

# International Journal of Behavioral Development

<http://jbd.sagepub.com>

---

## **Consistent patterns of interaction in young children's conflicts with their siblings**

Michal Perlman, Hildy S. Ross and Daniel A. Garfinkel

*International Journal of Behavioral Development* 2009; 33; 504 originally published online Jul 30, 2009;

DOI: 10.1177/0165025409343745

The online version of this article can be found at:  
<http://jbd.sagepub.com/cgi/content/abstract/33/6/504>

---

Published by:



<http://www.sagepublications.com>

On behalf of:



[International Society for the Study of Behavioral Development](http://www.sagepub.com/journalsPermissions.nav)

**Additional services and information for *International Journal of Behavioral Development* can be found at:**

**Email Alerts:** <http://jbd.sagepub.com/cgi/alerts>

**Subscriptions:** <http://jbd.sagepub.com/subscriptions>

**Reprints:** <http://www.sagepub.com/journalsReprints.nav>

**Permissions:** <http://www.sagepub.co.uk/journalsPermissions.nav>

**Citations** <http://jbd.sagepub.com/cgi/content/refs/33/6/504>

## Consistent patterns of interaction in young children's conflicts with their siblings

Michal Perlman

Ontario Institute for Studies  
in Education of the University  
of Toronto, Canada

Hildy S. Ross

University of Waterloo,  
Canada

Daniel A. Garfinkel

Ontario Institute for Studies  
in Education of the University  
of Toronto, Canada

This study investigates whether preschool-aged children show consistent patterns of behaviour in conflicts with their siblings. Consistency was assessed at the nomothetic (i.e., group), idiographic (i.e., individual), and idiosyncratic (i.e., consistent patterns that differed from the norm) levels. We examined conflicts between 19 2-year-old and 19 4-year-old children and their siblings. Both age groups showed consistent idiographic and nomothetic patterns of interactions. Two-year-old children used idiosyncratic patterns of responses to the conflict overtures of others (i.e., they deviated from the norm in consistent ways) while 4-year-old children did not. The variance in the responses of the younger children was greater than that found for the older children. Together these results suggest that as children mature through the preschool years their conflict patterns become more homogeneous. The importance of studying patterns in conflict at all three levels is discussed.

Keywords: conflict; preschoolers; siblings

Sibling conflict is frequent and often intense. As a result, parents identify it as the most common parenting problem they face (Brody & Stoneman, 1987; Prochaska & Prochaska, 1985). The quality of sibling conflict has both short- and long-term implications for children's social well-being and, more specifically, for the quality of the sibling relationship (Garcia, Shaw, Winslow, & Yaggi, 2000; Rinaldi & Howe, 1998; Slomkowski & Dunn, 1992). The abilities that enable children to address conflicts or resolve conflicts in more pro-social ways develop over the preschool period. Their language and perspective-taking abilities improve. At the same time, rates of aggression decline (NICHD ECCR, 2004). The complex ability to resolve differences effectively is one that evolves over time and for which different behaviours have different meanings at different developmental stages. For example, while grabbing may be normative for young children – in fact, it is associated with more frequent social overtures (Williams, Ontai, & Mastergeorge, 2007) – it may serve as a marker for poor social skills for older children. Thus, it is important to study conflict from a developmental perspective.

In the current study our focus is on patterns of interaction in the conflicts of preschool-aged siblings. The traditional developmental approach has been criticized for not recognizing the primacy of social interaction as a context in which behaviour occurs and develops (Cairns, 2000; Carpendale & Lewis, 2006). As a result, "social acts are often inappropriately viewed as structures of the individual rather than as part of an interpersonal exchange. An interactive view of social development requires that equal attention be given to the activities of the other individual" (Cairns, 2000, p. 59). In sibling conflict, children do not independently select conflict strategies. Rather, they react to their opponents and to third parties who enter

their disputes (Howe, Fiorentino, & Gariépy, 2003; Kramer, Perozynski, & Chung, 1999; Perlman & Ross, 2005; Phinney, 1986; Vuchinich, 1984). This can produce either effective problem solving or escalation and mounting hostility. Thus, it is important to study interaction sequences in conflicts.

Our primary goal is to examine whether 2- and 4-year-old children display consistent patterns of interaction with their siblings and their mothers when conflicts occur between the two children. We do so in a way that compares an individual's conflict patterns to normative patterns of his/her age group. We consider consistent patterns of conflict interaction at three levels: an individual's reactions to others (idiographic), the commonalities in patterns of interaction across individual children (nomothetic), and the consistent deviations of individual children from interactive patterns found for the group as a whole (idiosyncratic). Below we describe the distinctive and valuable information about children's conflict interaction that is gained at each of these levels, and present research on patterns in children's conflict at each level. We conclude by listing the research questions addressed in the current study.

An *idiographic* analysis provides information on the patterns of behaviour that children experience during conflict. For example, a hypothetical 4-year-old child's conflict behaviour may reveal that she has a tendency to reciprocate her brother's aggression. Researchers using an idiographic approach focus on individuals (e.g., by using case studies) and argue that people display consistent behavioural patterns, which may be described for individuals (Howard & Myers, 1990). There is nothing comparative in this approach as it entails an in-depth analysis of a single individual or relationship. For example, Duncan (1991) presented several case examples of families in which conflict followed what he called *conventions* that generate

a set of strong regularities in participants' actions while providing for meaningful variability. Duncan stipulates that these develop after repeated experiences and lead to expectations regarding one's own behaviour and the behaviour of others. He provides qualitative evidence of the presence of such patterns in conflicts involving young children (Duncan, 1990). As an illustration, he describes a sequence in which a 9-month-old boy repeatedly attempts to grab video camera wires only to be intercepted each time by his father. Similarly, Allen (1995) presents an in-depth analysis of conflict between three school-aged siblings. The children extensively negotiated use of their beds exhibiting a "social order" in the use of property and space.

A *nomothetic* analysis provides information on interactive patterns displayed, on average, within specified groups. For example, a nomothetic analysis may reveal that, in general, 4-year-old children tend to reciprocate the aggressive behaviours of their opponents. This level of analysis is important for identifying general patterns and developmental trends. Researchers using the nomothetic approach rely on the averaged responses of large numbers of subjects considered to be representative of the population as a whole, or of some meaningful subgroup, in an attempt to reveal general patterns that can be widely applied (Hermans, 1988). Thus, an abstracted "average" is used to describe the interaction patterns of populations or specific groups. More research has been devoted to studying group than individual conflict patterns (Eisenberg & Garvey, 1981; Kramer et al., 1999; Patterson, 1982; Perlman & Ross, 2005; Phinney, 1986; Vuchinich, 1984). For example, Vuchinich (1984) observed the dinner conversations of families with children ranging in age between 3 and 22 years old. He found that conflict behaviour was structured, showing two-step sequential patterns that were influenced by gender and family role. A number of researchers have found compelling evidence that children of varying ages reciprocate the conflict strategies of their opponents (Eisenberg & Garvey, 1981; Kramer et al., 1999; Patterson, 1982; Perlman & Ross, 2005; Phinney, 1986; Vuchinich, 1984). Children also typically tailor their responses to their opponents' characteristics. For example, Phinney (1986) found that preschoolers' sibling quarrels were likely to be made up of strings of three simple verbal actions such as rejections, denial, or contradictions. Their peer conflicts were more likely to be composed of three more elaborated verbal acts such as reasoning, explanations, and justifications. Perlman and Ross (2005) found that 2- and 4-year-old children reciprocated their opponents' reasoning more often than their power moves. Furthermore, they were sensitive to their opponents' status in that younger siblings consistently ignored opposition while older siblings used power more often than their younger brothers and sisters following sibling opposition. Thus, there is evidence for nomothetic patterns in children's conflict.

It is critical to carefully define the group when applying the nomothetic approach. Specific groups can be identified based on levels of an independent variable – for example, children whose mothers are depressed, bipolar, or not depressed (see Hay, Vespo, & Zahn-Waxler, 1998), or children with or without internalizing or externalizing difficulties (see Hollenstein, Granic, Stoolmiller, & Snyder, 2004) – or empirically by using analytic techniques such as cluster analysis to identify subgroups (Kaufman & Rousseau, 1990). For example, Patterson (1982) compared the in-home interaction patterns of families with and without antisocial sons who ranged in age

between 6 and 12 years old. In families with antisocial sons, parents and siblings acquiesced to and thereby increased the child's aggression, leading, in turn, to aggressive parental discipline and further increases in child aggression. Patterns also emerged in the families without antisocial sons, but these occurred less frequently and were shorter in duration (Patterson, 1984). The age of the participants could be used to define subgroups when developmental change in interactive patterns is of interest.

The *idiosyncratic* level examines the extent to which an individual's behavioural pattern deviates from his/her comparison group. In the case of our hypothetical child, it may reveal that this 4 year old actually reciprocates conflict behaviours more often than the "average" 4 year old. The actual behaviour of our 4 year old, revealed in idiographic analysis, can be partitioned according to its similarity to a reference group and its consistent divergence from nomothetic tendencies (i.e., consistent idiosyncratic patterns). Faced with the behaviour of their own children, parents often seek comparisons with normative patterns in order to assess the degree to which their own child departs from a comparison group. In the case of our hypothetical child, such information could have important implications suggesting this child may tend to escalate conflict and therefore may benefit from learning other strategies that would allow her to extricate herself from aggressive conflict situations.

A thorough review of the literature revealed no studies of idiosyncratic sequential patterns in young children's conflict behaviours. However, from a personality psychology perspective, Shoda, Mischel and Wright (1993, 1994) describe idiosyncratic sequential behavioural patterns in children's broader interactions. Shoda et al. (1994) argue that differences in personality can be characterized by consistent individual differences in how people react to repeated elements in their environments (i.e., the context of their own behaviours). Different people follow different *If-Then* patterns in their interactions with others, and personality can be described in terms of consistent patterns in an individual's reactions to repeated behavioural contexts. Shoda et al. (1994) chose to examine the context provided by the different behaviours exhibited by interaction partners. Using extensive observations of boys with behavioural problems in a summer camp setting, they tracked the extent to which children used consistent *If-Then* patterns in their responses to others. They examined consistency by randomly dividing each child's pool of observed *If-Then* responses into two. By correlating children's responses in the two half data sets they were able to determine whether children had consistent ways of responding (i.e., *Thens*) to different behaviours of their companions (i.e., *Ifs*). They found that children reacted in consistent and unique ways to the behaviours of their peers and of authority figures.

Shoda, Michel and Wright (1993) developed this approach to characterize idiosyncratic patterns in context-response contingencies. We add to their analyses by examining all three levels of analysis in parallel forms, so that the contributions of each component can be assessed and compared. We also include analysis of two age groups of children to illustrate the utility of conducting an analysis of subgroups of participants, especially as it demonstrates the developmental perspective revealed through such analysis. We conduct our analyses on the conflict interactions of preschool-aged children observed in their homes.

Sibling conflict is frequent, intense, and has long-term consequences. Having normative information about this

phenomenon could be very useful to parents. For example, knowing that children typically hit back when they are hit may be reassuring to parents who worry that their children react aggressively to one another. The idiographic perspective is essential because it reflects children's actual experiences (and therefore the experiences of those interacting with them). The idiosyncratic level provides a way to identify children whose behaviour may put them at risk for various developmental difficulties because it deviates from age-sensitive norms. In the current study conflict patterns were examined simultaneously at all three levels. This provides a comprehensive examination of these important behavioural patterns and illustrates the advantages and limitations of each as well as the utility of the combined information across three levels. Given the literature on nomothetic patterns, we would expect to see that children consistently reciprocate the conflict behaviours directed to them. In comparison, the literature on idiographic and especially on idiosyncratic consistency in interaction is sparse, although it is possible that group-level data reflect patterns found at the individual level. We will examine whether the degree of idiosyncrasy changes across the preschool period. It is possible that children become more idiosyncratic with time as their unique behaviour patterns become more entrenched. On the other hand, models of socialization might suggest that children's conflict strategies will become more homogeneous (i.e., they may be more like one another) as they grow and become more enculturated. This greater homogeneity may result from having greater exposure to parental intervention and experiences outside of the family that over time convey to children what is deemed appropriate behavior during conflict. The direction of any change in idiosyncrasy needs to be established empirically.

## Method

### Participants

Participants in this study were a subsample of a larger sample (Ross, Filyer, Lollis, Perlman, & Martin, 1994) of 40 families. Children were only included in the current study if their mothers and siblings directed each of five conflict strategies towards them a minimum of six times. This inclusion criterion is described in greater detail below. Families were recruited based on birth advertisements in a local newspaper. The sample of the current study consisted of 19 2-year-old children ( $M = 2.4$  years old) and 19 4-year-old children ( $M = 4.4$  years old) from 24 families. All children came from two-children families that consisted of a 4-year-old first-born child, a 2-year-

old second-born child, and both parents. Within each cohort, 14 of the children were sibling pairs. Five 2-year-old and five 4-year-old children from 10 additional families met our inclusion criterion. However, the siblings of these 10 children did not meet the inclusion criterion. Thus, each cohort included five children whose sibling was not a part of the current analyses. Of the older (i.e., 4-year-old) children included in these analyses, 10 were males and nine were females. Of the younger (i.e., 2-year-old) children, 13 were males and six were females. All children came from intact Caucasian families. Mothers and fathers had diverse educational and occupational backgrounds – 14% of mothers and 23% of fathers had not completed high school, 39% of mothers and 29% of fathers had completed high school, and 46% of mothers and 50% of fathers had completed university degrees. Ten mothers had full-time jobs outside the home, eight had part-time jobs, and the remaining 10 did not work outside the home. Parents were between the ages of 23 and 48 years. The subsample of families included in this study did not differ from the larger sample in any of the aforementioned demographic variables. Given the inclusion criteria, the subsample used in this study, when compared to families who were excluded, consisted of families with higher rates of longer conflicts and higher rates of maternal intervention in sibling conflicts (see Table 1).

### Procedure

The data were collected during six 90-minute sessions in the homes of the participants. In three sessions all four family members were present, while, in the remaining three, only the mothers and children were observed. Observers recorded the children's interactions on one track of an audiotape while narrating the children's behaviour onto a second track. Thus, a record of family members' verbal exchanges and their actions was available. Observations proceeded only when both children were in the same room and the parents were in the same or an adjacent room, although in both cases allowances were made for brief absences of up to two minutes. Television, video games, and visitors were not permitted during the course of the observations. Observers did not participate in family interaction and responded as little as possible to comments of family members. These data provide an in-depth view of micro-level social processes between very young children in the context of the family.

### Transcription of conflicts

Audiotapes were transcribed so that all actions that individuals exhibited were noted. In this study we focused on episodes

**Table 1**  
*Mean frequency of conflict, conflict turns, and parent intervention*

Number of siblings in the family who met the inclusion criterion	Number of conflicts per hour	Proportion of conflicts in which parents intervened	Number of turns per conflict		
			Older children	Younger children	Mothers
Both siblings; $n = 14$ families	7.55	60%	4.15	4.13	1.88
One sibling; $n = 5$ older and 5 younger children	6.52	63%	4.59	4.31	2.08
Neither sibling*; $n = 16$ families	5.09	49%	3.91	3.79	1.32

\*Comparison group.

**Table 2***Example of conflict with codes for Ifs and Thens*

Action number	Actor	Actions, comment and dialogue	Antecedent events (If) codes	Response (Then) codes
1	Younger	“Katie did this” [younger tattles to parents accusing older of damaging the coffee table]	Younger Power Older	Older Power Younger
2	Older	“You’re a liar”	Older Power Younger	
3	Younger	Does not respond		Younger Ignores Older
4	Older	Pushes younger lightly	Older Power Younger	Older Power Younger
5	Younger	“Me, I like do that”		Younger Complies Older
6	Mother	“Don’t ever tattle again”	Mother Power Younger	Older Power Younger
7	Older	“She lies” [older tattles on her younger sister to their parents]	Older Power Younger	
8	Younger	Does not respond		Younger Ignores Older

of sibling conflict. To be identified as a conflict, the actions of at least one child had to be met with some form of opposition by the other child, such as protest, resistance, or retaliation (Hay & Ross, 1982). Thus, conflicts consisted of three turns at minimum. The following exchange would have met our minimal criteria to be included as a conflict: Child A takes something from Child B. Child B protests and Child A returns the object. However, on average, conflicts were much longer than three turns in length (see Table 1). Conflicts ended when opposition between the children ceased without resumption for at least one minute. An example of a conflict in which one child tattled on her older sister is provided in Table 2. To estimate the reliability of the observations for the overall sample, 17 of the 40 families (i.e., 43%) were observed by two observers for a 20-minute session. Percent agreement between raters for the identification of conflict and the presence of each coded action within conflicts averaged 91%. Discrepancies were resolved through discussion between members of the research team. Along with the face validity of the data, the high reliability supports the data-collection protocol adopted in this study.

### Identification of If-Then contingencies

In *If-Then* contingencies, the *If* component refers to a specific antecedent event and the *Then* component refers to the family member’s response to that event (e.g., *If* my mother reasons with me during conflict, *Then* I comply). The conflict strategies that fit into the *If* categories were identified first; the consistency of subjects’ responses (i.e., based on the *Then* categories) was then examined.

**Coding of conflict actions.** All actions by participants in all conflicts were coded to identify the types of strategies that family members used during conflict. The coding system for conflict strategies was influenced by theoretical and empirical work related to child and familial conflict (e.g., Eisenberg & Garvey, 1981; Vuchinich, Emery, & Cassidy, 1988). The categories that were coded are defined in Table 3. These include Ignore the issue, Power, Cry, Oppose, Comply, and Reason. At

times, a single conflict turn contained two or more actions. In general, each action was coded. The one exception is when individuals directed a verbal response that involved reasoning but also opposition. In this case, opposition that co-occurred with reasoning that justified the opposition was coded as reasoning. For example, the statement, “Don’t, that’s mine” would be coded as reasoning rather than both opposition and reasoning. In all cases both the actor and the target were coded for each action. Frequencies as well as reliabilities were assessed based on all three pieces of information being in agreement: actor, target, and action. Reliability estimates for the conflict strategy coding for the general sample were calculated based on data from one session from 10 of the 40 families containing a total of more than 2,000 judgement points. Discrepancies were resolved through discussion and additional training. Kappa for the overall coding scheme was .86; percent agreement for the specific categories is found in Table 3.

**Selecting Ifs.** Following Shoda et al. (1993), each child’s data were randomly divided into two. All instances of each *If* for a given child were ordered according to the time of their occurrence and numbered consecutively. Even numbered *If*’s were then randomly assigned to one half data set and odd numbered events assigned to the other half data set. Consistency in children’s use of the different *If-Then* contingencies was established by correlating their own behaviours in the two half data sets. Data for these analyses were proportions of specific responses (*Thens*) to each antecedent (*If*). To have reliable proportional data in each half data set without setting the data requirements so high that subject loss would be excessive, Shoda et al. (1993) recommend that each *If* occur a minimum of six times per participant. This inclusion criterion was used in the current study.<sup>1</sup> The strategies that met this criterion in the *If* category for both older and young siblings were Mother Power, Mother Reasoning, Sibling Power, Sibling Reasoning,

<sup>1</sup> To avoid losing participants, in six cases this criterion was relaxed if no more than one of the five *If* conditions occurred only five times for a given child.

**Table 3**  
Coding of conflict actions

Strategy	Description	Percent agreement
Ignore issue	Response does not address the conflict issue: includes withdrawing, ignoring, and radically changing the subject	86
Power	Includes both verbal and physical aggression ranging from low (e.g., teasing, grabbing, and pushing) to high (e.g., insulting and hitting)	90
Cry	Crying or fussing	100
Oppose	Refusal or resistance that is not accompanied by reasoning (e.g., "Don't") and is done in response to the actions of others	80
Comply	Yielding or submitting to the opponent's position; can be verbal or physical (e.g., letting go of an object of dispute)	100
Reasoning	Justifications for one's own position (e.g., "I want it") or arguments that take the opponent's perspective into account (e.g., "You don't like it when he does that to you") or suggestion/acceptance of an alternative solution (e.g., sharing)	81

and Sibling Oppose. The second-last column in Table 2 provides the *If* codes associated with the example transcript. Since the focus of this study was on children's conflict patterns, mothers' behaviour was examined only when it provided a context for the children's behaviours. That is, the current study examines mothers' behaviours only as antecedent events (or *If*s) for their children's behaviours.

**Selecting Thens.** The response behaviours were selected on the basis of their salience during conflict and their role in either escalating or de-escalating conflict. Ignoring, complying and reasoning are thought to de-escalate conflicts. For young children, ignoring and complying have been observed to occur later in sibling conflicts (Perlman & Ross, 1997). Crying and power were also selected as *Thens* because they occur frequently and are salient during conflict (Perlman & Ross, 1997). The last column in Table 2 provides the *Then* codes associated with the example transcript.

Because of the overlap in the selection of *If*s and of *Thens* it was possible for a specific behaviour to act as an *If* for one child and as a *Then* to a preceding *If* for the other child. For example, in Table 2, Action 4, Older Power Younger, serves as a response to Younger Ignore Older (Action 3) and as an antecedent to Younger Comply (Action 5). Since the data for older and younger children were never collapsed, use of the same actions as *If*s for one child and *Thens* for the other child does not pose a problem with respect to the independence criterion of the statistical analyses.

### Analyses

Conflict strategies that met the inclusion criterion (i.e., that they occurred six times or more per person) as *If*s were identified in the data and serve as contexts for behaviours that

follow. Actions that immediately followed those context behaviours were identified. When turns contained more than one action (e.g., a reasoning and a power component) both were included in the analyses. For example, *If* Younger Power Older was followed by both Older Reason and Older Power to Younger, the following two *If-Then* patterns were counted: *If* Younger Power Older, *Then* Older Reason Younger and *If* Younger Power Older *Then* Older Power Younger. Cases in which the *If* contained multiple strategies were not included in the analyses because the specific action that prompted a response could not be identified unambiguously.

Following Shoda et al. (1993) we then randomly divided the observed *If*s for each child into two half data sets and treated each half data set as a separate set of observations<sup>2</sup> of each child's behaviour. Thus, each half data set includes the same 38 children with a minimum of three occurrences of each *If* per child in each half data set. The data in this study were proportionalized within each half data set, creating conditional probabilities of the likelihood of each response (each *Then*) given the occurrences of a particular antecedent *If*. To do so the frequency of each response (*Then*) that followed each antecedent *If* was divided by the total frequency of occurrence of each *If* within the half data set. Analyses were conducted separately for each *Then* response category (i.e., Comply, Cry, Ignore, Power, and Reason) by correlating the probabilities associated with each *If*. Correlations across the two halves of the data reflected consistency in responses. Across all three levels of analysis the degrees of freedom for the correlations were always four (the five *If*s minus one). High correlations indicate the child displayed consistent responses to the different *If*s provided by their opponents, suggesting that behaviour is governed by stable *If-Then* contingencies. Since the data sets were derived by randomly dividing observations for each participant into two, the sample sizes in Data Sets 1 and 2 were identical ( $N = 38$ ). Figure 2 later in this article exemplifies this analytical procedure at the nomothetic level. The outcome in this example is reasoning for the 19 4-year-old children. The five *If*s are arranged along the X-axis. The Y-axis represents the conditional probability with which children responded to the different *If*s with reasoning. Each line depicts one-half of the original data set. The correlation between the two data sets represents the similarity of children's use of reasoning in response to each of the five *If*s in Data Set 1 (represented by the dotted line) and Data Set 2 (represented by the solid line). The correlation in this example is very high,  $r = .93$  and  $p < .01$ , indicating that children's reasoning is likely governed by *If-Then* behavioural patterns.

## Results

### *Are there idiographic patterns?*

For the idiographic analyses the five conditional probability scores representing responses to each *If* in Data Set 1 were correlated with the corresponding conditional probability scores in Data Set 2 (i.e., the *If*s provide the link between the two data sets) separately for each child. For example, the reasoning of one participant is depicted in Figure 1. Her general pattern of responding is similar in both halves of the

<sup>2</sup> In the case of odd numbers of *If*s in a given category, the observation was randomly assigned to one of the half data sets.

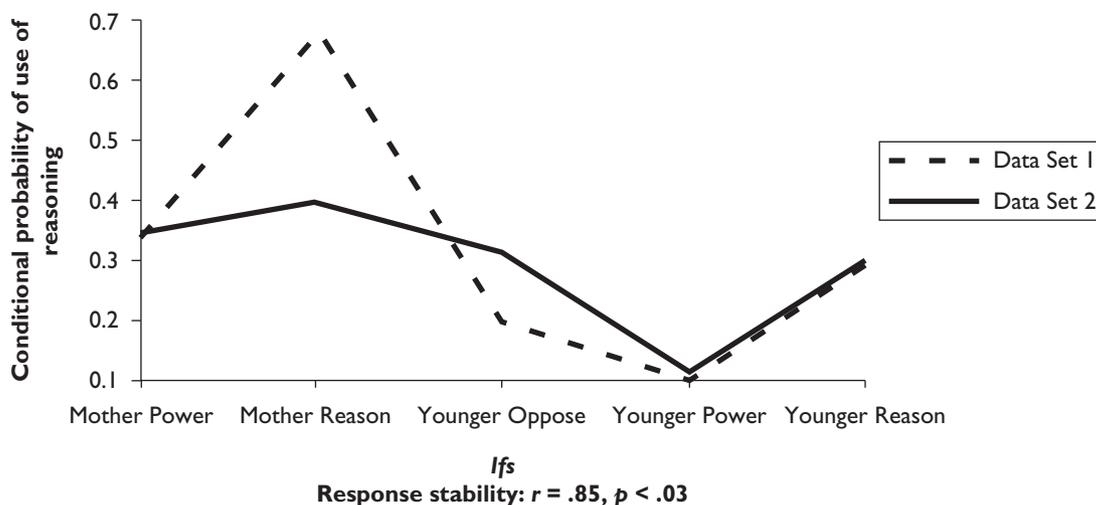


Figure 1. Example of idiographic analysis.

data. She reasoned more in response to mother *Ifs* than sibling *Ifs*. She reasoned most often after both her mother and her younger sibling reasoned with her, and she reasoned least in response to the use of power by her sibling. The correlation between the two half data sets for this child was .87. The  $r$ -values for each child were calculated and then transformed to Fisher's  $Z$  scores to enable us to compare and combine them. A one-sample  $t$ -test was used to determine if, as a group, the correlations were greater than 0. Ten such analyses were conducted – five for each category of response (i.e., *Then*) for older siblings and five for each category of response for younger siblings. Nine of the 10 analyses were significant at the  $p < .05$  level. The only outcome for which the correlation was not significant was older children's use of ignore. Thus, both older and younger children displayed consistent, idiographic *If-Then* patterns for the vast majority of outcomes selected in this study (see Table 4 for the average Fisher's  $Z$ s, Standard Deviations and the  $r$ -values that correspond to the averaged Fisher's  $Z$  for the idiographic analysis). These results do not imply that children show similar patterns, but speak only to the question of whether or not children generally show consistent individual *If-Then* patterns.

### Are there nomothetic patterns?

To determine if each cohort of children showed consistent *If-Then* patterns overall, we averaged their conditional probabilities within each half of the data for each *Then* category across children and correlated their average responses in each half data set across the five *Ifs* for each *Then*. The correlations and their associated significance levels were as follows: younger ignore,  $r = .80, p < .05$ ; older ignore,  $r = .85, p < .03$ ; younger comply,  $r = .98, p < .01$ ; older comply,  $r = .98, p < .01$ ; younger reason,  $r = .78, p < .06$ ; older reason,  $r = .84, p < .04$ ; younger power,  $r = .81, p < .05$ ; older power,  $r = .84, p < .04$ ; younger cry,  $r = .91, p < .02$ ; and older cry,  $r = .45, p < .22$ . Thus, older and younger children displayed consistent *If-Then* patterns as a group. The one exception is that older children, as a group, did not respond with cry in a consistent way following the *Ifs* examined in this study. It is worth noting that six of the older children never cried in response to any of the different *Ifs*, making cry among older children a hard category to interpret at the nomothetic level. Figures 2 and 3 provide examples of how groups of older and younger children respond with reasoning to different *Ifs*. The patterns are consistent for each age group, although the correlation between Data

Table 4

Descriptive statistics for the Fisher's  $Z$  and their corresponding  $r$ -values for the idiographic and idiosyncratic analyses

Thens	Idiographic analysis – average Fisher's $Z$ s	Idiographic analysis – $r$ values corresponding to the Average Fisher's $Z$ s	Idiosyncratic analysis – average Fisher's $Z$ s	Idiosyncratic analysis – $r$ values corresponding to the average Fisher's $Z$ s
Older Comply	.58 (1.05)	.52	.050 (.86)	.05 ns
Older Cry	4.02 (4.66)	.99	.72 (1.02)	.61
Older Ignore	.15 (1.02)	.15 ns	.07 (.96)	.07 ns
Older Power	.41 (.94)	.39	.17 (.86)	.17 ns
Older Reason	.33 (.52)	.32	-.06 (.63)	.06 ns
Younger Comply	.39 (.60)	.37	.28 (.43)	.27
Younger Cry	.45 (.67)	.42	.20 (.61)	.19 ns
Younger Ignore	.42 (.63)	.40	.28 (.73)	.28
Younger Power	.48 (.85)	.45	.38 (.78)	.36
Younger Reason	.63 (1.04)	.56	.47 (.77)	.44

Note. Standard deviations are in parentheses. *ns* indicates a non-significant  $t$ -test comparing the correlations (converted to Fisher's  $Z$ ) between Data Sets 1 and 2 to 0 for all the children in each age group. All other average  $r$  values are statistically significant.

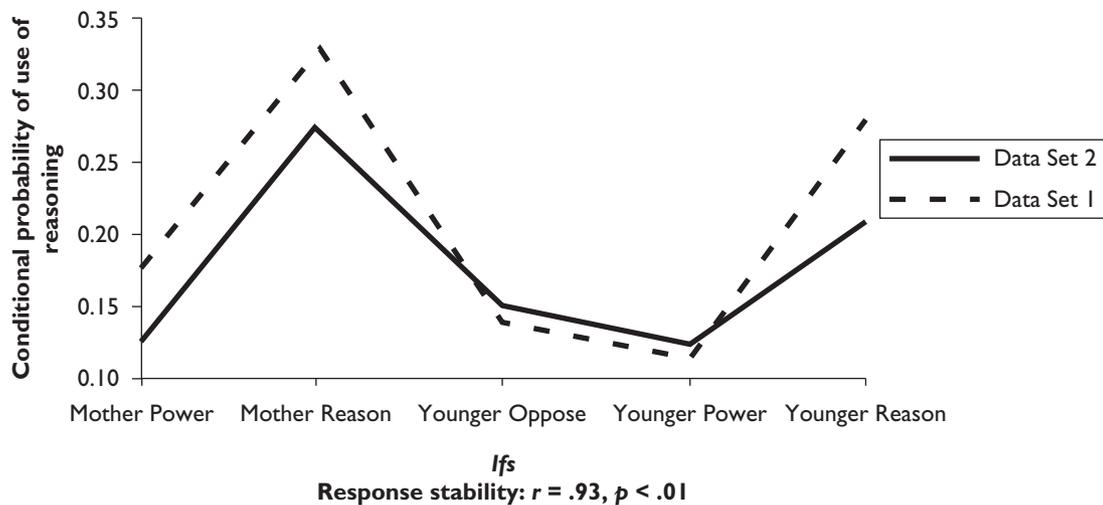


Figure 2. Example of nomothetic analysis for older children's reasoning.

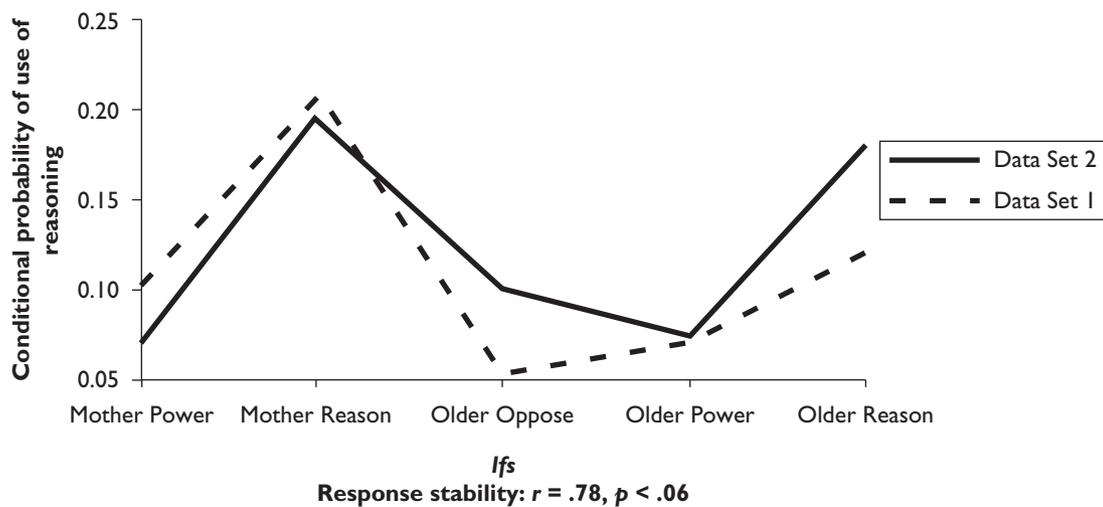
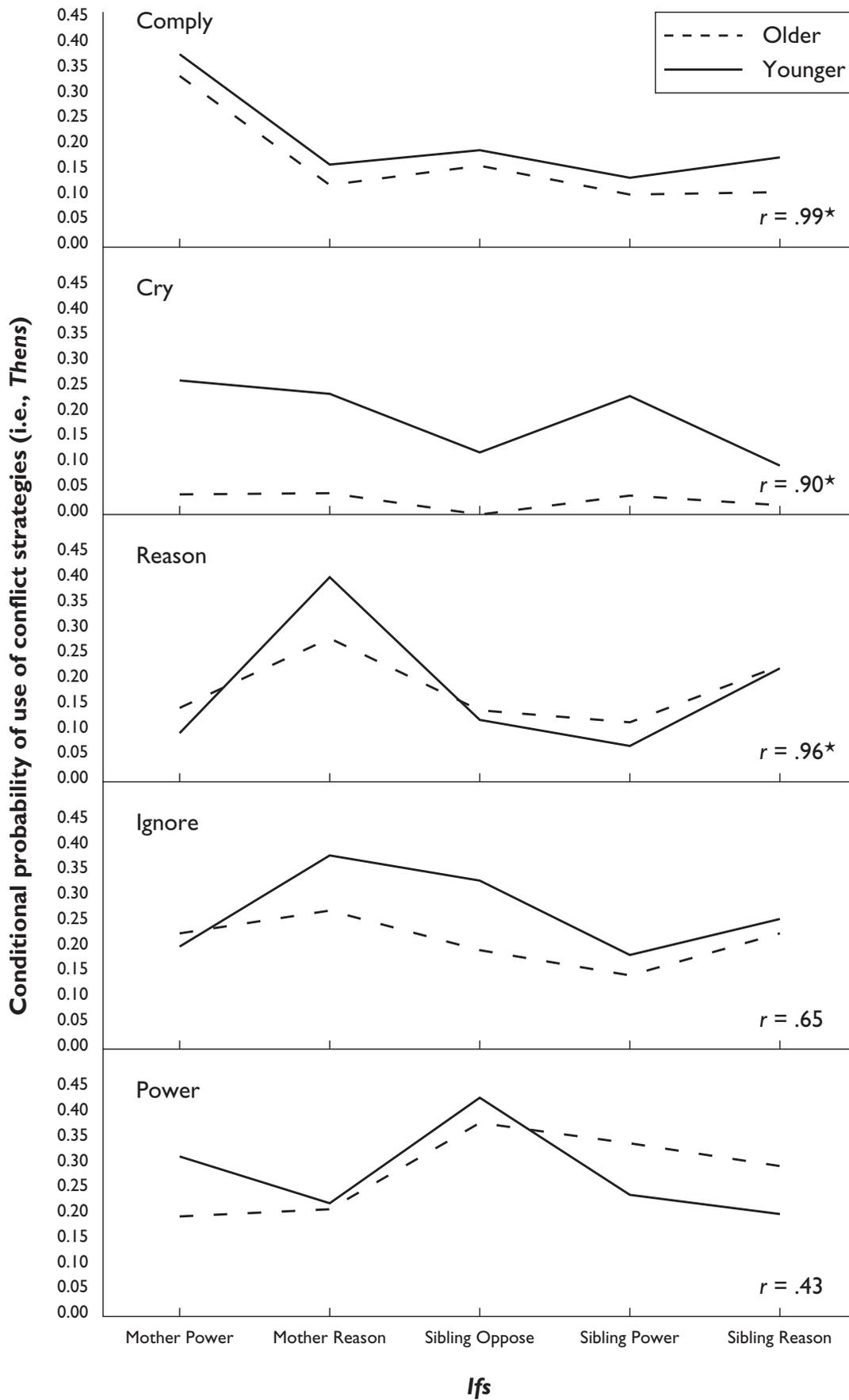


Figure 3. Example of nomothetic analysis for younger children's reasoning.

Sets 1 and 2 for younger children was only marginally significant ( $r = .78, p < .06$ ). Both age groups reason more in response to reasoning than to the use of power by their opponents. The magnitude of the correlations evaluating the consistency of nomothetic patterns was very high and most were significant, despite the stringent criterion for significance that results from the very low degrees of freedom in these analyses.

In addition, the *If-Then* patterns for the older children were compared with those of the younger children. This comparison was based on two levels of an independent variable (i.e., sibling age and/or birth order). It permits tracking of developmental changes in children's use of *If-Then* patterns across the preschool years. We examined whether there are differences between the nomothetic patterns displayed by older and younger siblings. To do this we created one set of conditional probabilities for older children's data for each *Then* category and a corresponding set of conditional probabilities for younger children's responses. We then correlated the behaviours of older and younger children (instead of correlating the two half data sets as we did in the other analyses presented in this paper) to determine whether or not the behavioural patterns they exhibited were similar. The correlations and

associated levels of significance were as follows: comply,  $r = .99, p < .01$ ; cry,  $r = .90, p < .04$ ; reason,  $r = .96, p < .01$ ; ignore,  $r = .65, p < .24$ ; and power,  $r = .43, p < .47$ . Figure 4 illustrates the data patterns found for older and younger siblings. The figure revealed that older and younger children both reciprocate reasoning by their mothers and siblings. They reason less following the use of power or opposition by opponents. Children complied most often following mother's use of power and, while younger children cried more than older children, crying tended to be more frequent following their mothers' strategies and to siblings' use of power in older as well as younger children. Older and younger children's use of ignore and power following the different *Ifs* followed slightly different patterns in that the correlations between patterns for older and younger siblings were not significant. The results for ignore suggest that younger children were more likely than older siblings to ignore their mothers' reasoning and their siblings' opposition, but were quite similar to the older children in other respects. The results for power suggest that older children responded to their younger siblings' use of power with power moves of their own, whereas younger siblings were less likely to do so.



\*p < .05.

Figure 4. Example of subgroup (older versus younger children) analysis.

### Are there idiosyncratic patterns?

We (along with Shoda and his group) study the way in which the behaviour of an individual deviates from the nomothetic pattern. We explore whether such deviation is consistent and hence constitutes a pattern of behaviour that is different from what others do under similar circumstances. Modeling Shoda et al.'s (1993, 1994) work, standardized scores (i.e.,  $z$ -scores) were calculated for each individual based on their divergence from the means displayed by the group. This was done separately for each data set and within age groups to determine whether they use particular *Thens* in response to particular *Ifs* more or less than other children their age. Doing so, in essence, removes the variance associated with the nomothetic patterns (i.e., the average) from the idiographic patterns (i.e., the individual), leaving what is unique in each child's response pattern. This approach involves using  $z$ -scores not merely as a matter of transforming data but, rather, as a transformation that has particular meaning in terms of the specific aspects of behaviour one is studying. Each child's  $z$ -scores for Data Sets 1 and 2 were correlated for each outcome. For example, Figure 5 shows an older child whose use of reasoning in Data Sets 1 and 2 is not sufficiently consistent to reach statistical significance,  $r = .66$ ,  $p < .11$ , even though the correlation itself is fairly strong. As with the idiographic analyses, Pearson  $r$ -values were converted to a Fisher's  $Z$  and one-sample  $t$ -tests were conducted to determine whether, overall, these children showed unique individual patterns. These analyses reveal that idiosyncratic *If-Then* patterns exist for this group of 4-year-old children only when the outcome behaviour is cry,  $t(18) = 3.06$ ,  $p < .004$ . In contrast, the 2-year-old children in this sample exhibited consistent idiosyncratic patterns (at the  $p < .05$  level or less) for all of the outcomes except for cry. The  $t$ -test when younger cry was the outcome was marginally significant,  $t(18) = 1.41$ ,  $p < .09$  (see Table 4 for the average Fisher's  $Z$ s, Standard Deviations and the  $r$ -values that correspond to the averaged Fisher's  $Z$ s for the idiosyncratic analysis).

The idiosyncratic behavioural conflict patterns were much stronger and more prevalent among the group of 2-year-old children than they were among the 4-year-old children. In an attempt to understand the apparently greater consistency in idiosyncratic patterns for younger siblings, the variances in the

responses of the older and younger children were examined. Our hypothesis, based on the prior analyses, was that the older group of children behaved more like one another and therefore did not exhibit idiosyncratic patterns to the same extent as younger siblings. Since there were five *Ifs* and five *Thens*, we compared 25 variances for the responses of the older children with 25 for the younger children. In 24 of these comparisons, the variance for the responses of the younger children was larger than the variance for the responses of the older children. In the one case where the variance was larger for the older child, the difference in variances was small at .02. Using the Sign test, such a pattern of results is significant at  $p < .001$ .

## Discussion

Both age groups displayed consistent patterns of conflict interaction at the idiographic (i.e., individual child) and nomothetic (i.e., for each age group) levels. Only the 2-year-old children tended to be idiosyncratic, showing consistent deviations from patterns found for their age mates. Consistency at each of these levels has different implications for understanding the ways in which young children respond to family members during sibling conflict.

### What did we learn from the idiographic analyses?

From a very young age, children react to their siblings' conflict behaviours in consistent, predictable ways. Given the frequency of sibling conflict this is meaningful to their opponents who likely come to anticipate their responses to particular conflict situations. Research on idiographic conflict patterns is very limited (see Allen, 1995 and Duncan, 1990 for noteworthy exceptions). These findings highlight the need for more research on idiographic patterns in conflict, as this level describes people's subjective experiences of the real world. Analyses at the idiographic level do not permit generalization across participants as each child's conflict pattern stands as a "case study" of its own. Thus, this level does not address how an individual's behaviour compares to that of others.

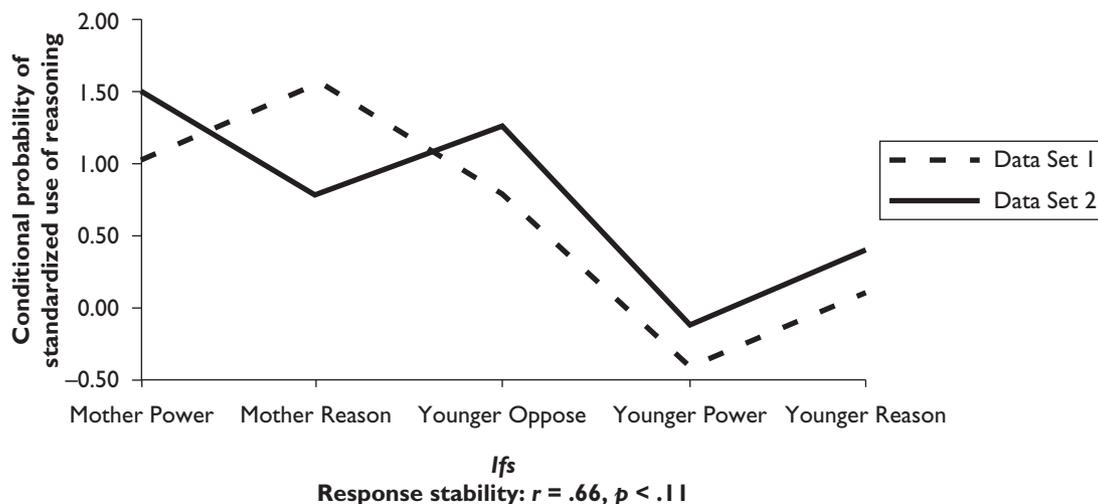


Figure 5. Example of idiosyncratic analysis.

### *What did we learn from the nomothetic analyses?*

Consistent with past findings (Abramovitch, Pepler, & Corter, 1982; Kramer et al., 1999; Perlman & Ross, 1997; Phinney, 1986; Vuchinich, 1984) children of both age groups reacted in highly consistent ways to the conflict actions of their mothers and siblings. Overall, children were sensitive to the status of their opponent and often reciprocated their opponent's actions. They also differentiated their responses depending on the type of conflict strategies their opponent directed towards them. Older and younger siblings showed very similar patterns in responding to the different *I*s for comply, cry, and reason. Their compliance was greatest to their mothers' use of power. Children clearly reciprocate reasoning by their mothers and siblings, and reason less often following power and opposition. This is consistent with past findings that children adopt a tit-for-tat strategy during conflict (Eisenberg & Garvey, 1981; Phinney, 1986; Vuchinich, 1984). Sensitivity to their opponents' actions provides evidence of children's interactions, rather than simple actions, in their sibling conflict exchanges. However, we provide greater detail about the specific patterns for which reciprocity is found and how older and younger children differ. Both children used power following sibling opposition, but only older children reciprocated their siblings' use of power. These developmental findings may be confounded by the fact that our younger cohort of children consisted of 13 boys and six girls while the older cohort was more evenly split between boys and girls; however, the patterns are inconsistent with the typical findings of boys displaying more aggression in this age group (Martin & Ross, 2005). Our sample size does not permit a further subgroup analysis of child gender or the gender composition of sibling dyads, although such analyses are possible in principle. Future studies should attempt to disentangle such effects.

### *What did we learn from the idiosyncratic analyses?*

As a group, younger siblings in this sample exhibited idiosyncratic *If-Then* conflict patterns. Two-year-old children showed unique patterns of responses. In contrast, as a group, their older brothers and sisters were not likely to consistently deviate from their cohort's nomothetic patterns. This does not mean that individual older siblings were not consistently idiosyncratic, but that consistent idiosyncratic patterns were found for relatively few older siblings. Rather, the *If-Then* conflict patterns of 4 year olds were generally also present among other cohort members. The greater similarity in the conflict patterns of older children would facilitate their ability to interact with others as their own behaviours become more generally predictable. Individuals need not have fought with any one of these 4-year-old children to be in a position to anticipate an individual child's responses during conflict. Predictability reflects social understanding and allows individuals to tailor their own actions to achieve a goal. This is especially important in conflict, where children's relationships and even their physical well-being may be compromised by maladaptive responses. Thus, predictability should allow for more adaptive conflict resolution.

The variability in responses may have been greater for *If-Then* patterns of 2-year-old children than of 4-year-old children because the older children may have internalized socially acceptable behaviour to a greater extent. With age and major environmental changes such as school entry, the

enculturation process may result in greater similarity in the behaviours of children living in fairly similar environments. Over time, children may internalize behavioural routines from their environments, making their behaviour more like that of their age mates. Alternatively, the role that older siblings play in sibling conflict may be more constrained and hence consistent across children than the role that younger siblings adopt.

The responses of first-born 4-year-old children to sibling and parent conflict behaviours were less variable than those of 2-year-old second-born children. What may be acceptable in the conflict behaviours of 2-year-old children may indicate "eccentricity" or even deviance in older children. Idiosyncrasy may continue to decrease over time, or it may fluctuate (for example, it may decrease as children begin school but may increase as children become adolescents). Periods of developmental transition have been found to be associated with greater "disorganization," or variance, in behaviour (Thelen & Smith, 1994). Thus, idiosyncratic patterns may mark important developmental transitions as children of a given age may exhibit different stages or adjustments to normative changes in their behaviour. The presence or absence of an idiosyncratic pattern likely depends on the specific phenomenon or process being examined as well as the participants in any study. Thus, it seems possible, even likely, that some processes become more idiosyncratic over time, or perhaps for a period of time. In fact, it may be possible to identify developmental transitions by the presence of consistent idiosyncratic patterns and the relative absence of nomothetic patterns in any age group. The idiosyncratic approach tells us much about deviance and is especially important to clinicians and individuals concerned with abnormal development. However, since it is inherently relativistic, it does not address what individuals actually do.

### *The advantages of using all three levels*

Had we conducted only idiographic analyses, we would have known that children show consistent conflict patterns but we would not know if participants used similar *If-Then* patterns. The nomothetic data allows us to explore whether there was a general conflict pattern within a group of interest and to compare responses across defined subgroups of individuals. For example, we found that reasoning was most likely to be a response to others' reasoning, and that older siblings were more likely to reason in response to their mothers than to their siblings. This provides mothers with a general strategy to increase reasoned discussion in the context of their children's disputes. Had we conducted only nomothetic analyses, our understanding of how individuals differ from the nomothetic patterns would have been limited. It is possible to extract a nomothetic pattern that does not reflect any one child very accurately. Finally, had we conducted only idiosyncratic analyses, we may have mistakenly concluded that younger children show consistency while older children do not. For the goals of some research, any one of these approaches may be appropriate. However, if the goal is to gain a full understanding of a phenomenon, all three approaches are informative.

Another advantage of the three-pronged approach is that it highlights the importance of the chosen comparison group. The exact nature of nomothetic patterns depends on the sampling of groups or subgroups. The degree and, indeed, the type of idiosyncratic patterns revealed depend on the group that is included in the reference group. This makes assignment of participant data to levels more complex and more interesting.

For example, in the current study, due to our inclusion criteria, each cohort consisted of children who experienced relatively high rates of conflict with their siblings. Any conclusions at the nomothetic and idiosyncratic levels must be interpreted with that in mind. A different group of participants may display different patterns of consistency. Similarly, Shoda et al. (1994) studied children with behavioural problems and used that group as the "norm" in standardizing their data. The extent to which the idiosyncratic patterns they found exist in children without behaviour problems remains to be seen.

### *The pitfalls of using only one level*

Keeping track of the kinds of conclusions that can be drawn on the basis of data from each level is a complex task. Shoda et al. (1994) developed an innovative methodology for the study of personality that was expanded in the current study. In their 1994 paper they write that they "pursued an idiographic strategy. Specifically, we focused on intra-individual organization of behaviour in terms of the specific patterns in which that behaviour varied across interpersonal situations, examining the stability of this pattern over time within each individual" (p. 676). However, they then describe an individual's *If-Then* response pattern based on their "pattern of standardized deviations from the normative pattern in terms of standard scores computed in each situation" (p. 678). Finally, they argue that such "idiographic assessment allows researchers to identify a set of activating psychological features for different behaviours" (p. 685). We argue that, because their data was based on standardized scores, the research actually identifies idiosyncratic, not idiographic, patterns. Thus, conclusions drawn from such data refer to the extent to which individual children differ from the group, not the extent to which particular events activate specific behaviours.

The personality literature provides an interesting example of the advantage of combining information from all three levels and the disadvantage of not doing so. Data very similar to our idiosyncratic data have been used as evidence for the construct of personality (Shoda et al., 1994). However, reliance on data at this level only may be misleading. We found that younger children were idiosyncratic while older children were not. Does this suggest that older children have less personality? Turning to the other levels of analysis sheds light on this issue as children may have idiographic "personality" (or height, or any other characteristic) that is very similar to the style exhibited by their comparison group.

Our data provide an example of a methodology for examining people in context. This recognizes the primacy of social interactions, which, as discussed by Cairns (2000), is often overlooked by developmental psychologists. Such an analysis reveals that individuals respond differently to the behaviour of others depending on the characteristics of these "others" (e.g., mom versus sibling) and the nature of their behaviours (e.g., power versus reasoning). We adapt the methods introduced by Shoda et al. (1993, 1994) for the study of idiosyncratic patterns of interactive behaviour to examine idiographic and nomothetic patterns of conflict interaction. Other analytic options are available for the study of sequences (e.g., sequential analysis, Markov models). These rely on conditional probabilities, as does Shoda et al.'s (1993) strategy, which was adopted in this study. Shoda et al.'s method makes the reliance on and meaning of conditional probabilities very explicit. It also allowed us to conduct parallel analyses across the idiographic,

idiosyncratic, and nomothetic levels, which was a central goal of this study. Other procedures generally require large amounts of data and have typically led researchers to collapse across individual participants. Analysis of idiographic or idiosyncratic consistencies, while not impossible in principle, require a great deal of data from each participant (Bakeman & Gottman, 1997), making them impractical in many cases including the current study.

We believe the approach outlined in this paper offers many advantages. However, it also suffers from several limitations. One limitation is the large data requirements. Another is the fact that the number of contexts determines the statistical power of the tests. With only a few contexts, individual significance is difficult to achieve. Researchers adopting this approach may need to rethink the typical .05 criterion for statistical significance.

The results presented in this paper report on *consistent patterns of interactive responses*, not more traditional frequencies of behaviour. We study the context-behaviour relationship that can be compared among individuals or groups. However, *If-Then* behavioural contingencies reduce interactions to their smallest possible units. Future research should examine longer interaction sequences. It is important to note that this technique is not limited to interaction data, but could, for example, be applied to constructed vignettes and questionnaires where different patterns of response to different questions might be investigated. Application to other sorts of data may be substantially simpler. Future research should also track changes in variance in specific behaviour across a longer period in the lifespan.

In conclusion, sibling conflict is a frequent and intense event in the lives of young children. These data reveal the presence and development of sequential patterns in how siblings interact during conflict. These have implications for the predictability of an opponent's behaviour and perhaps can serve as markers for developmental difficulties. The relative importance of nomothetic and idiographic data has been debated historically. We propose that the idiosyncratic level must be added to this discussion and argue that it should not be framed as a "debate." Rather, each level contributes important theoretical and methodological perspectives. The particular methodology developed here allows researchers to examine all three levels simultaneously using parallel analyses. As we have illustrated here, our understanding of *If-Then* patterns would have been incomplete had we examined it at only one of these levels. We are not arguing that individual researchers need to utilize all three perspectives at all times (although some researchers may wish to do so some of the time). Rather, developmentalists as a group must be aware of what level their own data addresses and what kinds of conclusions can be drawn based on such information.

## References

- Abramovitch, R., Pepler, D., & Corter, C. (1982). Patterns of sibling interaction among preschool-age children. In M. Lamb and B. Sutton-Smith (Eds.), *Sibling Relations* (pp. 61-86). Hillsdale, NJ: Erlbaum.
- Allen, R. (1995). "Don't go on my property!" A case study of transactions of user rights. *Language in Society*, 24, 349-372.
- Bakeman, R., & Gottman, J.M. (1997). *Observing interaction: An introduction to sequential analysis*. New York: Cambridge University Press.
- Brody, G., & Stoneman, Z. (1987). Sibling conflict: Contributions of the siblings themselves, the parent-sibling relationship, and the broader family system. *Journal of Children in Contemporary Society*, 19, 39-54.

- Cairns, R. (2000). Developmental science: Three audacious implications. In L. Bergman, R.B. Cairns, L. Nilsson, & L. Nystedt (Eds.), *Developmental science and the holistic approach* (pp. 49–62). Mahwah, NJ: Erlbaum.
- Carpendale, J., & Lewis, C. (2006). *How children develop social understanding*. Oxford: Blackwell.
- Duncan, S., Jr. (1990). Achieving parent–child coordination through convention: Fixed and variable sequence conventions. *Child Development*, 61, 742–753.
- Duncan, S., Jr. (1991). Convention and conflict in the child's interaction with others. *Developmental Review*, 11, 337–367.
- Eisenberg, A., & Garvey, C. (1981). Children's use of verbal strategies in resolving conflicts. *Discourse Processes*, 4, 149–170.
- Garcia, M., Shaw, D., Winslow, E., & Yaggi, K. (2000). Destructive sibling conflict and the development of conduct problems in young boys. *Developmental Psychology*, 36, 44–53.
- Hay, D., & Ross, H. (1982). Parental punishment and sibling aggression. *Social Psychology Quarterly*, 51, 11–18.
- Hay, D., Vespo, J., & Zahn-Waxler, C. (1998). Young children's quarrels with their siblings and mothers: Links with maternal depression and bipolar illness. *British Journal of Developmental Psychology*, 16, 519–538.
- Hermans, H. (1988). On the integration of nomothetic and idiographic research methods in the study of personal meaning. *Journal of Personality*, 56, 785–812.
- Hollenstein, T., Granic, I., Stoolmiller, M., & Snyder, J. (2004). Rigidity in parent–child interactions and the development of externalizing and internalizing behaviour in early childhood. *Journal of Abnormal Child Psychology*, 32, 595–607.
- Howard, G., & Myers, P. (1990). Predicting human behaviour: Comparing idiographic, nomothetic and agentic methodologies. *Journal of Counseling Psychology*, 37, 227–233.
- Howe, N., Fiorentino, L., & Gariépy, N. (2003). Sibling conflict in middle childhood: Influence of maternal context and mother–sibling interaction over four years. *Merrill-Palmer Quarterly*, 49, 183–208.
- Kaufman, L., & Rousseuw, J. (1990). *Finding groups in data: An introduction to cluster analysis*. New York: John Wiley & Sons.
- Kramer, L., Perozynski, L., & Chung, T. (1999). Parental responses to sibling conflict: The effects of development and parent gender. *Child Development*, 70, 1401–1414.
- Martin, J.L., & Ross, H.S. (2005). Sibling aggression: Sex differences and parents' reactions. *International Journal of Behavioral Development*, 29, 129–138.
- NICHD ECCR (2004). Trajectories of physical aggression from toddlerhood to middle childhood. *Monographs of the Society for Research in Child Development*, 69(4), 1–146.
- Patterson, G. (1982). *Coercive family processes*. Eugene, OR: Castalia.
- Patterson, G. (1984). Siblings: Fellow travelers in coercive family processes. In R. Blanchard & D. Blanchard (Eds.), *Advances in the study of aggression*. (pp. 173–215). New York: Academic Press.
- Perlman, M., & Ross, H. (1997). The benefits of parent intervention in children's disputes: An examination of concurrent changes in children's fighting styles. *Child Development*, 64, 690–700.
- Perlman, M., & Ross, H. (2005). If-then contingencies in children's sibling conflicts. *Merrill-Palmer Quarterly*, 51, 42–66.
- Phinney, J. (1986). The structure of 5-year-olds' verbal quarrels with peers and siblings. *The Journal of Genetic Psychology*, 147, 47–60.
- Prochaska, J., & Prochaska, J. (1985). Children's views of the causes and "cures" of sibling rivalry. *Child Welfare*, LXIV, 427–433.
- Rinaldi, C., & Howe, N. (1998). Siblings' reports of conflict and the quality of their relationships. *Merrill-Palmer Quarterly*, 44, 404–422.
- Ross, H., Filyer, R., Lollis, S., Perlman, M., & Martin, J. (1994). Administering justice in the family. *Journal of Family Psychology*, 8, 254–273.
- Shoda, Y., Mischel, W., & Wright, J. (1993). The role of situational demands and cognitive competencies in behaviour organization and personality coherence. *Journal of Personality and Social Psychology*, 65, 1023–1035.
- Shoda, Y., Mischel, W., & Wright, J.C. (1994). Intra-individual stability in the organization and patterning of behavior: Incorporating psychological situations into the idiographic analysis of personality. *Journal of Personality and Social Psychology*, 67, 674–687.
- Slomkowski, C., & Dunn, J. (1992). Arguments and relationships within the family: Differences in young children's disputes with mother and sibling. *Developmental Psychology*, 28, 919–924.
- Thelen, E., & Smith, L. (1994). *A dynamic systems approach to the development of cognition and action*. Cambridge, MA: The MIT Press.
- Vuchinich, S. (1984). Sequencing and social structure in family conflict. *Social Psychology Quarterly*, 47, 217–234.
- Vuchinich, S., Emery, R., & Cassidy, J. (1988). Family members as third parties in dyadic family conflict: Strategies, alliances, and outcomes. *Child Development*, 59, 1293–1302.
- Williams, S., Ontai, L., & Mastergeorge, A. (2007). Reformulating infant and toddler social competence with peers. *Infant Behaviour & Development*, 30, 353–365.