

Methodological Challenges of Including Children in Family Research: Measurement Equivalence, Selection Bias and Social Desirability

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Abstract The growing acknowledgment of children’s agency has increased the use of child reports in family research. This study investigates three challenges that are related to the inclusion of children in surveys: 1) selection bias in the sample through parent and child refusal; 2) measurement equivalence of parent and child reports; and 3) the effect of parental presence during the interview on child reports. These challenges are investigated with the multi-actor data of the Divorce in Flanders study. The study shows that divorced parents more often refuse child participation than married parents. A parental refusal is also more likely in case of less frequent open communication with the child. The results further indicate that children answer as reliably as their parents on survey questions, but also that children report less frequent parental conflict, a less problematic communication with their mother, and a less open communication with mother and father, than their parents. This suggests that children’s perspectives on family relations are different from their parents. Therefore, including child reports in family research may enhance the understanding of family life. Finally, children tend to report slightly different on family relations when parents are present. It is concluded that processes of social desirability and selection are important to take into account when investigating children’s reports on their family life, as they can bias results and limit generalizability of the findings.

Keywords Child interview · Parental consent · Parental presence · Multi-actor data · Family relations · Measurement equivalence

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1 Introduction

Traditionally, children were considered appendages of their parents and incapable of formulating their own views and attitudes in family research (Haugen 2008). As a consequence, studies tended to rely on proxy reports on children to get an insight in their family life rather than surveying children themselves (Bell 2007). This passive conception of the child has drastically changed the past two decades, as researchers are increasingly emphasizing children's agency within the family (Chin and Phillips 2004; Haugen 2010; Mason and Danby 2011; Mason and Hood 2011). The acknowledgment of children's agency has also influenced their position in research. Children are more and more considered a distinct population group that can provide reliable information on themselves and their family members (Dockett and Perry 2011; Mason and Hood 2011). Proxy reports on children are increasingly considered less reliable than child reports themselves as studies have found important discrepancies between child and proxy reports. These differences can be caused by a lack of knowledge of the proxy respondent or the influence of the proxy respondents own experiences and perceptions on their reports (Snoeren and Hoefnagels 2013).

The inclusion of children in family research entails some challenges for the researcher (Mason and Hood 2011). This study aims at contributing to the research literature by investigating three of these challenges. First of all, determinants of parental consent and consent of children are investigated in order to gain a better insight of selectivity in the child sample (Tigges 2003). There has been very little quantitative research on the relation between child participation in surveys and these two types of consent, especially with regard to minor children. Secondly, this study assesses measurement equivalence of latent concepts between children and parents and compares reports of parents and children on family relations. Previous studies using parents' and children's reports on family processes have, to our knowledge, not included this (Aquilino 1999; Mandemaekers and Dykstra 2008; Noller et al. 1992). Thirdly, this study gives special attention to the effect of parental presence during the interview on children's reports of family relations. The literature on the effects of parental presence on child reports tends to focus on delinquency or sexual behavior of children (Ogan et al. 2013). Very little is known whether the presence of a parent during the child interview also influences their reports on family relations.

We use the multi-actor data of the 'Divorce in Flanders' project which contains information on different actors of 1025 intact and 3525 dissolved marriages (Mortelmans et al. 2011). Multi-actor data allow to compare the perspectives of different actors and can be used to enhance the reliability and validity of the measurement and to explore processes of social desirability. Multi-actor data also enable us to explore differences in the participation of actors according to characteristics described by other actors (Kalmijn and Liefbroer 2011).

2 Literature Review

2.1 Selection Bias: The Role of Parental Consent and Consent of the Child

For juridical and ethical reasons, the participation of minors in surveys often depends on the consent of both parent(s) and child. Legally, only parents are in the position to

provide informed consent on the participation of a minor child. Nevertheless, research recognizing children as competent social agents also respects children's decisions about their own participation (Docket and Perry 2011). Therefore, selection bias might operate on two levels. First, parents might refuse the interviewer to contact the child. Second, children who were allowed to participate by their parents may refuse to participate themselves. We found only one study that dealt with these two stages of selectivity in questioning children (Kalmijn and Liefbroer 2011). While the research literature on the causes and consequences of non-response and selection bias in survey research is extensive (e.g. Billiet et al. 2007; Matsuo et al. 2010), non-response analyses on multi-actor datasets involving children is rare.

Kalmijn and Liefbroer (2011) have investigated determinants of parent and child consent within a large, multi-actor dataset on family life and kinship in the Netherlands. Higher educated parents and children were found to give their consent more often. Divorced parents tended to refuse the participation of their children, and children of divorced parents also tended to participate less in the survey. Fathers more often gave their consent than mothers, but girls more often participated in the survey than boys. In addition, the quality of the parent-child relationship influenced the likelihood of child participation in the survey. A high-quality relationship increased the likelihood that both parent and child agreed to participate in the survey. Overall, this study shows how these selection processes in the sample might bias results.

2.2 Measurement Equivalence Between Parents and Children

Children are still developing their cognitive, communication and social skills. Developmental psychologists believe that children younger than 16 years do not have the same cognitive abilities as adults, and as a consequence, are less capable of providing reliable answers in a survey (De Leeuw et al. 2004). In order to evaluate the inclusion of children in family research, it is therefore important to establish that concepts are measured in an equivalent manner between parents and children.

Measurement equivalence refers to whether concepts can be measured in a stable way across population groups, survey methods or over time (Davidov et al. 2011). Measurement equivalence tests are mostly used to compare the operationalization of latent variables between countries (e.g. Davidov et al. 2008, 2011). More recently, this subject also gained popularity within the field of psychology where the operationalization of concepts is compared between age groups, gender and ethnicity (e.g. Nigg et al. 2009).

Different levels of measurement equivalence can be distinguished, namely configural, metric and scalar equivalence. They are nested within each other, with configural equivalence being the lowest level and scalar equivalence the highest (Van de Vijver 2011). To reach configural equivalence, the same latent concepts should be measured by the same items in the different groups (Raju et al. 2002). Next, metric equivalence refers to equal relations between the items and the latent concepts (factor loadings) within all groups. The final step is to investigate the scalar equivalence, that is not only testing the relations between the items, but also the intercepts of the items (Raju et al. 2002).

Measurement equivalence is a necessary prerequisite for comparing the operationalization of constructs across different groups. In case measurement

equivalence cannot be confirmed by the data, it indicates systematic response biases or different understandings of the question (Davidov et al. 2008, 2011). If measurement equivalence is confirmed, this implies that mean differences are the result of substantial differences between the groups (Raju et al. 2002).

The comparison between parent and child reports requires multi-actor data, measuring the same concepts across different groups or actors. The scarcity in multi-actor data involving parents and children is reflected in the lack of studies testing the measurement equivalence of parent and child reports. Consequently, very little is known on different reports of parents and children on family relations. If children and parents have divergent perspectives on family life, the choice of informants can influence the results that studies obtain (Aquilino 1999).

A number of studies have indicated that parents have a more positive view of the relationship with their children than children themselves (Aquilino 1999; Mandemaekers and Dykstra 2008; Noller et al. 1992). This finding can be explained by the generational stake theory (Bengtson and Kuypers 1971). This theory emphasizes the need of each generation to see family relations from their own perspective. Parents tend to give a positive impression of the relationship they have with their children, as they desire to maintain a sense of generational closeness and continuity. Children, on the other hand, strive to become independent of their parents and tend to be more negative about the relations in the family. This is important, as they need to distance themselves from the family bonds in order to become an adult (Aquilino 1999; Noller et al. 1992).

2.3 The Bystander Effect of Parents

A third concern in surveying children is the presence of parents during the interview. Parental presence during the child interview cannot always be prevented, as it may lead to a higher incidence of parental refusal. Children tend to be more susceptible to issues such as suggestive questioning, social desirability and interviewer effects. Children may especially report more socially desirable behavior (or less socially undesirable behavior) when they fear that this information is shared with their parents or other adult authorities. Within this respect, parents' presence during the child's interview can lead to a higher tendency for socially desirable responses (Moskowitz 2004; Ogan et al. 2013). This phenomenon is referred to in the literature as 'the bystander effect'.

Three factors influence whether the presence of a bystander, such as a parent, affects children's response (Krumpal 2011). First of all, it depends whether the child is asked objective or subjective information, as subjective information is more susceptible to social desirability. Secondly, if the bystander has prior knowledge of the information, there is a smaller probability of a bystander effect. Thirdly, if the child expects negative consequences of sharing certain information, there is a higher risk of social desirability (Krumpal 2011). With regard to family relationships, there may be a high risk of social desirability when parents are present. This is subjective information and children can expect negative consequences if they report a low quality relationship between their parents or a high frequency of parental conflict when the parent is present during the interview.

In addition, parental presence might pressure the child to participate in the study, especially if this parent gave consent to the interviewer to contact the child (Docket and

Perry 2011). This might be reflected in differences between children who are intrinsically motivated to participate in the study versus children who participate to please their parents. Moreover, certain child characteristics and family dynamics might increase the likelihood of parents being present during a child's interview. Insights in the determinants of parental presence during a child interview are therefore important in understanding the bystander effect.

3 Data and Methods

3.1 Data: Divorce in Flanders Study

The Divorce in Flanders study is a large-scale project that focuses on the causes and consequences of divorce in Flanders, the Northern part of Belgium (Mortelmans et al. 2011). The data collection of the project took place in 2009–2010. A sample of marriages, referred to as 'reference marriages', was drawn from the Belgian National Register. The sample was proportional for year of marriage, but there was an overrepresentation of dissolved marriages: two-third of the selected marriages was dissolved and one-third was intact at the time of the interview. The selection criteria for reference marriage were: 1) The partners had to be of different sex, 2) The marriage was conducted between 1971 and 2008, 3) The reference marriage was the first marriage for both partners, 4) Both partners were not divorced more than once at time of the interview, 5) Both partners were alive at the time of the interview, 6) Both partners were domiciled in the Flemish region at time of the marriage and at time of the interview, 7) Both partners were between 18 and 40 years old at time of the marriage, 8) Both partners have the Belgian nationality from birth.

The Divorce in Flanders dataset is characterized by a multi-actor structure. For each selected marriage, the two partners, a child (if any), two (if alive) parents of the partners and, in case of a dissolved marriage, new partners (if any) were invited to participate in the study. Figures 1 and 2 present the multi-actor diagram for respectively intact and dissolved reference marriages.

In total, 8,506 reference marriages were selected of which 2,502 intact and 6,004 dissolved marriages. At least one partner participated in 41 % of the intact reference marriages, whereas this was the case for 59 % of the dissolved marriages. The proportion of marriages where two partners participated in the study is significantly higher in intact marriages (77 %) than in dissolved marriages (32 %).

During the interview with the first partner of the reference marriage, the target child was selected. The target child is a biological or adoptive child of the two partners of the reference marriage. The highest preference was given to children who were 10 years and older, and lived with at least one of the parents, preferably the first interviewed parent. The second highest preference was given to children of 18 years and older who did not live with their parents. The third highest preference was given to children younger than 10 who were living with at least one parent, preferably the first interviewed parent. The lowest preference was given to children younger than 18 who did not reside with at least one parent. These latter two groups were not selected for an interview. If there were more children in the same group of preference, the target child was randomly selected.

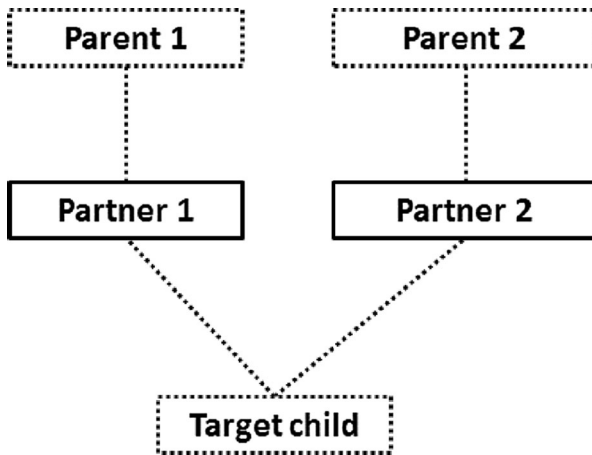


Fig. 1 Multi-actor diagram for intact reference marriages in the Divorce in Flanders study

If the selected child was younger than 18 years old, consent of parents was required before the child could be contacted. The procedure for parental consent differed between intact and dissolved marriages. In intact marriages, the consent was asked from the first interviewed partner. If the partner agreed that the child could participate in the study, the child was contacted. If the partner disagreed, the child was not contacted for an interview. In dissolved marriages, the first interviewed partner was also asked for consent. One parental consent was however not considered sufficient in this case. In case the first interviewed parent gave permission to contact the child and was living together with the child, this parent was asked whether his/her ex-partner would also give his/her consent. If the answer to this question was positive, the child was contacted. If the answer was “no” or “don’t know”, contacting the child was put on hold until the second partner was interviewed. Approximately one out of ten mothers and fathers indicated that their ex-partner would not agree, and another 10 % answered to be uncertain about the approval of the ex-partner. The large majority of mothers (83 %) and fathers (79 %) indicated that their ex-partner would agree with the participation of the child. In case the first interviewed parent was not living together with the child (mainly fathers), the contact of the child was always put on hold until the other parent was interviewed. This procedure was not necessary from a legal point of

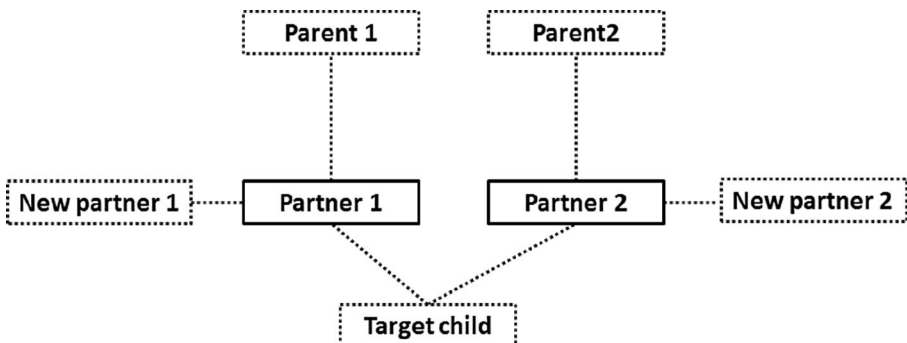


Fig. 2 Multi-actor diagram for dissolved reference marriages in the Divorce in Flanders study

view, but it was done to prevent conflict between ex-partners. Of course, children could also refuse to participate in the study when they were contacted.

3.2 Research Sample

The research sample of this study was limited to reference marriages with a target child between 10 and 17 years old who lived with at least one parent at the time of the interview. In total, the research sample consists of 1,151 marriages, including 256 intact and 895 dissolved marriages. The first part of Table 1 presents the single-actor response rates. In more than three out of four reference marriages (78 %), the mother participated in the study. The single-actor response of fathers is lower (66 %). The child participated in almost half of the cases (54 %). The response rates of all single actors are much lower within dissolved marriages than within intact marriages.

The second part of Table 1 presents the multi-actor response rates. In almost one third of the reference marriages, both parents and the target child participated in the study. Participation of the child without participation of the mother (5 %) is much less frequent than participation of the child without participation of the father (19 %). For the large majority of intact marriages, we have information on both parents and the child. Within dissolved marriages, the different types of multi-actor response are more equally represented. Only the participation of father and child only is very rare within the sample of dissolved marriages.

Descriptive information of the research sample is presented in Appendix B. There is a small overrepresentation of girls (54 %) in intact reference marriages, but not in dissolved marriages (49 %). The average age of target children is very similar in dissolved (13.78) and intact marriages (13.53). The mothers and fathers of the selected

Table 1 Participation rates in research sample

	Intact marriages		Dissolved marriages		All marriages	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Single actor participation						
Mother	245	95.7	655	73.2	900	78.2
Father	215	84.0	544	60.8	759	65.9
Child	198	77.3	424	47.4	622	54.0
Total (actors)	658		1623		2281	
Multi-actor participation						
Mother	21	8.2	155	17.3	176	15.3
Mother-child	20	7.8	196	21.9	216	18.8
Father	5	2.0	190	21.2	195	16.9
Father-child	6	2.3	50	5.6	56	4.9
Father-mother	32	12.5	126	14.1	158	13.7
Father-mother-child	172	67.2	178	19.9	350	30.4
Total (marriages)	256		895		1151	

Source: Divorce in Flanders

marriages (intact and dissolved) are on average respectively 42 and 44 years old. The youngest parent is 28, the oldest parent is 62, but 90 % of the parents is between 35 and 49 years old. The average year of marriage is 1991 and 80 % of the parents married between 1985 and 1995 in both groups. Mothers and fathers in intact marriages are more likely to be highly educated than parents in dissolved marriages. The majority of target children in dissolved marriages has a residential arrangement with the mother (58 %), and only a small proportion lives primarily with the father (6 %). The mean year of divorce in the research sample is 2004.

3.3 Measurement Scales

To compare the reports of parents and children, we need exactly the same measurement instruments in the parent and child questionnaire. The Divorce in Flanders survey questions parents and children in an identical manner about the frequency of conflict between the parents and the communication between parents and children.

3.3.1 Conflict Between Parents

The conflict scale consists of five items. Respondents were asked how frequent five specific conflict situations occurred during the last 12 months 1) with their partner (partners of intact marriages); 2) with their ex-partner (partners of dissolved marriages); or 3) between their parents (children). The 7-point frequency scale ranges from 1 = *Never* to 7 = *Daily*. If partners of dissolved marriages report to have neither personal contact nor contact by telephone or internet with their ex-partner, they were not offered these questions. Children were always offered these questions. The mean scores for each item are presented per actor in Appendix A. Overall, the frequency of conflict is very low. Children report slightly less verbal conflict (blaming each other and yelling at each other) than mothers and fathers. The proportion of missings is higher in the group of fathers and children than in the group of mothers.

3.3.2 Quality of Communication Between Parent and Child

The quality of communication between parent and child is measured by the openness in communication and problems with communication subscales of the Parents-Adolescent Communication Scale (Barnes and Olson 1986). The 7-point answer scale ranges from 1 = *Totally disagree* to 7 = *Totally agree*. This scale was filled in by partners of both intact and dissolved marriages. A child-focused version of this scale was offered to children twice: one for their mother and one for their father. In contrast with the conflict scale, the communication scale was presented to all parents, while children only had to answer these questions in case they still had contact with respectively mother and father. The mean scores for each item of the two subscales are presented per actor in Appendix A. Children tend to give a more negative account of the openness in communication items than their mother and father. For the problems in communication scale on the other hand, mothers give a more negative view than their children. The answers of fathers and children on the items of this scale are very similar.

3.4 Independent Variables

To study the selection bias and response patterns of children in the sample, we include variables related to parent and child consent and non-response rates in previous studies (Kalmijn and Liefbroer 2011): the age and sex of the child, the educational level of the parents, marital status of parents, and the quality of family relations. The variable measuring the educational level of mother and father, consists of three categories: 1) low (no degree of higher secondary education); 2) medium (degree of higher secondary education); and 3) high (degree of higher education). The quality of family relations is measured by the two scales (parental conflict and parent-child communication) that are used to test the measurement equivalence between parents and children. Moreover, we include two divorce related variables that have repeatedly been shown to be related to different child outcomes: duration since divorce and the residential arrangement of the child. Three residential arrangements are distinguished: mother, father and shared residence. Following Melli (1999), the threshold for shared residence was set at 33 % time spent with each parent. Finally, we also take the (order of) participation of both parents into account. The descriptive values of all independent variables are presented in Appendix B.

3.5 Analytical Strategy and Methods

The analyses consist of three steps. The first step is to model the selection bias in parent and child consent. Second, we test the measurement equivalence between parent and child reports. Third, we model the determinants of parental presence during the child interview and its consequences for children's reports.

3.5.1 Modelling Selection Bias in Parent and Child Consent

To model the likelihood of parent and child refusal, we estimate binary logistic regression models. In a first model, we estimate the likelihood of parents explicitly not giving permission to interview the child. We therefore model the likelihood of refusal versus non-refusal (permission or additional permission other parent required). In a second model, we estimate the likelihood of children not participating in the study after parental permission was given. Analyses are performed on respectively all marriages, only intact marriages, and only dissolved marriages. The first sample allows to test the differences between intact and dissolved marriages. The subsamples by marital status allow to see the effect of the other variables within both groups.

3.5.2 Measurement Equivalence Testing Between Parent and Child Reports

Multi-group confirmatory factor analyses are performed in order to inspect the measurement equivalence of conflict, openness in communication and problems in communication between mothers, fathers and children. For conflict, the measurement equivalence is assessed for mothers, fathers and children in one model. For openness in communication and problems in communication, measurement equivalence is tested between mothers and children; and between fathers and children.

A top-down approach is applied to the measurement equivalence test of the conflict and parent-child communication scales. The most restricted model is tested first, and constraints are gradually removed in order to improve the fit of the model (if necessary). The most restricted model is the scalar invariant model: factor loadings, intercepts and factor structure are equal across the groups. If there is an insufficient model fit, constraints are gradually removed (Davidov et al. 2011). If scalar equivalence is confirmed, group comparisons can be made in a substantive manner.

The fit indices that are used to inspect the global fit of the model are the Comparative Fit Index (CFI), the Tucker-Lewis Index (TLI), the Root Mean Square Error of Approximation (RMSEA), and the Standardized Root Mean Square Residual (SRMR). The CFI and the TLI can take on each value between 0 and 1. In general, values of 0.90 and higher are considered to be indicators of a good model fit (Byrne 2011). For the RMSEA, values smaller than 0.08 suggest a good model fit (Browne and Cudeck 1993). Modification indices and expected parameter changes (EPC) can be used to assess the way in which the model fit can be improved. These two indices should always be considered together, as the modification indices are sensitive to sample size. Changes to the model should only be made on the condition that 1) the change is interpretable and 2) both EPC and modification index are substantially high (Brown 2006; Whittaker 2012). For the standardized EPC, we will work with a cut-off value of 0.20 (Brown 2006). Finally, the size and significance of parameter estimates can be used to assess the model. Standardized factor loadings of 0.30 and higher indicate that the item is meaningfully related to the underlying latent variable (Brown 2006).

Finally, in case of scalar equivalence, we can compare the factor scores of parents and children in a substantive way. These factor scores are calculated with full information maximum likelihood estimations. For each observation, a function is estimated using those variables that have a non-missing value. These functions are accumulated and maximized across the entire sample (Arbuckle 1996). Observations with missing data are not excluded from the data, but their factor scores are calculated based on the other variables in the model. We apply two strategies to compare the factor scores of parents and children. The first strategy is to look at the strength of the bivariate correlation between the factor scores of children and mothers and fathers. The second strategy is to perform a paired t-test in order to see the mean differences in the scores of parents and children.

3.5.3 *Modelling the Determinants and Consequences of Parental Presence*

The determinants of parental presence during the child interview are modelled using a binary logistic regression model. As for the models on parental consent and consent of the child, we perform the analysis on respectively all marriages, the intact marriages and the dissolved marriages. To model the effect of parental presence, we perform multiple linear regression analyses modelling children's report on their communication with mother and father and the frequency of parental conflict within the samples of intact and dissolved marriages. We use the factor scores for parental conflict and parent-child communication from the confirmatory factor analyses as dependent variables.

4 Results

4.1 Selection Bias in the Divorce in Flanders Sample: Parent and Child Consent

Table 2 present the outcomes for parental consent to contact the child and the consent of the child to be interviewed. For the majority of the children, the parent(s) gave permission to contact the child, both within intact marriages and dissolved marriages. There are nevertheless important differences in the outcome of the child interview between intact and dissolved marriages.

Within the group of dissolved marriages, there is a large group of selected target children (19 %) that were not contacted, because only one parent gave the permission to contact the child and the other parent did not participate. Consequently, there was full parental consent for only 57 % (10 % + 47 %) of the selected target children from dissolved marriages, compared to 89 % (11 % + 78 %) of the target children from intact marriages. In addition, parents from dissolved marriages were two times as likely to give no permission to contact the child.

In case of full parental permission, the child was contacted for participation. In almost one out of ten intact and dissolved marriages, the parent(s) gave permission to contact the child, but the child refused to participate in the study. From the 227 (198 + 29) children from intact marriages and 512 (424 + 88) children from dissolved marriages whose parents gave full permission to contact them, respectively 13 and 21 % of the children refused to be interviewed. At the end of the fieldwork, 78 % of the selected target children from intact marriages were interviewed and 47 % of the selected target children from dissolved marriages.

Table 3 presents the results for the binary logistic regression of parental refusal and refusal by the child. Divorced parents are less likely to give permission to contact the child than married parents. There are no significant differences in child consent according to the marital status of the parents. Note that this finding applies only for children who received parental permission to participate in the study.

Within the sample of intact marriages, parents are less likely to give permission to interview a boy than a girl. Children with a medium educated mother are more likely to refuse than children with a highly educated mother. Participation of mother only is associated with more frequent parental refusal compared to when both parents

Table 2 Parental consent and consent of child for child interview, by marriage status

Parent(s)	Child	Intact marriages		Dissolved marriages	
		<i>n</i>	%	<i>n</i>	%
No permission	Not contacted	29	11	211	24
One permission, one unknown (on hold)	Not contacted			172	19
Permission	No interview	29	11	88	10
Permission	Interview	198	78	424	47
Total		256	100	895	100

Source: Divorce in Flanders

N = 1151

Table 3 Odds ratio's from logistic regression models predicting the refusal of parents and children for child participation

	All marriages		Intact marriages		Dissolved marriages	
	Parent refused	Child refused	Parent refused	Child refused	Parent refused	Child refused
Intercept	0.12***	0.15***	0.06***	0.07***	0.41***	0.31***
Age child (mean centered)	0.95	0.94	0.85	0.91	0.98	0.90
Sex child (ref = girls)	1.06	1.07	2.48*	0.65	0.95	1.24
Educational level mother (ref = high)						
Low	0.96	1.80°	2.76	2.79	0.94	1.50
Medium	0.88	1.63*	0.69	3.72*	0.94	1.23
Educational level father (ref = high)						
Low	0.87	0.51°	0.62	0.44	0.87	0.46*
Medium	1.38	0.49**	1.47	0.39	1.32	0.44**
Participation parents (ref = mother and father)						
Father only	0.86	2.45**	1.13	13.41**	0.82	1.56
Mother only	0.63*	1.61	3.88**	7.35***	0.46**	0.81
Father and mother	1.31	0.80	0.46	1.56	1.45	0.52
Dissolved marriage (ref = intact marriage)	2.72***	1.07				
Parental conflict	1.00	1.11	1.34	1.02	0.97	1.02
Open communication with child (mother)	0.68***	0.86	0.51*	0.70	0.69	0.85
Negative communication with child (mother)	0.66***	0.97	0.72	1.21	0.61	0.83
Open communication with child (father)	0.82*	0.76°	0.68	1.11	0.85	0.69*
Negative communication with child (father)	0.71	0.95	0.59	0.779	0.75	1.20
Parents no contact					0.95	0.95
Year of divorce (mean centered)					1.04	0.92*
Residence child (ref = with mother)						
Shared residence					0.84	0.81
With father only					0.78	0.97
<i>N</i>	1130	728	254	225	847	494

Source: Divorce in Flanders

° $p < 0.10$; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

participate. The likelihood of child refusal is higher if only one of the parents participated, especially if only the father participated. Note that it is very unlikely for intact marriages that only one parent participates in the study. Furthermore, more frequent open communication with mother is associated with a lower likelihood of parental refusal.

Within the sample of dissolved marriages, we find no differences according to the sex of the child. Children with a lowly or medium educated father are more likely to participate. We find a lower likelihood of parental refusal in case only the mother participated in the study. Next, more frequent open communication with father is associated with a higher likelihood of the child participating in the study after parental permission. Finally, children of more recent divorces are less likely to refuse to participate in the study.

The age of the child, the frequency of parental conflict, parents no longer having contact and the residence of the child in case of parental divorce are not associated with neither parental nor child refusal.

4.2 Measurement Equivalence of Family Relations Scales

4.2.1 Conflict Between Parents

The scalar invariant model for the five items measuring conflict does not fit the data properly. The fit indices (CFI=0.741, TLI=0.749, RMSEA=0.151, SRMR=0.132) suggest that the model needs to be adapted in order to improve the model fit. The standardized factor loading of the third item (physical violence) is lower than .30 in the three groups and is removed from the factor structure. This strongly improves the model fit (CFI=0.973, TLI=0.973, RMSEA=0.055, SRMR=0.033) and we proceed with this model. Despite the low standardized factor loading of the fourth item for children and fathers, the model fit does not need to be improved and no further adjustments are made. The estimates of the scalar invariant model are presented in the upper part of Table 4.

The correlation between the factor scores on parental conflict of children and mothers (0.17, $p < .001$) and of children and fathers (0.21, $p < .001$) is rather weak. A paired t -test shows significant differences between the scores of children and mothers ($\bar{x} = -0.35$, S.E.=0.05, $p < .001$) and of children and fathers ($\bar{x} = -0.18$, S.E.=0.05, $p < .001$). Children report on average less parental conflict than their mothers and fathers.

4.2.2 Communication Between Parents and Child

Measurement equivalence of openness and problems in communication between parents and children is first tested between mothers and children. The scalar invariant model fits the data sufficiently (CFI=0.929, TLI=0.923, RMSEA=0.082, SRMR=0.065). The estimates of the scalar invariant model are presented in the middle part of Table 4.

The correlation between the factor scores of mother and child are modest for both openness in communication (0.44, $p < .001$) and problems in communication (0.33, $p < .001$). Paired t -tests demonstrate that mothers report on average more frequent open communication ($\bar{x} = -0.16$, S.E.=0.04, $p < .001$) and more frequent negative communication ($\bar{x} = -0.22$, S.E.=0.04, $p < .001$) than children.

Next, measurement equivalence is assessed between fathers and children. This scalar invariant model also fits the data sufficiently (CFI=0.937, TLI=0.931, RMSEA=0.081, SRMR=0.060). The estimates of the scalar invariant model are presented in the lower part of Table 4.

Table 4 Scalar invariant measurement of conflict, openness and problems in communication between mothers, fathers and children: Unstandardized factor loadings and standard errors

	Unstand. estimate	S.E.	<i>p</i>
Conflict scale			
Blame each other ^a	1.000	0.000	n.a.
Yell or scream	0.957	0.065	***
Throw or break things	0.065	0.006	***
Not want to talk to each other	0.373	0.035	***
Openness in communication (mother-child)			
Child shows affection ^a	1.000	0.000	n.a.
Child avoids topics	-0.844	0.054	***
Satisfied with communication	1.075	0.039	***
Easy to discuss problems	1.182	0.044	***
Child expresses true feeling	1.242	0.045	***
Problems in communication (mother-child)			
Child says things better unsaid ^a	1.000	0.000	n.a.
Parent nags to child	2.054	0.219	***
Parent insults child	1.911	0.209	***
Parent says things better unsaid	2.189	0.232	***
Openness in communication (father-child)			
Child shows affection ^a	1.000	0.000	n.a.
Child avoids topics	-0.723	0.046	***
Satisfied with communication	1.042	0.038	***
Easy to discuss problems	1.231	0.044	***
Child expresses true feeling	1.186	0.042	***
Problems in communication (father-child)			
Child says things better unsaid ^a	1.000	0.000	n.a.
Parent nags to child	1.459	0.129	***
Parent insults child	1.583	0.139	***
Parent says things better unsaid	1.855	0.156	***
Child says things better unsaid ^a	1.000	0.000	n.a.

Source: Divorce in Flanders

N mothers=900; N children=622, N fathers=753

^a Marker indicator, significance cannot be calculated

[°] $p < 0.10$; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

The correlation between the factor scores of fathers and children is only modest with regard to openness in communication (0.25, $p < .001$) and problems in communication (0.28, $p < .001$). The paired *t*-test shows that fathers report more frequent open communication than their children ($\bar{x} = -0.39$, S.E.=0.06, $p < 0.001$). The differences in father and child reports regarding problems in communication are smaller ($\bar{x} = -0.07$, S.E.=0.04, $p = 0.038$).

4.3 The Determinants and Consequences of Parental Presence During the Child Interview

During 170 (27 %) of the child interviews at least one of the parents was present. Table 5 presents the results for the multivariate analysis modelling the likelihood of parental presence. The model including all marriages shows that parents from dissolved marriages are less likely to be present during the child interview than parents from intact marriages. Parents are less likely to be present during the interview for older children. Parental conflict is negatively related to parental presence in the three models.

Table 5 Odds ratio's from logistic regression models predicting the presence of parents during the child interview

Exp(B)	All marriages	Intact marriages	Dissolved marriages
Intercept	0.26***	0.26***	0.12***
Age child (mean centered)	0.81***	0.76**	0.83**
Sex child (ref = girls)	0.85	1.12	0.67
Educational level mother (ref = high)			
Low	1.88*	1.23	1.92
Medium	1.37	1.41	1.37
Educational level father (ref = high)			
Low	1.15	1.20	1.32
Medium	1.83*	1.72	2.21*
Participation parents (ref = mother and father)			
Father only	0.92	0.77	1.29
Mother only	1.74*	1.73	2.20*
Father and mother	0.71	0.40*	1.33
Dissolved marriage (ref = intact marriage)	0.63*		
Parental conflict	0.66**	0.69*	0.62*
Open communication with child (mother)	1.10	0.90	1.18
Negative communication with child (mother)	0.87	0.58*	1.02
Open communication with child (father)	1.01	1.03	1.07
Negative communication with child (father)	0.90	1.23	0.77
Parents no contact			1.41
Year of divorce (mean centered)			1.04
Residence child (ref = with mother)			
Shared residence			0.85
With father only			0.61
<i>N</i>	614	196	410
-2LL	653.8	207.2	424.5

Source: Divorce in Flanders

$^{\circ}p < 0.10$; $*p < 0.05$; $**p < 0.01$; $***p < 0.001$

Within intact marriages, more frequent negative communication with mother is associated with a lower likelihood of parental presence. Parental presence is less likely in case the father participated first than in case the mother participated first.

For dissolved marriages, parental presence is more likely in case only mother participated in the study and medium educated fathers are more likely to be present than high educated fathers. The year of divorce and residence of the child following divorce is not related to the likelihood of parents being present during the child interview.

Table 6 presents the multivariate results for differences in child reports on the frequency of parental conflict according to the presence of a parent. Within the sample of intact marriages, we find no significant effects at all. Within the sample of dissolved marriages, we find a statistical weak indication ($p < .10$) of children reporting less frequent parental conflict in case a parent was present during the interview. In addition, children from recent divorces and with a medium educated mother (degree of higher secondary education) report more frequent parental conflict than children from less recent divorces and highly educated mothers (degree of higher education). Finally, children report less frequent parental conflict in case only mother participated in the study.

Tables 7 and 8 present the results for the children's report on communication with mother and father. We see that children of intact marriages report more frequent open communication with mother if a parent was present during the interview. Moreover, we find a weak indication ($p < .10$) that children with divorced parents report more frequent negative communication with father in case a parent was present during the interview. In the other models, we find no significant differences in the reported communication according to the presence of a parent.

With regard to the control variables, we see that older children report less frequent open communication with mother and father than younger children, and more frequent negative communication. The latter only holds for children from dissolved marriages. Boys from dissolved marriages report more frequent open communication with their father than girls. Children in mother custody report the lowest scores on open communication with father, children in father custody the highest scores. Children in father custody also report the least negative communication with their father. Children in joint custody report the most open communication and the least negative communication with mother. The findings for the educational level of the parents are mixed. Children of more recent divorces report less open communication with father and more negative communication with mother and father. Finally, within the sample of dissolved marriages, children report more open communication with mother and less negative communication with mother if the father did not participate in the study.

As the frequency of conflict reported by the parents and the negative communication with mother is related to the likelihood of parents being present during the interview (Table 5), additional models are tested that control for parent reports of conflict and communication with the child. The addition of these variables did not change the association between parental presence and the frequency of conflict reported by the child, nor between parental presence and the communication with mother and father reported by the child. These findings suggest that the differences in children's report according to parental presence do not merely result from the selectivity within the group of children whose parents are present.

Table 6 Unstandardized coefficients and standard errors from the OLS-regression models predicting the frequency of parental conflict reported by the child

	Intact marriages		Dissolved marriages	
	B	S.E.	B	S.E.
Intercept	-0.07	0.14	-0.15	0.13
Age child (mean centered)	0.02	0.03	0.01	0.02
Sex child (ref = girls)	0.01	0.13	-0.05	0.08
Educational level mother (ref = high)				
Low	-0.31	0.29	-0.10	0.14
Medium	0.06	0.15	0.12	0.10
Educational level father (ref = high)				
Low	0.32	0.22	-0.02	0.13
Medium	0.08	0.15	0.23	0.11*
Participation parents (ref = mother and father)				
Father only	-0.13	0.41	-0.17	0.15
Mother only	0.15	0.22	-0.27	0.11*
Father and mother	-0.05	0.14	-0.02	0.13
Year of divorce (mean centered)			0.04	0.01***
Residence child (ref = with mother)				
Shared residence			-0.06	0.10
With father only			-0.11	0.19
Parent(s) present during IV	-0.12	0.15	-0.16	0.10°
N	196		409	
R ²	0.03		0.08	

Source: Divorce in Flanders

° $p < 0.10$; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

5 Discussion

The purpose of the current study was to evaluate three challenges that are related to including children in family research: 1) selection bias in the child sample caused by selective consent of parents and children; 2) the equivalence of parent and child reports; and 3) the influence of parental presence during the interview on child reports. Using data from the Divorce in Flanders project (Mortelmans et al. 2011), we demonstrated the strength of multi-actor data for these three purposes.

First of all, our study reveals two sources of selection bias in the child sample. The first relates to the quality of family relations. The communication between parents and children is found to be predictive for both parental consent to contact the child as for child consent to participate in the survey. The second bias relates to the marital status of the parents. Divorced parents more frequently decline the participation of their children compared to married parents. The higher likelihood of divorced parents refusing child contact is even reinforced in the Divorce in Flanders data by the applied strategy for parental consent of children with divorced parents. As often both parents had to give

Table 7 Unstandardized coefficients and standard errors from the OLS-regression models predicting positive communication with mother and father reported by the child

	Intact marriages				Dissolved marriages			
	OC with father		OC with mother		OC with father ^a		OC with mother ^a	
	B	S.E.	B	S.E.	B	S.E.	B	S.E.
Intercept	0.12	0.14	0.09	0.12	-0.45	0.17*	-0.36	0.15*
Age child (mean centered)	-0.06	0.03*	-0.07	0.03**	-0.12	0.03***	-0.12	0.02***
Sex child (ref = girls)	0.10	0.13	-0.11	0.11	0.29	0.11**	-0.02	0.09
Educational level mother (ref = high)								
Low	-0.23	0.29	0.20	0.25	-0.06	0.18	0.22	0.15
Medium	-0.17	0.15	0.15	0.13	-0.08	0.13	0.18	0.11
Educational level father (ref = high)								
Low	-0.32	0.22	-0.34	0.19	0.08	0.17	-0.13	0.14
Medium	-0.40	0.15**	-0.42	0.13**	-0.17	0.14	-0.13	0.12
Participation parents (ref = mother and father)								
Father only	-0.28	0.41	-0.28	0.36	0.10	0.20	-0.27	0.17
Mother only	0.10	0.22	-0.20	0.19	-0.11	0.14	0.25	0.12*
Father and mother	-0.06	0.14	-0.19	0.12	-0.28	0.17	-0.02	0.14
Parent(s) present during IV	0.05	0.15	0.26	0.13*	0.02	0.13	0.11	0.11
Year of divorce (mean centered)					-0.03	0.02*	-0.02	0.01
Residence child (ref = with mother)								
Shared residence					0.26	0.13*	0.25	0.11*
With father only					1.06	0.25***	0.01	0.21
<i>N</i>	196		196		376		405	
<i>R</i> ²	0.12		0.15		0.14		0.13	

Source: Divorce in Flanders

^a Subsample of children who have contact with parent

°*p*<0.10; **p*<0.05; ***p*<0.01; ****p*<0.001

permission to contact the child, the likelihood of either refusal or the lack of approval is much higher than for children of married parents. These findings need to be taken into account in the decision process of future studies evaluating dual parental consent for child participation in case of divorce. Overall, these two mechanisms reflect an important selection bias into the research sample and demonstrate the importance of empirically testing the consequences for the estimated models. Especially if one wants to investigate the consequences of divorce for children, this selection bias can have strong implications. As divorced parents and parents reporting few open communication with the child give their consent less often, it is very likely that only children with less negative outcomes are present in the study. This selection process is reinforced by the higher refusal rate of children who have little open communication with their father following divorce. A possible strategy to correct for this selective parental consent and non-participation of the child is the Heckman selection

Table 8 Unstandardized coefficients and standard errors from the OLS-regression models predicting negative communication with mother and father reported by the child

	Intact marriages				Dissolved marriages			
	NC with father		NC with mother		NC with father ^a		NC with mother ^a	
	B	S.E.	B	S.E.	B	S.E.	B	S.E.
Intercept	-0.16	0.09 ^o	-0.31	0.12*	-0.08	0.10	0.25	0.15 ^o
Age child (mean centered)	0.00	0.02	0.00	0.03	0.04	0.01**	0.08	0.02**
Sex child (ref = girls)	0.02	0.09	0.10	0.11	-0.04	0.06	-0.04	0.09
Educational level mother (ref = high)								
Low	-0.05	0.19	-0.52	0.26*	-0.09	0.10	-0.27	0.16 ^o
Medium	0.09	0.10	-0.09	0.13	0.06	0.07	-0.14	0.11
Educational level father (ref = high)								
Low	0.26	0.15 ^o	0.48	0.20*	-0.04	0.09	0.12	0.15
Medium	0.14	0.10	0.33	0.13*	0.13	0.08 ^o	0.13	0.12
Participation parents (ref = mother and father)								
Father only	-0.09	0.27	-0.02	0.36	-0.15	0.11	-0.07	0.17
Mother only	-0.16	0.15	0.09	0.20	0.04	0.08	-0.39	0.12**
Father and mother	-0.04	0.09	0.11	0.12	0.15	0.09	-0.19	0.14
Parent(s) present during IV	0.12	0.10	-0.14	0.13	0.14	0.07 ^o	0.03	0.11
Year of divorce (mean centered)					0.02	0.01*	0.02	0.01 ^o
Residence child (ref = with mother)								
Shared residence					0.00	0.07	-0.19	0.11 ^o
With father only					-0.40	0.14**	-0.18	0.21
<i>N</i>	196		196		376		405	
<i>R</i> ²	0.05		0.08		0.10		0.07	

Source: Divorce in Flanders

^a Subsample of children who have contact with parent

^o*p*<0.10; **p*<0.05; ***p*<0.01; ****p*<0.001

method (Kalmijn and Liefbroer 2011). This method uses a transformation of the predicted individual probabilities to be in the sample as an additional explanatory variable to correct for selection.

Second, this study clearly shows that children between 10 and 17 years old are capable of reporting on family relations as reliably as adults. Moreover, it is found that the perspectives of parents and children on family relations differ significantly. While the generational stake theory (Bengtson and Kuypers 1971), provides an explanation for the lower scores of children on open communication compared to their parents, the lower scores on negative communication and parental conflict of children are inconsistent with this theory. The less frequent parental conflict reported by children might result in part from parents hiding their conflicts for children, but this argument is not applicable for the negative communication between parents and children. An important question is to which extent the different reports are the

reflection of different perceptions, expectations and evaluations of the same relationship, or whether they originate from actor-specific processes of social desirability. Further studies are needed to understand the causes and underlying mechanisms of this finding. Nevertheless, the relevance of including children in family research is clearly supported by our findings, as children provide an additional perspective on family life. Given the reliability and uniqueness of their reports, the child's perspective may enrich our insights on contemporary family dynamics.

Third, the findings of this study suggest that parental presence during the child interview can cause social desirability. Children report less frequent parental conflict and more frequent open communication with mother in case of parental presence. Surprisingly, it is also found that children in dissolved families report more negative communication with the father if a parent was present. This might however also be interpreted in terms of social desirability, assuming that mainly mothers are present during the child interview. If parents are divorced, children might be more reluctant towards being positive regarding the other parent. Unfortunately, the data do not include information on which parent was present during the interview.

Regarding the practice of questioning children, three recommendations can be made based on the findings of this study. First of all, the juridical demands for questioning children can threaten the generalizability of research findings. The need for both parental and child consent increases the likelihood of an overrepresentation of children with positive family relations and married parents in the sample. Researchers, policy makers and experts on privacy issues therefore need to reflect on the pros and cons of parental consent in terms of child protection and data quality. In doing so, they also need to reflect on the conditions under which explicit parental consent is absolutely necessary in scientific research (e.g. the age of the children, the research context, the research topic and the anonymity of the data).

Second, this study shows that parents are often present during the interview of children. It is crucial that this is reported in the fieldwork documentation as it may alter their responses to survey questions. Information on the presence of third parties during the interview allows to control for this bystander effect in analyzing child reports. Furthermore, it can be recommended to diminish parental presence as much as possible, to decrease the likelihood of socially desirable answers. Future research is however necessary to establish whether refusing parental presence during the interview is related to lower levels of parental consent.

Third, the research design and research context have important implications for the sample composition. If children are not the main sample units, their participation on the study is dependent on the participation of others (e.g. parents). Moreover, if children are contacted outside their familial context (e.g. within their school), their response might be less determined by their familial background. As a consequence, studies with children have to look for an optimal equilibrium between representativeness and limited, random non-response on the one hand and rich data with multiple actors and perspectives on the other hand. Both dimensions are important with respect to data quality, but depending on the research topic, one dimension might even be more important than the other.

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Appendix A

Table 9 Mean scores on individual items of the conflict scale, openness in communication subscale, and problems with communication subscale per actor

Items conflict scale	Blame each other	Yell or scream	Use physical violence	Throw or break things	Not want to talk to each other	n
Child	1.94 (1.21)	1.59 (1.05)	1.03 (0.26)	1.04 (0.31)	1.59 (1.37)	622
Mother	2.54 (1.40)	1.93 (1.20)	1.04 (0.29)	1.07 (0.28)	1.47 (0.80)	900
Father	2.41 (1.26)	1.82 (1.07)	1.01 (0.09)	1.07 (0.30)	1.47 (0.73)	753
Items openness in communication subscale	Child shows affection	Child avoids topics	Satisfied with communication	Easy to discuss problems	Child expresses true feeling	n
Mother	5.82 (1.47)	3.75 (1.94)	5.72 (1.33)	5.53 (1.42)	5.24 (1.55)	900
Father	5.44 (1.56)	4.46 (1.84)	5.39 (1.44)	5.04 (1.54)	4.62 (1.65)	753
Child–Mother	5.38 (1.42)	4.29 (1.90)	5.80 (1.34)	5.32 (1.50)	5.02 (1.54)	622
Child–Father	4.87 (1.60)	4.73 (1.77)	5.14 (1.57)	4.30 (1.71)	4.17 (1.64)	622
Items problems with communication subscale	Child says things better unsaid	Parent nags to child	Parent insults child	Parent says things better unsaid		n
Mother	3.38 (1.89)	2.61 (1.50)	2.13 (1.37)	2.69 (1.63)		900
Father	3.13 (1.70)	2.30 (1.36)	1.97 (1.24)	2.48 (1.57)		753
Child–Mother	3.82 (1.81)	2.35 (1.50)	1.85 (1.23)	2.50 (1.68)		622
Child–Father	3.31 (1.80)	2.23 (1.45)	1.99 (0.41)	2.44 (1.65)		622

Source: Divorce in Flanders

Standard errors between parentheses

Appendix B

Table 10 Descriptive values of child and parent characteristics

	Intact marriages	Dissolved marriages
Child characteristics		
Age child (mean, SD)	13.53 (2.31)	13.78 (2.20)
Sex child (%)		
Boys	46	51
Girls	54	49
Residence child (%)		
With mother only		58
Shared residence		36
With father only		6

Table 10 (continued)

	Intact marriages	Dissolved marriages
Parent characteristics		
Age mother (mean, SD)	42.6 (3.92)	41.62 (4.28)
Age father (mean, SD)	44.5 (3.99)	43.93 (4.39)
Year of marriage (mean, SD)	1991 (4.13)	1991 (4.10)
Educational level mother (%)		
Low (no degree of higher secondary school)	7	18
Medium (degree of higher secondary school)	38	45
High (degree of higher education)	55	37
Educational level father (%)		
Low (no degree of higher secondary school)	12	23
Medium (degree of higher secondary school)	42	47
High (degree of higher education)	46	30
Participation parents (%)		
Father only	4	27
Mother only	16	39
Father first–mother second	31	16
Mother first–father second	49	18
Year of divorce (mean, SD)		2004 (3.76)

Source: Divorce in Flanders

N mothers=900, N fathers=759, N children=622

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