

# Chapter 4

## The Presence of a Third Person in Face-to-Face Interviews with Immigrant Descendants: Patterns, Determinants, and Effects

Nadja Milewski and Danny Otto

### 4.1 Introduction

A central criterion in social science surveys is that face-to-face interviews must be conducted in private in order to ensure the anonymity of the respondents. The presence of third parties during the interview—i.e., of individuals who are neither the interviewer nor the respondent—compromise these ideal conditions. The presence of such individuals changes the interview situation, as the strict anonymity of the respondent can no longer be guaranteed. When a family member or other third party is in the room, the respondent in an interview may modify his/her answers in order to avoid conflicts with the bystander. Hence, scholars have generally assumed that information gathered in interviews in which a third party was present may be biased (Zipp and Toth 2002). So far, however, only a small number of studies have investigated the determinants of the presence of a bystander in face-to-face interviews and its effects on other variables.

Previous studies that have examined the question of the identity of the third party have mainly focused on spouses (e.g., Anderson and Silver 1987; Hartmann 1991; Smith 1997; Pollner and Adams 1997), and, to a lesser extent, on parent-child dyads (Taietz 1962; Aquilino et al. 2000). Most of the topics studied were of a sensitive nature, and ranged from family values and behavior, such as gender roles and the division of household labor (e.g., Mohr 1986; Lander 2000); to income (e.g.,

---

N. Milewski (✉)

Faculty of Economic and Social Sciences, Institute for Sociology and Demography,  
University of Rostock, Rostock, Germany  
e-mail: [nadja.milewski@uni-rostock.de](mailto:nadja.milewski@uni-rostock.de)

D. Otto

Faculty of Economic and Social Sciences, Post-graduate program “Power of Interpretation”,  
University of Rostock, Rostock, Germany  
e-mail: [danny.otto@uni-rostock.de](mailto:danny.otto@uni-rostock.de)

© The Author(s) 2017

C. Bolzman et al. (eds.), *Situating Children of Migrants across Borders and Origins*, Life Course Research and Social Policies 7,  
DOI 10.1007/978-94-024-1141-6\_4

77

Hartmann 1995), religion (Anderson and Silver 1987), political preferences (Silver et al. 1986) and deviant behavior, such as substance use (e.g., Reuband 1987; Aquilino et al. 2000). Methodological studies in the social sciences have shown that a third person was present in between 5 and 82% of face-to-face survey interviews (Casterline and Chidambaram 1984; Reuband 1984; Zipp and Toth 2002). Thus, such cases are far from exceptional. Bystanders are even more likely to be present in interviews with international migrants than in interviews with their non-migrant counterparts (Reuband 1984; Aquilino 1993). This gap has been mainly attributed to the need for support during the interview among respondents with below-average language skills (Allerbeck and Hoag 1981). This is not surprising when first-generation migrants were interviewed. Overall, however, interview settings with international migrants have not received much scholarly attention.

The question of whether third parties are present in interviews with international migrants is becoming increasingly important given the growing shares of immigrants in a number of large European countries. In countries such as Germany, France, Spain, and the United Kingdom, immigrants and their descendants make up around 20% of the populations (Eurostat 2011). Consequently, social scientists of various disciplines are increasingly including immigrant groups in their data collections and research. Our paper focuses on the presence of a third person in face-to-face interviews that were conducted with second-generation residents of Turkish parents living in several western European countries within the project The Integration of the European Second Generation (TIES 2007–2008). They were born in Western Europe and had visited school there. The goals of our study are twofold. First, we give a descriptive overview of the patterns of the presence of bystanders in interviews by comparing immigrant descendants and natives. We then analyze the determinants of these patterns by entering the socio-demographic characteristics of the survey participants into a multivariate model. Second, we test whether the presence of a third person affected responses to sensitive interview questions; we chose attitudes towards sexuality and abortion since these attitudes are important during the transition to adulthood (which corresponds to the age range of the survey) and they can be considered as sensitive questions both among migrants and non-migrants.

## 4.2 Background

### 4.2.1 *Patterns and Determinants of Third-Party Presence*

The factors that influence the presence of a bystander in a face-to-face interview can be seen mainly from three perspectives: the opportunity structure, the need for support, and the control motivation (Reuband 1984; Mohr 1986; Aquilino 1993; Hartmann 1994; Smith 1997; Pollner and Adams 1997; Lander 2000; Zipp and Toth 2002). On the issue of social control, the theoretical considerations regarding the presence of third parties and their effects on the answers in interviews mainly centre

on the change in self-presentation style of the respondent. The underlying assumption is that a respondent is likely to behave differently and give different answers if a person known to the respondent is present than s/he would in a private exchange with an interviewer the respondent did not know prior to the interview, and is unlikely to meet again. Self-presentation theory (e.g., Goffman 1959) suggests that individuals try to present themselves in a favorable light, or that they try to remain in the roles to which they are accustomed. The presence of a third party—usually the spouse or the partner, but nearly always a person who is known to the respondent (Hartmann 1994)—may cause the respondent to present him/herself in line with presumed expectations. It is therefore possible that social desirability bias or situational desirability bias leads to distortions in the responses (Esser 1986).

Desirability bias is, however, a subject for discussion in its own right. On the one hand, respondents may in general tend to report what they believe they are expected to report in the interview based on external pressures. On the other hand, spouses seem to assume that couples are expected to report a high level of agreement with each other. They may be more likely to adjust their answers to each other's, or at least to respond in a way that seems coherent with the role known to the partner (Zipp and Toth 2002).

From this point of view, bystanders appear to contaminate the interview, which is supposed to be artificial and therefore controlled. It is assumed that interviewers are less likely to get the “true” answer when someone else is present. “The desire to present a positive image may lessen respondents’ willingness to reveal sensitive information” (Aquilino et al. 2000: 846). As this observation indicates, the effect of the presence of a third party may become particularly important when the respondent is being interviewed face-to-face on sensitive issues, which are already “inclined to elicit response distortions, even in a standard interview setting” (Hartmann 1994: 299).

Whereas these considerations suggest that the presence of a bystander in an interview could lead to inaccurate or dishonest responses, another line of argumentation appears plausible: third persons who are familiar with the respondent may correct their answers (Hartmann 1994), especially to factual questions (e.g., Anderson and Silver 1987; Aquilino 1993; Lander 2000). Hence, the third person may serve as a “lie detector” (Boeijs 2004: 5) who causes the respondent to adjust her/his answers to the “truth” that is accepted in the respective relationship. A qualitative study by Boeijs (2004) on the effects of the presence of the partner indicated that there are shifts in the self-presentation styles of the interviewees, but they are not systematic. While it seems safe to assume that the presence of a third party changes the interview setting and can affect the responses given, we are unable to deduce the direction of the shift from a theoretical point of view. As previous empirical studies on the third-person effect generated heterogeneous results, it is impossible to say which of the scenarios appears more likely.

Whether a deterioration of the results occurs may also depend on the reasons why a third party is present. Previous studies have shown that the presence of a bystander is not random, and that specific patterns can be identified. The term “opportunity structure” refers to the circumstances which enable a third party to be

present during the interview, while the term “support function” refers to the circumstances which require the third party’s presence (e.g., Reuband 1984, 1992). The factors related to the opportunity structure include the type of housing, the number of rooms, the other persons living in the household, as well as the marital status and the employment status of the respondent (Reuband 1992; Aquilino 1993; Hartmann 1994; Zipp and Toth 2002). Aquilino’s research (1993) on the presence of a spouse during the interview provides an extensive model for predicting whether or not a third party will be present. Using the United States National Survey of Families and Household (1987/1988), he found that being older, being male, being married and sharing a household with the spouse, having an unemployed partner, and having a small home increase the chances that the spouse will be present. He also found that the likelihood that a bystander will be present decreases with increasing educational attainment and income, and when the children in the household are older (i.e., 13+ years) (Aquilino 1993). This compilation of control variables was used in several other studies (e.g., Smith 1997; Pollner and Adams 1997).

Hartmann (1994) reported rather similar results in a study using data from the German General Social Survey (1984–1990), but she also focused on the interview setting itself. She found that the likelihood that a bystander will be present increases with the duration of the interview. Moreover, the chances that a third party will be present increase when the respondent and the interviewer are not the same gender, and especially when a woman is being interviewed by a man. Hartmann was therefore able to strengthen the descriptive findings of Mohr (1986), who suggested that the third-party presence is often gender-specific. According to the jealousy hypothesis, a man may feel intimidated when his wife is going to be questioned by a male interviewer, and may therefore want to attend his wife’s interview. However, Hartmann’s (1994) results indicated that women are more likely than men to be present in the spouse’s interview regardless of the sex of the interviewer. Lander (2000), using various samples of the same survey (1980–1998), added to the jealousy hypothesis by suggesting that the partner may want to control the interview situation if the partner of a respondent anticipates that the respondent will be asked questions pertaining to the couple’s relationship (Lander 2000). It therefore seems impossible to distinguish the causes and effects of a bystander’s presence. For example, how can we know whether a husband who reported being satisfied with his marriage did so because his wife was present in the room, or whether a married man who consents to be interviewed with his wife present is more likely to be satisfied with his marital relationship in general (Hartmann 1994)?

In addition to citing factors associated with social control and the opportunity structure in explaining the presence of a third party in an interview, several authors also mentioned the need for support (e.g., Reuband 1984). In particular, elderly people or those with lower levels of education may need assistance during the interview. The bystander may, for example, help the respondent with comprehension difficulties or memory gaps, or s/he may simply help the respondent feel less nervous and more comfortable in an unknown situation.

### 4.2.2 *Effects of Third-Party Presence*

Whereas the results found in the literature are rather consistent on the patterns and determinants of a bystander in face-to-face interviews, the findings on the effects of third parties on the answers of the interviewed persons are mixed and partly contradictory. To allow for a coherent interpretation of the results, nearly all of the studies focused on a certain group of bystanders (i.e., children, spouses/partners, parents) in an interview. The earliest study dealing with the issue of third parties was conducted by Taietz (1962) in the Netherlands. He researched the effect the presence of a child or a grandchild has on the statements of elderly people on norms for extended families, and found a significant shift of answers towards more “traditional” housing arrangements. Control variables, such as sex, age, occupational status, and marital status, were incorporated and supported the finding that the presence of a third person has an effect on the responses (Taietz 1962). Subsequent studies in Germany and the United States primarily focused on the spouse as the third party. The results of Reuband (1987 and 1992) suggested that the presence of the spouse may lead respondents to give more conservative answers to sensitive questions, and to express more conservative family norms and values. Mohr (1986) noted a shift in responses with changes in the gender constellations in the interview setting. He found that men and women responded more positively to items concerning marriage satisfaction and partnership quality when they were questioned by interviewers of the same sex while the partner was present. But both Reuband (1984) and Mohr (1986) acknowledged that these findings may have resulted from uncontrolled selection effects.

Aquilino (1993) reported a significant effect of spousal presence on the responses to marriage-related questions. Although the insertion of an extensive list of control variables reduced the effects of the brut model, significant differences appeared between respondents with or without a third-party presence. He concluded that the presence of a spouse is a potential source for response effects on marriage-related items, and that the observed bias depends on the nature of the question (Aquilino 1993). Later research on the effects of the presence of a spouse during the interview initially produced results quite similar to those of Aquilino (1993), but they did not hold when controlling for covariates (Hartmann 1996; Smith 1997; Pollner and Adams 1997). Hartmann (1996) focused on the connection between a third-party presence and evasive responses. While her results partially supported the hypothesis of higher non-response rates in interview settings of limited privacy, the effect found was almost irrelevant, and became even smaller when covariates were controlled for.

The approach most often used in this kind of methodological study is to compare the answers of respondents who were alone with their interviewer to those of respondents who were interviewed with a third party present, since only one person per household was interviewed for the respective surveys (Anderson and Silver 1987). Zipp and Toth (2002) took a different approach, using data from the British Household Panel Study in which both spouses in each household were interviewed. They compared the information given by the two spouses and found, after controlling for confounders, that the presence of the spouse increased the level of agreement between the spouses (Zipp and Toth 2002).

The effect of a third-party presence is seen not only in couples, but also in parent-child constellations. Aquilino et al. (2000) found a significant impact of parental presence on the responses of their children, and vice versa, to drug abuse questions in the US. To a greater extent than in private interview settings, the respondents in both situations tended to either deny or minimize their use of intoxicating substances. Aquilino et al. (2000) concluded that the identity of the bystander is important, since they did not find a similar shift in answers when other individuals (i.e., siblings or partners) were present.

In addition to examining third-party effects, scholars have also looked at the relationship between the presence of a bystander and responses to sensitive questions. An interaction of these two problems in empirical research seems plausible. The sensitivity of questions may appear to be even more pronounced in a non-private interview setting. Hence, the presence of a bystander may be associated with a stronger bias on answers to sensitive items, including family attitudes and health behavior (Lee 1993; Hartmann 1994; Barnett 1998; Tourangeau and Yan 2007; Sander 2009).

### ***4.2.3 The Role of Immigrant Status***

International migrants and their descendants have been largely ignored in this field of methodological research, though there are a few exceptions. Anderson and Silver (1987) examined the effect of the spouse as a bystander in interviews with Soviet emigrants to the United States on various topics (e.g., religion, satisfaction with housing or standard of living, gender roles) and in different interview settings (interview in private or with spouse). They did not find a bystander effect (note that this research focused exclusively on migrants). In 51% of the cases, the spouse was present at the interview.

Other studies employed migrant status or ethnicity as one of the variables related to opportunity structures. Aquilino (1993), using race, found that black Americans and Mexican-Americans in the US were more likely to have a third person present at the interview than white Americans. Reuband (1984) found similar results for immigrants in West Germany. In 58–71% of the interviews with migrant workers, which were carried out in the 1970s, the presence of a third person was reported. Differences were found between the immigrant groups in Germany: 54% of young Italians, but 76% of young Turks, were interviewed in the presence of another person. This difference was partially traced back to a support function, as the third person translated in 19% of the interviews with Turks (Allerbeck and Hoag 1981).

There is, however, no study on the presence of a third person in interview settings that has explicitly compared the patterns and the determinants of a third-party presence in interviews among immigrants and their non-migrant counterparts. Our paper addresses the presence of a third person in survey interviews that were

conducted with second-generation residents of Turkish parents living in several western European countries. Turkish immigrants form one of the largest immigrant groups in European destination countries (Eurostat 2011). Previous research has demonstrated that, even in subsequent generations, immigrant groups differ in their socio-demographic characteristics from the non-migrant populations, and that these factors are also part of the opportunity structure that determines the presence of a third party in survey interviews. For example, compared to the native population, Turkish migrants tend to live in households with more inhabitants but less space, have more children, and co-reside with three generations. In addition, relative to the average non-migrant, the average Turkish migrant (and particularly the average Turkish female migrant) has less education, is less likely to participate in the labor force, and has a higher risk of unemployment. Moreover, compared to both non-migrants and migrants of other nationalities, Turkish migrants have on average less proficiency in the language of the host country. These socio-economic disadvantages decrease from the first to the second-generation residents, but they are still visible, showing little variation across the host countries (e.g., Söhn and Özcan 2006; Fincke 2009; Sauer and Halm 2009; Crul et al. 2012).

A number of studies have looked specifically at the family formation behavior of second-generation Turkish migrants (Milewski 2011; de Valk and Milewski 2011; Hamel et al. 2012), relating it to persistent differences in the demographic patterns of Turkey and the western European destination countries. The Turkish migrants and the respective host populations differ in their cultural values and norms, including on issues such as virginity at marriage, abortion, gender roles, and religiosity (e.g., Idema and Phalet 2007; Diehl et al. 2009; Maliepaard et al. 2010; Milewski and Hamel 2010; Huschek et al. 2011; Hamel et al. 2012). These differences are mainly associated with the family system traditions in the respective places of origin. According to Inglehart (1997), “traditional” family values, such as an emphasis on intergenerational ties, a rejection of divorce, and a clear division of labor between men and women, coincide with the importance of religion on a societal level. By contrast, gender equality receives more support, individual wellbeing is viewed as more important than collective attitudes, and divorce is not stigmatized, in societies in which religion is less important. These assumptions are consistent with Reher’s (1998) typology of family systems in Europe, in which he distinguishes between countries with a tradition of stem families (Mediterranean countries place great value on familism), and western and northern countries with a tradition of nuclear families.

In order to answer our research questions on the patterns, the determinants, and the effects of a third-party presence, we worked with the following hypotheses:

(H1) our first hypothesis is related to the opportunity structure and the support function. We assume that immigrant descendants are more likely to have a third party present at an interview than natives due to the differences in the socio-demographic composition of these groups. Specifically, we assume that there may be more opportunities for a third-party bystander to be present in interviews of members of the second generation due to their bigger family sizes, higher likelihood of non-participation in the workforce, and lower educational attain-

ment (Sauer and Halm 2009). Accordingly, we assume that differences in the frequency of a third-party presence between migrant descendants and natives should diminish or vanish if we control for the socioeconomic composition of the groups (Aquilino 1993; Hartmann 1996; Smith 1997; Pollner and Adams 1997). We did not focus on language skills since all of the Turkish descendants were born in the survey countries and had attended school there, assuming that they achieved at least a minimal level of language proficiency.

(H2) our second hypothesis refers to the effects of a third-party presence. We test whether the presence of a third party affects the answers to sensitive questions (Barnett 1998; Tourangeau and Yan 2007). First, we assume that respondents may give different answers depending on whether a third person is or is not present in the interview setting. Second, we expect that this effect will be larger among members of the second generation because the proportion of bystanders is assumed to be higher than it is among natives.

### 4.3 Data, Variables, and Method

We analyzed data from the survey *The Integration of the European Second Generation (TIES 2007–2008)*. TIES is a European comparative survey that focuses on migrant descendants; the so-called second generation. About 10,000 descendants of immigrants from Turkey, Morocco, and the former Yugoslavia and a native comparison group were interviewed in 15 cities in eight western European countries. Respondents were sampled as second-generation Turks if they were born in the country where the survey was held and at least one of their parents was born in Turkey. The respondents were aged 18–35 years. An urban sample frame was chosen because most immigrants and their descendants throughout Europe live in cities. A standardized questionnaire in the language of the respective country of residence was used (Groenewold and Lessard-Phillips 2012).

We used data from 12 cities with approximately 500 respondents per city, roughly half of whom were second-generation Turks, while the other half belonged to the respective native comparison group. The cities included in our study were Vienna and Linz in Austria, Brussels and Antwerp in Belgium, Paris and Strasbourg in France, Berlin and Frankfurt in Germany, Zurich and Basle in Switzerland, and Amsterdam and Rotterdam in the Netherlands. Our final sample consisted of 5870 respondents, of whom 51% were Turkish immigrant descendants.

Our analytical strategy is as follows. We first provide a descriptive overview of the variables used in the analyses by migrant status (Table 4.1). Then we give an overview of the type of the third person present in the interviews (Table 4.2). The multivariate analyses are based on logistic regression techniques, and the results are displayed as odds ratios (DeMaris 1995; Larose 2006). The dependent variable of the first part of the analyses (part A) is the presence of the third person (yes, 1/no, 0). Model A1 controls only for immigrants status, sex, and age. Model A2 takes into account variables related to the opportunity structure and the support function



**Table 4.1** Descriptive overview of the sample, by migrant status

Variable	Turkish descendants		Native comparison group	
	N	%	N	%
<i>Third-person presence***</i>				
Yes	998	33.2	593	20.7
No	2011	66.8	2268	79.3
<b>Socio-demographic characteristics</b>				
<i>Sex</i>				
Woman	1533	50.9	1473	51.5
Man	1476	49.1	1388	48.5
<i>Age in years***</i>				
18–25	1774	59.0	1204	42.1
26–35	1235	41.0	1657	57.9
<i>Country***</i>				
Austria	455	15.1	479	16.7
Belgium	602	20.0	558	19.5
France	500	16.6	351	12.3
Germany	503	16.7	503	17.6
Switzerland	450	15.0	459	16.0
The Netherlands	499	16.6	511	17.9
<i>Marital status ***</i>				
Not married	1856	61.7	2188	76.5
Married	1119	37.2	558	19.5
Divorced, mv	34	1.1	115	4.0
<i>Children in household***</i>				
None	1725	57.3	2079	72.7
1 or 2	679	22.6	389	13.6
3+	605	20.1	393	13.7
<i>Education ***</i>				
Primary	145	4.8	49	1.7
Lower secondary	451	15.0	172	6.0
Apprenticeship	721	24.0	498	17.4
Upper secondary	591	19.6	559	19.5
Tertiary	300	10.0	827	28.9
Enrolment in education	801	26.6	756	26.4
<i>Religion ***</i>				
Christian	70	2.3	1547	54.1
Muslim	2406	80.0	34	1.2
Other religion or none	533	17.7	1280	44.7
<i>Total</i>	<i>3009</i>	<i>51.3</i>	<i>2861</i>	<i>48.7</i>
<b>Attitudes<sup>a</sup></b>				
<i>Acceptance of pre-marital sex among women***</i>				
Always	604	25.1	1991	86.5

(continued)

**Table 4.1** (continued)

Variable	Turkish descendants		Native comparison group	
	N	%	N	%
In specific cases/no	1633	67.8	232	10.1
Non-response	170	7.1	80	3.5
<i>Acceptance of pre-marital sex among men***</i>				
Always	870	36.1	2010	87.3
In specific cases/no	1364	56.7	213	9.2
Non-response	173	7.2	80	3.5
<i>Acceptance of abortion for medical reasons***</i>				
Always	857	35.6	1505	65.3
In specific cases/no	1373	57.0	719	31.2
Non-response	177	7.4	79	3.4
<i>Acceptance of abortion for non-medical reasons ***</i>				
Always	322	13.4	832	36.1
In specific cases/no	1910	79.4	1392	60.4
Non-response	175	7.3	79	3.4
<i>Total</i>	<i>2407</i>	<i>100</i>	<i>2303</i>	<i>100</i>

Calculations based on TIES 2007–2008; N = 5870

\*\*\*p < 0.001 via chi<sup>2</sup> test for association between variable and immigrant status

mv missing values

<sup>a</sup>Austria, France, Germany, Switzerland, and the Netherlands; Belgium was excluded because this information was not included in the survey; N = 4710

**Table 4.2** Overview of the presence of a third person

Third person	Turkish descendants		Native comparison group	
	N	%	N	%
Partner	156	20.1	178	39.2
Father	48	6.2	20	4.4
Mother	172	22.1	64	14.1
Father-in-law	2	0.3	0	0.0
Mother-in-law	5	0.6	1	0.2
Child	154	19.8	72	15.9
Sibling	124	15.9	15	3.3
Other	117	15.0	104	22.9
<i>Total</i>	<i>778</i>	<i>100</i>	<i>454</i>	<i>100</i>

Calculations based on TIES 2007–2008. N = 1232 (only those where a third person was present) Austria, France, Germany, Switzerland, and the Netherlands; Belgium was excluded because this information was not included in the survey

(marital status, children, and education). Model A3 adds variables related to culture (religion, country of residence). Part B of the multivariate analyses estimates the effects of a third-person presence on attitudes towards sensitive topics (Table 4.1). We used several dependent variables and display three steps for each analysis. First, we show the brut effect of the migrant status of women and men. Second, we control for the socio-demographic control variables. Third, the variable of the third person was added to the modelling process.

The socio-demographic composition of the two groups showed significant differences consistent with the literature. We found that second-generation Turks were more likely to be married and had more children on average than the comparison group, despite having a younger age structure. These control variables were related to the opportunity structure and were significantly associated with the presence of a third party. On average, the Turkish descendants had less education and were more likely to report having had a religious upbringing (most in a Muslim faith) than natives (who were mostly Christians). (We did not include co-residence with the parents or employment status since these variables correlated with enrolment in education, marital status, and having children).

In order to test whether the presence of a third person makes a difference in the respondents' answers, we used attitudes towards sensitive topics since we believe that a bias will be greater the more sensitive the topic is. We used four attitudinal variables that are important during early adulthood and that can be regarded as sensitive both among migrants and non-migrants: two questions were related to the acceptability of pre-marital sex (for women and for men) and two were related to the acceptability of abortion (for medical and non-medical reasons). The possible answers for each question were: always acceptable, acceptable in specific cases, and not acceptable (note: these questions were not included in the TIES questionnaire in Belgium). We built four dichotomous variables that distinguish between "always acceptable" and "acceptable in specific cases or not acceptable" (due to very small numbers of natives who did not accept abortion or pre-marital sex at all). Table 4.1 shows that levels of acceptance of both pre-marital sex and abortions were significantly lower among the Turkish descendants than among the comparison group. The percentage of non-responses was about twice as high among the second-generation residents as it was among the natives.

#### 4.4 Descriptive Findings

As the first lines in Table 4.1 indicate, the share of immigrant descendants (33%) who were interviewed in the presence of a third person was significantly ( $p < 0.001$ ) larger than the share of natives (21%) interviewed with a bystander. In the whole sample, a third party appeared more frequently when the interviewees were married, had children living in the household, had a lower level of education, and reported having a religious upbringing. The lowest share of cases in which a bystander was present was reported in Germany (12%), while the highest was in the Netherlands (36%). Regarding the attitudinal variables, we found that respondents interviewed

in the presence of a bystander were significantly less likely to say they accept premarital sex and abortion than respondents who were interviewed in private ( $p < 0.001$ ). Moreover, the presence of a bystander was associated with slightly higher percentages of non-response (about 4% vs. 7%, respectively).

Table 4.2 displays information on the type of the third person. The partner and family members made up the majority of third persons in both groups. Whereas the partner was the most frequent bystander type among the native comparison group, the partner was present in only 20% of the cases among the second-generation residents. The bystanders were more likely to have been parents (22% and 14%, respectively) or siblings (16% and 3%, respectively) among the migrants than among the natives. The share of children among the bystanders varied slightly between the groups (20% and 16%, respectively).

## 4.5 Multivariate Results

Table 4.3 presents the results of the multivariate analyses on the determinants of a third-party presence. Overall, Turkish descendants were almost twice as likely as non-migrants to have had a third person present at the interview. Since we found a difference by sex among the second generation, we worked with an interaction between the group and sex. Model A1 (controlled for age) demonstrated that Turkish-descent women were 1.3 times more likely than Turkish men to have been interviewed in the presence of a bystander. By contrast, no significant difference was found between the women and the men in the comparison group; and their chances of having had a bystander present were significantly lower than those of the Turks. Despite small reductions in the size of the coefficients, this pattern of significant differences remained when the indicators of the opportunity structure and the need for support (marital status, children, education) were added in Model A2, and when indicators of the cultural background (country of residence, religious upbringing during childhood) were added in Model A3.

The effects of the control variables were mostly in line with those found in the previous literature: The likelihood of the presence of a third person was significantly higher when the respondents were married and/or had children. It decreased with increasing education. No significant impact was found for age, which may be related to the young sample population in general, as well as to correlations with marital status and children. The effect of the country of residence was rather surprising: compared to the respondents in Germany, the respondents in all of the other survey countries were more than twice as likely to have been interviewed in a non-private setting.

Table 4.4 displays the final part of our analysis, in which we tested whether the presence of a third party had an effect on attitudes, and whether the differences in attitudes between the Turkish descendant group and the comparison group may have been related to the presence of a bystander. The estimates in the Models B1 were related to the brut effect (controlled for age only) of the groups studied and gender. In line with the literature, we found that both Turkish women and Turkish

**Table 4.3** Determinants of the presence of a third person (odds ratio)

Variable	Model A1		Model A2		Model A3	
<i>Immigrant status and sex</i>						
Turkish-descent men	1		1		1	
Turkish-descent women	1.34	***	1.24	**	1.28	**
Native men	0.62	***	0.75	**	0.74	*
Native women	0.60	***	0.68	***	0.67	**
<i>Age<sup>a</sup></i>						
18–25 years	0.96					
26–35 years	1					
<i>Marital status</i>						
Not married/divorced/mv			1		1	
Married			1.40	***	1.32	**
<i>Children in household</i>						
None			1		1	
Yes			1.71	***	1.85	***
<i>Education</i>						
Primary			1.42	*	1.19	
Lower secondary			1		1	
Apprenticeship			0.75	**	0.84	
Upper secondary			0.88		0.76	*
Tertiary			0.72	**	0.61	***
Enrolment in education			0.92		0.77	*
<i>Religion</i>						
Christian					1	
Muslim					0.99	
Jewish, other, none					1.13	
<i>Country</i>						
Austria					3.18	***
Belgium					2.08	***
France					2.13	***
Germany					1	
Switzerland					2.27	***
The Netherlands					3.19	***
<i>Pseudo R<sup>2</sup></i>	<i>0.019</i>		<i>0.042</i>		<i>0.069</i>	

Calculations based on TIES 2007–2008. N = 5870

\*p < 0.05, \*\*p < 0.051 \*\*\*p < 0.001

<sup>a</sup>Age not included in models A2 and A3 because of multicollinearity with education, marital status, and children

men were far less likely than their non-migrant counterparts to say they approve of a woman having pre-marital sex. On the question regarding the acceptability of pre-marital sex for men, the difference was somewhat smaller but still significant; in this case as well we found a gender gap in the Turkish group. On the question regarding the acceptability of abortion—for non-medical as well as for medical reasons—the differences between the Turkish and the native respondents were smaller, and there

**Table 4.4** Effect of the presence of a third person on attitudes (odds ratio)

Variable	Model B1 <sup>a</sup>		Model B2 <sup>b</sup>		Model B3 <sup>c</sup>	
<b>Acceptance of pre-marital sex among women</b>						
<i>Immigrant status and sex</i>						
Turkish-descent men	1		1		1	
Turkish-descent women	0.96		1.08		1.10	
Native men	18.37	***	5.41	***	5.37	***
Native women	27.60	***	8.34	***	8.29	***
<i>Third-person presence</i>						
Yes					0.64	***
No					1	
Pseudo R <sup>2</sup>	0.326		0.378		0.382	
N	4460		4460		4460	
<b>Acceptance of pre-marital sex among men</b>						
<i>Immigrant status and sex</i>						
Turkish-descent men	1		1		1	
Turkish-descent women	0.74	***	0.80	*	0.81	*
Native men	10.96	***	3.61	***	3.58	***
Native women	14.10	***	4.74	***	4.70	***
<i>Third-person presence</i>						
Yes					0.78	**
No					1	
Pseudo R <sup>2</sup>	0.245		0.290		0.292	
N	4457		4457		4457	
<b>Acceptance of abortion for medical reasons</b>						
<i>Immigrant status and sex</i>						
Turkish-descent men	1		1		1	
Turkish-descent women	0.98		0.97		0.98	
Native men	3.39	***	2.44	***	2.43	***
Native women	3.05	***	2.18	***	2.17	***
<i>Third-person presence</i>						
Yes					0.78	**
No					1	
Pseudo R <sup>2</sup>	0.065		0.118		0.120	
N	4454		4454		4454	
<b>Acceptance of abortion for non-medical reasons</b>						
<i>Immigrant status and sex</i>						
Turkish-descent men	1		1		1	
Turkish-descent women	0.98		0.99		1.003	
Native men	3.49	***	1.98	***	1.96	***
Native women	3.56	***	2.02	***	1.998	***
<i>Third-person presence</i>						
Yes					0.79	*
No					1	

(continued)

**Table 4.4** (continued)

Variable	Model B1 <sup>a</sup>	Model B2 <sup>b</sup>	Model B3 <sup>c</sup>
<i>Pseudo R</i> <sup>2</sup>	0.062	0.139	0.140
<i>N</i>	4456	4456	4456

Calculations based on TIES 2007–2008

Austria, France, Germany, Switzerland, and the Netherlands; Belgium was excluded because this information was not included in the survey

*N* varies between the four analyses due to differences in the numbers of missing values in the outcome variables

\**p* < 0.05, \*\**p* < 0.051 \*\*\**p* < 0.001

<sup>a</sup>Models B1 controlled for age

<sup>b</sup>Models B2 controlled for marital status, children, and education

<sup>c</sup>Models B3 controlled additionally for religion and country of residence

were no significant gender differences within the respective groups. These differences between the Turks and the natives decreased considerably for each of the four attitudes when we controlled for the socio-demographic variables, mainly due to the insertion of education (Models B2).

Finally, we added the dummy for the third person in the Models B3 (as well as religiosity and country of residence). Controlling for the bystander variable did not do much to explain the differences between the second-generation Turks and members of the comparison group in their attitudes, whereas the presence of the third person had a significant impact as such: respondents were significantly less likely to say they consider pre-marital sex and abortion to be acceptable when a bystander was present in the interview than when they were in anonymous settings. The control variables of age and having children were found to have no effect both among Turkish descendants and natives. Married respondents and religious respondents (either Muslim or Christian) were less likely to say they accept pre-marital sex and abortion than unmarried respondents and non-religious respondents. The degree of acceptance increased with the education of the respondent (Strickler and Danigelis 2002; Jelen and Wilcox 2003). When we looked at the country of residence, we found that the respondents in all other countries were significantly more likely to say they accept abortion than they were in Germany.

## 4.6 Conclusion

This paper studied the presence of a third person in face-to-face interviews with Turkish descendants and a non-migrant comparison group. We used data from the TIES project, which was carried out in six western European countries. As previous studies on the presence of a third party in interviews had included relatively few immigrants, we began our investigation by describing and comparing the patterns and the determinants of a third-party presence among immigrant descendants and non-migrants. We found that a bystander was present in the interviews of about one-third of the migrant descendants in our sample and about one-fifth of the natives. These shares are in the lower range of those given by Zipp and Toth (2002):

they reported shares ranging from 37 to 57% for studies conducted in the United States, Great Britain, and Germany. Nevertheless, our results suggest that immigrants are more likely to be influenced by the presence of a third party in an interview, and that the risk of bias in these cases is higher than it is for non-migrants.

This finding supports our first working hypothesis. We had assumed that migrant descendants would be more subject to non-private interview settings than natives due to differences in their opportunity structures (Reuband 1992; Hartmann 1994). In order to test this hypothesis, we controlled for household characteristics as well as individual variables. Including these variables led to a slight decrease in the differences between the groups in the presence of a third party, but they remained significant. This indicates that differences in the socio-demographic compositions of the groups explain some of the differences in the interview settings. The most important factors were marital status and the number of children. However, these control variables could not fully explain the increased likelihood among immigrants of the presence of a third party.

The following question therefore arises: Why did we find more immigrants interviewed in non-private settings for reasons not related to opportunity? While Allerbeck and Hoag (1981) argued that language proficiency may play a role, we do not think that this applies to our sample, since all of the Turkish descendants were born in the survey countries (this was the sampling criteria) and attended school there. Hartmann (1994) and Lander (2000) brought up the jealousy hypothesis, which may of course apply to individuals regardless of their migration history. The jealousy hypothesis was put forward mainly in order explain the higher percentages of bystanders in interviews with women than with men. We indeed found such a gender effect, but only among Turkish descendants. In the comparison group, the odds of a bystander being present were not significantly different between women and men. We should note, however, that the type of bystander also varied between the groups: whereas the third person in the interviews with the natives was most likely to have been the partner, which would support the jealousy hypothesis; the third person among the Turks was most likely to have been a parent or a sibling. This difference may be related to the young age structure of the second generation in our sample, with some of these respondents still living with their parents. Instead of being viewed as evidence of jealousy, the presence of a third party among the migrant respondents may instead be seen as an indicator of the high level of social cohesion and the relatively strong intergenerational ties within Turkish families.

In addition to opportunity structure, support, and social control, we suggest another explanation for the more frequent presence of third parties in interviews with migrant descendants. The literature shows that, compared to members of other minority groups, members of the Turkish migrant community are more subject to discrimination in various areas, such as education, the labor market, and the practice of religion, in all of the western European countries where they reside (Crul and Vermeulen 2003; Foner and Alba 2008; Safi 2010). This may be related to a high correlation between people of Turkish origin and the Muslim faith, which is a minority religion in Western Europe. Especially immediately after the attacks of 9/11, Muslims faced hostility throughout Europe. In the following years, immigrant



minorities in general and Muslim groups in particular were increasingly targeted by scientific surveys, but also became the subject of popular as well as scientific studies. As the media reported the results of such studies rather selectively, focusing on the negative aspects, immigrants from Turkey (amongst others) were stigmatized. Negative public opinion and prejudices towards immigrants further intensified after incidents such as the murder of Theo van Gogh in the Netherlands in 2004, the riots in the suburbs of Paris in 2005, and the cartoon crisis in Denmark in 2005/06 (Kühle 2013). In Germany, several researchers were interested in investigating the “criminal potential” of immigrants (Pfeiffer et al. 2005; Baier et al. 2006), as well as the “otherness” or even the “backwardness” of Muslims (Brettfeld and Wetzels 2007). In light of these developments (at the time when the TIES survey was carried out, i.e., in 2007 and 2008), it may well be the case that Turkish descendants may be skeptical towards social science investigations and data collections, and therefore may prefer not to be interviewed alone.

Interestingly, we found variation by country of residence, with respondents in Germany being the least likely to have had a bystander at the interview. At this point we can only speculate about the reasons for these differences. The size and the duration of stay of the Turkish minority community in Germany, country-specific perceptions of large-scale scientific surveys, or the perceived level of discrimination may partly explain these patterns.

Knowing the patterns and the determinants of a third-party presence is only one part of the picture, however. The second question—and perhaps the more important one—is whether the presence of a bystander biases the results of a study. Theoretical considerations and the results of international studies have suggested that answers given in anonymity differ from those given in the presence of a third person. Moreover, many studies on several aspects of integration of international migrants and their descendants have shown that differences in values and norms persist between Turkish migrants and non-migrants living in the same country. Therefore, we tested our second hypothesis that the presence of a third person has an effect on the answers given to sensitive questions in general (Barnett 1998; Tourangeau and Yan 2007), and that the presence of a bystander may mediate the differences in the answers given by immigrant descendants and natives. In order to test this hypothesis, we used the questions on the acceptability of pre-marital sex and of abortion. On one hand, our results supported the hypothesis of a bystander effect since the answers given in the presence of a third person deviated from those given in private interview settings. On the other hand, the differences between the answers given by the migrant descendants and the non-migrants could not be explained by the presence of a third party. If bystanders bias the answers, then they do so in the same way for both groups. We also found, however, that the presence of a bystander influenced not only the answer categories, but also the frequency of non-responses, which was higher when a third party was present (Hartmann 1996).

In sum, the findings of our study indicate that the presence of a third person in an interview is more likely in migrant minorities even if they grew up in the country of destination and should face less language comprehension problems than the first immigrant generation. The presence of a bystander may have effects on responses

and can bias survey results. The logical implication of these findings is that survey organizers should seek to prevent non-private interview settings by, for example, placing special emphasis on this subject in interviewer training sessions. Addressing this issue is especially important when migrant populations are being targeted in face-to-face interviews.

**Acknowledgements** This research was supported by the first author's European Reintegration Grant provided through Marie Curie Actions (FP7 People, PERG-GA-2009-249266 – MigFam), and was funded by the European Commission. The views expressed in this paper do not reflect the views of the funding agencies. The publication benefited from the support of the Swiss National Centre of Competence in Research LIVES–Overcoming Vulnerability: Life Course Perspectives, which is financed by the Swiss National Science Foundation (Grant number: 51NF40-160590).

## References

- Allerbeck, K., & Hoag, W. (1981). Interviewer- und Situationseffekte in Umfragen. Eine log-lineare analyse. *Zeitschrift für Soziologie*, *10*(4), 413–426.
- Anderson, B. A., & Silver, B. D. (1987). The validity of survey responses. Insights from interviews of married couples in a survey of Soviet emigrants. *Social Forces*, *66*(2), 537–554.
- Aquilino, W. S. (1993). Effects of spouse presence during the interview on survey responses concerning marriage. *Public Opinion Quarterly*, *57*, 358–376.
- Aquilino, W. S., Wright, D. L., & Supple, A. J. (2000). Response effects due to bystander presence in CASI and paper-and-pencil surveys of drug use and alcohol use. *Substance Use & Misuse*, *35*(6-8), 845–867.
- Baier, D., Pfeiffer, C., & Windzio, M. (2006). Jugendliche mit Migrationshintergrund als Opfer und Täter. In W. Heitmeyer & M. Schrötte (Eds.), *Gewalt. Beschreibungen, Analysen, Prävention* (pp. 240–268). Bundeszentrale für politische Bildung: Bonn.
- Barnett, J. (1998). Sensitive questions and response effects. An evaluation. *Journal of Managerial Psychology*, *13*(1-2), 63–76.
- Boeije, H. R. (2004). And then there were three. Self-presentation styles and the presence of the partner as a third person in the interview. *Field Methods*, *16*(1), 3–22.
- Brettfeld, K., & Wetzels, P. (2007). Muslime in Deutschland. In *Integration, Integrationsbarrieren, Religion sowie Einstellungen zu Demokratie, Rechtsstaat und politisch-religiös motivierter Gewalt –Ergebnisse von Befragungen im Rahmen einer multizentrischen Studie in städtischen Lebensräumen*. Hamburg: Bundesministerium des Inneren.
- Casterline, J., & Chidambaram, V. C. (1984). The presence of others during the interview and the reporting of contraceptive knowledge and use. In J. A. Ross & R. McNamara (Eds.), *Survey analysis for the guidance of family planning programs* (pp. 267–298). Liege: Ordinan Edisions.
- Crul, M., & Vermeulen, H. (2003). The second generation in Europe. *International Migration Review*, *37*(4), 965–986.
- Crul, M., Schneider, J., & Lelie, F. (Eds.). (2012). *The European second generation compared. Does the integration context matter?* Amsterdam: Amsterdam University Press.
- de Valk, H. A., & Milewski, N. (2011). Family life transitions among children of immigrants: An introduction. *Advances in Life Course Research*, *16*, 145–151. doi:dx.doi.org/10.1016/j.alcr.2011.10.001.
- DeMaris, A. (1995). A tutorial in logistic regression. *Journal of Marriage and Family*, *57*(4), 956–968.
- Diehl, C., König, M., & Ruckdeschel, K. (2009). Religiosity and gender equality. Comparing natives and Muslim migrants in Germany. *Ethnic and Racial Studies*, *32*(2), 278–301.

- Esser, H. (1986). Können Befragte lügen? Zum Konzept des „wahren Wertes“ im Rahmen der handlungstheoretischen Erklärung von Situationseinflüssen bei der Befragung. *Kölner Zeitschrift für Soziologie und Sozialpsychologie*, 38, 314–336.
- Eurostat. (2011). Migrants in Europe. In *A statistical portrait of the first and second generation*. Luxembourg: Publications Office of the European Union.
- Fincke, G. (2009). *Abgehängt, chancenlos, unwillig? Eine empirische Reorientierung von Integrations-theorien zu MigrantInnen der zweiten Generation in Deutschland*. Wiesbaden: VS Verlag für Sozialwissenschaften.
- Foner, N., & Alba, R. (2008). Immigrant religion in the U.S. and Western Europe. Bridge or barrier to inclusion? *International Migration Review*, 42(2), 360–392.
- Goffman, E. (1959). *The presentation of self in everyday life*. New York: Doubleday.
- Groenewold, G., & Lessard-Phillips, L. (2012). Research methodology. In M. Crul, J. Schneider, & F. Lelie (Eds.), *The European second generation compared. Does the integration context matter?* (pp. 39–56). Amsterdam: Amsterdam University Press.
- Hamel, C., Huschek, D., Milewski, N., & de Valk, H. (2012). Union formation and partner choice. In M. Crul, J. Schneider, & F. Lelie (Eds.), *The European second generation compared. Does the integration context matter?* (pp. 225–284). Amsterdam: Amsterdam University Press.
- Hartmann, P. (1991). Befragungen in Anwesenheit des Partners. *ZA-Information*, 29, 44–60.
- Hartmann, P. (1994). Interviewing when the spouse is present. *International Journal of Public Opinion Research*, 6(3), 298–306.
- Hartmann, P. (1995). Response behavior in interview settings of limited privacy. *International Journal of Public Opinion Research*, 7(4), 383–390.
- Hartmann, P. (1996). Evasive responding in interview settings of limited privacy. In F. Anuska & A. Kramberger (Eds.), *Developments in data analysis* (pp. 153–165). Ljubljana: University of Ljubljana.
- Huschek, D., de Valk, H. A., & Liefbroer, A. C. (2011). Gender-role behavior of second-generation Turks in Western Europe: The role of partner choice, gender ideology and societal context. *Advances in Life Course Research*, 16(4), 164–177.
- Idema, H., & Phalet, K. (2007). Transmission of gender-role values in Turkish-German migrant families. The role of gender, intergenerational and intercultural relations. *Journal of Family Research/Zeitschrift für Familienforschung*, 19(1), 71–105.
- Inglehart, R. (1997). *Modernization and postmodernization: Cultural, economic, and political change in 43 societies*. Princeton: Princeton University Press.
- Jelen, T. G., & Wilcox, C. (2003). Causes and consequences of public attitudes toward abortion: A review and research agenda. *Political Research Quarterly*, 56(4), 489–500.
- Kühle, L. (2013). “We are in this together”: How the cartoon crisis changed relations between the Danish state and Muslim Danes. In S. M. Behloul, S. Leuenberger, & A. Tunger-Zanetti (Eds.), *Debating Islam. Negotiating religion, Europe, and the self* (pp. 243–262). Bielefeld: Transcript.
- Lander, B. (2000). Anwesenheitseffekte im Wandel. Eine Sekundäranalyse zur Anwesenheit des Partners im Interview anhand des ALLBUS 1980 bis 1998. *Zeitschrift für Soziologie*, 3(29), 227–239.
- Larose, D. T. (2006). *Data mining methods and models*. Hoboken: Wiley.
- Lee, R. M. (1993). *Doing research on sensitive topics*. London: Sage Publications.
- Maliepaard, M., Lubbers, M., & Gijsberts, M. (2010). Generational differences in ethnic and religious attachment and their interrelation. A study among Muslim minorities in the Netherlands. *Ethnic and Racial Studies*, 33(3), 451–472.
- Milewski, N. (2011). Transition to a first birth among Turkish second-generation migrants in Western Europe. *Advances in Life Course Research*, 16, 178–189. doi:10.1016/j.alcr.2011.09.002.
- Milewski, N., & Hamel, C. (2010). Union formation and partner choice in a transnational context: The case of descendants of Turkish immigrants in France. *International Migration Review*, 44, 615–658. doi:10.1111/j.1747-7379.2010.00820.x.

- Mohr, H.-M. (1986). Dritte beim Interview. Ergebnisse zu Indikatoren aus dem Bereich Ehe und Partnerschaft mit Daten des Wohlfahrtssurvey 1984. *ZA-Informationen*, 19, 52–71.
- Pfeiffer, C., Kleimann, M., Schott, T., & Petersen, S. (2005). *Migration und Kriminalität. Ein Gutachten für den Zuwanderungsrat der Bundesregierung*. Baden Baden: Nomos.
- Pollner, M., & Adams, R. E. (1997). The effect of spouse presence on appraisals of emotional support and household strains. *Public Opinion Quarterly*, 61, 615–626.
- Reher, D. (1998). Family ties in Western Europe: Persistent contrasts. *Population and Development Review*, 24(2), 203–234.
- Reuband, K.-H. (1984). Dritte Personen im Interview. Zuhörer, Adressaten oder Katalysatoren der Kommunikation? In H. Meulemann & K.-H. Reuband (Eds.), *Soziale Realität im Interview* (pp. 117–156). Frankfurt am Main: Campus.
- Reuband, K.-H. (1987). Unerwünschte Dritte beim Interview. *Zeitschrift für Soziologie*, 4(16), 303–308.
- Reuband, K.-H. (1992). On third persons in the interview situation and their impact on responses. *International Journal of Public Opinion Research*, 4(3), 269–274.
- Safi, M. (2010). Immigrants' life satisfaction in Europe. Between assimilation and discrimination. *European Sociological Review*, 26(2), 159–176.
- Sander, M. (2009). *Migration and health. Empirical analyses based on the German Socio-Economic Panel Study (SOEP)*. Bamberg: University of Bamberg (Dissertation Thesis).
- Sauer, M., & Halm, D. (2009). *Erfolge und Defizite der Integration türkeistämmiger Einwanderer. Entwicklung der Lebenssituation 1999 bis 2008*. Wiesbaden: VS Verlag für Sozialwissenschaften.
- Silver, B., Abramson, P., & Anderson, B. A. (1986). The presence of others and overreporting of voting in American national elections. *Public Opinion*, 50(2), 228–239.
- Smith, T. W. (1997). The impact of the presence of others on a respondent's answers to questions. *International Journal of Public Opinion Research*, 9(1), 33–47.
- Söhn, J., & Özcan, V. (2006). The educational attainment of Turkish migrants in Germany. *Turkish Studies*, 7(1), 101–124.
- Strickler, J., & Danigelis, N. L. (2002). Changing frameworks in attitudes toward abortion. *Sociological Forum*, 17(2), 187–201.
- Taietz, P. (1962). Conflicting group norms and the “third” person in the interview. *American Journal of Sociology*, 68(1), 97–104.
- Tourangeau, R., & Yan, T. (2007). Sensitive questions in surveys. *Psychological Bulletin*, 133(5), 839–883.
- Zipp, J. F., & Toth, J. (2002). She said, he said, they said. The impact of spousal presence in survey research. *Public Opinion*, 2(66), 177–208.

**Open Access** This chapter is licensed under the terms of the Creative Commons Attribution 4.0 International License (<http://creativecommons.org/licenses/by/4.0/>), which permits use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license and indicate if changes were made.

The images or other third party material in this chapter are included in the chapter's Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the chapter's Creative Commons license and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder.

