What Do We Know About Grandparents?

Insights from current quantitative data and identification of future data needs

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Abstract: Against the background of a 'new wave' of empirical studies investigating various aspects of grandparenthood across a broad range of regional contexts, this article aims to take stock of what has been achieved so far and which lessons we can learn from this for the future. Our focus is on the measurement of grandparenthood and grandparenting in quantitative social surveys and the implications this has for the substantive questions we can ask and the answers, we can get out of such data. For several broader questions – who is a grandparent and when does this transition happen; what does it mean to be a grandparent; and what are the implications of grandparenthood for families? – we review previous questionnaire items from a variety of surveys as well as studies in which they were used. We identify relevant issues related to these questions which cannot be adequately addressed with currently available data, but should be considered in new or ongoing survey projects. The answers provided by recent studies as well as the many still open questions identified here indicate excellent prospects for scholarship on grandparents in the years to come.

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Introduction

Research on grandparents and grandparenthood is flourishing. The 'Web of Science' database, for example, lists some 40+ research articles with "grandparent*" in the title for each of the past several years – and this, obviously, covers only a small fraction of the published studies investigating the topic. The relevance of multigenerational family relations and the central role of grandparents therein have been recognized for many decades (e.g., Silverstein et al. 1998; Townsend 1957): only when taking a three-generational perspective will we be able to grasp the complexity of families as a multigenerational system in which grandparents constitute an important source of both intergenerational inequalities and solidarities (e.g., Hank et al. 2017; Silverstein et al. 2003). A 'new wave' of (longitudinal) ageing surveys initiated at the turn of this century has spawned a 'new wave' of empirical studies investigating various aspects of grandparenthood in unprecedented detail and across a broad range of regional contexts. Against the background of the accumulated evidence provided by this research, it seems time to take stock of what has been achieved so far and which lessons we can learn from this for the future (also see the recent review by Hayslip et al. 2017).

Whereas we acknowledge the value of *qualitative* research (e.g., Arthur et al. 2003; Chapman et al. 2016), our focus in this article is on the measurement of grandparenthood and grandparenting in *quantitative* social surveys (such as the U.S. Health and Retirement Study (HRS) and its related surveys in Europe and elsewhere[1]). Obviously, the instruments we employ determine to a large extent, which substantive questions we can ask and which answers scientists and practitioners can get out of such data. For several general questions (who is a grandparent and when does this transition happen; what does it mean to be a grandparent; and what are the implications of grandparenthood for families?), which need to be answered before one can seriously get into the investigation of more specific issues, we review previous questionnaire items from a variety of surveys as well as studies in which they were used. We

[1] It is beyond the scope of our review to cover in detail all surveys containing (some) information on grandparents and our selection of examples is, inevitably, to some extent arbitrary. Importantly, our review of substantive research in not limited to HRS-type surveys, but includes studies based on, for example, the Generations and Gender Surveys (GGS), the German Ageing Survey DEAS), or the Longitudinal Ageing Study Amsterdam (LASA).

then identify relevant issues related to these questions which cannot be adequately addressed with currently available data, but should be considered in new or ongoing survey projects.

Who *is* a grandparent?

The term 'grandparent' can simply be used to describe an individual's structural position in a multigenerational family system, where grandmothers and –fathers can be labeled as G1, their children constitute G2, and their grandchildren are G3. Within such a family system, we may distinguish biological and non-biological kin relations[2]. Data on grandparents tend to rely on one source: respondents' own report on the number of grandchildren they have. However, whereas, for example, the HRS, the English Longitudinal Study of Ageing (ELSA)[3], and the Korean Longitudinal Study of Aging (KLoSA) ask to *all* respondents (whether and) how many living grandchildren they have, the Survey of Health, Ageing and Retirement in Europe (SHARE) only asks this question to respondents who have children (either biological or not) who are still alive. The latter routing of the question excludes all together 'fictive' grandchildren. The extension of lineage through fictive kin ties which expands family beyond blood and marriage is nevertheless not an uncommon occurrence, and older people who are childless or with no children living in the vicinity tend to be more likely to have fictive kin relationships (Johnson 1999; Voorpostel 2013), and to refer to and describe fictive grandchildren as family-like members (Allen, Blieszner, and Roberto 2011; Armstrong 2011). Allowing for respondents to self-define as grandparents, and to include in the count of grandchildren also fictive grandchildren might be particularly important given falling fertility rates and the general rising proportion of childless older people among those born since the mid-1950s or 1960s (Sobotka 2017; Toassini et al. 2004).

Current and past changes in marital stability have also yielded growing interest to the step*grand*parent-step*grand*child relations (see Chapman et al. 2016 for a recent investigation).

[2] This distinction is important to empirically test, for example, social and biological (i.e. evolutionary) theories of *grandparental investment decisions* (e.g., Coall et al. 2014).

[3] Note that ELSA puts together grandchildren and/or *great*-grandchildren and there is no way to distinguish them.

Indeed, Szinovacz' (1998) analysis of the US National Survey of Families and Households indicated that close to 40% of couples with adult children had at least one stepgrandparent relationship in their family (either through their own or through their adult children's divorces and remarriages). Although the rapid increase in multigenerational stepfamilies has made this a fertile area for future research, stepgrandparent-stepgrandchild relationships are often difficult to identify in existing surveys, whose focus still tends to be on biological kin relations. First, some surveys (e.g. the Chinese Health and Retirement Longitudinal Study (CHARLS) and KLoSA) do not explicitly instruct the respondents to also account for spouse's/partner's biological, step- or adopted children (see Table 1). It therefore remains unclear, in these surveys, whether – or under which conditions – respondents consider their partner's grandchildren as their own ones (unless they both have a biological relationship to these G3 children). However, in those surveys which explicitly ask to account for spouses' or partners' grandchildren from previous relationships (see later waves of HRS and SHARE), no direct information about step-grandchildren is then asked (e.g.: "*Is this grandchild a biological or a step-grandchild?*" or "*How many of these grandchildren are not strictly biological?*"). Moreover, for respondents being identified as having a step-grandchild, it would be important to collect data on whether the grandchild is (*a*) a biological child of the respondent's stepchild or (*b*) a stepchild of the respondent's biological child.[4]

[Table 1 about here]

When does the *transition to grandparenthood* happen?

Even though recent research indicates that it is important to investigate when older people become grandparents (e.g., Leopold and Skopek 2015; Margolis 2016), most of the surveys considered in this paper do not collect data on the transition to grandparenthood. A few surveys

[4] Coall et al. (2014), for example, claim to be able to identify grandparents' (G1) and grandchildren's (G3) biological relatedness in SHARE (Wave 1) using information on whether the G1-G2 relationship is a biological one. If, however, G1-G2 are biologically related and G2-G3 have a steprelation, there is *no* biological relation between G1 and G3. The authors acknowledge this as a limitation, but it nonetheless remains a major shortcoming of their analysis (and the data they use).

(see SHARE, for instance) collect information about the year of birth of the youngest grandchild, as this piece of information is likely to affect the provision of grandparental childcare (e.g., Di Gessa et al. 2016a; Hank and Buber 2009). However, the inclusion of data on the age of the oldest grandchild would be equally invaluable to estimate the average or median age of the onset of grandparenthood. The timing and duration of grandparenthood might occur in conjunction with other demands, roles and life events and transitions (such as parenthood, marital disruptions, labor force participation, and other caring responsibilities to name some) (Hagestad 1988; Szinovacz 1998). The age at which older people become grandparents might also affect both the experience of grandparenthood itself and the grandparent-grandchild relationship. For instance, both qualitative and quantitative studies have shown that 'off-time' grandparents were less content with their role and felt less close to their grandchildren (Burton 1996; Dench and Ogg 2002).

A postponement in the transition to grandparenthood has been observed in countries that have experienced a consistent delay in fertility (Leopold and Skopek 2015; Margolis 2016), which is also associated with having fewer grandchildren. This may have important consequences on how grandparents relate to their grandchildren, with more exclusive relations to them compared to the past. Moreover, changes in timing might have differential effects on grandchild care provision: grandparents may be already out of the labor force and therefore have more time to care for and spend with their grandchildren, although they might also be more likely to be at risk of experiencing important health limitations (e.g., Margolis and Wright 2017). A question like "*How old is your oldest grandchild?*" could address some of these issues.

What does it *mean* (not) to be a grandparent?

Next to ascertaining an individual's grandparent status as well as collecting basic demographic information about the grandchildren (as structural characteristics), it might also be important to assess subjective aspects of grandparenthood, such as grandparent identity and the meaning attached to being a grandfather or –mother (e.g., Hayslip et al. 2003; Reitzes and Mutran 2004b) as well as individuals' self-evaluation of the grandparental role (e.g., Mahne and Motel-

Klingebiel 2012; Reitzes and Mutran 2004a)[5]. However, the majority of the surveys considered in this paper either do not assess individuals' perception of their own role as grandparents at all, or they merely collect information on normative beliefs and attitudes about grandparenting. For instance, SHARE respondents were asked to which degree they agreed with the following statements: "*Grandparents duty is to (1) be there for grandchildren in cases of difficulty (such as divorce of parents or illness); (2) to contribute toward the economic security of grandchildren and their families; (3) to help grandchildren's parents in looking after young grandchildren*".

Although it is acknowledged that multipurpose surveys are heavily restricted in the number of questionnaire items they can employ to measure one particular construct – like, for instance, 'grandparent role centrality' – examples of single-item measures do exist. The 2008 German Ageing Survey (DEAS), for instance, asked "*On the whole, how important is your role as a grandparent to you?*" (note that respondents who were not (yet) grandparents at the time of the interview were asked, how important it is for them to become a grandparent in the future). The meaning and the role of grandparenthood may be shaped by several factors including lineage, sex, age, and distance (Burton 1996; Dench and Ogg 2002; Somary and Strieker 1998) and it would be important to collect data about people's experiences and expectations regarding grandparenthood in order to avoid the assumption that all grandparents would relate to this role in a similar way. Also, particularly given the current changes in fertility and childlessness, it is desirable to collect data on the importance older people place on this (hypothetical) transition, and to assess whether –and to what extent –they might feel and experience the stigma, social pressure, or frustration of grandchildlessness (Wirtberg et al. 2007).

The grandparent role may be enacted in very different ways (e.g., Silverstein and Marenco 2001). Recent studies have particularly focused on grandmothers and –fathers as providers of *childcare* (see, for example, Di Gessa et al. 2016*a* for Europe; Ko and Hank 2014 for East Asia; Luo et al. 2012 for the United States)[6]. Grandparents may even become their grandchildren's

[5] Conversely, one might ask, what the significance of being a grand*child* is, and how this role is perceived by grandchildren and grandparents (e.g., Even-Zohar & Sharlin 2009).

[6] See Fruhauf et al. (2006) for a study of grand*children* caring for their grand*parents*.

primary caregiver (Hayslip et al. 2017). In some countries, especially the United States, custodial care is a relatively widespread – and well-investigated – phenomenon in socio-economically disadvantaged families (see Pilkauskas and Dunifon 2016 for a recent study of such 'grandfamilies' as well as the review by Moon et al. 2016), whereas this barely is a relevant issue in European welfare states. All surveys ask questions about the provision of care, although the temporal timeframes (in the last week or year, as well as references to the 'average' day, week, month, or year), the wording ('take care' or 'look after') and the circumstances (explicitly 'without the presence of parents' or not) are different in each study (see Table 2 for further details).

[Table 2 about here]

These questions raise three main issues: they do not allow to understand why some grandparents are (or are *not*) looking after their grandchildren; they do not provide information on the periodicity of care; and the activities grandparents do with their grandchildren as well as on the quality of the relationship. Understanding the reasons for the (non-)involvement of grandparents is important as this may relate to both demographic and logistic reasons, as well as to cultural norms, family expectations, and the availability, costs, or quality of services. Moreover, characteristics of the parents determining the need for grandparents as providers of childcare (e.g., Hank and Buber 2009) as well as information about the quality of the intergenerational relationship between parents and grandparents are important to consider. Generally, no information about the reasons, why grandparents do *not* provide childcare, is available. Is it because parents' prefer formal over family care (where grandparents might 'compensate' the lack of childcare provided by themselves through provision of financial support)? Is it due to grandparents' unwillingness or inability to get involved (e.g. due to health limitations or geographic distance)? Or does 'competition' between grandparents matter? Given increasing divorce rates and life expectancy, a grandchild might indeed experience substantially more adults in the grandparent role than just their biological grandparents. However, although at least two 'sets' of grandparents might be involved in grandchild care, most studies have focused on the viewpoint of only one 'set' of grandparents. It is possible that parents (i.e. G2)

are more likely to approach or 'select' the other (maternal) grandparents (with more financial resources, more time, and better health) to provide grandchild care. Additionally, different sets of grandparents may be asked to help with different tasks: those living in close proximity may be more involved in everyday chores, while those living far away may be more involved during school holidays. A younger set of grandparents may be asked to perform more physically engaging activities (e.g. driving grandchildren to sport training), while others may supervise them when doing their homework. At the same time, we do not know how involved grandparents are in the decision to look after grandchildren, and why they do so. Grandparents are generally not asked whether they volunteered (because they enjoyed it) or felt obliged to look after grandchildren (because there was no alternative).

What is also lacking in all of these surveys – and has only recently been included in ELSA's forthcoming Wave 8 – is information on the *periodicity of care*, that is, whether childcare has mainly been provided during weekdays or weekends, or during particular times of the year (e.g. school term / holidays). When, not just how often on 'average', grandparents provide childcare is, however, important information if one aims to understand to what extent grandparents' involvement is associated with parents' employment behaviors, as well as with availability of formal childcare.

Surveys collecting data on how individuals spend their time might be employed to obtain such information on the timing of grandparents' childcare provision and, importantly, to learn more about the 'composition' of grandparents' childcare time (e.g., Craig and Jenkins 2016) or, more generally, the *activities* they do when spending time with grandchildren (e.g., Hebblethwaite and Norris 2011). Grandparents most likely have *contacts* with grandchildren beyond occasions they actually care for them (they might, for example, just exchange emails or SMS; see Quadrello et al. 2005). However, still little is known about what grandparents actually do when they provide care. Although it is assumed that different styles of grandparenting exist, ranging from the 'fun seeker' to the 'storyteller' (Gauthier 2002; Neugarten and Weinstein 1964), and it is known that grandfathers and grandmothers perform care differently and may have different expectations of involvement (Stelle et al. 2010), none of the surveys has so far collected any information on activities. Only recently, ELSA (Wave 8) has included a battery of activities covering overnight stays, looking after ill grandchildren, playing with them or

participating in leisure activities, preparing meals, helping with homework, as well as accompanying them to/from nursery, play-group or school. Although it is acknowledged that these categories do not fully capture the complexity of the interactions and activities that grandparents and grandchildren do, they at least attempt to provide a description of how grandparents spend time with their grandchildren. Ideally, however, one should also know the quality of the relationship that grandparents have with their grandchildren given that this might affect their likelihood to look after them, as well as the activities they do with them (e.g., Huo et al. 2017; Silverstein and Marenco 2001).

What are the *implications* of grandparenthood and grandparenting?

Implications for grandparents' health

Several studies have investigated, both cross-sectionally and longitudinally, the relationship between grandparental childcare and health in different societal contexts (ranging from Chile to the U.S., Europe, and China). These studies have yielded inconclusive results, depending on the health measure considered, the intensity level and hours of care provided, and the regional context. Some have found a positive relationship between grandparents' childcare and depressive symptoms, worse self-rated health as well as physical health problems (Blustein, Chan, and Guanais 2004; Lee et al. 2003; Minkler et al. 1997), particularly among grandparents with primary care responsibilities or who coreside with grandchildren and provide high levels of childcare (Chen and Liu 2012; Minkler and Fuller-Thomson 2005; Minkler et al. 1997). Other studies, however, have found beneficial effects (including better self-rated health, lower levels of loneliness, fewer depressive symptoms and better cognition) or no major widespread health effects once previous characteristics (and prior health status in particular) are taken into account (Arpino and Bordone 2014; Ates 2017; Chen and Liu 2012; Chen et al. 2014; Di Gessa et al. 2016b; 2016c; Hughes et al. 2007; Mahne and Huxhold 2015; Tsai, Motamed, and Rougemont 2013).

Better information on the styles of grandparenting, the activities grandparents do with their grandchildren, as well as the reasons why grandparents look after them might help better disentangle the relationship between grandchild care provision and health, and explain some of

the observed inconsistencies observed in the literature. Analyzing SHARE data, Muller and Litwin (2011), for example, did not find empirical support for the hypothesis that greater grandparent role centrality increases psychological well-being. Using the same data source, Arpino and Bordone (2014) showed that looking after a grandchild had a positive effect on verbal fluency of grandparents in Europe, whereas no statistically significant effects were found for numeracy and recall. Knowing what grandparents do when they are with their grandchildren could help better explain both the mechanism (and specific activities) through which provision of childcare may be beneficial for cognitive functioning, and the different results found for different cognitive tests. A similar argument applies also when other measurements of health and well-being are considered, or when gender differences in the health effect of grandparenting are observed, as playing with grandchildren or taking them to/from school, for instance, may have different or more nuanced effects on grandmothers' and grandfathers' health.

Depending on the context studied, coresiding with grandchildren has either been assumed unanticipated and involuntary because of disruptive circumstances (such as the consequence of serious problems experienced by parents) or a manifestation of family cohesion and a normative way of life. However, asking grandparents how involved they are in the decision to live with their grandchildren, and whether they chose to or had to, would provide valuable information which is likely to affect the perception of grandchild provision as more or less rewarding and beneficial for health. Similarly, when different levels of intensity of care are considered, one could argue that looking after intensively for grandchildren might be more or less detrimental for health depending not only on whether such commitment was imposed on grandparents or it was chosen by them, but also on roles, expectations, desires as well as activities.

Implications for grandparents' and parents' productive activities

The provision of grandchild care has been considered an important factor in shaping both grandparents' labor force participation (e.g., Ho 2015; Lumsdaine and Vermeer 2015) and engagement in social activities (e.g., Arpino and Bordone 2017), as well as the middle-generation's (and mothers' in particular) participation in the labor market (e.g., Aassve et al.

2012*a*; Arpino et al. 2014)[7]. Several studies have suggested that grandparents looking after grandchildren might be themselves less likely to be in paid work as well to participate in educational or voluntary activities, particularly when high levels of childcare were provided. At the same time, it has been argued that the provision of regular grandchild care may facilitate labor force participation among the middle generation (and daughters/mothers in particular).

Most of these studies, however, lack information on what grandparents actually do when they look after grandchildren and what the specific schedule (including periodicity) of and motivation for joint activities is. Surveys collecting data on how individuals spend their time might be used to fill in this gap. Knowing the activities done with grandchildren might help understand why the relationship between regular provision of grandchild care and grandparents' participation in other social activities is more likely to be competitive among men than women, for instance (Arpino and Bordone 2017). Similarly, when trying to understand the extent to which grandparenting is associated with parents' employment, it is usually hypothesized that grandparents would provide some kind of 'regular' care to help mothers (and fathers) go to work. However, knowing directly from the grandparents the main reasons for their involvement within the family could strengthen some of these findings as grandparents could look after grandchildren regularly for a number of other reasons, including because the family has a preference for grandparental rather than institutional childcare; because formal childcare is deemed too expensive; or because they want to give their grandchildren (or their parents) a break in times of family conflicts or union disruptions. Similarly, if the aforementioned information on periodicity of childcare were available, one could better ascertain the extent to which grandparents help mothers go back to work, as well as whether grandparents' involvement in childcare is an adaptation to or has been planned jointly with mothers' work configuration, shedding light on both the interconnectedness of family relationships and the complex nature of household and family economy.

[7] Another strand of literature, which we do not discuss here in greater detail, investigates the role of grandparents in the middle-generation's fertility (e.g., Aassve et al. 2012*b*; Thomése & Liefbroer 2013).

Implications for grandchildren

Grandparents may interact with grandchildren in different ways, thereby affecting a variety of grandchildren's outcomes[8]. Previous research investigating this relationship has primarily focused on educational outcomes and grandchildren's well-being. Whereas the older generation in the family may provide a broad range of resources (economic, cultural, and social) supporting the younger generation's *educational attainment*, there is only mixed evidence for a direct effect of grandparents' resources and involvement on grandchildren's school performance. Findings from such diverse settings as Denmark (Møllegaard and Jæger 2015) and rural China (Zeng and Xie 2014) suggest that grandparents' education (or, more generally, cultural capital) may affect grandchildren's educational attainment. In the Chinese case, this association was only found in coresident grandparent-grandchild dyads, though, suggesting psychosocial pathways. Møllegaard and Jæger (2015) also considered grandparents' economic and social capital, but did not find any significant effects here, arguing that these resources are unlikely to matter in a Scandinavian welfare state context. However, in another recent study from the Netherlands, Bol and Kalmijn (2016) do not find any evidence for a direct effect of grandparents' education, occupational status, or cultural resources on grandchildren's schooling. This null finding turned out to be independent of the strength of intergenerational involvement in the family. More theoretical and empirical work seems necessary to better understand why grandparental effects on children's educational outcomes are not more consistently observed (even though they might be plausibly expected) and to which extent the relationship might be specific to particular family constellations (e.g. intact vs. non-intact families) or welfare state contexts (e.g., Deindl and Tieben 2017).

A somewhat clearer picture emerges when looking at studies investigating the role of grandparents in grandchildren's *psychological well-being*. Both Ruiz and Silverstein (2007) as well as Moorman and Stokes (2016) found that greater cohesion with grandparents reduced depressive symptoms in adolescent/adult grandchildren. Previous research provided no

[8] Note that *birth cohort studies*, such as the Millennium Cohort Study in the UK, are particularly well suited to investigate the implications of grandparenting for grandchildren (e.g., Del Boca et al. 2017), but that these studies may also provide important information on the grandparents themselves (see Hansen and Joshi 2007).

indication, however, of a grandparent effect on grandchildren's self-esteem (Ruiz and Silverstein 2007) or risky health behaviors (Dunifon and Bajracharya 2012).

To further advance our knowledge about grandparents' role in shaping important aspects of grandchildren's lives, it seems insufficient to merely consider structural characteristics of grandparents (namely their endowment with a variety of resources or 'capitals'). Rather, we need to know more about (a) the potentially complex living arrangements and interactions within the three-generational family system (including, for example, the quality of the relationship between the grandparent and parent generation) and – as we have already argued above – (b) how grandparents and grandchildren actually interact and spend time with each other.

Perspectives for future research on grandparents

Since the beginning of this century, there has been an impressive increase in the quantity and quality of studies on grandparenthood and grandparenting, contributing significantly to our knowledge of grandparents and their interaction with (grand-)children around the world. Good science, however, tends to ask as many new substantive questions as it answers old ones. However, any advancement of empirical research on grandparenthood and grandparenting also depends on the availability of adequately designed data. Whereas the potentials of surveys that have already been collected are not yet fully exploited, it is certainly not too early to also think ahead in terms of both substantive and design issues.

Substantive issues. It is beyond the scope of this article to even start properly discussing all the promising avenues that researchers might take in the future. There are some general themes, however, which we would like to mention here, because they seem particularly relevant and exciting. *First*, grandparenting and grandparenthood need to be analyzed taking a *gender perspective*. Whereas this is generally acknowledged, much previous work on grand*parents* actually focused on grand*mothers*. Little is known, for example, about how grandmothers and –fathers share tasks when supporting their grandchildren. The growing interest in grand*fathers* (see, for example, Buchanan and Rotkirch 2016) is therefore more than welcome. Moreover, it is important to consider gender configurations in the younger generations (e.g., Barnett et al.

2010; Dubas 2001; Tanskanen et al. 2011), because the complexity of *multigenerational* gender issues in grandparenting can otherwise not be appropriately accounted for.

Second, beyond considering the grandparent role in intergenerational family relations (Silverstein et al. 1998), the continuous increase in life-expectancy should increasingly direct our attention to *great*-grandparents. The yet small body of research explicitly looking at great-grandparents primarily focused on their psychological well-being or quality of life (Drew and Silverstein 2004; Even-Zohar and Garby 2016). Not much is known so far about the role that great-grandparents play in the lives of the younger generations in the family (see Roberto and Skoglund,1996, for a small-scale study based on a convenience sample or Knigge's, 2016, recent investigation of great-grandfathers' role in younger generation men's status attainment). Clearly, more research is needed in this arena.

A *third*, and final, issue concerns the absence of the grandparent role for current and future generations of older people (e.g., Uhlenberg 2004: 84). Grandchildlessness may result from one's own or children's (voluntary or involuntary) childlessness (Margolis 2016). Involuntary (grand-)childlessness in particular may generate shocks, both earlier in the life-course and later, when peers are involved in relationships with grandchildren. Older people may substitute the lack of biological grandparenting roles by other elective relations (e.g. with nieces and nephews or with friends' and neighbors' children) with similar involvement (both in terms of time and emotional attachment). Surveys should thus include questions that allow for a better understanding of possible consequences of grandchildlessness for older people and their coping mechanisms as well as the conditions, under which the lack of biological grandchildren might be successfully substituted by alternative relations and roles.

Design issues. One way to go is asking new (or more refined) substantive questions within the framework of existing surveys (see above); another – complementary - way to go is to give grandparenthood and grandparenting adequate attention when designing new studies. We would like to mention a few issues that seem important to consider in this regard. *First*, to better understand grandparent-grandchild relations, data collection and analysis could follow a *multigenerational multi-actor design*, which would help us tackling issues such as parental (G2)

gatekeeping in the G1-G3 relationship (e.g., Barnett et al. 2010; Whitbeck et al. 1993)[9] or discordance in grandparents' and –children's reports of their relationship quality (e.g., Harwood 2001; Villar et al. 2010). Obviously, though, multi-actor data tend to suffer from relatively high non-response and potential selectivity issues (e.g., Hank et al. 2017; Kalmijn and Liefbroer 2011).

Independent of whether information about multiple members of a family is collected from a single reporter or following a multi-actor design, a decision must be made, whether each relevant family member should be asked (that is, *all* – biological and non-biological – grandparents, children, and grandchildren) or whether a *selection* should be made and, if so, according to which criteria (e.g. focusing on grandmothers and their youngest biological grandchild). Researchers will have to find a balance between, on the one hand, obtaining as detailed and complete information as possible and, on the other hand, economic considerations (related to both data *collection* and data *analysis*, which might become very costly, if the data set becomes overly complex).

Second, the greater availability of longitudinal data has advanced the identification of causal effects of grandparenting in, for example, grandparents' (G1) health (e.g., Ates 2017), parents' (G2) fertility (Aassve et al. 2012*b*), or grandchildren's (G3) psychological well-being (e.g., Moorman and Stokes 2016). Whereas this obviously continues to be a primary function of longitudinal surveys in the future, they are also important in other regards. For instance, we not only need to be able to accurately assess individuals' grandparent *status* at a certain point in time, but also the timing of the *transition* to and the *duration* of grandparenthood (e.g., Leopold and Skopek 2015; Margolis 2016). Moreover, many grandparents today will live to see their grandchildren becoming adults (see Huo et al. 2017 for a recent investigation). It therefore seems important to take a *life-course perspective*, monitoring the dynamics of grandparent-grandchild relations over longer periods of time (e.g., Geurts et al. 2012; Monserud

[9] A related strand of recent research addresses the effects of parental divorce (and children's subsequent residence arrangements) on grandchildren's contact with grandparents (see Jappens & van Bavel 2016; Westphal et al. 2015).

2010) – not at least because 'intergenerational contracts' in lengthened lives may have to be redefined (see Thomése and Cong 2015).

Third, and finally, the (initial) sample not only needs to be sufficiently large to allow maintaining a long-run panel study, but also to permit quantitative analyses of small but relevant sub-populations. Obviously, a survey's sample size depends on the available financial resources. For specific subpopulations, researchers may thus consider alternatives to costly face-to-face data collection. At least in some contexts, online surveys might offer such an option, but their representativeness obviously depends on both internet coverage and use among the older population (see, for example, Gilleard and Higgs 2008; Peacock and Künemund 2007). Such quantitative approaches to the study of specific (smaller) subpopulations could and should be complemented by qualitative designs and, especially, mixed-methods research.

If we, finally, were to draw one overarching *conclusion* from our review and reflections, it would be a very positive one, namely: the many answers provided by the plethora of recent studies as well as the many still open questions identified here indicate excellent prospects for scholarship on grandparents in the years to come. Hopefully, these research projects will not only contribute to academia, but will also have an impact on families and public policies dealing with the challenges and opportunities of grandparenthood.

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BOXES

Box 1: Questions on respondents' number of grandchildren

Survey[a]	Latest wave	Variable	Question
HRS	Wave P 2016	E046	Altogether, how many grandchildren do you (or your (late) [husband/wife/partner/spouse]) have? (Include as grandchildren any children of your (or your (late) [husband/wife/partner/spouse]'s) biological, step- or adopted children.)
CHARLS	Wave 2 2013	CB065-6-7-8	How many children does [childn's name] have? How many children under age 16 does [childn's name] have? How many grandchildren does [childn's name] have? How many grandchildren under age 16 does [childn's name] have? (list for all children
ELSA	Wave 7 2014/15	DIGRAN	Do you have any living grandchildren or great-grandchildren?
GGS	Wave 3 2012	243	How many grandchildren do you have?
KLoSA	Wave 4 2012	BA068	Altogether, how many living grandchildren do you have? (please include those whose parent is dead or missing)
SHARE	Wave 6 2015	ch021-2	Talking about grandchildren, how many grandchildren do you [and your][husband/wife/partner] have altogether? (include grandchildren from previous relationships) Do you [or your] [husband/ wife/ partner] have any great-grandchildren?

[a] HRS = Health and Retirement Study (U.S.); CHARLS = China Health and Retirement Longitudinal Study; ELSA = English Longitudinal Study of Ageing; GGS = Generations and Gender Survey; KLoSA = Korean Longitudinal Study of Aging; SHARE = Survey of Health, Ageing and Retirement in Europe.

Box 2: **Questions on grandparents' provision of childcare**

Survey[a]	Laest wave	Variable	Question
HRS	Wave P 2016	E060-1-3-8	Did you (or your (late) [husband/wife/partner]) spend 100 or more hours in total [since FAMILY R's LAST IW MONTH, YEAR/in the last two years] taking care of [grand or greatgrandchildren/grandchildren]? (Which of your children is the parent of those grandchildren (or great-grandchildren)?) Roughly how many hours altogether did you(, yourself,) spend? Roughly how many hours altogether did your [husband/wife/partner/spouse] spend?
CHARLS	Wave 2 2013	CF001-2-3	Did you spend any time taking care of your grandchildren or great-grandchildren last year? For which child's children or grandchildren did you provide care? (please list all the children including coresident ones) Approximately how many weeks and how many hours per week did you spend last year taking care of this child's children or grandchildren? (Interviewee's time separated from that of his/her partner)
ELSA	Wave 7 2014/15	ERCAA ERCAB ERCABNUM ERCALIVE ERCAC	Did you look after anyone in the past week? This could be your partner or other people in your household or someone in another household? (By 'look after' we mean the active provision of care). What relation is this person or people to you? How many people did you look after in the past week? [Does the person / Do any of the people] you care for live with you? How many hours in the past week did you do this?
GGS	Wave 3 2012	248-49-50	How often do you look after [name of each grandchild younger than 14]? How often do you see [name of each grandchild younger than 14]? How satisfied are you with your relationship with [name of each grandchild younger than 14]
KLoSA	Wave 4 2012	BA069 to BA080	Did you take care of any of your grandchildren under the age of 10 during the past one year? Did you take care of any of your grandchildren before he/she reached the age of 10?

			How many grandchildren did you take care of? What is the name of the grandchild you took care of? Whose child is [grandchild's name]? How long did you take care of [grandchild's name]? (unit: a year) On average how many hours per week did you care for [grandchild's name] during that period?
SHARE	Wave 6 2015	SP014-5-6	During the last twelve months, have you regularly or occasionally looked after [your grandchild/ your grandchildren] without the presence of the parents? Which of your children [is the parent of the grandchild/ are the parents of the grandchildren] you have looked after? On average, how often did you look after the child(ren) of {FLChildName[i]} in the last twelve months?

[a] HRS = Health and Retirement Study (U.S.); CHARLS = China Health and Retirement Longitudinal Study; ELSA = English Longitudinal Study of Ageing; GGS = Generations and Gender Survey; KLoSA = Korean Longitudinal Study of Aging; SHARE = Survey of Health, Ageing and Retirement in Europe.