The relationship between young children’s linguistic ability, home language, and their adaptive modifying strategies in peer conflicts

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Abstract
This article presents the results of a study of conflict strategies in 96 two- and three-year-old children in multiethnic childcare centers. The main question was whether young children’s use of psychologically complex strategies in conflict management depends on language development. It is hypothesized that 2-year-olds rely on verbal adaptive modification strategies less often than 3-year-olds; and that children with a home language different from the dominant one in the childcare center also use verbal modification strategies less often. The overall conclusion is that the use of psychologically complex strategies in conflict management does not totally depend on language development. Age seems to contribute most to the use of psychologically and linguistically complex modification strategies. A description is given of the diverse forms of verbal adaptive modifying behavior that was found in 2- and 3-year-olds.

Keywords
language acquisition, multiethnic childcare center, peer conflict, 2- and 3-year-old children, verbal modification strategies

Introduction
At an early age, children learn that they may have interests that are contrary to those of others. During conflicts they communicate their wishes, insist, compromise, give up, and reconcile with their opponent. In childcare settings children have several conflicts an
hour (Chen, Fein, Killen, & Tam, 2001; Shantz, 1987). In this article we discuss how 2- and 3-year-old children settle their conflicts, and in particular whether their use of psychologically complex strategies depends on their linguistic development.

Children aged 2 and 3 make their first steps in the transition from physical to verbal strategies in resolving peer conflicts. Although in the course of the second year, there is a gradual decrease in relying on gestures in communication and an increase in verbal utterances, children’s language is still context bound. Only little by little do children learn to use language as a representational system, learn to understand its ideational function (De Haan & Singer, 2003; Nelson 2005).

In childcare and preschool, much value is given to conflict resolution by using language. ‘Use your words’ or ‘talk’ is often the advice of teachers when children are in conflict (Arcaro-McPhee, Doppler, & Harkins, 2002; Buzzelli, 1995; Göncü & Cannella, 1996; Malloy & McMurray, 1996). The use of adaptive verbal strategies that take into account the perspective of the other child is supposed to be most successful (Eisenberg & Garvey, 1981). There is yet hardly any evidence, however, that 2- and 3-year-olds are able to solve their conflicts by talking. Most of the research has been done with older children (Chen et al., 2001; Shantz, 1987). In addition, the results of studies of preschoolers are rarely discussed separately for the youngest children (Eisenberg & Garvey, 1981; Killen & Turiel, 1991; Sheldon, 1992). Some studies suggest that the role of verbal strategies become more important from the age of 3. Corsaro (1979) found that 2- and 3-year-old children are less likely to negotiate than 4-year-olds, and that both age groups rely heavily on non-verbal strategies. Kinoshita, Saito, and Matsunaga (1993) found that only in the course of their first year at kindergarten do 3-year-old children increasingly use verbal mutual understanding strategies (opinion sharing, explanation, use of rules, and compromise).

Therefore, one main question of our research is what role does linguistic ability play in resolving a conflict. It may be hypothesized that the use of adaptive modifying strategies in peer conflict depends on linguistic ability.

The first question is about differences between 2- and 3-year-olds in the use of non-verbal and verbal psychologically complex strategies that take into account the perspective of the other. Since the language in Dutch multicultural childcare centers is Dutch, while migrant families parents often do not speak Dutch with their children, a second question is whether there are differences in the use of these strategies among children from families who speak Dutch at home and children for whom the language of the childcare center is different from the language spoken at home. Finally, we have done a qualitative analysis of the verbal expression of these complex strategies to obtain a better insight into the linguistic tools of these young children.

We start with a brief review of the psychological literature about young children’s ability to use strategies that take into account the perspective of the other in conflict resolution and research on language development about the linguistic abilities of 2- and 3-year-old children.

Theoretical background

Studies of conflict strategies have shown the importance of prosocial behavior in conflict resolution. According to the ‘relationship model’ of Dunn (1988) and the ethological model
of De Waal (2000), at least two vital interests are at stake in conflicts: personal interests to fulfill wants or needs, and the social interest to maintain good relationships among members of the same group. In groups (families, centers, peer groups) the expression of aggression is constrained by a need to maintain beneficial relationships. Wherever social relationships are valued, a full complement of checks and balances during conflicts can be expected. Studies of young children show that 2-year-old children already engage in acts of reconciliation after a conflict (Butovskaya, Verbeek, Ljungberg, & Lunardini, 2000). One of the most stable results of conflict studies is the finding that playing together after a conflict occurs significantly more often when children played together before the conflict than when they played alone (Horowitz, 2005; Laursen & Hartup, 1989; Shantz, 1987; Singer & De Haan, 2007). Regarding conflict resolution, Eisenberg and Garvey (1981), Killen and Turiel (1991), and Sheldon (1992) found that 2- to 5-year-olds negotiate by bargaining, requesting explanation, compromising, or making alternative proposals.

From developmental psychological theory, it appears that young children are increasingly able to solve their conflicts taking into account the perspective of the interactive partner. The ‘theory-of-mind’ research relates to children’s increasing ability to understand everyday behavior in a psychological way (Colonnese, 2005; Wellman, 2002). As they get older, children come to understand that human actions are the result of the mental states of desires and beliefs. During their second year children develop a ‘theory’ of the other’s mind, that is, they learn to understand that actions are motivated by desires, and that others may have desires different from their own. In the very beginning, this is a ‘practical grasp’ (Dunn, 1988; Nelson, 2005). Especially in a conflict situation, children may learn about the motivational state of the opponent on the basis of emotion and non-verbal behavior. With development, verbal expression becomes an important source of information. Within the framework of the theory-of-mind research, Bartsch and Wellman (1995) analyzed children’s use of mental state verbs of desire (want, hope, wish, care (about), afraid that) and belief (think, know, believe, expect, wonder, dream), which are supposed to show children’s ‘theory-of-mind’ capabilities. They found that by the age of 30 months, there is already an overwhelming use of desire verbs, and right before the third birthday children refer to mental states of belief. First references are to children’s own mental states, but only 2 months later the reference of these verbs is to the other’s mental state. Dunn and Brophy (2005) report about a number of studies in which correlations were found between theory-of-mind abilities and language scores. Early language ability explained later theory-of-mind performance. Children’s participation in talk about mind and emotion within the family and with peers predicted later assessments of mind and emotion understanding. It is not clear, however, how this link should be conceived. Nelson (2005) argues that the meanings of these mental state words for 2- and 3-year-old children do not yet reflect the concepts behind those terms in adult language.

Related to the capacity of children to take into account the perspective of their opponent, Eisenberg and Garvey (1981) distinguish different levels of ‘adaptiveness’ to the interlocutor in conflict resolution. At the lowest level (insistence), children understand the constraints of the interaction, that is, they respond to the contribution of the other, but do not provide any new information. At the next level (justifying, giving reasons), children understand the communicative constraints and present new information. At the third level (suggesting an alternative proposal for the other child, making a promise under the
condition of complying with a directive), children take into account the perspective of the opponent. Finally, at the fourth level (compromise), in addition to the abilities of these three levels, children are able to understand what would be fair. It may be extrapolated from the theory-of-mind research, that psychologically, around the third birthday, children are able to use the adaptive strategies of the third level proposed by Eisenberg and Garvey (1981).

It remains an open question how linguistic capabilities add to children’s capacity to use adaptive strategies in conflicts. Prosocial behavior during conflicts does not totally depend on the verbal capacities of children. Young children can negotiate in a non-verbal way by offering a toy, smiling, pointing, or kissing. But verbal means may greatly add to children’s capacity to negotiate. Discourse analysis of turn taking and contingency in discourse shows how children learn to consider and respond to the contribution of the other in interaction. In conversation there is a growing connectedness in their communication: with development, children’s turns relate more to the previous turn of the other, and they may build a coherent and connected text (Ninio & Snow 1996). In his 2-year longitudinal study of the language acquisition of 125 children from 15 and 39 months on, Wells (1985) found ‘other-orientation utterances’ from the age of 30 months. For the ‘control function,’ other-oriented language (suggestion, offer, query of wants, or intention) was used from 30 months on, for the ‘expressive function’ (query of state/attitude) this was 33 months, and for the ‘representational function’ (explanation), 36 months. A study of relational language (De Haan & Singer, 2001) showed that 3-year-olds already use a number of devices to pay attention to the ‘want of relationship.’ The children referred explicitly to togetherness and friendship, used imitation and humor as devices to express common ground, and underscored their cooperation in play by explicit reference to this cooperation. Sheldon (1992) describes how preschoolers talk in a way that fulfills their wants and needs and maintains positive social relationships at the same time by using ‘double-voice discourse strategies.’ Katz (2004) showed that 2-year-old children even developed distinct relational styles of talking with different children. Children’s language becomes increasingly decontextualized (Hickmann, 1995). In their growing representational capacities, their attention in interaction may move from one that is oriented to practical action, in which language is a tool to manipulate ongoing activities, toward reflective action, with language as a tool to manipulate the ideas of the other (De Haan & Singer, 2003). Linguistically, decontextualization may lead to a decreasing use of deictic forms and an increasing use of explicit reference to ideas.

From this review, we may hypothesize that psychological maturation as well as linguistic ability contribute to the use of adaptive conflict strategies. Although, from two-and-a-half years of age children may refer to the interlocutor’s state of mind and use ‘other-oriented language’ in conflict resolution, sophisticated linguistic expression may only emerge later, when children are 3 years old. The review of the literature leads to the following hypotheses:

**H1**: There are differences between the 2- and 3-year-old children, both in psychological as well as linguistic respects. Three-year-olds use more strategies that take into account their opponent’s perspective than do 2-year-olds, and their linguistic expression is also more advanced.
H2: When the language of the childcare is different from the migrant children’s language at home, such children use verbal adaptive strategies less often, but they do use as many non-verbal adaptive strategies that take into account the opponent’s perspective, and their expression is linguistically less advanced than children whose home language is only Dutch or children who speak both Dutch and another language at home.

Since Dutch and migrant children’s ethnic backgrounds differ, it is important to take this background into account. Cross-cultural research in which conflict management of children in different countries is investigated revealed cultural differences with regard to specific tools the children use, for instance, rituals or styles of verbal negotiation (Butovskaya et al., 2000; Corsaro, 1997; Hold-Cavell, Attili, & Aschleidt, 1986). There are also differences between collectivistic and individualistic cultures; children from collectivistic cultures invest more energy in maintaining good social relationships than children from individualistic cultures (Sanchez Medina, Lozano, & Goudena, 2001). We have not found any earlier research into conflict resolution in children in multiethnic settings in which children from different cultural backgrounds are involved, however. On the one hand, migrant children grow up in different home situations (Pels & Nijsten, 2003), and may take what they have learned to the childcare center. On the other hand, interacting in a childcare group setting is very different from living in a family context; all children have to adapt to a new environment, speak the dominant language, and make their own ‘peer culture’ in which ethnic differences – if there are any – may disappear. Therefore, we hypothesize that:

H3: There are no differences in conflict resolution strategies among children from different ethnic groups in multicultural Dutch-speaking childcare centers.

Method

Children and childcare

From 23 childcare centers in the Netherlands, 96 two- and three-year-old children of parents with Caribbean (Dutch Antilles), Moroccan, and native Dutch backgrounds were recruited. The children were equally distributed for 2 and 3 years of age (mean age 2;11, range 2;2–3;11 years), ethnic background, and sex. The socioeconomic background of the three ethnic groups was mixed, Moroccan mothers more often having lower educational levels than the other groups and Dutch mothers the highest (p < .05) (see Table 1). The teacher of the daycare group was asked what language was spoken at the home of the target child. Antillean children mostly spoke both Papiamento and Dutch at home, whereas in the Moroccan children’s home, often both Dutch and Berber or Moroccan Arabic was spoken. In a small number of families only a language other than Dutch was spoken (see Table 1).

The childcare centers were located in the four big cities of Amsterdam, Rotterdam, The Hague, and Utrecht, and some smaller municipalities in the Netherlands. All centers had qualified teachers and a heterogeneous composition of ethnic backgrounds of children. In the centers there were at most six and at least three children from the ethnic group of the target child. The mean playgroup size during our data collection was
10 children with two teachers. Regardless of the teachers’ and children’s home language, the teachers all used Dutch. Dutch is the lingua franca in all centers. During the data collection we did not hear any other language spoken.

**Data collection**

The 96 target children were video and audio taped twice for half an hour during free play. Free play is defined as a situation in which the children are free to choose what they want to do, and they may play with or without interaction with the teacher. Focal individual sampling was used in which one child was followed. We used portable wireless audio equipment (Sennheiser EW 100) and a video camera, and the children wore a lapel microphone connected to the pocket transmitter in a little rucksack.

The 96 hours of video and audio taped data were carefully studied to select all conflicts. A conflict is defined as an interaction containing an overt opposition ‘by refusing, denying, objecting or prohibiting, and disagreeing’ (Garvey, 1984, p. 129). Conflicts may be restricted to a single opposition, or children may persist in their resistance, either non-verbally or verbally, until a solution is found or one of the children gives way. All conflicts were transcribed by using the computer program CHILDES (MacWhinney, 2000). The conflict episodes were coded by trained observers for categories of non-verbal acts, emotion, and verbal utterances.

**Data analysis**

Our data may be described using the peer interaction model of Blum-Kulka, Huck-Taglicht, and Avni (2004). The basis of this descriptive model is the concept of the *discursive event*, in which four dimensions make up the context of the meaning-making processes.

The first dimension, the *activity type*, is determined by the institutional organization. In our research it is the free play setting of the childcare center. The general *thematic frame* of the discourse, which is what the conversation/conflict is about, is the second dimension. In conflicts during free play, we found the following themes: conflicts about objects, about unwanted actions, about trying to enter the play or territory of another child, about play ideas, and the content of play. The third dimension represents the *genre* of language

<table>
<thead>
<tr>
<th></th>
<th>Dutch</th>
<th>Moroccan</th>
<th>Antillean</th>
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<tbody>
<tr>
<td><strong>Educational level mother</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>40</td>
<td>53</td>
<td>50</td>
</tr>
<tr>
<td>Medium</td>
<td>20</td>
<td>37</td>
<td>41</td>
</tr>
<tr>
<td>High</td>
<td>40</td>
<td>10</td>
<td>9</td>
</tr>
<tr>
<td><strong>Home language</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Only Dutch</td>
<td>100</td>
<td>2</td>
<td>22</td>
</tr>
<tr>
<td>Only a language other than Dutch</td>
<td>34</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Dutch and another language</td>
<td>59</td>
<td>75</td>
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</tbody>
</table>

Table 1. Characteristics of the target children in percentages ($N = 96$)
use, referring to relatively stable types of discourse. Genres have recurrent structural features. The structure in a conflict is composed of: (0) the (non) verbal act that is the cause of (1) the opposition, followed by (2) exploration, (3) modification, (4) the ending of the conflictive interaction, and (5) explicit reconciliation after the conflict has ended. In the children’s conflicts, (2), (3), and (5) are often absent. The fourth dimension of Blum-Kulka et al. (2004), captured by the concept of ‘keying’ relates to children’s (shifts in their) stance in the interaction. We defined the keying moves in the conflict as follows.

- The cause (0) may be any (non) verbal act preceding the opposition.
- Opposition or will-imposing strategies (1) refer to ‘the second move of a sequence in which one of the interaction partners explicitly manifests dislike, disagreement, aversion, or any other behavior that is contrary to the immediately previous action, real or potential proposal, demand, or statement of the other interaction partner’ (Veneziano, 2001, p. 117). Veneziano’s (2001) study shows that justifications are often given in the first opposition, and they are used as a tool to enforce children’s own positions by justifying their rights (see also Goodwin, 1990).
- Explorative strategies (2) refer to the child’s behavior when investigating what the opponent does or wants by looking or asking questions.
- Modification or problem-solving strategies (3) are an attempt to resolve the conflict by changing the conflict behavior. ‘Modification’ is a broad category covering: proposing an alternative or giving an alternative object, smiling and kissing, changing the conflict by turning the conflict into a game, or compromising. These are the adaptive strategies in which the opponent’s perspective is taken into account (Eisenberg & Garvey, 1981)
- The conflict ends (4) when the opposition stops because one of the opponents gives in or the opponents have found a solution and reconcile.
- Explicit post-conflict reconciliation (5) is defined as making ‘peace with another with some delay following a conflict-induced separation’ (Butovskaya et al., 2000, p. 244).

**Analysis of modifications**

In this article we present the results from the use of modification strategies, since these are supposed to be the most complex, both from a psychological as well as a linguistic point of view. Partly following Eisenberg and Garvey (1981), we defined the following subcategories for modification strategies.

- Proposal of alternative. The child tries to distract his/her opponent by offering an object other than the one requested, or by proposing to the opponent that (s)he carry out an alternative action, finds an alternative location or role for cooperation.
- The use of a conditional directive. The child expresses two linked propositions; one is a promise, the other a directive.
- Compromise. The child modifies his/her behavior by proposing some form of sharing, which is the partial use of a possession or to take turns. In addition, Sheldon’s (1992) category of using a pretend frame and Killen and Turiel’s (1991)
category of *transforming the conflict into a game* was distinguished as a type of compromise. The compromise is psychologically the most complex strategy. The children not only have to take into account the perspective of the opponent, as is the case of the other two strategies, but they also have to be able to understand what would be fair.

We analyzed the children’s non-verbal modification as well as their verbal modification strategies. *Non-verbal modification behavior* was coded when children offered an object, pointed to an alternative location, smiled, or made a non-verbal game out of the conflict.

**Linguistic complexity**

To determine the linguistic development in Dutch of the children, three measures were used, based on the language the child used during the conflict moments: the Mean Length of Utterance (MLU), the Mean Length of Utterance of the five longest sentences (MLU five), and the number of different words a child used.

Mean length utterance is often used as a measure of language development (Sokolov & Snow, 1994). In this study the number of words and sentences of all conflict episodes were counted, and then the average length was computed by using the MLU program of CHILDES. Brown (1973) differentiated MLU in five stages: ranging from Stage I MLU 1.0–2.0, to Stage V MLU 3.5–4.0. In these stages MLU is a good index of language complexity. After Stage V MLU ceases to be a good index, in part because syntax becomes more sophisticated, and is not expressed in longer utterances. In addition to MLU, the MLU of the five longest utterances was computed by selecting the five longest utterances, counting the words of each sentence, and dividing the total number by five. MLU five is an index of the upper limits of the child’s language production in a sample (Sokolov & Snow, 1994). A third measure of lexicon is the Type/Token Ratio, ‘types’ meaning the number of different words, divided by ‘tokens,’ which is defined as the total number of words used. Using types alone often appears to be much more reliable than using the Type/Token Ratio (Vermeer, 2000). Therefore, in this study only the different words were counted and divided by the total amount of conflicts. There were significant differences between the 2- and 3-year-olds, MLU \( t = 6.531, \text{d.f.} = 94, p < .001; \) MLU five \( t = 6.486, \text{d.f.} = 94, p < .001; \) Different words \( t = 4.155, \text{d.f.} = 94, p < .001. \) Table 2 shows that there were also differences in linguistic development among the children depending on the language(s) of the home, MLU \( F(2) = 4.192, p < .05; \) MLU five \( F(2) = 6.503, p < .01; \) Different words \( F(2) = 4.573, p < .05. \) Children who spoke only Dutch at home had the highest scores, children who did not speak Dutch but only another language at home had the lowest scores, and the scores for children who spoke both Dutch and another language were in between.

With respect to linguistic complexity of the modification strategies, we studied the use of deixis, the encoding of ‘ideas’, and connected text for utterances that contained modification strategies. In addition, we calculated the MLU for the utterances containing modification.

An utterance was coded for deixis if it encoded features of the context of the utterance in such a way that the interpretation of the utterance depended on the analysis of that context (Levinson, 1983): the use of demonstratives, adverbs for place and time, specific words to get attention, for example, when a child refers to an alternative object for the other
child by using a place-holder such as *this, look, one, a new one, here*. Expression of an idea was coded if a child referred to non-perceivable entities such as the encoding of time (*Next time you may paint*), a promise, turn taking, sharing (*is both*), joking, and pretend (*Ice-cream, ice-cream, yummy!*). The encoding of ideas may require a larger vocabulary.

Connected text was coded when children articulated at least one adjacent pair of utterances containing a modification strategy in one turn.

**Inter-relabilities and statistics**

The data were coded by 14 graduate students of developmental psychology. After the initial training, pairs of two independent coders coded the occurrence of a conflict and the conflict strategies of selected transcripts. All differences were discussed and corrected. Inter-reliability for the final coding of conflict behavior was controlled by recoding the conflict episodes of every fifth child, and calculated with the Cohen kappa coefficient. The reliability for coding conflict behavior was .77.

The variables of conflicts (frequency and duration, verbal and non-verbal conflict behavior) were entered in SPSS, and for every child mean percentages were calculated for all variables. Accordingly, using the percentages for 96 children, group differences based on age, language, and ethnic background were analyzed with *t*-tests/one-way ANOVAS and post-hoc Bonferroni tests. In all analyses the .05 level of confidence defined the significance.

**Results**

First, we present the quantitative results relating to (differences in) frequency and duration of conflicts and use of the conflict strategies by the children. Subsequently, in a qualitative analysis we provide more descriptive findings of the ways the children express their strategies.

**Quantitative results**

We found 1144 peer conflicts, with a mean of 12 conflicts per hour. Forty percent of the conflicts consisted of only a single opposition without any further continuation. Most conflicts were short, on average 20 seconds per conflict.

As Table 3 shows, 2-year-olds have fewer conflicts than 3-year-old children, $F(2) = 3.487$, d.f. = 94, $p < .05$. There are no differences among the ethnic groups in the frequency of

<table>
<thead>
<tr>
<th>Language measure</th>
<th>Home language</th>
<th></th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Dutch only $n = 41$</td>
<td>No Dutch spoken $n = 12$</td>
<td>Dutch and another language $n = 43$</td>
</tr>
<tr>
<td>MLU</td>
<td>2.61</td>
<td>1.99</td>
<td>2.14</td>
</tr>
<tr>
<td>MLU five</td>
<td>5.14</td>
<td>3.22</td>
<td>4.14</td>
</tr>
<tr>
<td>Different words</td>
<td>5.03</td>
<td>3.13</td>
<td>3.62</td>
</tr>
</tbody>
</table>

**Table 2.** Linguistic ability related to home language, means per group
conflicts, but there are in the average duration: the conflicts of the Dutch children, $F(2) = 3,854, p < .05$, are the longest. There were no differences among the children who spoke only Dutch, only another language than Dutch, and those who spoke both Dutch and another language at home. No differences were found in the themes of the conflict; most conflicts relate to the material world of objects and the domain of unwanted actions.

With regard to the conflict strategies of the children, we analyzed the verbal strategies as well as their non-verbal counterparts. We looked at the percentage of conflicts in which each target child used at least one non-verbal and verbal strategy. We found hardly any differences for our main categories: opposition, exploration, and modification related to age, home language, and ethnic group. The only significant difference was for home language in verbal modification ($F(2) = 3,930, p < .05$): children with mixed language use at home more often used verbal modification strategies to solve conflict than did the other two groups. Overall, non-verbal and verbal modification was used at least once in about 9% of the conflicts (see Table 4).

### Table 3. Conflicts: Frequency and duration related to age and ethnic background (absolute numbers and means)

<table>
<thead>
<tr>
<th>Conflicts (N = 1144)</th>
<th>Absolute numbers</th>
<th>Mean number per hour</th>
<th>Mean duration in seconds</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2-year-olds</td>
<td>495</td>
<td>10.3</td>
<td>21.5</td>
</tr>
<tr>
<td>3-year-olds</td>
<td>649</td>
<td>13.5*</td>
<td>18.6</td>
</tr>
<tr>
<td><strong>Ethnic group</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Antillean</td>
<td>421</td>
<td>13.2</td>
<td>18.9</td>
</tr>
<tr>
<td>Moroccan</td>
<td>357</td>
<td>11.2</td>
<td>16.8</td>
</tr>
<tr>
<td>Dutch</td>
<td>366</td>
<td>11.4</td>
<td>24.5*</td>
</tr>
</tbody>
</table>

* $p < .05$.

### Table 4. Non-verbal and verbal modification: mean percentages of conflicts in which target child uses at least one modification strategy on total of conflicts related to age, home language, and ethnic group

<table>
<thead>
<tr>
<th>Conflicts with modification (N = 101)</th>
<th>Conflicts with non-verbal modification (%)</th>
<th>Conflicts with verbal modification (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2-year-olds</td>
<td>9.0</td>
<td>8.0</td>
</tr>
<tr>
<td>3-year-olds</td>
<td>9.3</td>
<td>10.4</td>
</tr>
<tr>
<td><strong>Home language</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dutch</td>
<td>8.9</td>
<td>7.8</td>
</tr>
<tr>
<td>Other</td>
<td>4.5</td>
<td>3.9</td>
</tr>
<tr>
<td>Mixed</td>
<td>10.7</td>
<td>11.9*</td>
</tr>
<tr>
<td><strong>Ethnicity</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Antillean</td>
<td>10.4</td>
<td>10.8</td>
</tr>
<tr>
<td>Moroccan</td>
<td>7.5</td>
<td>7.9</td>
</tr>
<tr>
<td>Dutch</td>
<td>9.5</td>
<td>9.2</td>
</tr>
</tbody>
</table>

* $p < .05$. 
Verbal modifications. Next, we had a closer look at the verbal modification strategies. Table 5 shows the use of different types of verbal modifications. We found such modifications in 101 conflicts. Conflicts may contain one or more utterances with a modification strategy; in 101 conflicts there were 153 utterances with a verbal modification strategy that could be categorized as proposal of alternative, conditional directive, or compromise (except for a remaining category of four utterances). Since frequency of conflict differed between the age groups, and duration of conflicts differed among the children’s ethnic groups, no further statistical analyses were carried out; the figures serve as context for the qualitative analysis.

Table 5 shows that 2-year-olds predominantly propose an alternative strategy, whereas 3-year-olds use compromise in nearly half of their modification behaviors. Children who only speak a language other than Dutch at home hardly use any verbal modification strategy; the mean age of the children who do is 3;9. For the children who speak only Dutch at home, the division between proposing an alternative and compromise is more equal; but migrant children who speak only Dutch at home do not use compromise, so the indigenous Dutch children take account of the frequent use of compromise. The children who speak both Dutch and another language at home propose an alternative twice as often as a compromise. With respect to ethnic group, the Dutch children have the most equally distributed use of proposing an alternative and compromise compared with the Antillean and Moroccan children.

Qualitative analysis: Ways of expression

First, we discuss the nature of the utterances containing a modification strategy and then the use of deixis and connectedness.

Table 5. Type of verbal modification: percentages of total use by age, home language, and ethnic group

<table>
<thead>
<tr>
<th>Verbal modification strategies (N =153) ( ^{a} )</th>
<th>Frequencies use of modification (n)</th>
<th>Proposal alternative ( n = 92 ) (%)</th>
<th>Conditional directive ( n = 5 ) (%)</th>
<th>Compromise ( n = 52 ) (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2-year-olds (n = 48)</td>
<td>47</td>
<td>84</td>
<td>6</td>
<td>10</td>
</tr>
<tr>
<td>3-year-olds (n = 48)</td>
<td>106</td>
<td>51</td>
<td>2</td>
<td>47</td>
</tr>
<tr>
<td>Home language</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Only Dutch (n = 41)</td>
<td>55</td>
<td>55</td>
<td>4</td>
<td>41</td>
</tr>
<tr>
<td>Only another language (n = 12)</td>
<td>6</td>
<td>0</td>
<td>0</td>
<td>100</td>
</tr>
<tr>
<td>Dutch and another language (n = 43)</td>
<td>92</td>
<td>64</td>
<td>4</td>
<td>32</td>
</tr>
<tr>
<td>Ethnic group</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Antillean (n = 32)</td>
<td>69</td>
<td>72</td>
<td>4</td>
<td>24</td>
</tr>
<tr>
<td>Moroccan (n = 32)</td>
<td>36</td>
<td>60</td>
<td>0</td>
<td>40</td>
</tr>
<tr>
<td>Dutch (n = 32)</td>
<td>48</td>
<td>49</td>
<td>4</td>
<td>47</td>
</tr>
</tbody>
</table>

\( ^{a} \) Four items could not be categorized as proposal of alternative, conditional directive, or compromise.
In a few cases the transmission from opposition to modification is marked by a ‘change-of-state token’ (Heritage, 1984, cited in Goodwin, 1990, p. 157), in which the children announce their move toward a change in the interaction: in most cases ‘Kijk’ (look) is used, and incidentally ‘Hé,’ ‘Ja’ (yes), ‘O,’ or ‘Ah.’ But mostly the transition is done smoothly. We discuss the findings for each strategy separately.

**Proposing an alternative.** The strategies of offering an object and proposing an alternative action, location, or role for the other child are cognitively the least complex strategies. The children often use deictic forms when they offer or give back an object, such as the demonstratives ‘Hier’ (here), ‘Dies’ (these), ‘Ditte, ditte, ditte’ (this, this, this), and ‘Jij mag deze’ (You can have these); in a few instances they use more explicit constructions such as ‘Voor jou’ (For you). But sometimes they mention the object itself: ‘Dat is nog een bed’ (That’s another bed). Also, when they propose another location, they use demonstratives to refer to it: ‘Ga maar daar’ (You go there). When children propose an alternative action, they may explicitly refer to that action: ‘Ja we gaan vechten’ (Yes, we are going to fight!).

With regard to the use of demonstratives, it is essential to know the non-verbal context to understand what is meant. But sometimes more explicit constructions require knowledge of the non-verbal context as well to understand that a proposal has been made. In the following example of a conflict about access, Megan modifies her behavior by offering a seat to Sutnyson by using a directive:

1. Megan (2;10) is playing alone with a jigsaw puzzle at the table. The teacher sits behind her to help. Sutnyson (2;5) walks to the table and puts a little ball next to the jigsaw puzzle. Megan doesn’t like this and pushes Sutnyson away a couple of times. When Sutnyson stays and looks sad, Megan decides to offer Sutnyson a seat next to her:

   Megan:  **Zitten.** (Sit down) [Megan refers to the seat next to her]
   Megan:  **Ga zitten.** (Sit down) [She again refers to the seat next to her]
   Megan:  **Ga zitten, Sutnyson.** (Sit down, Sutnyson)
   Sutnyson:  [Sutnyson is going to sit in the seat next to Megan]
   Megan:  **Hij speelt bij mij.** (He is playing next to me) [Megan addresses the teacher and points to Sutnyson].

   Proposals for cooperation are less frequent than the other proposals of an alternative. This often happens implicitly, by mentioning the interesting action, for example, playing eating ice-cream by saying: ‘IJsje, ijsje, lekker’ (Ice-cream, ice-cream, yummy!). Another way of expressing this is by the transition to the inclusive we or us. For example, Imane (3;4) who was not allowed to sit on a small couch, initiates another interaction by saying: ‘Ga _we_ televisie kijken?’ (Are we going to watch television?). Sometimes the children use a playful implicit way of expressing their proposal to cooperate, as Suzanne does in using ‘túuíüt’ to let the airplane take off.

2. Suzanne (3;4) and Sarah-Noor (3;4) play in the house corner that they are traveling in an airplane. When flying for some time, Sarah-Noor says:
Sarah-Noor: We zijn ‘r! (We are there)
Suzanne: Nee, we zijn er nog niet. We gaan tüüüüüút omhoog. We gaan nog een keer omhoog. We zijn er nog niet hè? (No, we are not there yet. We are going tüüüüüút up. We are going up again. We aren’t there yet, are we?)

Conditional directives. The children appear to be too young to use the strategy of conditional directives. Only five times in 1144 conflicts did they use a directive in this sense. In these cases, the children only expressed the proposition containing the directive; the promise was implicit, as in (3), or the other child posed a question that is answered by posing the condition (4).

(3) Aisha wants her plate back from Lilly (2;11). Lilly suggests that she will return the plate by saying: ‘Alstjeblieft?.Zeggen. Zeggen, zeggen. Je moet zeggen. Zeggen: mag ik?’ (Please? Say. Say, say. You have to say. Say: can I?)

(4) Rafik (3;4) wants Sylvano (3;4) to stop singing, Sylvano continues jumping and singing. Rafik says: ‘Ik ben toch je vriend’ (I am your friend, eh?). In Sylvano’s response the promise to be a friend is implicit: ‘Ja, maar dan moet je wel een liedje aanzetten’ (Yes, but then you should put on a song). For a while, Rafik looks doubtful, but then he joins Sylvano in jumping and singing.

Compromise. This strategy is psychologically the most complex one. It requires that children be able to combine the points of view of both interlocutors, and modify their own behavior in order to find a solution that satisfies both. Mostly the children adapt their own behavior by choosing another way to act, by sharing space and searching for other objects to share. In a few instances they make a joke or a game out of a conflict or switch to a pretend play frame. Turn taking is proposed by only three children. Linguistically, the sharing by the 2-year-olds is done by using deictics in referring to objects or acts, such as with Darren (2;11): ‘Die, die is van jou’ (That, that’s yours). The language of the 3-year-olds is more often less context bound and refers to a non-perceivable entity: they make promises: Johnny (3;5) ‘en ik gaat van mij een ijsje maken voor jou’ (and I will make an ice-cream of mine for you); they refer to their togetherness (Charilain, 3;7) ‘Is allebei’ (is both), and in a few cases they joke: Tess (3;5) ‘Zuwe stiekem doen?’ (Shall we do it secretly?) and propose to pretend: Jaoud (3;1) pretends to be the police car driver ‘tatuul!’ in a conflict about a wheelbarrow. The proposals for turn taking involve adverbs related to future actions (‘eerst’ (first)), nouns and verbs (‘je beurt’ (your turn), ‘wachten’ (wait), and connectives (‘dan’ (then)) as in the example of Charilain (9). The compromises of the children who speak a Moroccan language at home have utterances that contain both deixis ‘en dies?’ (and this one?), as well as less context bound expression: ‘ ‘k ga voor jou zoeken’ (I’m going to search for you).

Psychological and linguistic complexity. Is the psychologically more advanced strategy, the compromise, also linguistically the most complicated? To answer this question, we looked at deixis and ideas, connectedness of utterances, and the MLU in the modifying strategies.
The utterances containing proposals of an alternative most often included deictic elements (42%), but children who expressed a compromise also quite often used deictic elements (35%). In proposing an alternative, children referred to an idea (17%) less often than when they proposed a compromise (31%). The expression of a compromise is linguistically more complicated (MLU 4.1) than proposing an alternative (MLU 2.7).

So, compromises are more often linguistically complex than utterances with a proposal of an alternative, but the expression of an alternative may be linguistically rather complex, as in ‘Volgende keer mag je weer verven’ (Next time you may paint again), and children may express a compromise in a simple way: ‘is dies?’ (is (it) this one?). Although the linguistic complexity may differ, modifying utterances may be quite similar in what they express. This may be seen in the examples (5) and (6), and (7) and (8).

**Proposing an alternative.**

(5) Soukaina (3;4) plays with a jigsaw puzzle. Chiney (3;4) is doing something with Soukaina’s puzzle, and Soukaina yells: ‘Nou!’ Chiney repeats her action; ‘Zo, zo’ (So, so) and Soukaina pushes Chiney’s arm away, and then she says: ‘Hier, krijg deze’ (Here, have these) and she pushes a different jigsaw puzzle towards Chiney.

(6) Paula (3;6) and Tess (3;5) are playing with blocks. ‘Ik weet wat’ (I know something), Paula says, and she sweeps the blocks towards herself. ‘Nou!’ yells Tess. Tess tries to snatch the blocks. Paula keeps taking the blocks away, and Tess again protests. Then Paula sweeps blocks back to Tess, in a singing voice: ‘Hier de blokken naar je toe’ (Here, the blocks to you).

**Compromise.**

(7) Kisha (3;10) and Chantal are going to play with a computer. Kisha takes the keyboard, but Chantal says: ‘Nee, jij niet’ (No, not you). Kisha continues playing with the keyboard, and Chantal grips Kisha and pushes her away: ‘Jij niet!’ (Not you!). Kisha tears herself loose from Chantal, and then she takes the computer mouse and says ‘ik ga deze’ (I’m going (to use) this).

(8) Timo (3;6), a Dutch boy, plays with Jordy in the corner. Timo takes a block that lies on the ground just in front of Jordy. ‘He, ik heb die nodig’ (Hey, I need this one). ‘Nee!’ (No!), Jordy yells. Timo points to the cupboard where the blocks are. ‘Daar is er nog een’ (There is another one), he says. ‘Nee, nee, die was van mij!’ (No, no, that one was mine!). Jordy reacts, and Timo says: ‘Ik ga er voor jou eentje zoeken’ (I’m going to look for one for you), and he walks to the cupboard to find a block for Jordy.

We did not find a pattern with respect to connected text. When children connect utterances with a modification strategy in one turn, they most often repeat sentences, ‘Kom maar, Kom maar, Anwar’ (Just come. Just come, Anwar). In only a very few instances do children produce connected text as Charilain does below:
Charilain (3;7) is ironing in the house corner. Nora (2;11) also wants to iron. She gets an iron from the teacher, but needs the ironing board.

Charilain: Eerst ik ook strijken dan jij, oke? (First I’ll do the ironing and then you, ok?)

Nora: Ik eerst deze. (First I this one) [She points to her iron]

Charilain: Ja eerst je beurt wachten. Eerst je beurt wachten, oké? Je mag eerst je beurt wachten. Dan mag jij en dan mag ik. (Yes, first wait your turn.) [Charilain is going to iron]. (First wait your turn, ok? You can wait your turn. Then you can and then I can.) [Charilain points to herself and then to Nora.] Is allebei. (Is both.)

Nora: Mag ik deze? (Can I have this one? I want the pants.) [She is going to iron the pants]

Charilain: Ik ga wachten. (I am going to wait.) [Charilain is going to sit on the couch]. Ik ga wachten. Ik ga wachten tot jij klaar bent. (I am going to wait. I am going to wait until you are finished.)

There are differences in the use of linguistically complex sentences among age and ethnic group. Two-year-olds use more utterances with deictic elements (49%) than 3-year-olds (35%), and the latter have four times more utterances referring to an idea (24% vs 6%).

It is difficult to compare differences relating to home language. The migrant children who do not speak Dutch at home or who use only Dutch at home use too few modifying strategies to draw any conclusion. The children using a mixed home language use deixis in 44% of their modification strategies, and in 18% they refer to an idea.

Differences among the ethnic groups are small for the use of deictic elements, and Dutch children refer most often to ideas (in 27% of their utterances compared to 16% by the Antillean and 11% by the Moroccan children).

Since connected text was seldom found, we did not look at differences among the groups.

In sum, proposing an alternative is the psychologically simpler modifying strategy and is most often expressed in a simple way, whereas the psychologically more complex strategy of the compromise is more often expressed in a linguistically more complex way. So, it may be assumed that language ability adds to proposing a compromise, but the use of this strategy does not totally depend on advanced language ability.

Conclusion and discussion

Our main question was whether young children’s use of psychologically complex strategies in conflict management depends on their language development. To answer this, we focused on children who are believed to differ in psychological maturation and/or linguistic ability: 2-year-old children vs 3-year-olds, and children with different home languages than the language of the childcare center. Language development was measured by the mean length of utterances, mean length of the five longest utterances, and the
number of different words in the utterance. There were significant differences between the age groups, as well as among the children with only Dutch as the language used at home, no Dutch spoken at home, and both Dutch and another language spoken at home. Three-year-olds and children who spoke only Dutch at home had the highest scores. With respect to the conflict strategies, we found non-verbal and verbal modification strategies by which children modify their behavior to solve a conflict: a proposal of an alternative, a conditional directive, and a compromise. The compromise is psychologically the most complex strategy: children have to take into account the perspective of the opponent, and in addition, they have to understand what would be fair.

Since there were differences among the number of conflicts for the age groups and the duration of conflicts among the ethnic groups, we calculated in our quantitative analysis the percentage of conflicts in which target children used at least one non-verbal or verbal modification strategy. Next, we looked at the absolute numbers of the different modification strategies used. Finally, we did a qualitative analysis of the modification strategies by looking at the use of deixis, the expression of ideas, the use of connected text, and the mean length of utterances containing a proposal of an alternative or a compromise.

We put forward three hypotheses. The first hypothesis, that 3-year-olds use more modification strategies that take into account their opponent’s perspective than 2-year-olds, and that their linguistic expression is also more advanced, could be partly confirmed. Statistics revealed that there were no differences in the percentage of conflicts in which target children used at least one non-verbal or verbal modification strategy. With respect to the absolute numbers in the use of the modification strategies, however, we found a different proportion was true for the use of the different strategies between the age groups. The 3-year-old children used the most complex verbal strategy, the compromise, more often than the 2-year-olds. The qualitative analysis showed that the verbal expression by the 3-year-olds was also more advanced. Their modification strategies were less bound to the context: they contained fewer deictic elements, and the children more often referred to an idea. Connected text in one turn was hardly found for both age groups.

The second hypothesis focused on differences in the use of modification strategies with respect to home languages. With respect to verbal modification, from the quantitative analysis there appeared to be a difference, but not in the hypothesized direction. Children who spoke both Dutch and another language at home used verbal modification more often than did children who spoke only a language other than Dutch at home or children who only spoke Dutch at home. There were no significant differences between the latter two groups. So, less advanced linguistic ability in Dutch for children with both Dutch and another language at home did not result in fewer, but on the contrary, in more frequent use of verbal modification than in the other two groups. Apparently, a more limited linguistic ability did not make it impossible for such children to use language in modifying their conflict behavior. The qualitative analysis revealed that they do make compromises, and that they often rely upon deictic elements in their utterances. The use of modifying strategies by the migrant children who only spoke a language other than Dutch at home did not contain sufficient instances to be able to extrapolate any conclusions about psychological or verbal complexity; the same holds for the migrant children who only spoke Dutch at home. The indigenous Dutch children were responsible for the frequent use of compromises. There were no differences for non-verbal modification, which is in line with the hypothesis.
We formulated a third hypothesis concerning differences in conflict resolution among the ethnic groups that might explain any differences among children with home languages other than Dutch. There were no differences found in the percentage of conflicts in which the children used at least one non-verbal or verbal modification strategy. We may assume that cultural conventions at home do not interfere with the findings relating to home language.

The overall conclusion is that the use of psychologically complex strategies in conflict management does not totally depend on language development. Age seems to contribute most to the use of psychologically and linguistically complex modification strategies. The psychologically most complex modification, the compromise, seems to be beyond the grasp of most of the 2-year-old children. The results relating to differences in home language background showed that linguistically less competent children were able to use verbal modification strategies that take into account the perspective of the interlocutor. Although their language is less complex in terms of the frequent use of deictic elements, they may use their language for the same purposes of modifying their behavior as the linguistically more competent children.

This brings us back to the advice of ‘use your words’ by teachers in childcare centers. From our quantitative results it appears that 2- and 3-year-olds only begin to use verbal modification strategies to solve their conflicts. We found verbal modification strategies in only 9% of the conflicts. This finding may be influenced by the way we defined a conflict: for several reasons we included interactions with only a single oppositional move. In other studies (Shantz, 1987) a second oppositional move was required to involve the conflict in the analysis. The mean number of conflicts among the 2- and 3-year-old children in our study was 12 per hour, which is more than the 8 per hour in Shantz’s (1987) review. Excluding the single oppositional move conflicts, which made up about 40% of all conflicts, would result in a higher percentage than 9%. But then, there were still a considerable number of conflicts in which children do not consider the other’s perspective by talking.

It seems important to keep in mind the other findings of this study. First, children also use non-verbal modification strategies. These may support their verbal behavior or may be used instead of talking. Teachers should also pay attention to such non-verbal behavior in conflict resolution. Second, in our qualitative analysis we found that verbal modification behavior was often expressed by the use of deictic words. Modification behavior is still bound to context. Only the 3-year-olds were able to express ideas that were detached from the immediate here-and-now and required a rich vocabulary. Although children may give the impression that they have a concept of the other’s mind, their meanings are still in a developmental process (De Haan & Singer, 2003; Dunn & Brophy, 2005; Nelson, 2005). To acquire language to solve conflicts in a way that satisfies the opponents in the conflict, it is of utmost importance that teachers engage the children in a discourse about the intentions and emotions of the other child.

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