il tunnel perché se non riesce a passarci il	and this is why we are making it because it does not have one (.) this is why we are making it (.) go sit down Tom ((makes Tom sit down)) but we need to pay attention that our car will be able to go under the tunnel because

		tunnel dobbiamo rifarlo eh quindi state bene attenti che riesca a passarci vi lascio le costruzioni qua ((avvicina le costruzioni ai bambini)) e poi vengo a vedere il tunnel che avete fatto	if it does not suc- ceed going under the tunnel we need to remake it so therefore pay atten- tion that it can go under it I let you the building blocks here ((puts the building blocks near the children)) and afterward I come to see the tunnel you made

The discussion about how to solve the task begins at turns 2-3. However, in turn, 4, one of the children (Tom) immediately reacts, saying that Sam's city does not have a tunnel. The presentation of the task by the researcher is not necessarily argumentative; she presents the aim of the activity (constructing a tunnel) as "con- structing his (i.e., Sam's) tunnel." Arguably, Tom interprets the adjective "suo" (his) in such a way that he understands "the tunnel that is in Sam's city." This is not literally what the adult has said but is a reasonable interpretation of her words. Tom then reinter- prets the construction of the tunnel as a means to faithfully repro- duce the city where Sam lives and works. From his reaction at turn 4, we might say that Tom interprets the presentation of the task by the researcher as a form of means-end argumentation. The re- searcher's argumentation according to Tom's interpretation can be reconstructed as in figure 3.
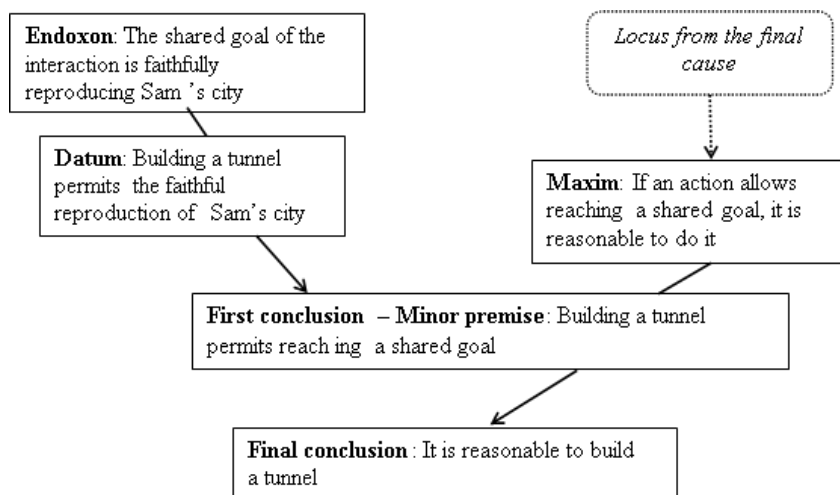
Endoxon: The shared goal of the interaction is faithfully reproducing Sam's city

Locus from the final cause

Datum: Building a tunnel permits the faithful reproduction of Sam's city

Maxim: If an action allows reaching a shared goal, it is reasonable to do it

First conclusion – Minor premise: Building a tunnel permits reaching a shared goal

Final conclusion: It is reasonable to build a tunnel

Figure 3 AMT representation of the Fireman Sam example (researcher's argumentation according to Tom)

Tom's objection at turn 4 stems from the fact that he does not share the datum proposed (or allegedly proposed) by the adult: Sam's city does not have a tunnel. In this sense, because the child is more knowledgeable than the adult about the details of Sam's world, there is an asymmetry of knowledge that is reversed (contrary to what one would expect): the child knows more than the adult. Consequently, in response to Tom's remark, the researcher reacts (turn 5) by rephrasing the goal of the interaction (*endoxon*). She says that they are building a tunnel precisely because Sam's city does not have one. In this way, the researcher modifies the *endoxon*: the goal is not faithfully reproducing Sam's city but completing it. This means that the researcher has understood Tom's objection and reacts in this way in order to correct the implicit material premise (*endoxon*) that Tom assumed was her premise.

5. Discussion and further research

Two main aspects emerge from our analysis of the three examples presented in the preceding section. The first aspect is that the reconstruction of children's inferences and, in particular, implicit

premises, contributes to a nuanced understanding of children's argumentative skills. Findings from the ArgImp project show that isolating material premises from procedural premises permits the identification of possible sources of misunderstandings and arguments that come to a "wrong" conclusion. In the case of children's argumentation, we often note (as in all three examples discussed above) that arguments are correct from an inferential-procedural viewpoint, but they rely on *endoxa* that only partially reproduce adults' understandings of reality (further examples are discussed in Convertini, in preparation; Lombardi et al. 2018). Although the three examples considered are similar in this respect, they also present a further interesting aspect.

In example 1 (the TUC® example), we find a case in which the *endoxon* ("TUC® are not made for adults") is made explicit by the child. While, more often than not, endoxa are left implicit in conversation for pragmatic reasons (see our discussion in section 4), in this case, Levin makes it explicit. We may only make hypotheses about why he does so. Arguably, he needs to explain this *endoxon* because his mother appears not to share when she suggests him to give a TUC® to the researcher (table 1, turn 4). The fact that material-contextual premises are made explicit and subject to discussion sometimes when they are not shared between adults and children seems to confirm previous findings by Anderson *et al.* (1997). However, examples 2 and 3 (the LEGO® example and the Fireman Sam example, respectively) show that *endoxa* that are not shared by adults and children do not always become an object of discussion. Both cases suggest that it is important for analysts of argumentation, psychologists and other researchers to devote more attention to what is "taken for granted" in terms of material-contextual premises in adult-children discussions.

Furthermore, in example 1, we could also wonder why Levin does not seem to feel the need to make the *datum* ("The researcher is an adult") explicit, as we observed in section 4.1; whereas, in the other two examples, the datum is made explicit in children's arguments. Arguably, this happens because in example 1 the *datum* is factual evidence that is before the eyes of all participants to the discussion, who can see the researcher sitting at their family table

in the here-and-now of the conversation. Therefore, mentioning the *datum* would be superfluous. This observation invites more research on the role of perceptible or "evident" data in argumentative discussions, due to the socio-material setting of the conversation (for some observations see Iannaccone, Perret-Clermont and Convertini, in preparation).

We now turn to example 3, which is particularly interesting to discuss in greater detail because it incorporates some further dimensions that go beyond our initial research aim and may be considered as emergent findings. Example 3 clearly shows that adults' implicit *endoxa* are not always clear to the children. But more generally, it shows that it is not simply children's *endoxa* that are "weird," but adults' in some ways are, too. In fact, there is a problem of perspectivation, and we should take into account that adults' implicit starting points might also be questioned (or difficult to understand) in conversation. This result is in line with findings by Pramling and Säljö (2015). In their study of Piagetian interviews, these authors show that taking into account the situatedness of the conversation (including adults' implicit starting points) might change the interpretation of children's argumentation. All this suggests that, in order to improve argumentation (for example in educational settings), a careful consideration of both adults' and children's implicit premises would be necessary. That is, without forgetting that these premises are likely to change while the child (and sometimes even the adult) deepens his or her understanding of the issue (Miserez-Caperos 2017).

From the viewpoint of children's argumentative skills, example 3 also shows that Tom was able to reconstruct a possible means-end argumentation allegedly proposed by the adult. He was able to assume the *endoxon* that he thinks the adult has proposed and reason from that starting point.

The second aspect that emerges from example 3 concerns the fact that children (in this case, Tom) are able to discuss the meaningfulness of a task proposed by an adult. Even though this is not the subject of the present paper, it deserves some discussion, as this aspect clearly surfaces from our data. Tom's reaction in turn four is indirectly criticizing (or questioning at the least) the adult's pro-

posal. In this case, as it is visible in the following of extract 3, the adult does pick up the child's suggestion and modifies the goal of the activity following up on this criticism.[16] In other cases, however, we have shown that children's attempts to question an adult's proposal are not taken up by the adults participating in the interaction. For example, Greco, Mehmeti and Perret-Clermont (2017) show that when children question a discussion issue proposed by an adult or try to open a new discussion issue, they might not be allowed to do so by the adult (for many reasons, including the possibility of an adult's lack of decentration).

These kinds of findings, which are emerging in the ArgImp project, brought us to consider more closely the notion of a "discussion issue" in relation to the freedom rule of an argumentative discussion (van Eemeren and Grootendorst 2004). In its original formulation, the *freedom rule* states that parties to an (ideal) argumentative discussion should be free to advance standpoints and arguments. We find, however, that one of the limitations that might be imposed on children is due to the fact that they are not free to open argumentative discussions by bringing new issues to the adult's attention (or to challenge an adult's issue). When the issues proposed by children deviate from what is expected, or go against the adult's expectations, they are often "suppressed" or left apart in the adult-led discussion. We think that carefully observing how issues are raised or refused (not always argumentatively) and who is legitimate to do so might open new avenues for the study of children's argumentation in educational contexts (see Greco, Mehmeti *et al*. 2017; Greco 2016). This also opens the debate on a reconsideration of the teacher's role in argumentative discussions. If "teaching" is understood only as a teacher-guided top-down activity, and "learning" as acquiring the knowledge that a teacher "has", then the promotion of discussions in classrooms might lead to conflicting requirements for the students. This might also explain

---

[16] This example suggests that a further step in this research could be the reconstruction of pragmatic inferences made by adults in order to reconstruct the meaning of children's arguments. In some cases, pragmatic inferences might break down and this would explain where adults do not understand children (and *vice versa*).

why sometimes it is so difficult to promote argumentation in the classroom (Schwarz and Baker 2017). Instead, if the teacher's role is understood as similar to that of a mediator (Greco, Mehmeti and Perret-Clermont 2017) in a triangular relation with students and knowledge issues, then a space can open for critical discussion among the interlocutors. However, the characteristics of this space and the precise role of the teacher and the students deserve more research.

6. Conclusion

In this contribution, we have shown some exemplary findings of the ArgImp project, focusing on how the reconstruction of children's inferences within an adult-children discussion (in different settings) might contribute to the study of children's argumentation. The systematic analysis of a growing collection of episodes of children's argumentation shows that distinguishing between procedural and material premises (as allowed by the AMT) provides useful insights into what the possible misunderstandings might be in their interaction with adults. In particular, material premises explain possible misalignments between adults and children in terms of implicit starting points.

These findings contribute to the research stream on argumentation in context, integrating previous research in developmental sociocultural psychology and argumentation studies. We have focused on a contextual setting that is still relatively underinvestigated: namely, situations in which very small children (under six years) participate in the discussion, including semi-structured play activities outside the setting of a school classroom. This kind of micro-approach differs from studies that are usually referred to as part of the field of "argumentation and education." In fact, in the present study, our aim is neither to assess children's "individual" argumentative skills nor to teach them these skills; also, we have not taken the classroom as our context of investigation. Our reconstruction of children's inferences and of the implicit premises that are present in adult-children conversation, however, might have implications at an educational level in the longer run. In fact, one could observe what role misunderstandings due to implicit premis-

es play within school activities. This would be, however, the subject of future research.

Moreover, research on adult-children conversations could be extended by considering how much specific interactional micro-settings leave space for the children to develop their own contributions to argumentative discussions freely. A case such as the one that emerged in our third example (Fireman Sam's example, section 5) is particularly revealing in this sense because we see a child who questions an assignment given by the adult (and the adult lets him do this). Whether children are left free to give shape to argumentative discussions in the family and in other (formal and informal) educational contexts is an open question that would be worth exploring (cf. Greco, Mehmeti and Perret-Clermont 2017). Observing this aspect would give a perspective on how much children are considered rational partners in argumentative discussions.

References

Ajello, A.M., C. Pontecorvo and C. Zucchermaglio. 2004. *Discutendo s'impara. Interazione sociale e conoscenza a scuola*. Roma: Carocci.

Anderson, R. C., C. Chinn, J. Chang, M. Waggoner and H. Yi. 1997. On the logical integrity of children's arguments. *Cognition and Instruction* 15: 135-167.

Andriessen, J., M. Baker, and D. Suthers. 2003 (Eds.). *Arguing to learn: Confronting cognitions in computer-supported collaborative learning environments*. Dordrecht: Kluwer.

Andriessen, J. and B. Schwarz. 2009. Argumentative design. In *Argumentation and education – Theoretical foundations and practices,* eds. N. Muller-Mirza and A. N. Perret-Clermont, 145–174. Heidelberg, Germany: Springer.

Bigi, S. and Greco Morasso, S. 2012. Keywords, frames and the reconstruction of material starting points in argumentation. *Journal of Pragmatics* 44(10): 1135-1149.

Bova, A. and F. Arcidiacono. 2013. Investigating children's why-questions: A study comparing argumentative and explanatory function. *Discourse Studies* 15(6): 713-734.

Convertini, J. In preparation. *Contributo allo studio dei tipi di argomento in situazioni di problem solving tecnico da parte di bambini in età prescolare*. PhD dissertation, University of Neuchâtel.

Dolz-Mestre, J., and C. Tobola Couchepin. 2015. Les pratiques d'évaluation dans l'enseignement de la production écrite d'un genre argumentatif à l'école primaire. *Le Français dans le monde. Recherches et applications* 58 : 144-153.

Donaldson, M. 1978. *Children's minds*. New York: W.W. Norton.

van Eemeren, F. H. and R. Grootendorst. 1984. *Speech acts in argumentative discussions: A theoretical model for the analysis of discussions directed towards solving conflicts of opinion.* Dordrecht: Floris Publications.

van Eemeren, F. H. and R. Grootendorst. 2004. *A systematic theory of argumentation: The pragma-dialectical approach*. Cambridge: CUP.

Elbers, E. 2004. Conversational asymmetry and the child's perspective in developmental and educational research. *International Journal of Disability, Development and Education* 51(2): 201-215.

Felton, M., M. Garcia-Mila, C. Villarroel, and S. Gilabert. 2015. Arguing collaboratively: Argumentative discourse types and their potential for

knowledge building. *British Journal of Educational Psychology* 85 (3): 372–386.

Greco, S. 2016. L'enfant dans la discussion: Questions de légitimité, deconfiance et d'interprétation de sa parole. *FamPra – Die Praxis desFamilienrechts* 17 (2): 402-415.

Greco, S., T. Mehmeti and A.-N. Perret-Clermont. 2017. Do adult-children dialogical interactions leave space for a full development of argumentation?: A case study. *Journal of Argumentation in Context* 6(2): 195 – 221.

Grice, H. P. 1975. Logic and Conversation. In *Syntax and Semantics,* eds. P. Cole and J. L. Morgan, 41-58. New York: Academic Press.

Grossen, M. 2014. L'intersubjectivité dans l'étude des processus d'enseignement-apprentissage: Difficultés et amBuités d'une notion. In *L'intersubjectivité en questions: Agrégat ou nouveau concept fédérateur pour la psychologie?,* eds. C. Moro, N. Muller Mirza and P. Roman, 139-160. Lausanne: Antipodes.

Hannken-Illjes, K. 2004. *Gute Gründe geben. Ein sprechwissenschaftliches Modell argumentativer Kompetenz und seine didaktischen und methodischen Implikationen*. Frankfurt am Main: Peter Lang.

Hauser, S., and M. Luginbühl. 2017. Wenn Kinder argumentieren – Grundlagen und erste Befunde einer Studie zur mündlichen Argumentationskompetenz von Schulkindern. In *Begründen – Erklären – Argumentieren. Konzepte und Modellierungen in der Angewandten Linguistik,* eds. I. Meissner and E. L. Wyss, 89-105. Tübingen: Stauffenburg.

Hundeide, K. 1992. Intersubjectivity and interpretative background in children's development and interaction. *European Journal of Psychology of Education* 8(4): 439-450.

Iannaccone, A. and A.-N. Perret-Clermont. 1993. Qu'est-ce que s'apprend? Qu'est-ce qui se développe? In *Les savoirs quotidiens,* eds. J. Wassmann and P.R. Dasen, 235-260. Freiburg: Universitätsverlag.

Iannaccone, A., Perret-Clermont, A.-N., and Convertini, J. In preparation. Children as investigators of Brunerian "Possible worlds". The role of narrative scenarios in children's argumentative thinking.

Kuhn, D. and W. Udell. 2003. The development of argument skills. *Child Development* 74(5): 1245-1260.

Kuhn, D. 1991. *The Skills of Argument*. Cambridge: CUP.

Kuhn, D. 2010. Teaching and learning science as argument. *Science Education* 94: 810-824.

Kuhn, D. 2016. A role for reasoning in a dialogic approach to critical thinking. *Topoi*, online first, https://doi.org/10.1007/s11245-016-9373-4

Kuhn, D., L. Hemberger, and V. Khait. 2017. *Argue with Me: Argument as a Path to Developing Students' Thinking and Writing*. London: Routledge.

Light, P. and A.-N. Perret-Clermont. 1989. Social context effects in learning and testing. In *Cognition and Social Worlds,* ed. J.-A. Sloboda, 99-112. Oxford: Oxford University Press.

Lombardi, E., Greco, S., Massaro, D., Schär, R., Manzi, F., Iannaccone, A., Perret-Clermont, A.-N., and Marchetti, A. 2018. Does a good argument make a good answer? Argumentative reconstruction of children's justifications in a second order false belief task. *Learning, Culture and Social Interaction* 18: 13-27.

Macagno, F. and K. Konstantinidou. 2013. What students' arguments can tell us; using argumentation schemes in science education. *Argumentation* 27(3): 225-243.

Mauritzson, U. and R. Säljö. 2001. Adult questions and children's responses: Coordination of perspectives in studies of children's theories of other minds. *Scandinavian Journal of Educational Research* 45(3): 213–231.

Mercer, N. 2009. Developing argumentation: Lessons learned in the primary school. Muller Mirza, N. and A.-N. Perret-Clermont, 177-194. New York: Springer.

Migdalek, M. J., C. Santibáñez Yáñez and C. R. Rosemberg. 2014. Estrategias argumentativas en niños pequeños: un estudio a partir de las disputas durante el juego en contextos escolares. *Revista Signos, Estudios de Lingüística* 47(86): 435–462.

Miserez-Caperos, C. 2017. Etude de l'argumentation à visée cognitive dans des interactions entre adulte et enfant : un regard psychosocial sur le modèle pragma-dialectique. (PhD Dissertation), Neuchâtel:

Université de Neuchâtel. downloadable from:
https://doc.rero.ch/record/289108?ln=fr (last visited January 2018).

Muller Mirza, N. and C. Buty. 2015. L'argumentation dans les contextes de l'éducation: enjeux et questions vives. Introduction. In *L'argumentation dans les contextes de l'éducation,* eds. N. Muller Mirza and C. Buty, 13-36. Bern: Peter Lang.

Muller Mirza, N., A.-N. Perret-Clermont, V. Tartas and A. Iannaccone. 2009. Psychosocial processes in argumentation. In *Argumentation and education,* eds. N. Muller Mirza and A.-N. Perret-Clermont, 67-90. Dordrecht: Springer.

Musi, E. 2014. Evidential modals at the semantic-argumentative interface: Appearance verbs as indicators of defeasible argumentation. *Informal Logic* 34 (4): 417-442.

Nonnon, E. 1996. Activités argumentatives et élaboration de connaissances nouvelles: le dialogue comme espace d'exploration. *Langue française* 112(1): 67-87.

Nonnon, E. 2015. Préface. L'argumentation dans les contextes de l'éducation. In *Argumentation dans les contextes de l'éducation,* eds. N. Muller Mirza and C. Buty, 1–11. Bern: Peter Lang.

Osborne, J., S. Erduran, and S. Simon. 2004. Enhancing the quality of argumentation in school science. *Journal of Research in Science Teaching* 41 (10): 994-1020.

Piaget, J. 1926/2003. *La représentation du monde chez l'enfant*. Paris: Presses Universitaires de France.

Piaget, J. 1974. *La prise de conscience*. Paris: PUF.

Plantin, C. 1996. Le trilogue argumentatif. Présentation de modèle, analyse de cas, *Langue Française* 112: 9-30.

Pontecorvo, C. and L. Sterponi. 2006. Learning to argue and reason through discourse in educational settings. In *Learning for life in the 21st century,* eds. G. Wells and G. Claxton, 127-140. Oxford: Blackwell.

Pramling, N. and R. Säljö. 2015. The clinical interview: The child as a partner in conversations vs. the child as an object of research. In *International handbook of young children's thinking and understanding,* eds. S. Robson and S. F. Quinn, 87-95. London: Routledge.

Psaltis, C. and G. Duveen. 2006. Social relations and cognitive development: The influence of conversation type and representations of gender. *European Journal of Social Psychology* 36: 407-430.

Rapanta, C. and F. Macagno. 2016. Argumentation methods in educational contexts: Introduction to the special issue. *International Journal of Educational Research* 79: 142-179.

Resnick, L. B. and F. Schantz. 2015. Re-thinking intelligence: Schools that build the mind. *European Journal of Education* 50 (3): 341-348.

Rigotti, E. and S. Greco Morasso. 2010. Comparing the Argumentum Model of Topics to other contemporary approaches to argument schemes: the procedural and material components. *Argumentation* 24(4): 489-512.

Rigotti, E. and S. Greco. 2019. *Inference in argumentation: A topics-based approach to argument schemes*. Cham: Springer (Argumentation Library).

Santi, M. 2006. *Ragionare con il discorso*. Napoli: Liguori.

Schär, R. 2018. *An argumentative analysis of the emergence of issues in adult-children discussions*. PhD dissertation, USI – Università della Svizzera italiana, Lugano.

Schär, R., and Greco, S. 2018. The emergence of issues in everyday discussions between adults and children. *International Journal of Semiotics and Visual Rhetoric* 2(1): 29-43.

Schwarz, B. 2009. Argumentation and learning. In *Argumentation and education: Theoretical foundations and practices,* eds. N. Muller Mirza and A.-N. Perret-Clermont, 91-126. New York: Springer.

Schwarz, B. and M. Baker. 2017. *Dialogue, argumentation and education: History, theory and practice.* Cambridge: CUP.

Shotter, J. 1985. *Social accountability and selfhood*. London: Blackwell.

Siegel, H. 1995. Why should educators care about argumentation? *Informal Logic* 17 (2): 159-176.

Traverso, V. 1999. *L'analyse des conversations*. Paris: Nathan.

Völzing, P.-L. 1982. *Kinder argumentieren. Die Ontogenese argumentativer Fähigkeiten*. Paderborn: Schöningh.