Measures of gender role attitudes over time

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1. Theoretical framework: Measures of gender role attitudes over time

Gender role attitudes have been measured in many national and international multi-theme surveys since the early 1970s in order to observe and analyze changes over time and carry out country comparisons. In this thesis I will show how gender role attitudes are measured. I will also discuss whether they should be measured in the way they are measured and how an instrument for measuring gender role attitudes can be improved. Furthermore, I am using the measuring instruments currently available to analyze how gender role attitudes develop over time. To introduce the topic, I will first define gender role attitudes and summarize how gender role attitudes develop at the individual level. In addition, I will outline theoretical approaches that relate to how gender role attitudes develop over time and how differences in gender role attitudes arise. This serves as a basis for a discussion of the measurement of gender role attitudes. I will discuss problems associated with the measuring of gender role attitudes over time and cross-culturally. However, one focus of this thesis lies on the measurement of gender role attitudes over time and the question of how measures of gender role attitudes can be adapted to social changes in a society. Another focus is the question of how cultural contexts affect gender role attitudes over time.

1.1 A conceptualization of gender role attitudes

To understand gender role attitudes we first have to understand the concept of gender. One theoretical approach to understand the concept of gender derives from role theory. Role theory would state that humans „behave in ways that are different and predicable depending on their respective social identities and the situation“ (Biddle, 1986, p. 68). It presumes “that expectations are the major generators of roles, that expectations are learned through experience, and that persons are aware of the expectations they hold. This means that role theory presumes a thoughtful, socially aware human actor“ (Biddle, 1986, p. 69). Being a female or being a male can then be understood as one of the roles we have as individuals. Even though the social role approach has been criticized later on for not fully capturing the concept of gender and not being helpful to understand gender inequality, many theoretical approaches have relied on this theory and rather expanded the ideas behind instead of abandoning the approach altogether (B. J. Risman & Davis, 2013). Acker (1992), for example, discusses the concept of sex roles and defines gender as “the patterning of difference and domination through distinctions between women and men that is integral to many societal

processes" (p.565). She argues that "gendered institutions" are a better concept to understand gender differences. "'Gendered institutions' means that gender is present in the processes, practices, images and ideologies, and distributions of power in the various sectors of social life" (p.567). Thus, organizations are gendered and organizational practices and routine decisions sustain gender divisions (Acker, 1999, 2012). For the definition of gender role attitudes, it is important to understand that the distinction between men and women is one of the basic organizing principles in societies. Adult roles are allocated on the basis of sex (Bem, 1981). Gender can be understood as social-status factor as well as ethnicity, economic class, race or sexual orientation (Leaper & Friedman, 2007; C. L. Ridgeway & L. Smith-Lovin, 1999). Gender is associated with all levels of a society. "Gender involves cultural beliefs and distributions of resources at the macro level, patterns of behavior and organizational practices at the interactional level, and selves and identities at the individual level" (Ridgeway & Correll, 2004, p. 511) (see also Budgeon, 2014). Also Risman (B. Risman, 1998; B. J. Risman, 2009; B. J. Risman & Davis, 2013) sees gender as a structure in a society such as the economic structure, for example. This gender structure affects interactional expectations and has implications at the institutional level.

Gender roles can be defined as attitudes and behaviors which are prescribed and assigned by a society to men and women on the basis of gender (cp.Bartley, Blanton, & Gillard, 2005, p. 72 f). Gender role attitudes are then the beliefs about the appropriate social roles of men and women in society. Often the term gender ideology is used as an equivalent to gender role attitudes (Davis & Greenstein, 2009). However, gender role attitudes do not equal gender stereotypes. Gender role attitudes are prescriptive while gender stereotypes are descriptive beliefs about gender characteristics and differences (Diekman & Goodfriend, 2006; Kerr & Holden, 1996). Gender stereotypes describe the ascription of gender traits. Mostly the dimensions agency and communion are distinguished. Agency comprises traits referring to competence, instrumentality or independence. Communion refers to expressivity, warmth and concern for others. Usually traits regarding agency are ascribed to men and those regarding communion to women. A more detailed categorization distinguishes traits, role behaviors, physical characteristics and occupations. Haines, Deaux, and Lofaro (2016) do not find much change in gender stereotypes over time.

The concept of gender stereotypes is not as common in the social sciences as is the concept of gender roles. Even though the concept of gender roles is also mainly one developed from a social psychological perspective, it is also used in the social sciences. Almost every national or international survey with a representative sample and the aim to capture attitudinal and

behavioral changes within a society or across countries includes at least some measure of gender role attitudes (Davis & Greenstein, 2009). In reference to the General Social Survey (GSS) in the US, which started in the early 1970s, other social surveys were developed to observe behavior and attitudes over time. Furthermore, since the 1980s studies were developed to compare attitudes and behavior cross-culturally. Among these national and international studies is the British Social Attitudes survey (BSA), the German General Social Survey (GGSS), the International Social Survey Program (ISSP), the World Value Survey (WVS) or the European Values Study (EVS). All of them include some measure of gender role attitudes. They all have in common that they are cross-sectional studies with a broad range of topics. In my thesis, I will focus on measures of gender role attitudes in such studies and not on measures which are more common in social psychology (see Beere, 1990 for an early overview). Regarding gender role attitudes usually the distinction is made between attitudes related to the public and attitudes related to the private sphere. Attitudes are then described as being traditional or egalitarian. Traditional gender role attitudes comprise the attitude that there should be different roles for men and women in a society whereas men's roles are assigned to the public and women's roles to the private sphere. Egalitarian attitudes emphasize that there should not be a differentiation of roles in the private or public sphere based on gender. In chapter two of this thesis I develop a more detailed concept for gender role attitudes that can be used to categorize gender role attitudes and measures of gender role attitudes. Next, I will introduce theoretical approaches for the understanding of differences in gender role attitudes.

1.2 Theoretical approaches to understand differences in gender role attitudes

1.2.1 The explanation of individual differences in gender role attitudes

For the explanation of individual differences in gender role attitudes, gender schemas play a role. A schema is a cognitive structure that "organizes and guides an individual's perception" (Bem, 1981, p. 355). Schemas help to process information. Gender schema theory, hence, would propose that gender-based schematic processing partly explains individual differences in attitudes. Gender schemas are part of the individual's identity. Children learn the dominant gender schema in a society and learn which attributes are linked with their own sex. Incoming information is evaluated based on the internalized gender schema. The behavior, attitudes and characteristics of others are evaluated on the internalized gender schema in relation to their gender.

From a social role theory perspective gender differences arise from historically different societal positions of women and men. These different roles generate expectations about which characteristics are associated with these roles (Archer, 1996). One of the most important processes to explain the generation of different expectations postulated by social role theory is socialization (Archer, 1996; Eagly, 1997). Here the assumption is that in interaction with significant and generalized others gender role attitudes are formed. Also West and Zimmerman (1987) emphasize the importance of interaction for the constitution of gender in their "Doing gender" approach. For children such significant others are the parents, teachers and peers, for example. Socialization implies mainly two mechanisms. Appropriate behavior is learned as others appreciate conform behavior and penalize non-conform behavior. Furthermore, significant others serve as role models. In addition to these socialization aspects, parents may influence their children's gender role attitudes indirectly by transferring their status and providing access to cultural, social and economic resources (Cichy, Lefkowitz, & Fingerman, 2007).

Some studies provide evidence that gender role attitudes are transferred by the parents to the children (Bohannon & Blanton, 1999). Croft, Schmader, Block, and Baron (2014) show that the division of homework between parents affects their children's aspirations regarding work. Halpern and Perry-Jenkins (2016) report results which indicate that parents affect the career aspirations of their children via their behavior (e.g. the intensity of their housework or childcare) more than via their own gender role attitudes. Kulik (2002) finds evidence that parents' education and mothers' employment status affect their own and their children's attitudes. Also findings from other studies (Ex & Janssens, 1998; Fan & Marini, 2000; Farré & Vella, 2013; Hess, Ittel, & Sisler, 2014; Marks, Lam, & McHale, 2009; Moen, Erickson, & Dempster-McClain, 1997; Myers & Booth, 2002) show that gender role attitudes of parents are related with those of their children, however, effects also depend on the sex of the parent and the one of the child respectively of the children. Besides the parents a study from Salikutluk and Heyne (2017) also supports the idea that peers exert an influence on children. They show that the performance of girls in mathematics is influenced by gender role attitudes in their class. Hence, interaction is seen as an important factor for behavioral differences of men and women (Messerschmidt, 2009). It is also important for the maintenance and modification of the gender system, thus, interaction not only plays a role at the individual level but also on the societal level regarding gender norms (C. L. Ridgeway & L. Smith-Lovin, 1999). From a socialization theory perspective gender role attitudes are formed in childhood and remain rather stable in later life. It therefore offers an approach to explain

differences in the attitudes of gender roles, but does not assume that personal attitudes change over time.

Besides socialization theory, other exposure-based explanations for differences in attitudes refer to similar processes but also refer to individual change in attitudes. Here the argumentation is that attitudes are influenced by contextual influences. Women, who are exposed to feminist ideas, for example by attending higher educational institutions, adjust their attitudes toward feminist issues. Working women probably are also likely to change their attitudes through their experience of paid work (Bolzendahl & Myers, 2004). However, the relation is mutual (Corrigall & Konrad, 2007). Gender role attitudes also have an influence on the labor force participation of mothers and women in general (Andringa, Nieuwenhuis, & Van Gerven, 2015; Cunningham, 2008a, 2008b; Damaske & Frech, 2016; Fortin, 2005, 2015). Female employment should not only have an effect on women but also on the attitudes of men since they are also exposed to or married to employed women. There is also some evidence that the media has an influence on attitudes towards gender roles in so far as people who often watch television are more traditional (Yamamoto & Ran, 2014), however, the causality is unclear and the effect rather small.

Using an approach based on control models, differences in gender role attitudes can be explained by the fact that people are interested in reconciling their behavior with their self-meaning (Kroska & Elman, 2009). Interest based explanations of differences in gender role attitudes refer to the mechanism that individuals adjust their attitudes to their interests. Thus, gender equality, for example, benefits women more than men and therefore women express more gender egalitarian attitudes than men (Bolzendahl & Myers, 2004). Hence, also different living circumstances can affect gender role attitudes. These theoretical approaches would assume that gender role attitudes change over the life course. The causal direction of whether living conditions affect attitudes or attitudes affect living conditions is unclear and not easy to investigate (Berrington, 2002). Kroska and Elman (2009) find evidence that explanations based on exposure, interest and control models help to understand differences in gender role attitudes. A social constructivist perspective of gender role attitudes also focuses more on individuals embedded in social contexts. Here gender role attitudes are the results of different social and historical contexts and are not defined by one single individual. Furthermore, gender is not an individual characteristic but varies by situations. A social constructivist perspective would also assume that gender perceptions vary by race, sexual orientation, education or class (Baber & Tucker, 2006). Social constructivist perspectives would lead to a

more social-structural approach to explain differences in gender role attitudes (e.g. Betz & O'Connell, 1989).

There are many other studies which support the idea that living circumstances affect gender role attitudes and vice versa (e.g. Berrington, 2002; Brajdić-Vuković, Birkelund, & Štulhofer, 2007; Lendon & Silverstein, 2012). Kalmijn (2005) shows that in marriage attitudes towards gender roles are also influenced by the one of the partner. Kramer and Kramer (2016) report findings that egalitarian men have a higher likelihood than less egalitarian to be "stay-at-home fathers". Kaufman (2000) reports that gender role attitudes influence the likelihood of women to become mothers and men with egalitarian attitudes cohabit more often and are less likely to divorce when they get married. However, Kaufman, Bernhardt, and Goldscheider (2017) conclude that in egalitarian countries such as Sweden gender role attitudes are less affected by family transitions. Desai, Chugh, and Brief (2014) show that the kind of marriage a man has (traditional marriage with non-employed partner), has an effect on how he perceives women's employment. Vespa (2009) finds that marriage and parenthood affect gender role attitudes in dependence on the race and gender. Also gender egalitarianism in a country seems to have an effect on marriages and divorces (Pessin, 2018) and on educational expectations of adolescents (A. McDaniel, 2009). In general, different socialization experiences seem to account for differences in gender role attitudes. However, gender role attitudes seem also to change in respect with chosen living circumstances.

1.2.2 The explanation of differences between countries or over time

There are also some explanations for an aggregated change in attitudes in a society. Such a change can be the result of cohort replacement – that is a younger birth cohort replaces an older one – or of individual change (Berrington, 2002; Brewster & Padavic, 2000). Cohort replacement means that an older cohort differs systematically in childhood experiences and is exposed to different parental values, for example, than a younger cohort. If the older cohort dies, its values die with it (Brooks & Bolzendahl, 2004). Individual changes on the other hand can occur through changes in living circumstances or be influenced by period effects (Berrington, 2002). This also implies that attitudes can change throughout the life course (Brooks & Bolzendahl, 2004).Changes in a society occur if living circumstances change for a larger portion of the population or period effect have an effect on the attitudes of a larger portion of the population. Brooks and Bolzendahl (2004) also argue that the change in attitudes (of gender roles for example) also is influenced by the change of other attitudes (for example the increase in the acceptance of rights-based principles). This is what they call

ideological learning. Some theories make predictions of how societies develop over time regarding gender role attitudes. Modernization theory would assume that industrialization produces pervasive social and cultural changes which also lead to changes in gender roles (Inglehart & Baker, 2000). Differences between countries or different time points within a country would then result from different economical statuses or more broadly from differences in social structural development. Besides social structural developments, the institutional context can also influence gender role attitudes and cultural norms again can have an effect on the formulation, institutionalization and efficacy of work-family policies (Budig, Misra, & Boeckmann, 2012). Family policies probably influence gender role attitudes by signaling what is defined as appropriate behavior and by shaping the choices which are available to individuals (Jakobsson & Kotsadam, 2010). Grunow, Begall, and Buchler (2018) refer to policy feedback theory to explain the effect of family policies on gender ideologies. Here the idea is that "interests, beliefs and ideologies held by citizens…feed back into the policy-making process" (p.47). Work-family policies on the other hand may influence individual gender role attitudes through role exposure and norm setting. Policies could serve as cultural and normative reference points. Social changes are assumed to have an effect on gender role attitudes (Brajdić-Vuković et al., 2007). Hence, these approaches would assume that as institutional contexts change, gender role attitudes should also change.

However, another theoretical approach would assume that traditional values persist even though societies develop economically and politically (Inglehart & Baker, 2000). Inglehart and Baker (2000) show in their study that structural changes accompanied with modernization and the cultural background of a country affect value change in the country. As expected they find a value change related to social development but differences in values also persist due to different cultural factors (mainly the heritage regarding religion).

Several studies support the idea that gender role attitudes are affected by the context in a country (e.g. Cha & Thébaud, 2009; Dotti Sani & Quaranta, 2017; A. E. McDaniel, 2008; Sjöberg, 2004), however, the association between cultural context and gender role attitudes is probably reciprocal (Grunow et al., 2018). Budig et al. (2012) show in their study, that the relation between parental leave length as well as publicly funded childcare and earnings of mothers is affected by gender role attitudes in a country. Neilson and Stanfors (2014) discuss that family policies have an influence on the division of labor in the family. Even though they find an influence on actual behavior and do not examine the influence on attitudes, the division of labor in a family is probably also connected to gender role attitudes. Olson et al. (2007) find evidence that the economic condition in a country affects gender role attitudes.

Paxton and Kunovich (2003) show, that there is a relation between women's representation in parliaments and gender role attitudes in a country.

Many studies therefore shed light on how gender role attitudes are influenced by individual characteristics and the social context and how changes in attitudes at the individual and regional level can be explained. There are also several studies that analyze the change of gender role attitude over time or cross-culturally and help to understand what affects gender role attitudes. Most studies show that gender egalitarianism is on the rise (Berridge, Penn, & Ganjali, 2009; Bolzendahl & Myers, 2004), but not continually so since some studies also report a levelling of more egalitarian attitudes (Brewster & Padavic, 2000; Choe, Bumpass, Tsuya, & Rindfuss, 2014; Cotter, Hermsen, & Vanneman, 2011). Thijs, Te Grotenhuis, and Scheepers (2017) examine whether social changes lead to gender egalitarianism in the Netherlands. They note that cohort replacement explains above all the change in the gender roles of women and the increasing participation of women in higher education, but not the increased labor force participation explains part of this development. However, they find the change in attitudes of men much harder to explain than the change in women's attitudes. They conclude that different explanatory models are necessary to understand change in attitudes for men and women. Also other studies find that cohort replacement but also period effects have an influence on gender role attitudes (Brewster & Padavic, 2000; Choe et al., 2014; Ciabattari, 2001; Lee, Alwin, & Tufiş, 2007). Pampel (2011) argues that compositional changes of the population change attitudes of innovative, high status groups first before egalitarian attitudes spread to other groups. He shows that differences between groups within the US become smaller (see also Carter, Corra, & Carter, 2009). Pepin and Cotter (2018) show that increase in egalitarian attitudes depends on what measure you look at. Especially attitudes regarding the family are less egalitarian than attitudes towards public roles of women. They find that mothers' employment and increased education explain egalitarian gender role attitudes of the youth in America. Also Lomazzi (2017) shows for Italy that it is important what aspect of gender role attitudes is being studied. Cross-cultural studies focus on the explanation of differences between countries. I deal with these studies in detail in chapter four. However, since I focus on studies with European countries later on, I will point out that there are also studies with a wider range of countries or in other regions of the world. Alesina, Giuliano, and Nunn (2011) show a relation between gender role attitudes and whether a society traditionally practiced plough agriculture. That is, they found a long-lasting effect of the historical gender division of labor. Boehnke (2011) reports findings that individual characteristics such as educational attainment explain gender role attitudes as well as structural factors on country

level. However, she does not discuss differences between countries in detail. Qian and Sayer (2016) examine differences in gender ideology and marital satisfaction within Asia and find a relation between marital satisfaction and gender ideology for women in Taiwan and differences in gender ideology and marital satisfaction within this region (see also Tu & Liao, 2005; Yang, 2016). Also, Yu and Lee (2013) find differences in dependence on what attitude is studied with higher support for the employment of women, but less for gender equality at home. Their study shows that attitudes depend on the extent of impediments for women in a country. Thus, cross-cultural studies support the assumption that gender role attitudes are a multi-dimensional concept (see also Grunow et al., 2018; Knight & Brinton, 2017) and results depend on what is measured.

1.3 Measures of gender role attitudes

It is important to understand how gender role attitudes are formed since they have very real effects on processes related to family and family formation (Davis & Greenstein, 2009). Furthermore, gender role attitudes have an effect on various aspects in our lives. Studies report evidence, that gender role attitudes affect how we perceive working roles of others (Gaunt, 2013), how work performance of females and fair pay is evaluated (Buchanan, 2014) or how we evaluate violence against women (Flood & Pease, 2009). They also have the potential to affect hiring decisions (Rice & Barth, 2017). Gender role attitudes are also related to our well-being. Livingston and Judge (2008) show that attitudes towards gender roles are affecting the way we perceive work-family conflicts. They are also related to perceived marital quality (Amato & Booth, 1995) and psychological distress (Sweeting, Bhaskar, Benzeval, Popham, & Hunt, 2014). Gender role attitudes also help to assess how well immigrants are assimilated in a country (Röder, 2014; Röder & Mühlau, 2014; Scheible & Fleischmann, 2013; van de Vijver, 2007). There are also several studies that examine the relationship between gender role attitudes and the division of housework as one indicator for persisting gender inequality (Aassve, Fuochi, & Mencarini, 2014; Baxter, 1997; Braun, Lewin-Epstein, Stier, & Baumgärtner, 2008; Carlson & Lynch, 2013; Rosemary Crompton, Brockmann, & Lyonette, 2005; Evertsson, 2014; Schober, 2013). Thus, the concept of gender role attitudes is an important one for the understanding of several aspects related to well-being and gender inequality. Furthermore, many studies examine differences in gender role attitudes over time or cross-cultural or within a society.

However, little attention is paid so far on how gender role attitudes are measured. In my thesis, I argue that social developments not only affect gender role attitudes but should also have an effect on how we measure gender role attitudes.

The gender role attitudes of a respondent depend on different contexts. This also affects the measures with which the attitudes are measured. Besides of the context of the questionnaire in which the measure of gender role attitudes is embedded, the personal experiences of a respondent and the cultural context is essential for the answering of questions (Braun, 2003). Measures of gender role attitudes are often criticized by social scientists and respondents for having a traditional phrasing which emphasized a public role for men and a private role for women, for example. Gender egalitarianism, however, is not the reverse of traditional gender role attitudes (Braun, 2008). Therefore respondents cannot express an egalitarian view of gender roles (Behr, Braun, Kaczmirek, & Bandilla, 2012) with the traditional measures in use. An option would be to add egalitarian items as well. There are, however, restrictions in the use of gender egalitarian items and traditional items simultaneously. Results from Behr et al. (2012) indicate that the gender ideology of some respondents may not be captured then since they observe also respondents that do agree to items phrased traditional and egalitarian. Some respondents also disagree to both sorts of items. This answer pattern can be explained by the preference of respondents for individualistic solutions if it comes to gender role attitudes. The relation between traditional and egalitarian measures needs more attention and further studies are necessary to examine contradicting answering patterns.

In general, existing measures in social surveys are criticized for their focus on traditional roles of men and women. Furthermore, the phrasing of items which are meant to measure gender role attitudes is important (Braun, 2003). Hence, regarding measures of gender role attitudes a supplementation and revision of existing measures should be discussed. For the development of measures it is important to know how the measures are used. That is, studies which use measures of gender role attitudes for their analyses not only provide insights in how gender role attitudes differ and change over time, at one point in time, or cross-culturally, but also provide hints at which challenges there are for the measurement. The measurement of gender role attitudes over time and cross-culturally poses a different set of challenges for the used measures. In this thesis, I focus on the challenges for the measurement of attitudes over time. However, I also discuss challenges related to cross-cultural comparisons. Furthermore, I discuss how the context within the interview situation can affect gender role attitudes.

1.3.1 Measures of gender role attitudes over time

The examination of gender role attitudes over time is not as straightforward as it seems. Even if the same measures are used, social changes can have an impact on the functional equivalence of a measure. That is, the social context at one point of time can differ from one later on and this probably affects what measures capture and questions whether answers are comparable. Smith (2005) formulates two laws for the examination of social change: 1. for the measuring of change, the measure should not be changed and 2. if the same measures produce non-constant measurement, the measures have to be changed. Thus, if there is evidence that the functional equivalence of a measure is challenged, the measure has to be changed. This, however, implies that the comparability of answers over time is hindered since a change in the measurement can be a real change or result from the change of the measure. Especially for studies conceptualized to observe changes within societies, this aspect is a very important one. Measures should never be changed lighthearted.

Studies show that the comparison of gender role attitudes over time has to be done very carefully. Barth (2016) shows that respondents today probably understand items used since the beginning of the 1990s differently and that they do have more difficulties to understand the items that were developed to measure a one-dimensional construct.

Hence, the measures in use have to be revised. For this revision it is helpful to know how measures are used but it is also important to review the measures in use. In chapter two, I review measures of gender role attitudes in international and national social surveys with a representative sample. On the one hand chapter two provides an overview of measures in use in these surveys. On the other hand, however, I also discuss whether these measures are still adequate for the measurement of gender role attitudes. I argue that social changes in a society lead to the need to adjust measures in use and to supplement them with new items. Social structural changes that have the potential to affect measures of gender role attitudes are an increased female labor force participation especially of mothers (Akbulut, 2011; Cohany & Sok, 2007; Leibowitz & Klerman, 1995) or the educational expansion (Becker, Hubbard, & Murphy, 2010; Blossfeld & Jaenichen, 1992). Furthermore, there are changes in family formation such as marriage rates, divorce rates and fertility (Brewster & Rindfuss, 2000; Mau & Verwiebe, 2010). These changes are accompanied with changes in family policies and labor market policies and also express themselves in changes in the division of labor within the family where we observe a decline of the male breadwinner model (Ciccia & Bleijenbergh, 2014; Dorbritz, 2008; Haas, Steiber, Hartel, & Wallace, 2006; Morgan, 2013). The division of labor of men and women regarding care responsibilities and housework

remains rather traditional (e.g. Bianchi, Sayer, Milkie, & Robinson, 2012). In addition, new questions arise in the course of social changes which were not expected in the design of the measures employed. That is, we always have to ask whether the used measure help also to answer questions that arise due to social developments (McHugh & Frieze, 1997). In general the role of men is changing (Messner, 1993) which implies that relations within the family are changing with fathers becoming co-parents instead of the sole breadwinner in the family (Cabrera, Tamis-LeMonda, Bradley, Hofferth, & Lamb, 2000; Goldscheider, Bernhardt, & Lappegård, 2015; Meil, 2013). In social surveys, however, the role of men is disregarded so far (Braun, 2008) and also changes in familial and public roles of men and women are not accounted for sufficiently. Chapter two discusses social changes in more detail and I also deal here with the question of how these social changes affect measures of gender role attitudes. I conclude that measures have to be changed in their phrasing to increase comparability over time with a more specific phrasing leading to greater comparability. Furthermore, measures need to be supplemented to allow for the evaluation of more egalitarian models of the division of labor (housework, care responsibilities and labor market) within families and changing roles of men in particular. Chapter three bases on this review and here I show how a measure of gender role attitudes can deal with challenges related to the measurement over time using the example of the German General Social Survey (GGSS or ALLBUS).

1.3.2 Measures of gender role attitudes cross-cultural

In cross-cultural studies measures of gender role attitudes are supposed to measure these attitudes in different cultural contexts. This requires that measures in different cultural contexts are understood in the same way. Braun, Scott, and Alwin (1994) discuss for example that in cross-cultural studies it would be important to know why women should work and not only whether woman should work. The evaluation of the former should have an influence on the evaluation of the latter and may vary from country to country. Intercultural differences exist in the salience of different concepts which influences how easily items can be interpreted. Cultural differences probably also lead to differences between countries in the effect of the interviewer situation or the context of the questionnaire (Braun, 2003; van Vlimmeren, Moors, & Gelissen, 2016). In cross-cultural studies it is important to be aware of the possible differences in the answer process (Braun & Scott, 2009b).

For the comparability of answers across countries it is for example important how questionnaires are translated into different languages (European Social Survey, 2012; Gibbons, Hamby, & Dennis, 1997). Thus, for the development of measures for cross-cultural

studies other aspects have to be taken into consideration in comparison to the development of measures for national studies. There are not many studies that discuss whether measures of gender role attitudes are comparable across countries. Constantin and Voicu (2014) conclude that for cross-cultural studies measures in the ISSP and WVS are not useful for the comparison of the level of support for gender equality. Lomazzi (2018) discusses different methods to test measurement equivalence of gender role attitudes in cross-cultural comparisons. She distinguishes the two concepts "exact equivalence" – which requires the use of the exact same instrument for different groups - and "approximate equivalence", which is not as strict and allows for cultural variability and uncertainty in the assessment. In her study she demonstrates that for the measure used in the WVS (last round) multi-group confirmatory factor analyses allow the conclusion that for 27 countries measures are comparable whereas results from a frequentist alignment method shows that measures are comparable in 34 countries (of 59 countries in the study). Thus, not for all countries in the WVS measures of gender role attitudes are comparable in the last round of the WVS. Al-Ghanim and Badahdah (2017) discuss how gender role attitudes should be measured in the Arab World and develop a measure which they argue is more appropriate for the measuring of gender role attitudes in this realm than measures in use. Further studies also show how measures used in social surveys can be tested for adequacy across countries (Davidov, Schmidt, & Schwartz, 2008; Efremova, Panyusheva, Schmidt, & Zercher 2017; Sokolov 2018).

In this thesis, I do not examine whether measures of gender role attitudes are equivalent across countries. Nevertheless, I contribute to our understanding of attitudes towards gender roles. We already know a lot about how gender role attitudes change over time and differ within countries based on gender, race, religiousness and denomination (e.g. Carter & Corra, 2005; Schnabel, 2016), family background, education or employment. As already mentioned we also have information why gender role attitudes differ between countries or how they develop over time. This information is also important for the assessment of measures. However, there are not many studies that analyze gender role attitudes cross-culturally and over time to see how differences in gender role attitudes between countries develop over time. I add to this literature in the fourth chapter. Here I examine how differences in gender role attitudes between East and West European countries develop over time. For this purpose I pool data from three international social surveys (ISSP, WVS and EVS). These are among the main sources for the examination of gender role attitudes in cross-cultural comparison. My analyses show that gender role attitudes become more egalitarian and differences between East and West Europe decrease over time. The results also depend on which attitude is

examined. I find more traditional attitudes in East Europe for two attitudes related to the private sphere ("Being a housewife is just as fulfilling for pay" and "A working mother can establish just as warm and secure a relationship with her children as a mother who does not work.") and more traditional attitudes in West Europe for the third attitude related to the public sphere ("Both the man and woman should contribute to the household income."). Furthermore, the analyses reveal that a closer look at regions within East and West Europe broadens our understanding of differences in attitudes. North Europeans are the most egalitarian in their attitude towards consequences of female employment whereas residents in Continental and Anglo Saxon countries are the most traditional ones regarding a joint contribution to the household income. However, the analyses also show that there is potential for the improvement of the measures. First of all, differences in attitudes are rather small between East and West European countries. For two of the items the agreement is also very high. This indicates that the variation in answers is not very high and we need items that differentiate more between different groups. Second, the international surveys I use for the analyses only provide a limited set of measures. This is also discussed in chapter two, where these surveys are also part of the review of measures in use.

Further studies are necessary to improve measures used in international surveys. A basis for this purpose is described in chapter three. In addition, studies which examine the equivalence of measures in cross-cultural surveys need to be extended by the aspect of time. So far they focus on one point in time only.

1.3.3 Situational context of measures of gender role attitudes

Survey data also has to be analyzed with the awareness that the interview situation itself can have an effect on the answer. Besides the personal background of a respondent and the context in which he or she lives, the interview situation is a third context. For the generation of an answer respondents first have to understand the question, generate an opinion, chose the appropriate answer category and edit the response in dependence on their need to conform to social desirability norms (Braun, 2003). These processes can also be influenced by the interview situation. In the interview situation, the interviewer can have an influence. The measures I focus on are included in face-to-face studies (e.g. WVS, EVS, GGSS or GSS) or answered in a self-completion mode (ISSP). In face-to-face studies an interviewer is present. The presence of an interviewer probably increases answers adapted to social desirable behavior (Kreuter, Presser, & Tourangeau, 2008; Krumpal, 2013). Krumpal (2013) mentions that measures which are prone to social desirable answer behavior probably show a higher

percentage of missing values. There are not many studies which address the effect of the interviewer situation but early studies show that the gender of the interviewer probably affects gender role attitudes. Respondents express more egalitarian answers if they are surveyed by a female interviewer (Kane & Macaulay, 1993a). Liu and Stainback (2013) find some evidence that the interviewer's gender influences attitudes towards marriage. That is, respondents seem to adjust their answers at least partly due to the influence of social desirable behavior. I argue in chapter two that there are indicators which show that attitudes towards gender roles are not strongly affected by social desirable behavior (low percentage of missing values, comparable results in different modes). But further studies are necessary to confirm this assumption. The effect of the interviewer has to be analyzed with current data, cross-cultural and over time. Besides the interviewer, the context in the questionnaire depicts another potential influencing factor for answers. This means that it is good for the observation of change if the context of the measures in the questionnaire is constantly the same. This includes the questionnaire length, the position of the measure in the questionnaire and the questions which are asked before and after a measure. If this is the case, respondents have the same framework for their response, such as the same fatigue effects or exposure to the response categories. This is of importance in longitudinal and cross-cultural surveys and should also be considered in regard to the revision of measures and the development of new measures.

1.4 The improvement of measures of gender role attitudes

This thesis also contributes to the improvement of measures of gender role attitudes. In chapter two I conclude what steps are necessary to improve measures in use. In chapter three I describe how this improvement can be implemented. I will first describe the approach used in the GGSS and then discuss which restrictions are associated with the improvement of measures in social surveys.

1.4.1 Development of new measures

For the development of new measures one has to focus on which attitudes are meant to be measured (Gibbons et al., 1997). Besides measures of a global gender ideology, there are also measures to assess very specific gender issues for example attitudes towards lesbians and gay men (Ashmore, Del Boca, & Bilder, 1995). In my thesis, I focus on measures of attitudes towards women and men in general. Even if most of the surveys which I examine also have measures of attitudes towards homosexuals, for example, their measures of gender role

attitudes mainly address men and women in general. Some of the items refer to single parents or wives and husbands or mothers and fathers in particular. In this thesis, I also do not want to develop a new measure of gender role attitudes but the aim is to improve the measures in use using the example of the GGSS. That is, the basis for improvement is the old measure. This does not only concern the phrasing of the items but also the used answer categories. So far the measure in the GGSS can be answered with a four point agreement scale. It is also possible to utter a "don't know" answer or to refuse the answer. To rely on the old measure is necessary since an abandoning would lead to an interruption of the time series and the items are useful to assess traditional attitudes. Also the keeping of the old answer scale aims at maintaining some comparability over time. In chapter three I analyze why the old measure should be improved. The structure of the old GGSS measure does not necessarily reveal the need for improvement. However, for some items the variation in answers is small with high levels of agreement to the non-traditional answer option. I argue that social developments create the need to phrase items differently than in the 1970s and 1980s since for example the employment of mothers and fathers meant something different back then. I show that the specification of the extent of employment for mothers and fathers as well as of the age of the children affects the answers of respondents also leading to more variation in answers. Thus, to make answers more comparable a specification of the old items is necessary. Furthermore, items were developed to enable the measurement of attitudes towards models of division of labor within the family that deviate from the male breadwinner model towards a more equal division of labor. In addition, I supplemented the old measure with items to evaluate the role of fathers in the family. For the development of the new items and the comparison of the rephrased items of the old measure with the original items as well as for the composition of the revised measure two pretests were conducted. There are several options to pretest items (e.g. Collins, 2003; Schwarz, 1997 describe some cognitive methods). Besides cognitive pretest methods, items can also be tested in more representative samples. For the pretesting the development of items should not be done alone but it is important to take the opinion of several persons into account. That is, for the development of items teamwork is essential. The items for the GGSS were also discussed in the work group of the GGSS. The aim of the pretest is always the selection of appropriate items to measure the intended concept. In the GGSS we decided to test the developed items with a web pretest. This enabled us to test the developed items in a large sample and together with other attitudes to examine the relation between new developed items and other attitudinal information of the respondents. Besides attitudes towards gender roles, the questions in the first pretest for the GGSS capture attitudes

towards religion and abortion. Items are evaluated in terms of their distribution, that is, how much variation they provide and how large the percentage of missing values is. The latter would indicate problems with the understanding of the items. Furthermore, analyses of the items with the religiousness, the region or gender of the respondents in the pretest reveal whether predictable relations with these characteristics are observed. For the development of a revised measure, a second pretest was conducted with several versions of a revised measure in the same mode as the final survey (in this case face-to-face). The results of the two pretests entail in a new revised measure that bases on the old measure and supplements it with new items. The new measure comprises two factors, a modern and a traditional one, and finally consists of nine items. Chapter three describes the revised measure in more detail. This revised measure was used at the same time as the old measure in a split half. So a comparison of answers to the old and the new measure is enabled and a switching between the two measures is facilitated. This contributes to the problem of a potential abandoning of the time series when measures are changed. Even if the revised measure was developed for the GGSS, this revision also provides insights for the revision of measures in other surveys. A next step would be to use the revised measure in different contexts and to test whether similar results can be observed. Furthermore, the arguments for a revision of measures not only apply to the measurement of gender role attitudes but to measures per se which are meant to capture social change. For the analysis of social change we should always discuss whether measures still capture the intended concept.

1.4.2 Restrictions in omnibus surveys

The development of new measures for the GGSS and probably for social surveys in general differs from scale development in psychological studies (Clark & Watson, 1995). In psychological studies one would develop a large pool of items and then restrict this pool of items to develop a new measure. However, short item batteries are rare. Usually these new measures comprise many items. The sex-role egalitarianism scale, for example, consists of 38 items for each of the three domains and the development of this scale started with more than five hundred items (Beere, King, Beere, & King, 1984). The gender role beliefs scale consists of twenty items and was developed out of 120 (Kerr & Holden, 1996). A short version of the Attitudes toward Women Scale comprises 25 items (Spence, Helmreich, & Stapp, 1973). A large number of items has to be tested and the resulting measure is rather long. Hence, these two steps (the testing and the implementation) are often not applicable for social surveys. First of all, a pretest is usually not designed to develop or improve one measure only. However, it

would take too much time and cost too much money to test so many items for only one measure. Social surveys often rely on already developed measures or have to improve existing measures (i.e. the step of item reduction is skipped). This is the case at least for multidimensional concepts. There are also concepts which can be measured with few items for which the pretests are less cost and time consuming. Since the basis of a measure of attitudes towards gender roles is a multidimensional concept this does not apply to these attitudes. On the other hand, for the use in social surveys the length of a measure is restricted. There are restrictions in respect to the length of the questionnaire and longer measures need more time in a questionnaire so that fewer concepts can be measured. However, in social surveys the aim is to observe attitudinal and behavioral changes regarding multiple topics. As described the basis for the revised measure of gender role attitudes in the GGSS was the existing measure. Only regarding the new items several options were tested. This was important for the conduction of the first pretest. The revision of the measure was also restricted in terms of the aim to maintain the existing time series. The revised measure does not capture every aspect of the concept of gender role attitudes. This would also result in a large measure. It supplements the existing measure with items regarding different models of division of labor and regarding the role of fathers in the family. However, it would also be possible to focus on attitudes regarding a public role of men and women in politics or business for example.

1.5 The analysis of gender role attitudes

For the analysis of gender role attitudes not only the measure of these attitudes is essential, but also the measurement of concepts and characteristics with which one wants to analyze gender role attitudes. Regarding the analyses in the fourth chapter it would have been helpful to have a constant measurement of background characteristics. Characteristics which are important for the analysis of gender role attitudes are for example the education as well as the gender, religious background, migration or ethnic background and age of the respondent. Furthermore, information about the parents' education, social class, employment status and other living circumstances regarding the family such as marital status or the number of children are helpful for the analysis of gender role attitudes. These characteristics, however, are not immune to social changes. Westbrook and Saperstein (2015), for example, discuss that the way gender is measured in social surveys and how gender is conceptualized has to be reconsidered. They argue for the use of a more gender neutral phrasing of questions and a

measurement of gender that overcomes a dichotomous definition. That is there are sometimes good reasons for the change of the measure of background characteristics. A change of the measures should be done carefully though. For the analysis of gender role attitudes over time and cross-cultural it is important to have information about these background characteristics for each round and each country and that this information is comparable. Furthermore, the assessment of measures also relies on the information of background characteristics. An indicator for criterion validity of a measure is if the measure shows expected relations with other variables. These other variables are not only background characteristics of the respondent but attitudinal or behavioral variables as well. Attitudes towards gender role are related with other attitudes as the ideological learning approach states (Brooks & Bolzendahl, 2004). Potential attitudes which are related to gender role attitudes refer to the family, religion (e.g. Siordia, 2016; Whitehead, 2012), abortion or homosexuals (e.g. Henry & Wetherell, 2017), rights-based ideology (Brooks & Bolzendahl, 2004) or migrants. In the process of questionnaire development studies should also take into consideration which options for analyses they want to offer if they conduct gender role attitudes. The comparison of gender role attitudes across countries also requires information about the participating countries on country level. Differences in gender role attitudes between countries can be explained, for example, by differences in economic development or institutional differences regarding family policies or labor market policies as well as structural differences in labor market participation or participation in higher education. Social surveys do not often provide such information. However, it is important for the organizations who conduct these surveys to enable the merging of context variables to data from social surveys and to be committed to the provision of such information.

1.6 Conclusion and Outlook

In this thesis I discuss the adequacy of measures of gender role attitudes for analyses over time and show how measures of gender role attitudes can be improved using the German General Social Survey.

In chapter two I review measures of gender role attitudes in use in national and international social surveys with multiple topics and a representative sample. I conclude that there is the need for improvement and supplementation of measures in use. Social changes lead to new questions regarding the division of labor of men and women within the family and especially

regarding the role of fathers in the family. Furthermore, I argue that social changes lead to the necessity to specify the phrasing of items to increase comparability over time.
In chapter three I develop a revised measure on the basis of the findings in the second chapter for the GGSS. I show that the phrasing of the items matters for the evaluation. The revised measure is introduced in the GGSS 2012 in a split with the old measure. It bases on this old measure and consists of finally nine items representing a traditional factor and a modern factor. I discuss that this measure should be tested in different contexts as well. A next step would be to revise measures used in other national and international social survey on the basis of the findings from the second chapter. A step towards this revision is also presented in chapter four of this thesis. I argue that for the revision of the measure of gender role attitudes it is also important to analyze gender role attitudes with the available data. So far there are studies missing who analyze gender role attitudes over time and cross-cultural.
In chapter four I examine how gender role attitudes develop in East and West Europe and whether we observe a divergence or convergence of attitudes. My results show that attitudes in East and West Europe converge over time, however, results depend on the examined measure. While East Europeans have more traditional attitudes than West Europeans regarding the fulfillment associated with being a housewife and the consequences of a mother's employment they have less traditional attitudes towards the joint contribution of men and women to the household income. A closer look at the regions within East and West Europe reveals that especially North Europeans evaluate the consequences of a mother's employment less negatively than respondents in other regions. Europeans in Continental and Anglo-Saxon countries have the most traditional attitudes regarding a joint contribution to the income. The analyses also show that the difference is rather small and two of the three examined items show a high percentage of agreement to the nontraditional answer. For the measurement of gender role attitudes this finding indicates that measures are necessary which lead to a higher variation in answers. Furthermore, the cross-cultural data only allow for the analyses of a very narrow concept of gender role attitudes.
I argue that for the revision of measures of gender role attitudes three steps are necessary: 1) a review of measures in use; 2) an identification of the problems with the current measures and 3) the development and implementation of a revised measure. With this thesis I contribute in chapter two to step one and two regarding national and international social surveys. I also contribute to step two in chapter four concerning cross-cultural studies. In chapter three I contribute to the third step using a national study.

However, this thesis cannot address all aspects of the measurement of gender role attitudes over time. Even if there are many studies which examine how and why gender role attitudes differ between different groups based on gender or the religious background, for example, this is not the case for the influence of the interview situation on gender role attitudes. Here, more studies are necessary to evaluate the influence of the interview situation and which impact a potential influence would have on the measure. Furthermore, the implementation of a revision of measures of gender role attitudes in other national and international studies should be tackled. A basis can be the revised measure used in the GGSS. This measure also provides the basis for further analyses of how the old and the revised measure are related. Analyses are necessary to examine which groups in a society can be distinguished regarding gender role attitudes based on the old and the revised measure and what impact it has, to which group one belongs. Here an approach could be to distinguish latent classes. This approach is used by Knight and Brinton (2017) and Barth and Trübner (2018). However, it is also important to analyze how such classes are related to other attitudes or behavior. This also applies if another methodological approach is used. The analysis of gender role attitudes with other attitudes has to be examined in more detail. Finally, the concept of gender role attitudes is a very broad one, even if attitudes towards men and women in general are taken into consideration. Social surveys only provide a restricted opportunity to measure gender role attitudes. This allows researchers to examine gender role attitudes in relation with other topics. So far the focus was on the division of labor of men and women within the family and on consequences of female employment. There exist only some measures regarding a public role for example in politics or the hierarchy in a business. To measure every aspect would take too much time and resources. For the ISSP there already exists a module with focus on attitudes related to gender and family ("Family and Changing Gender Roles"). Maybe the provision of a core module for gender role attitudes could be an option for other surveys as well. It should be discussed to what extent measures of gender role attitudes should be included in social surveys and whether there is the possibility to measure them in more detail by using splits, for example.

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2. The Adequacy of Measures of Gender Roles Attitudes: A Review of Current Measures in Omnibus Surveys

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2.1 Abstract and Keywords

The measures of attitudes toward gender roles included in many representative international and national omnibus surveys were developed mostly in the 1970s and 1980s with a focus on the male breadwinner model. This article deals with the issue of whether the measures provided in these omnibus surveys need to be adjusted to specific social changes. A review of these measures has found that adjustments have occurred in a limited way that focused on the role of women and disregarded the role of men. Furthermore, most of these measures only examined the traditional roles of men and women. More egalitarian role models have not been considered sufficiently. In addition, most items that have been measured are phrased in a general form and, for example, do not specify parents' employment or the ages of children. A specification of these aspects of measurement would help to clarify the conceptual meaning of the results and increase the possibility of more accurately analyzing gender role attitudes over time.

Keywords: gender role attitudes; measure; longitudinal analysis; omnibus surveys

2.2 Introduction

Beliefs about the appropriate roles for men and women regarding the division of paid labor, homework, and childcare often are referred to as *gender role attitudes* or as *gender ideology* (e.g., Davis & Greenstein, 2009). Several quantitative studies (e.g., Bolzendahl & Myers, 2004; Brewster & Padavic, 2000; Cotter et al., 2011; Lee et al., 2007) that have examined the change of these attitudes since the end of the 1970s have shown that traditional gender role attitudes have declined, and egalitarian attitudes have increased. Even if gender role attitudes differ between various groups in a society with the, "well educated, the less religious, the unmarried, and [… the] postmaterialists" (Inglehart & Norris, 2003, p. 47) tending to be more egalitarian, Inglehart and Norris (2003) have shown that differences are larger between

societies than between groups within a society. Clear evidence exists that the shift to an industrial and an even more influential postindustrial society leads to more egalitarian gender role attitudes. Thus, most studies concerned in some way with gender role attitudes rely on the measures provided in surveys. However, to evaluate change in gender roles attitudes over time, we must critically reflect on the measures used to carry out this evaluation. Only by measuring the underlying construct in the same way over time will our observations about changing attitudes be valid. However, if the interpretation of these measures changes, we may need to consider adjusting the measures themselves. In other words, the validity of measures in use has to be evaluated in light of their context. This scenario especially applies if the same measures are used over a long period of time, and social change is likely to occur or does occur. Social change also may lead to new aspects of gender roles that have not been considered adequately using the old measures.

This article analyzes whether social change leads to a necessity to adjust measures of gender role attitudes, and also assesses the validity of the measures in use. I begin by describing the concept of *gender role attitudes* and why observing change might be a problem. After a description of relevant societal developments, I examine how they affect measures of gender role attitudes. Therefore, I systematically review the measures used in selected national and international omnibus surveys. Finally, I summarize the results and discuss necessary considerations for future studies of gender role attitudes and beyond.

2.3 Concept of gender role attitudes

Regarding gender roles, I focus on the measures concerning "the assignment of different adult social responsibilities to men and women" (Pleck, 1977, p. 182, p. 182), which are used to measure the attitudes about the appropriate roles of men and women. To better understand these attitudes and evaluate the need for improvement, we need to conceptualize them. However, so far, no generally accepted concept has been agreed on for use. Therefore, a concept needs to be developed that includes attitudes about gender roles. The main distinction regarding gender roles has been drawn between the roles ascribed to the public sphere and the roles ascribed to the private sphere. The public sphere roles are related to community or public office (e.g., party executive or president) (e.g., Baber & Tucker, 2006) and to occupations (e.g., taxi driver or secretary). The private sphere roles usually are related to a distinction between roles in a partnership and those concerning parenthood (e.g., Baber & Tucker, 2006). Furthermore, the intersection of these two spheres is important (see Scott,

2010). Another distinction can be drawn between attitudes towards role ascription and attitudes towards role conflict. *Attitudes towards role ascription* are about to which roles a man or a woman should conform. In other words, study respondents ascribed a role to a man or a woman (e.g., "a woman has to have children in order to be fulfilled" European Values Study 1981). *Attitudes towards role conflict* address how these conflicts—for example, which can occur between the public and private spheres—are evaluated. Conflicts also can occur within spheres, for example, by neglecting a partner to spend time with the children. Finally, attitudes broach a segregation of roles—how couples should divide the roles of the private and public spheres within a relationship. An example is: "A man's job is to earn money; a woman's job is to look after the home and family" (British Social Attitudes Survey 1984). Therefore, the distinction between role ascription, role conflict, and role segregation approximates a distinction made by Funk (1991) between role segregation, role combination, and role conflict.

With respect to these different aspects, roles can be allotted to a traditional or an egalitarian point of view. The former implies that the private sphere, for example, is assigned to women, and they are restricted to complying with their family responsibilities. In contrast, egalitarian attitudes are demonstrated, for example, when someone believes that men and women should share equally the responsibility for family tasks and that women as well as men should participate in paid work. The distinction between traditional and egalitarian roles can be made regarding the different aspects of gender roles: role ascription, role conflict, and role segregation. Figure 2.1 presents an outline of the concept of *gender role attitudes*.

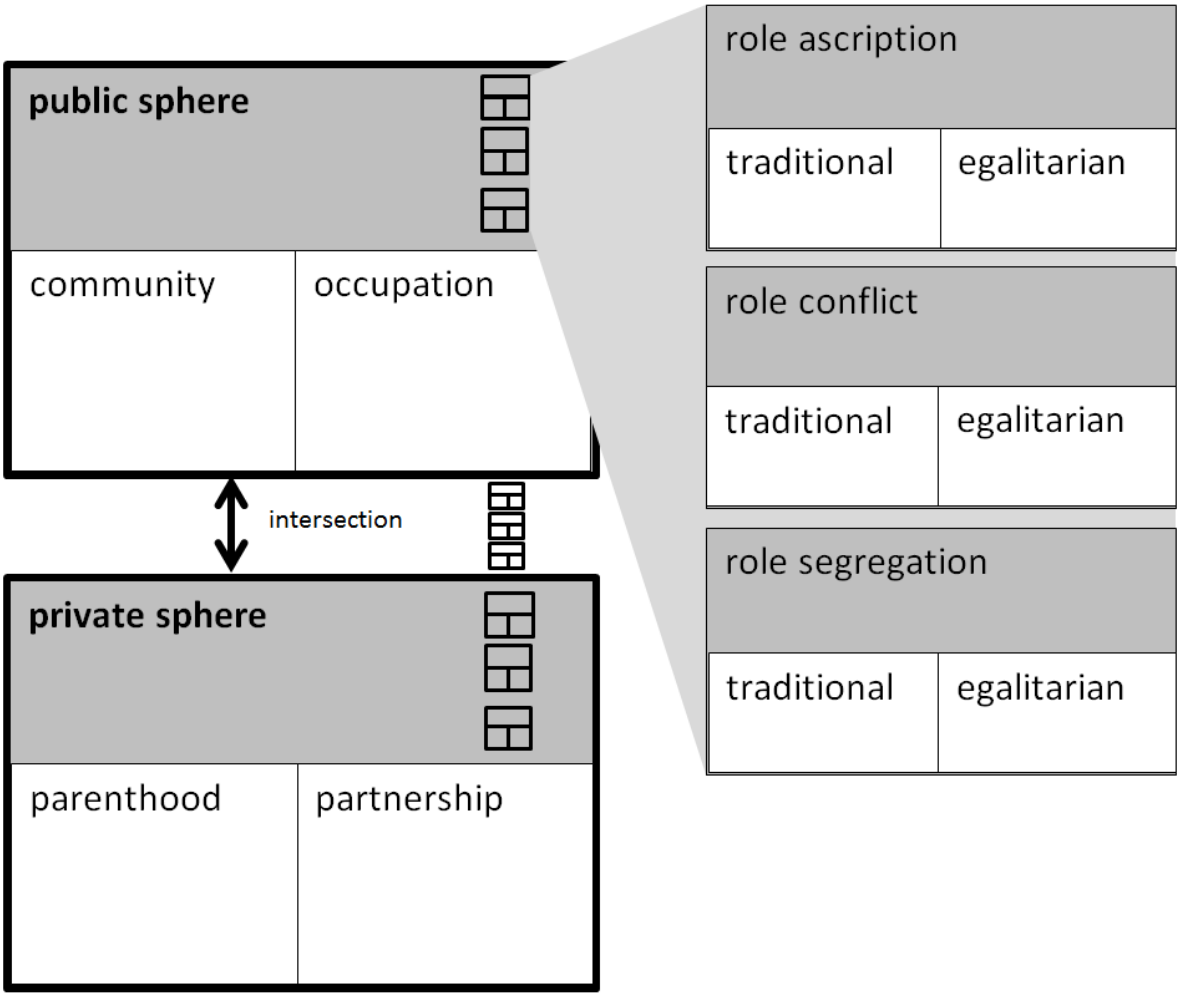


Figure 2.1 The concept of *gender role attitudes*

Theoretically, we can distinguish nine different aspects of gender role attitudes:

a) Role ascription within the public sphere
b) Role ascription within the private sphere
c) Role ascription at the intersection of these two spheres
d) Role conflict within the public sphere
e) Role conflict within the private sphere
f) Role conflict at the intersection of the two spheres
g) Role segregation regarding the public sphere
h) Role segregation regarding the private sphere
i) Role segregation at the intersection of the two spheres

The concept of *gender role attitudes* aims to provide the possibility of allocating the measures of gender role attitudes developed so far. Based on this concept, measures of gender role

attitudes can be evaluated with respect to their coverage and gaps. For the development of measures, however, the aspect of observing change also must be considered.

2.4 Measures of gender roles over time

The evaluation of attitude change by Smith (2005) reminds us that we need to consider how change is measured. According to Smith's first law, we can only measure change if measures are not changed over time. However, constant measures may produce non-constant measurement (Smith's second law), which makes it necessary to change the measures. The first law refers to the problem that even small changes in measures may change the measurement and lead to invalid interpretations of attitude change. In this case, a change in attitudes may be attributed only to changes in measures. The second law refers to the possibility that the functional equivalence of measures is not given due to the changes in the substantial meaning associated with them or of their applicability, which can be caused by societal developments. As a consequence, we must violate the first law and change the measures to measure the same concepts over time.

Braun (2009) has stated that the functional equivalence of measures is only a given if their interpretation does not change. While this statement refers to cross-cultural comparisons, the same applies for cross-temporal comparisons. Thus, the interpretation is contingent on the personal experiences of the respondent – her/his socialization and personal living conditions, such as the employment of his/her mother, their own employment, and family status -, the cultural context, and the context of questions in the questionnaire (cp. Braun, 2006; Tfaily, 2010). The cultural context frames gender roles by legal regulations or creates the norms for gender roles in society. Societal developments can affect the interpretation of measures by changing personal experiences and the cultural context. Barth (2016) has shown that for Britain, for example, gender role attitudes have become more complex due to social change. Regarding the measures of gender role attitudes, a large diversity of potential influential context variables exists. Next, I describe which societal developments may affect the measures of gender role attitudes. Thus, I focus on the developments in countries—USA, Germany, Japan, Italy, Sweden, and UK—in which the measures of gender role attitudes also represent different cultural contexts, for example, regarding female participation in the labor force.

2.5 Societal developments affecting measures of gender role attitudes

Most measures of gender role attitudes were developed in the late 1970s and 1980s when the dominant model for living together was the male bread-winner model. This family model was widespread with some variation in Western countries (R. Crompton, 1999).

2.5.1 Developments in education and labor force participation

One of the developments that led to a decline of the male bread-winner model was more women becoming better educated. Today, women invest more in education than they used to in the late 1970s and 1980s (Becker et al., 2010). The increase in women's education also is connected to female labor force participation (e.g., Jaumotte, 2004). In 1970, the female labor force participation rate was about 50% in the USA, Germany, and Japan; about 60% in Sweden; and about 30% in Italy, which was rather low. Since then, female labor force participation has increased in these countries (OECD, 2014c). At the same time, only small changes can be observed with respect to the male employment rate of approximately 90%. Further changes in female participation were changes in working hours and the participation of mothers. On the one hand, the part-time work of women increased in Germany, Japan, and Italy; decreased in Sweden; and stayed approximately the same in the USA and the UK (OECD, 2014b). On the other hand, a look at the labor force participation rate of mothers shows that it increased since the 1970s, although mothers with younger children are still less likely to work for pay and often work part-time (Macran, Joshi, & Dex, 1996; Mosisa & Hipple, 2006; OECD, 2014d; Peuckert, 2012). Changes in employment also mean that the male bread-winner model (for example, in 1990 34% of households with couples in West Germany fit this model, but in 2007, only 20% fit) is being replaced increasingly by a model in which the male partner works full-time, and the female partner works part-time (in 1990 26% and in 2007 40%) (see also McCulloch & Dex, 2001; OECD, 2014e; Peuckert, 2012, p. 411). Hence, while the women is more likely to "win bread" as well, she usually is not employed to the same extent as her partner (OECD, 2014a). In summary, female labor force participation has changed insofar as it has increased and become more differentiated regarding working hours and regarding women with or without children, depending on the age of the children. Developments in labor force participation and education are accompanied by the following developments in family structure.

2.5.2 Developments in family structure

Many changes in family structure can be observed since the 1970s. In that decade, marriage was more common than today and women married at younger ages (Elliott, Krivickas, Brault, & Kreider, 2012; OECD, 2014h; Peuckert, 2012, p. 36; Statistics Bureau Japan, 2013). Furthermore, the first child was born much earlier than today, and the fertility rate was higher (OECD, 2013, 2014f). Alternative living arrangements to the married heterosexual couple were not widespread. Few children were born non-marital, and cohabitation was not common (OECD, 2011, p. 24). Since the 1970s, cohabitation is widely practiced, especially among younger people (Nazio & Blossfeld, 2003; OECD, 2014i). Additionally, more and more women remain unmarried and divorce rates have risen (see Elliott et al., 2012, figure 2; OECD, 2014h; Peuckert, 2012, p. 305 ff; Statistics Bureau Japan, 2013, p. 21). In other words, families are not based necessarily on a married couple any more. Also, the rising number of single parents has consolidated this fact (OECD, 2011, p. 28). Another development that has affected family is the rising number of childless women (OECD, 2014g; Peuckert, 2012). In addition, in many countries legal changes also have occurred, which have encouraged males to take a greater share in the child-rearing of small children by being offered paid parental leave. However, many men do not use this opportunity as much as they could. Due to the increasing number of working women, the pressure on men has probably increased with respect to their participating more in housework and child-rearing (e.g., Breen & Cooke, 2005), and men also have to balance work and family somehow (Ranson, 2001). The previously described changes in female education and labor force participation, as well as changes in family structure occurred in many Western countries in similar ways, although there were and are still are differences between countries. For example, Sweden has a higher participation of women in the labor force than Italy, and the change in working hours for women is less pronounced in the USA or UK (OECD, 2014a, 2014c). Despite country-specific developments, family formation and living arrangements have become more differentiated, and the participation of women in the labor force has increased in Western countries over time.

2.5.3 Effects on measures of gender role attitudes

Why should the previously described developments affect measures of gender role attitudes? According to exposure-based or interest-based explanations, socialization theories, and control models, the personal experience of a person is influenced among other things by the family situation and labor force participation. Relying on exposure-based explanations

(Bolzendahl & Myers, 2004), we would assume that the personal experience of a person affects how he/she evaluates gender roles. Individuals in the 1970s probably had personal experiences that were different from individuals living today in 2017. It was less likely that mothers worked. Deviation from the male bread-winner model based on a married couple was not widespread. For women, it was less likely to gain a higher education and thereby be exposed to non-traditional roles of men and women. According to socialization theories, which also are based on the idea of the influence of exposure, children learn about roles by imitating their parents' gender roles (Myers & Booth, 2002). Several studies have found, for example, that if a mother is employed, their children have more egalitarian gender role attitudes (Boehnke, 2011; Davis & Greenstein, 2009). Interest-based explanations refer to personal experience and to the influence of personal living circumstances on how someone perceives the roles of men and women in society by adjusting them to their own interests (Abe, 2011; Bolzendahl & Myers, 2004; Corrigall & Konrad, 2007; Kroska & Elman, 2009) with gender role attitudes also being affected, for example, by the participation of women in the labor force (Cunningham, 2008b). Control models also assume that people possibly adapt their attitudes to their own living circumstances to avoid cognitive discrepancies between their own attitudes and living circumstances (Kroska & Elman, 2009).

In addition to personal experiences, the measures of gender role attitudes may also be affected by the cultural context in which someone lives. This context has changed insofar as societies in general are less traditional nowadays than in the 1970s. Women's independence has become a part of the modernization process in societies (cp. Inglehart & Norris, 2003, p. 6). In post-industrial societies, most women do not accept traditional roles anymore, and gender equality has become an important issue in political debate (Inglehart & Welzel, 2005). Gender roles have converged in postindustrial societies "because of a structural revolution in the paid labor force, in educational opportunities for women, and in the characteristics of modern families" (Inglehart & Norris, 2003, p. 29). In other words, gender equality has become a new societal norm, and persons who support traditional gender role attitudes are said to deviate from this norm and may face negative consequences. The acceptance of female participation in the labor force also may be influenced by increasing divorce rates and a rising number of single parents, which may increase the need for women to become financially independent. Also, the decreasing number of children born should have an effect on how gender roles are evaluated, since fewer children are affected by how their parents divide the roles of the private and public spheres.

Another development that also facilitates a more egalitarian opinion regarding gender roles is increasing secularization. With a shift away from church membership, and its related traditional thinking, towards more individualistic religious beliefs, a shift toward less traditional gender role attitudes also can be observed.

The question is whether these societal developments have led to a true change of gender role attitudes or whether we only observe these changes due to an adaptation of socially desirable behavior to new social norms. In the latter case, the change we observe results from the socially desirable behavior of respondents insofar as they think that the expression of more egalitarian attitudes is desirable. By expressing socially desirable behavior, respondents can avoid potential negative reactions from their environment. A shift to a social norm that favors egalitarian models of the division of labor should result in an increase in the expression of egalitarian attitudes. Unfortunately, it is almost impossible to assess the true gender role attitudes of respondents. In addition, social desirability is difficult to measure. Even if measures to assess the tendency of a respondent to respond in a socially desirable manner (e.g., Crowne-Marlowe need for approval scale) are available, most surveys do not include them. With respect to the assessment of gender role attitudes, we do not know to what extent they are influenced by social desirability. A high proportion of "don't know" answers or refusals indicates that questions are prone for social desirability (Krumpal, 2013). Measures of gender role attitudes, however, do not show a high proportion of item non-response or "don't know" answers as the example of the German General Social Survey (GGSS) shows. Studies also have indicated that social desirability differs by mode (Kreuter et al., 2008). A first comparison of a web-pretest for the GGSS with the original survey distribution (conducted face-to-face) has indicated that gender role attitudes do not differ in systematic ways, and that these attitudes have not differed to a large extent between the pretest and the survey in 2012. This finding also attenuates earlier findings that the sex of the interviewer influences gender role attitudes (Kane & Macaulay, 1993b) because in web surveys, the sex of the interviewer could not possibly influence the behavior of respondents. Furthermore, we can observe changes in behavior as well as in attitudes: fathers invest more time in childcare, parental leave policies have changed (Akgunduz & Plantenga, 2013; Boll, Leppin, & Reich, 2014; Goldscheider et al., 2015), and female participation in the labor force has increased. Social desirability can explain only some of these changes, which supports the assumption of a real change in gender role attitudes. However, future studies should examine in detail the extent to which gender role attitudes are influenced by social desirability.

Social changes suggest that more people have been exposed to working women, and especially working mothers, and additionally, to the idea that the employment of women does not necessarily equate with full-time work. This exposure should affect the acceptance of female participation in the labor force. Since personal experience and the cultural context both have changed over time, the question arises as to whether and how measures of gender role attitudes apply to these changes. Questions come into focus, such as how the part-time employment of women is evaluated or how the role of men in the household is perceived. Can we evaluate such attitudes with the measures in use? The following section reviews measures of gender role attitudes and evaluates to what extent they adapt to the previously described changes.

2.6 Review of measures of gender role attitudes

The measures of gender role attitudes included in almost all national or international omnibus surveys always cover several aspects of the *gender roles* concept. However, these surveys seldom cover all aspects of gender roles, and often include shorter scales of gender role attitudes than psychological measures, such as the Attitudes Toward Women Scale (AWS) or the Social Roles Questionnaire (see Baber & Tucker, 2006; McHugh & Frieze, 1997). An explanation for these shorter scales is probably the time constraints of the survey.
The following paragraphs introduce the measures used in international, European, and national cross-sectional omnibus surveys (exception being the longitudinal Generations & Gender Programme) with a large sample representative of the national population. The focus is on omnibus surveys in which attitudes about gender roles are asked in short scales, which can be analyzed together with a number of background variables and other topics. These surveys are the USA General Social Survey (GSS; 1972–ongoing; 1972–1994 ~ annual; since 1994 biannual; ~ N 1500–4500), the German General Social Survey (GGSS/ALLBUS; 1982–ongoing; biannual; ~ N 3500), the British Social Attitudes Survey (BSA; 1983–ongoing; annual; ~ N 3000), the Japanese General Social Survey (JGSS; 2000–ongoing; 9 waves; ~ N 2000-5000), the Taiwan Social Change Survey (TSCS; 1984–ongoing; 6 rounds; ~ N 1100-4300), the Australian Survey of Social Attitudes (AuSSA; 2003–ongoing; 7 waves; ~ N 1500-8000), the Korean General Social Survey (KGSS; 2003–ongoing; annual; ~ N 1300-1600), and the East Asian Social Survey (EASS; 2003–ongoing; 4 waves; ~ N 2500-8000 each country). The considered European and international omnibus surveys are the European Social Survey (ESS; 2002– ongoing; biannual; ~ N 800–1500 each country), the European

Values Study (EVS; 1981–ongoing; 4 waves; ~ N 1500 each country), and the World Values Survey (WVS; 1981–ongoing; 6 waves; ~ N 1000-2000 each country). Finally, the measures used in the Generations & Gender Programme (GGP; 2004–ongoing; 3 waves; ~ N 9000 each country) and the International Social Survey Programme (ISSP; 1984–ongoing; annual; ~ N 1500 each country) are reviewed. The GGP is an international survey with a focus on gender, and the ISSP focuses regularly on family and gender as topic (repeated four times so far). A study by Davis and Greenstein (2009) with a focus on surveys in the USA such as the National Longitudinal Survey of Youth and the National Study of the Changing Workforce is therefore supplemented. Although the considered surveys comprise a good range of different cultural contexts, the selection does not claim to cover all national omnibus surveys with a representative sample and large sample size.

Starting in 1972, the GSS was one of the first surveys to include measures of gender role attitudes and other general social surveys and international surveys followed (e.g., BSA, ALLBUS, EVS, ISSP, JGSS, WVS). Table 2.1 provides an overview of the measures of gender role attitudes, which are asked more than once (in more than one survey or in more than one round of the same survey). Thus, an analysis over time or cross-culturally is possible. A measure of the actual behavior of respondents regarding gender roles and concepts used in androgyny like masculinity and femininity, which focus more strongly on differences in personality between men and women, are not included. Table 2.1 is based on the documented English translations of the surveys and on item databases provided for individual surveys. Items are chosen by a semantic analysis. Questionnaires or item databases were searched for words related to gender and family, such as *woman, husband, wife*, and *children*, and items were selected when they described gender roles. Table 2.1 is organized according to the nine conceptual aspects of gender roles presented in Figure 2.1 and provides information about the phrasing of items. Items of different surveys with similar phrasing were counted as the same item. Additionally, it provides information about the first and last year of measurement for all the surveys. The number of surveys or rounds in a survey that included gender role attitudes also is reported.

The measures of gender role attitudes mainly were supposed to identify whether persons have a traditional point of view regarding gender roles or not. However, even if we know that someone refuses a traditional point of view, we do not necessarily have information about how egalitarian she/he is (Braun, 2008) or the other way around.

Table 2.1 Measures of gender role attitudes in national and international omnibus surveys

item	first/last year	asked in survey [frequency of item in respective survey over time]
a) ascription public sphere		
1) Having a job is the best way for a **woman** to be an independent person.[X]	1984/2012	BSA[5], JGSS[2], TSCS[4], EVS[3], WVS[2], ISSP[3], KGSS[1]
2) Which of these best describes the reasons why many **married women** work 1) for the company of other people; 2) need money for basic essentials; 3) to earn money of their own; 4) to earn money to buy extras; 5) to follow a career; 6) work is a change; 7) working is the normal thing to do	1984/1991	BSA[2]
3) Do you think that the job is particularly suitable for **men** only, particularly suitable for **women** only, or suitable for both equally…1. bus driver; 2. computer programmer; 3. airline pilot; 4. bank manager; 5. car mechanic; 6. director of an international company; 7. family doctor/GP; 8). local councilor; 9. member of Parliament; 10. nurse; 11. police officer; 12. secretary; 13. social worker	1984/1994	BSA[4]
4) **Married women** have a right to work if they want to, whatever their family situation.	1987/1994	BSA[3]
5) Do you agree or disagree that a **woman** becomes the Empress?	2006/2012	JGSS[2]
6) If your party nominated a **woman** for President, would you vote for her if she were qualified for the job?	1972/2010	GSS[8]
7) Most **women** have to work these days to support their families.	1994/2003	ISSP[1], KGSS[1]
b) ascription private sphere		
1) **Men** should cook and look after themselves.	2000/2010	JGSS[9]
2) **Men** ought to do a larger share of household work than they do now.	2002/2006	EASS[1], ISSP[1]
3) **Men** ought to do a larger share of child care than they do now. /A **father** should be as heavily involved in the care of his children as the mother.	2002/2003	AuSSA[1], ISSP[1]
4) The authority of **father** in a family should be respected under any circumstances./ The **husband** is the head of the household and the wife should be obedient to him.	1996/2008	TSCS[1], EASS[2]
5) A **woman** can have a child as a single parent even if she doesn't want to have a stable relationship with a man.[X]	1981/2012	EVS[4], GGP[3], WVS[4]
6) A **woman** has to have children in order to be fulfilled./ Do you think that a woman has to have children in order to be fulfilled or is this not necessary?/ Women must raise children to have a fulfilled live.	1981/2012	EVS[4], GGP[3], WVS[3], TSCS[1]
7) **Married women** are generally happier than unmarried women. /Without a doubt, a **woman's** happiness lies in a marriage.	1996/2012	EASS[2], JGSS[8]
9) **Men** can have a fulfilling life without children. /Men do not have to raise children to have a fulfilled life.	1996/2012	EASS[1], EVS[2], GGP[3]
10) **Men** can have a fulfilling life without marriage. /Men can still have a fulfilled life without getting married.	1996/2012	EASS[2], JGSS[8]
11) It's mainly the **mother**'s responsibility to discipline the children.	1984/2000	TSCS[3]

continuation table 2.1

c) ascription private & public sphere		
1) A **single father** can bring up his child as well as a married couple.[X]	1988/1996	ISSP[1], TSCS[2]
2) A **single mother** can bring up her child as well as a married couple.[X]	1988/2012	GSS[1], ISSP[1], TSCS[2]
3) A job is alright, but what most **women** really want is home and children.	1987/2012	BSA[4], EVS[3], ISSP[4], KGSS[1], WVS[1]
4) How much do you agree or disagree that **women** shouldn't try to combine a career and children.	1987/1994	BSA[3]
5) How much do you agree or disagree that if children are well looked after, it's good for a **woman** to work.	1987/1994	BSA[3]
6) Do you think that **women** should work outside the home full-time, part-time or not at all under these circumstances 1) after marrying and before there are children; 2) when there is a child under school age; 3) After the children leave home; 4) when a couple has not yet had a child; 5) After the youngest child starts school 6) After all children complete elementary school[XX]	1987/2012	BSA[4] , ISSP[4], TSCS[2]
7) About the government ensuring that affordable, good quality child care was available. Thinking about a **single mother** when her child reaches school age. Which comes closes to your view about what the single mother should do…she has a special duty to go out to work to support her child // She has a special duty to stay at home to look after her child.[X]	1994/2009	BSA[8]
8) About the government ensuring that affordable, good quality child care was available. Thinking about a **single mother** with a child under school age. Which comes closes to your view about what the single mother should do…she has a special duty to go out to work to support her child // She has a special duty to stay at home to look after her child.[X]	2005/2009	BSA[3]
9) About a **single mother** with a child under school age. Which comes closest to your view? She has a special duty to go out to work to support her child // She has a special duty to stay at home to look after her child	1994/2009	BSA[8]
10) About a **single mother** with a child of school age. Which comes closest to your view? She has a special duty to go out to work to support her child // She has a special duty to stay at home to look after her child	2005/2009	BSA[3]
11) About a **married mother** with a child of school age. Suppose the government ensured that affordable, good quality child care was available. Which comes closest to your view? She has a special duty to go out to work to support her child // She has a special duty to stay at home to look after her child	2005/2009	BSA[3]
12) About a **married mother** with a child under school age. Suppose the government ensured that affordable, good quality child care was available. Which comes closest to your view? She has a special duty to go out to work to support her child // She has a special duty to stay at home to look after her child	2005/2009	BSA[3]
13) About a **married mother** with a child under school age. Which comes closest to your view? She has a special duty to go out to work to support her child // She has a special duty to stay at home to look after her child	2002/2009	BSA[5]

continuation table 2.1		
14) About a **married mother** with a **child of school age. Which** comes closest to your view? She has a special duty to go out to work to support her child // She has a special duty to stay at home to look after her child	2005/2009	BSA[3]
d) role conflict public sphere		No items observed
e) role conflict private sphere		
1) A **wife** should avoid earning more than her **husband** does./ If a **woman** earns more than her **partner**, it is not good for the relationship./ If a woman earns more money than her husband, it's almost certain to cause problems./ It is better if the husband's income is higher than the wife's.	1983/2010	BSA[1], GGP[3], TSCS[1], WVS[2]
2) If the **husband** in a family wants children but the **wife** decides that she does not want any children, is it all right for the wife to refuse to have children?	1972/1996	GSS[2]
3) **Women** should be able to decide how to spend the money they earn without having to ask their **partner**'s permission.	2004/2012	GGP[3]
4) The **husband** should be older than his **wife**. [X]	2004/2012	EASS[1], GGP[3], TSCS[2]
f) role conflict private & public sphere		
1) A working **mother** can establish just as warm and secure a relationship with her children as a mother who doesn't work. [X]	1972/2012	ALLBUS[8], BSA[2], EVS[3], GSS[8], ISSP[4], JGSS[2], KGSS[1], WVS[3]
2) A preschool child is likely to suffer if his or her **mother** works. [X]	1972/2012	ALLBUS[8], AuSSA[2], BSA[3], EVS[3], GGP[3], GSS[8], ISSP[4], JGSS[9], TSCS[4], WVS[1]
3) A child actually benefits if his or her **mother** has a job rather than just concentrating on the home.	1982/2012	ALLBUS[8]
4) A **woman** and her family will all be happier if she goes out to work.	1987/1994	BSA[4], ISSP[1]
5) All in all, family life suffers when the **woman** has a full-time job.[X]	1988/2012	BSA[2], ISSP[5], TSCS[4]
6) A **woman** should be prepared to cut down on her paid work for the sake of her family.	2004/2010	ESS[3]
7) Family life often suffers because **men** concentrate too much on their work.	1994/2012	GSS[7], ISSP[1], KGSS[1]
8) Being a **housewife** is just as fulfilling as working for pay.[X]	1988/2012	BSA[1] ,EVS[3], GGP[3], ISSP[4], KGSS[1], WVS[5]
9) It is more important for a **wife** to help her **husband**'s career than to have one herself.[X]	1972/2012	ALLBUS[8], EASS[2], GSS[5], JGSS[7]
10) How much do you agree or disagree that if a **woman** takes several years off to look after her children it's only fair her career should suffer.	1987/1994	BSA[3]
11) It is more fulfilling for **women** to work for pay than to be a homemaker.	1996/2001	TSCS[3]
12) Children often suffer because their **fathers** concentrate too much on their work.	2004/2012	GGP[3]
g) role segregation public sphere		
1) **Women** should take care of running their homes and leave running the country up to **men**.	1972/1998	GSS[6]
2) Tell me if you agree or disagree with this statement: Most **men** are better suited emotionally for politics than are most **women**.[X]	1972/2012	GSS[13]
3) On the whole, **men** make better political leaders than **women** do.	1995/2012	GGP[3], WVS[4]
4) Politics is a **men's** game, it is better for **women** not to be involved.	1990/2012	TSCS[4]

continuation table 2.1		
5) On the whole, **men** make better business executives than **women** do.	2005/2010	WVS[2]
h) role segregation private sphere		
1) **Men** should take as much responsibility as women for the home and children.[X]	2004/2008	ESS[1], EVS[1]
2) Who do you think should do this – mainly the **man**, mainly the **woman**, or should the task be shared equally…1) look after children when they are sick; 2) teach children discipline; 3) household shopping; 4) make the evening meals; 5) organize the household money and payment of bills; 6) repair the household equipment; 7) the evening dishes; 8) the household cleaning; 9) the washing and ironing/Which one of the following do you think is a fair way for a couple to share household work? Both should do half of the household work/ Any method, as long as the couple reaches an agreement/ Household work should be assigned according to each spouse's expertise/skill or preference/Other	1983/2011	BSA[4], TSCS[1]
3) **Women** are more suitable for taking care of the family than **men**.[X]	1996/2008	EASS[1], TSCS[2]
4) In general, **fathers** are as well suited to look after their children as **mothers**.	1999/2008	EVS[2]
5) If parents' divorce it is better for the child to stay with the **mother** than with the **father**.	2004/2012	GGP[3]
i) role segregation private& public sphere		
1) It is much better for everyone involved if the **man** is the achiever outside the home and the **woman** takes care of the home and family.[X]/It's better for a **husband** to take care of external matters, while a **wife** takes care of domestic matters./ Families are more harmonious when the **husband** is in charge of the "external" affairs and the **wife** takes care of the "internal" affairs.	1972/2012	ALLBUS[8], GSS[12], TSCS[2]
2) A **man's** job is to earn money; a **woman's** job is to look after the home and family.[X]/For a married couple, the **husband** should be in charge of the "external" affairs, while the **wife** takes care of the "internal" affairs.	1984/2012	AuSSA[1], BSA[6], EASS[3], ISSP[7], JGSS[7], KGSS[1], TSCS[6]
3) Do you approve or disapprove of a **married woman** earning money in business or industry if she has a **husband** capable of supporting her?[X]	1972/2012	ALLBUS[8], GSS[5], JGSS[9]
4) When jobs are scarce, **men** should have more right to a job than **women**./ During economic recession, it is all right for **women** to be laid-off before **men**./ In times of high unemployment **married women** should stay at home.	1984/2012	BSA[4], EASS[1], ESS[3], EVS[3],GGP[3], TSCS[1], WVS[5]
5) It is not good if the **man** stays at home and cares for the **children** and the **woman** goes out to work.	1994/2004	BSA[2], ISSP[1],KGSS[1]
6) Both the **husband** and the **wife** should contribute to the household income.[X]	1988/2012	EVS[3], ISSP[4], KGSS[1], WVS[3]

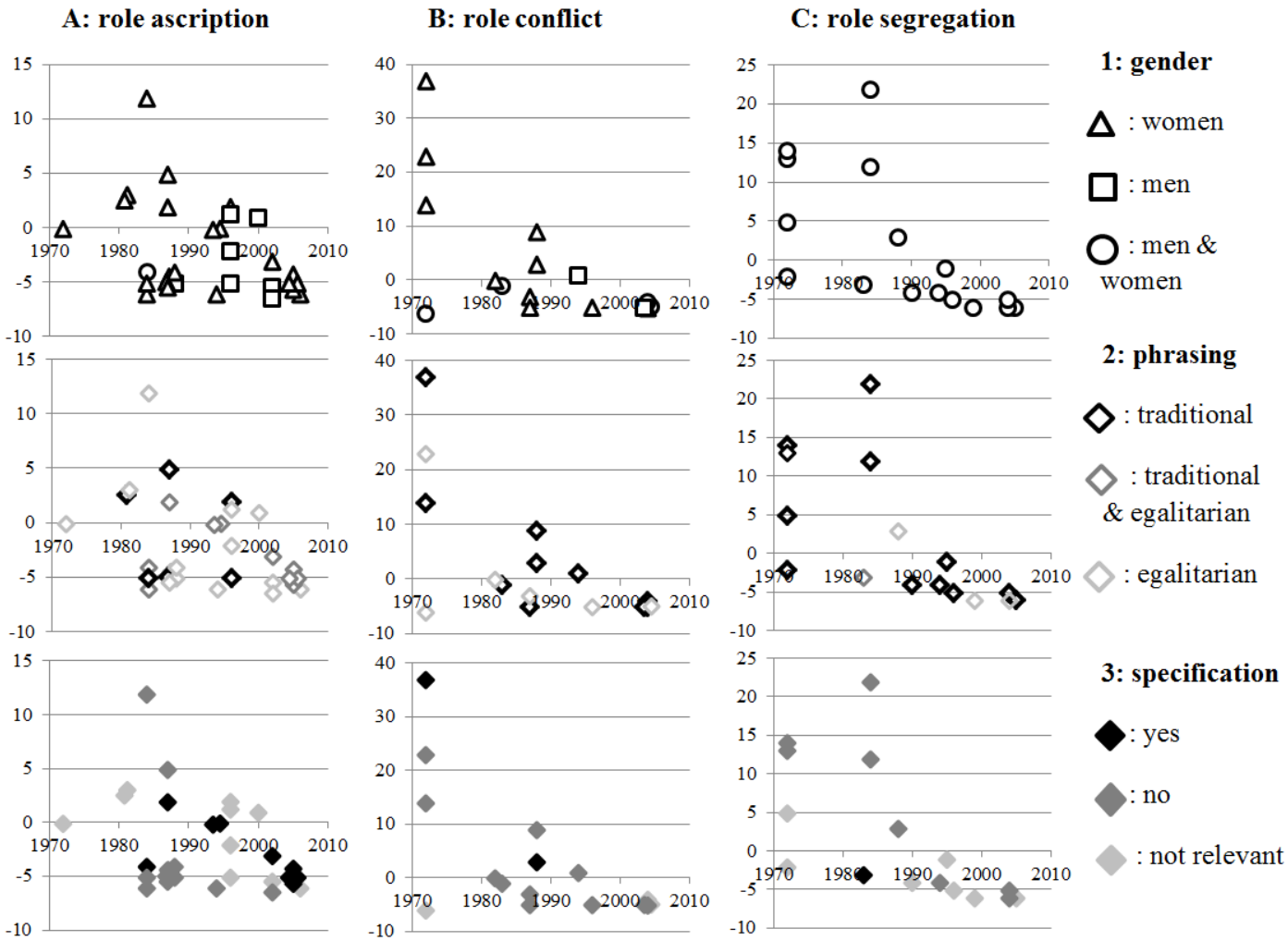
Note: GSS: General Social Survey; ALLBUS: German General Social Survey (GGSS); BSA: British Social Attitudes Survey; JGSS: Japanese General Social Survey; AuSSA: Australian Survey of Social Attitudes; TSCS: Taiwan Social Change Survey; EASS: East Asian Social Survey; GGP: Generations and Gender Programme; ESS: European Social Survey; EVS: European Values Study; WVS: World Values Survey; ISSP: International Social Survey Programme;

[X]the item phrasing of some items differs between the different surveys; [XX] some items are asked only partly in the instrument; the EASS comprises TSCS, KGSS and partly the JGSS as well as the Chinese General Social Survey (no additional information available); the items conducted in the ISSP in the relevant survey years are integrated in the investigations of the GSS, BSA, and partly TSCS and KGSS and are only counted for the ISSP.

Since the division of labor between men and women can express itself in different forms on a continuum between traditional and egalitarian attitudes, some surveys, over time, have introduced more measures that refer to a more egalitarian role model. In addition to the distinction between egalitarian and traditional measures of gender role attitudes, we also need to look at the phrasing of the measurement items, since they differ regarding their degree of specification. They can be phrased in a general form (e.g., "Most women have to work these days to support their families," e.g., ISSP) or be more specific (e.g., "All in all, family life suffers when the woman has a full-time job," e.g., BSA). Empirical studies often show only two aspects of gender roles, which refer to role segregation and the consequences of employment (related to role conflict) (Braun & Scott, 2009a; Lee et al., 2007). These measures are worded mainly as statements that respondents evaluate using an agreement scale (2, 4, or 5 point scales). Many measures of gender role attitudes aim to enable analyses over time. To evaluate whether and how measures account for societal developments, the items presented in Table 2.1 are systematically explored according to the following: 1) Does the item focus on the roles of men or women (or both)? 2) Is the focus of the item on egalitarian or traditional attitudes (or both)? and 3) Does the item specify the amount of employment or the ages of the children? The first aspect is important, since more women live non-traditional roles that also affect the role of men. An analysis by gender indicates whether measures consider gender by dealing with, for example, the role of men. The second aspect is important, since the division of labor became more differentiated over time, both for women and men. Items with a stronger egalitarian stance gain importance, since the non-traditional models of the division of labor within the family have become more important. The third aspect is relevant, since developments such as the differentiation of female employment and the differentiation of family patterns should be reflected in the measures.

Additionally, the present study reports the first year in which an item was introduced to see when it first became relevant (see the x-axes in Figure 2.2). Furthermore, the number of years an item is used is subtracted from the mean number of years for the use of all items. Thus, this indicator can take negative or positive values (an item less or more widespread than the overall average) (see the y-axes in Figure 2.2) and shows how relevant an item is compared to other items.

The different foci are evaluated separately for role ascription, role conflict, and role segregation. The results of the analysis are presented in Figure 2.2.



Note: x-axis: first year of measurement of item; y-axis: number of years item is conducted in relation to mean number of years conducted of all items

Figure 2.2 Measures of gender role attitudes

Each mark in the Figure represents one item from Table 2.1. Regarding the first aspect role ascription (A) and role conflict (B), the analysis shows that most items refer to women (focus gender: triangles), and the items referring to men (focus gender: squares) are not common. However, since the 1990s, surveys have introduced some items regarding men, especially related to role ascription. These items refer mainly to the roles ascribed to the private sphere (see Table 2.1). In other words, in the private sphere, men have faced new challenges, especially regarding parenthood and housework, and so surveys have accounted for these developments, at least partly. However, the number of items referring to men and their dispersion in surveys indicate that most surveys need to extend their measures about male gender roles.

In terms of the egalitarian or traditional phrasing of items, we observed that—regarding role ascription—some items have an egalitarian (Figure 2.2 A, focus phrasing: light grey diamond) or both an egalitarian and a traditional phrasing (Figure 2.2 A, focus phrasing: dark grey diamond). That is, the items account for the roles that have arisen increasingly due to societal developments in the last decades, such as a higher female employment rate, a higher employment rate for mothers, and a rising number of single parents.

However, for items related to role conflict or role segregation, we only have a few egalitarian items (Figure 2.2 B–C, focus phrasing: light grey diamond), and therefore little adjustment to societal developments. In terms of the focus specification of the item, we found that some items related to role ascription specify the ages of children or the amount of employment (and also found an approximately equal number of items that do not) (Figure 2.2 A, focus specification: black diamond). Therefore, these items account partly for developments, such as a higher differentiation of female employment, especially regarding part-time work and the employment of mothers according to the age of their children. Items related to role conflict and role segregation are not usually specified in terms of workload, especially of mothers, or the ages of the children (Figure 2.2 B–C, focus specification: dark grey diamond).

In general, most measures about the ascription of gender roles are not widespread in surveys. More than half of these items are asked less often than the overall mean of the items. Items measuring the consequences of role conflicts or role segregation are slightly more widespread, but most items often are not asked about. That is, for many items, we have only a small number of rounds in which they were used in a survey or a small possibility of comparing answers across surveys.

All in all, our analysis found that measures often are too strongly focused on traditional roles. Societal developments have raised new questions about, for example, the evaluation of more

egalitarian models of the division of labor in the family and public sphere that cannot be answered with these traditionally focused measures. In other words, items are missing that could help, for example, to evaluate the models that are more widespread in society today, such as part-time work for women and full-time work for men. Thus, a supplementation of the measures in use is necessary. Across all aspects of gender roles (figure 2.2 A–C), our analysis of the focus specification of an item has shown that few items specify the number of working hours or the ages of children, which affects the validity of the measures in use. On the one hand, for example, with respect to the evaluation of the consequences of employment, the amount of employment matters. Full-time employment should be evaluated differently than part-time employment. However, so far, most surveys do not specify this aspect of employment, which would not be a problem if respondents always interpret the term *employment* the same across time. However, female employment has become more differentiated. Furthermore, employment for women per se probably has changed meaning, for example, due to changed family patterns and women's lower financial security. Hence, the changes over time in personal experiences and the cultural context that influence the interpretation of a question about gender roles also have become more differentiated. This situation suggests that a specification of the amount of employment is necessary. On the other hand, the evaluation of the consequences of employment or the labor force division should also be dependent on the presence and the ages of children. In the 1970s, it was less common than today for a mother to participate in the labor force. Today, it is more common, but differences still exist according to the ages of children. Thus, today more than in the 1970s, the age of a child matters with respect to the evaluation of gender role attitudes. That is, since societal developments may have led to new interpretations of these terms, it is important to specify as many terms as possible to increase the probability that the measures are understood by every respondent in the same way. Furthermore, it helps to compare answers to questions across groups within a society and over time.

2.7 Conclusion and Discussion

Measures of gender role attitudes were mainly developed in the 1970s and 1980s when the male bread-winner model was dominant. However, societal developments, such as a greater differentiation of family structure and female employment led to an erosion of this model. This erosion also affects the measures of gender role attitudes. So far, most measures concentrate on traditional division of labor within the family, and so the evaluation of more

egalitarian models is neglected. Furthermore, the role of men has changed, and some surveys already have adapted to these changes. However, especially regarding the evaluation of the consequences of employment, we do not have much information about how the male role is perceived. The differentiation particularly of female employment challenges the adequacy of items that are supposed to measure attitudes toward the division of labor and the consequences of employment, although these items usually do not specify the ages of children or the workload. To be able to compare answers, the room for interpretation should be small to ensure the equivalence of measures over time. Thus, a specification of these aspects of measurement is advisable. However, such a specification will directly affect the measures. We have to deliberate about whether we change some measures to ensure equivalence over time and risk the possibility of comparing current attitudes with attitudes measured in previous rounds. In summary, the question about whether measures of gender role attitudes are still adequate has to be answered in the negative. Of course, some measures are still useful for evaluating traditional models of the division of labor within the family, and some can even account for more egalitarian models and the newer roles of men or women in the public and private spheres. However, for future analyses of gender role attitudes over time, we still need to question the adequacy of the analyzed measures. Societal developments challenge the assumption that the measures developed in the 1970s measure the same concept or imply the same meaning as I have shown for gender role attitudes. Of course this problem affects not only measures of gender role attitudes, but also measures that try to capture developments over time. If we want to measure attitude change over time, we should always reflect critically on the adequacy of measures. Further steps regarding gender roles would be to evaluate whether some measures in use that already take some important developments into consideration can be adopted from other surveys as well. In general, a standard of measures towards gender role attitudes does not exist, which impedes analysis over time. It is necessary to develop new measures, especially concerning the role of men and more egalitarian models of the division of labor. Furthermore, concepts have to be developed concerning how measures in use can be adjusted to societal developments without risking important information about these developments over time. Therefore, tests also are necessary to see how changes in measures affect the responses to these changed measures. In addition, a specification of items is partly necessary, although this specificity also must be restricted to ensure the comprehensibility of an item. That is, it is a balancing act between specifying important aspects and keeping the new item as comprehensible as possible. The addition of new items regarding new aspects of gender roles also is restricted not only in terms of

comparability over time, but also with respect to the time constraints of surveys. That is, the necessary adjustment of old measures of gender role attitudes is a challenging task that requires a consideration of many aspects. Finally, the measures in use were developed in a time in which sex-role theory was dominant, which was based on ideas of structural functionalism that saw gender roles as important to maintaining a well-functioning social system. Even though the ideas of structural functionalism were challenged early on, the idea of gender roles persisted and is still relevant for social psychology and survey methodology in particular. Thus, I discussed the revision of measures based on sex-role theory and did not take theoretical changes into consideration, although I am aware that several other theories have pointed out the limitations of sex role theory (e.g., Messner, 1998; B. J. Risman & Davis, 2013). Acker (1992), for example, has argued that gender is not limited to a social role, a personality component, or an individual attribute; in addition, gender also is a structural factor that is expressed by gendered institutions. Therefore, gender is present "in the processes, practices, images and ideologies, and distributions of power in the various sectors of social life" (p. 567). Ridgeway has emphasized that social interactions have played an important role in the maintenance of gender inequality (C. Ridgeway & L. Smith-Lovin, 1999; Ridgeway, 2011). We need new measures to test these theories that go beyond a gender role approach. A consideration of theoretical changes regarding gender theory would probably lead to an extension of measures related to gender in addition to measures of gender role attitudes in surveys. Future research therefore should address how theoretical changes would affect the adjustment and supplementation of measures regarding gender in surveys.

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3. Measures of Gender Role Attitudes Under Revision: The Example of the German General Social Survey

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3.1 Abstract and Keywords

Using the example of the German General Social Survey, this study describes how measures of gender role attitudes can be revised. To date measures have focused on the traditional male breadwinner model. However, social developments in female labor force participation, education, and family structure suggest that a revision and adjustment of existing measures are required. First, these measures need to be supplemented with items that represent more egalitarian models of division of labor and the role of the father in the family. Second, the phrasing of existing items needs to be revised. The results of this study indicate that especially regarding the amount of working hours and the age of children, a specification is needed. This study presents a revised measure, to facilitate analyses over time. This revised measure represents two factors: one referring to traditional and one to modern gender role attitudes.

Keywords: measures of gender role attitudes, revision, egalitarian role models, role of fathers in the family, division of labor in the family

3.2 Introduction

Gender role attitudes (GRA) are the beliefs about "the assignment of different adult social responsibilities to men and women" (Pleck, 1977, p. 182) (p.182). Many studies have analyzed these attitudes, and some have examined the relation between GRA and the labor force participation of women (Budig et al., 2012; Cunningham, 2008a, 2008b; Farré & Vella, 2013; Garrett, 2008), religious beliefs (Carter & Corra, 2005; Petersen & Donnenwerth, 1998; Schnabel, 2016; Seguino, 2011), or the division of homework (Braun et al., 2008; Carlson & Lynch, 2013; Mălina Voicu, Voicu, & Strapcova, 2009). In addition, research also has focused on how GRA differ between countries or within a country (Inglehart & Norris, 2003; Inglehart & Welzel, 2005; Myers & Booth, 2002; Yu & Lee, 2013) and how they have

changed over time (Bolzendahl & Myers, 2004; Cotter et al., 2011; Kroska & Elman, 2009; Pampel, 2011). These and other studies have shown that differences in GRA help to explain the differences of many family characteristics and processes, such as marriage or the division of household labor. Furthermore, these GRA affect decisions with respect to education and labor force participation (see Davis & Greenstein, 2009). Even though GRA is an important concept, surprisingly few studies have discussed how GRA should be measured. Socio-scientific cross-sectional multi-topic surveys with a representative sample such as the International Social Survey Programme (ISSP), the General Social Survey (GSS), the European Social Survey (ESS), the European Values Study (EVS) and the World Values Survey (WVS) include measures of GRA for analyses. Many studies have relied on the quality of, and are restricted by, the provided measures, which offer a related pool of items for analyses (Davis & Greenstein, 2009). Most of these measures were developed in the 1970s or 1980s, and they mainly focus on the male-breadwinner model. Since then, many societal developments have occurred, such as an increasing female labor force participation, expansion of educational opportunities for women, and changes in family formation—for example, a decrease of the number of children per woman, and fewer marriages and more divorces (Walter, 2017).

How can measures of GRA be adapted to these changes in gender relations? I argue that due to these developments, a supplementation and adaptation of existing measures are necessary. GRA have become more complex over time (cp. Barth, 2016). New questions have arisen about the division of household labor between men and women within the family. Existing measures cannot address adequately the question of how models of the division of labor—which have spread in the last decades and which deviate from the traditional male breadwinner model—are evaluated. In addition, the changing roles of men in the family are not considered extensively in surveys, so a supplementation of existing measures of GRA is necessary to overcome this shortcoming. Furthermore, it cannot be assumed that respondents interpret the measures, despite social changes, in the same way as in the 1980s. Thus, the following question arises: How can existing measures be improved to facilitate analyses over time?

Using the example of the German General Social Survey (GGSS or ALLBUS), this study describes how measures of GRA can be supplemented and improved. The aim is to present a revised measure that extends the content covered by the existing measures, which will help to increase the comparability of answers over time. First, I point out the theoretical and methodological need for changes in the current measures of GRA with a focus on the

measures used in the GGSS. Next, I present the new and adjusted measures of GRA that are based on pretests, and ways to overcome the shortcomings of the current measures. Last, the discussion focuses on the consequences on the measures of GRA in surveys in general.

3.3 Current measures of GRA

Measures of GRA face some challenges. First, Pampel (2011, p. 968) has criticized these measures for their "lack of validity, [the] miss[ing of] key elements of gender relations, and [for the] mix [of] components of public and private equality" (p.968). Baber and Tucker (2006) also have pointed out that old measures (the Attitudes Toward Woman Scale or the Attitudes Toward Marital and Childrearing Roles Scale) tend to be outdated. Typical examples of items for current measures are "Being a housewife is just as fulfilling as working for pay." (e.g., WVS) or "A job is alright, but what most women really want is home and children." (e.g., British Social Attitudes Survey). Davis and Greenstein (2009) have provided an overview of the measures in use with respect to the American context. Walter (2017) also has discussed the measures in use in international and national surveys. In general, the measures of GRA focus on the traditional models of the division of the family (Behr et al., 2012) and neglect more egalitarian role models, and the role of men in the family (Walter, 2017).

Furthermore, the functional equivalence of measures of GRA over time has been challenged (Braun & Scott, 2009b). Particularly, societal developments and subsequent changes in the cultural context may lead to differing interpretations of items over time. Since the first implementation of the measures of GRA, many social changes have occurred, which should have an influence on gender relations in society and how respondents express GRA. Among these developments is the educational expansion of women. Also, a part of these developments were changes in female labor force participation. Female employment per se as well as the part-time work of women and the employment of mothers have increased. In addition, family patterns have changed, for example, the number of children per woman has decreased as have marriages, while divorces have increased. Also, the traditional male breadwinner model has declined, and non-traditional—more egalitarian—models of the division of labor in the family have arisen. These developments have been observed in most Western societies (Scott, 2008; Walter, 2017), and thus, the need for measures that apply to these developments has increased (Walter, 2017). Barth (2016) also has shown that GRA have become more complex over time, and that the measures in current use cannot capture

this complexity (see also Behr et al., 2012). These findings apply to the measures of the GGSS — the focus of the present study — but also to the GRA measures of other international and national multi-topic surveys. So far these measures are suitable for evaluating the male breadwinner model and the consequences of female labor force participation for the family. Although these measures can provide information about attitudes towards women's roles with respect to childcare and homework, they cannot provide the same information with respect to men's roles in these same activities (see McHugh & Frieze, 1997 for the GSS). Furthermore, these measures enable an assessment of the consequences of female employment with respect to any children involved, but not for the consequences of male employment. Research has suggested that female and male behavior regarding childcare and employment are evaluated differently (Gaunt, 2013), and in the last decades, men have been confronted with new roles in the division of labor in the family (Hook, 2010).
The focus on an evaluation of the male breadwinner model is especially problematic, since a refusal of this traditional model does not equal egalitarianism (Behr et al., 2012). Much less data is available for assessing attitudes towards more egalitarian models of division of labor in the family, such as the part-time or full-time work of both partners or the full-time work of one and part-time work of the other (Braun, 2008). However, over time, Western societies have experienced a decline of the male bread-winner model and a rise of more egalitarian models (Ciccia & Bleijenbergh, 2014). Thus, the current measures of GRA need to be supplemented to allow an evaluation of the role of the father in the family, and of the more egalitarian role models of the division of labor in the family. Existing measures also need to be revised regarding their phrasing. Even if the consequences of employment on the children can be evaluated or female employment generally, aspects that potentially can influence the evaluation of employment, for example the number of employment working hours or the ages of children, rarely are specified. Therefore, specifying the items regarding employment or the ages of children could facilitate an analysis over time by increasing the comparability of answers (Braun, 2003).

3.4 Measures of GRA in the GGSS

The GGSS has measured GRA since 1982 with six items that also can be found in other surveys (Table 3.1). The GGSS used these six items during nine rounds (1982, 1991, 1992, 1996, 2000, 2004, 2008, 2012, 2016). The items were mainly taken from the GSS and were supposed to measure GRA in general.

Table 3.1 Measures of GRA in the GGSS

Code	Item	Use in other surveys
WRKMUM	A working mother can establish just as loving and secure a relationship with her children as a mother who doesn't work.	EVS (1990, 1999, 2008); GSS (MAWRKWRM 1988-91, 1993-98, 2002, 2012; FECHLD 1972-82, 1983-87, 1988-91, 1993-98, 2000, 2002, 2004, 2006, 2008, 2010, 2012, 2014, 2016), ISSP (1988, 1994, 2002, 2012), WVS (1990, 1995, 1999)
SUPHUSB	It's more important for a wife to help her husband with his career than to pursue her own career.	GSS (FEHELP 1972-82, 1983-87, 1988-91, 1993-98)
CHLDSUFFR	A small child is bound to suffer if his or her mother goes out to work.	EVS (1990, 1999, 2008); GSS (FEPRESCH 1972-82, 1983-87, 1988-91, 1993-98, 2000, 2002, 2004, 2006 2008, 2010, 2012, 2014, 2016); ISSP (1988, 1994, 2002, 2012); WVS (1990)
MALEBREAD	It is much better for everyone concerned if the man goes out to work and the woman stays at home and looks after the house and children.	ISSP (1988, 1991, 1994, 1998, 2002, 2008, 2012); GSS (FEFAM 1972-82, 1983-87, 1988-91, 1993-98, 2000, 2002, 2004, 2006, 2008, 2010, 2012, 2014, 2016)
CHLDBEN	A child actually benefits if his or her mother has a job rather than just concentrating on the home.	
WIFENOWRK	A married woman should not work if there are not enough jobs to go round and her husband is also in a position to support the family.	GSS (FEWORK, 1972-1982, 1982B, 1983-87, 1988-91, 1992-98 FEWORKIF 1872-82)

Note: Translation according to Wasmer (2014)

Respondents were asked to evaluate statements with a four point agreement scale, with high values indicating disagreement. To examine how well these items measure GRA, I first looked at their distribution (Table 3.2). The proportion of missing values is rather small and has decreased over time, which indicates that an understanding of the items is not a problem. I also found that less traditional attitudes are on the rise, which is consistent with other studies (e.g. Knight & Brinton, 2017; Thijs et al., 2017). However, a trend exists towards ceiling- or bottom-effects for most items, which poses a challenge for analyses. A revised measure should counter this trend. For example, between 1982 and 2016, the mean of the first item WRKMUM decreased from 2.0 to 1.5. The proportion of people who agreed absolutely increased from 41% to 61%, and in East Germany to 73%. In general, East Germans especially often chose the non-traditional extreme category. In contrast to older respondents, younger respondents did not choose traditional answers very often.

Table 3.2 Distribution of the measure of GRA in the GGSS

Item			mean	Std. Dev.	% strong agreement/ strong disagreement				
		MV	Total			West	East	Y	O
WRKMUM	GGSS 1982*	2.4	2.02	1.01	41/9	-	-	42/6	33/14
	GGSS 1992	2.5	1.75	.93	53/6	47/7	76/1	57/2	45/10
	GGSS 2000	1.1	1.68	.88	55/4	50/5	74/1	57/2	52/6
	GGSS 2012	.5	1.37	.68	72/2	70/2	85/1	68/1	69/2
	GGSS 2016	.6	1.54	.76	61/2	59/2	73/1	63/1	58/3
SUPHUSB	GGSS 1982*	4.8	2.45	1.03	22/19	-	-	10/35	37/6
	GGSS 1992	5.7	2.72	1.01	14/26	15/25	12/31	6/39	27/10
	GGSS 2000	4.2	2.84	.95	10/28	11/26	8/34	5/38	18/12
	GGSS 2012	1.9	3.14	.85	5/39	5/39	3/38	3/41	8/21
	GGSS 2016	.9	3.15	.83	5/38	5/37	5/42	3/40	9/26
CHLDSUFFR	GGSS 1982*	2.6	1.54	.80	62/4	-	-	51/6	71/2
	GGSS 1992	3.1	1.97	1.01	42/10	46/8	24/21	25/15	51/7
	GGSS 2000	2.3	2.12	1.01	34/12	39/9	13/24	22/15	41/7
	GGSS 2012	1.1	2.61	1.03	17/24	19/20	8/43	9/23	25/22
	GGSS 2016	.5	2.70	.98	13/24	15/21	7/38	8/26	19/23
MALEBREAD	GGSS 1982*	2.7	1.99	1.01	41/10	-	-	20/22	62/2
	GGSS 1992	3.3	2.45	1.08	25/21	27/18	12/32	12/33	44/6
	GGSS 2000	2.1	2.57	1.03	19/23	21/19	8/36	10/32	31/9
	GGSS 2012	.8	3.02	.99	10/39	12/36	4/55	3/44	21/27
	GGSS 2016	.6	3.07	.92	7/39	8/35	5/55	5/44	13/27
CHLDBEN	GGSS 1982*	5.0	3.08	.90	6/39	-	-	8/29	3/53
	GGSS 1992	6.4	2.72	.98	13/25	10/28	26/12	15/16	7/35
	GGSS 2000	4.6	2.52	.93	15/15	11/18	30/5	15/11	12/19
	GGSS 2012	1.5	2.26	.92	22/10	18/38	43/5	20/7	24/12
	GGSS 2016	1.7	2.19	.87	23/8	19/9	42/5	24/7	22/12
WIFENOWRK	GGSS 1982*	4.5	2.06	1.03	38/13	-	-	20/20	53/4
	GGSS 1992	5.2	2.50	1.11	25/24	26/22	18/34	13/32	46/10
	GGSS 2000	4.0	2.77	1.06	16/31	17/28	9/44	9/39	29/17
	GGSS 2012	1.4	3.02	1.0	10/40	11/38	7/48	5/42	20/27
	GGSS 2016	1.7	3.19	.89	7/47	8/45	4/55	4/50	14/35
N	GGSS 1982*		2991			-	-	667	583
	GGSS 1992		3548			2400	1148	794	594
	GGSS 2000		3804			2481	1323	705	705
	GGSS 2012		1721			1178	550	307	389
	GGSS 2016		1750			1164	586	267	447

Note: * 1982 only West Germany; selected years; percentages missing excluded; Y=aged 18 to 30; O= aged 65 and older; MV: percentage of missing data (don't know and refusal); data: GESIS - Leibniz Institute for the Social Sciences (2017), GESIS - Leibniz Institute for the Social Sciences (2016).

However, this increase in non-traditional attitudes is not synonymous with an increase in egalitarian attitudes. It is not clear which attitudes respondents are expressing on a continuum between traditional and egalitarian. Changes in the distribution also could be the result of a change in the meaning of the items. Due to social changes, it could be that the items are not functionally equivalent anymore. A change in the structural composition of the items over time would be an indicator of a change in their meanings. Based on previous studies

(Bauernschuster & Rainer, 2012; Lee et al., 2007), we can distinguish two factors — one related to the consequences of female employment on their children and the other related to gender ideology or the specialization of the roles of men and women in the family. The six items of the GGSS represent these two factors: the items WRKMUM, CHLDSUFFR, and CHLDBEN represent the first, and the items SUPHUSB and WIFENOWRK represent the second; and the item MALEBREAD represents both factors. Confirmatory factor analyses have found that a structure with two latent variables representing these two theoretical factors has a reasonable fit (e.g. Schermelleh-Engel, Moosbrugger, & Müller, 2003) for the data in each survey year (for each year RMSEA <=0.05 [1996, 2000]; CFI >=0.988 [1996]; SRMR<=0.021 [1996]; chi2(7)<=64.924 [2000]; the years in brackets represent the worst fit of all years) (Figure 3.1) (see also Lee et al., 2007). A model that contains these two factors performs better than alternative models, for example, a model with a single factor with respect to fit statistics (results not presented, but available upon request). However, the assumption that the structure does not change over the years is based on a multi-group comparison using structural equation modelling with years as groups unsustainable. Thus, a model with equal loadings has a good fit but a worse fit than an unconstrained model, and a model with equal intercepts does not have a good fit. Therefore, scalar invariance is not provided (see Table 3.7 in the Appendix), and the possibility of comparing the meaning of the means of the empirical factors over time is restricted (cp. Steinmetz, Schmidt, Tina-Booh, Wieczorek, & Schwartz, 2009). For the factor consequences, the reliability (ρ reliability) varies from .61 to .73, and for the factor gender ideology, the reliability varies from .68 to .76.

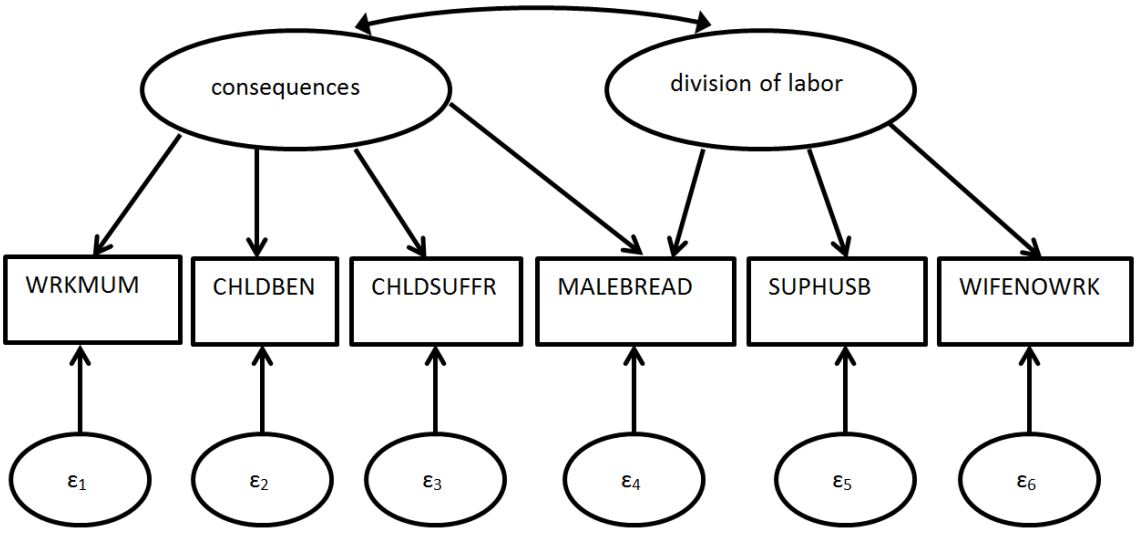

Figure 3.1 Structure of gender role items in the GGSS

From a methodological point of view, the analyses of the structure and reliability of the old items do not necessarily reveal a need for improvement. However, the distribution of the first item, especially, is skewed. Furthermore, although the old measure provides a satisfying structure, social change is not covered sufficiently. A supplementation and revision of the old measure are necessary. However, this necessity poses a challenge insofar as a new measure should be connected to the old measure to preserve the existing time series and enable analyses over time.

3.5 Improvement of measures of GRA

The GGSS improved its measure of gender role attitudes with two pretests to test different phrasings and the composition of the items. Finally, it introduced a revised measure in a split with the old measure. With respect to the first pretest, two factors played a role in the development of the new items—a specification of the phrasing of the old measure and a supplementation of it.

The old items are partly un-specific with respect to employment status, the ages of children, and the gender of the parent, and this un-specificity probably influences how respondents interpret the items (Braun, 2003). The evaluation of parental employment and the division of labor in the family should depend on these aspects. A mother's employment especially depends on the ages of her children. Moreover, mothers still often interrupt their employment after the birth of a child, and are more likely to stay at home with young children. The childcare situation improves with the age of a child, which facilitates mothers to return to the labor market (e.g. Folk & Beller, 1993; Gangl & Ziefle, 2009). Today, more women with young children work for pay, and many of them combine their family responsibilities and work by working part-time (e.g. Ciciolla, Curlee, & Luthar, 2017; Gangl & Ziefle, 2009). Thus, evaluating employment per se is not sufficient anymore. An earlier study by Mason and Kuhlthau (1989) found that parental care was perceived as the ideal care for preschool children. Also, the fact that women often return to work on a part-time basis after the birth of a child indicates that parental care is perceived as necessary for smaller children. Furthermore, although childcare traditionally has been a female task (e.g. Gangl & Ziefle, 2009; Silverstein, 1991), over the last decades, the role of fathers in the family has changed from a male breadwinner role to one of co-parenting (Cabrera et al., 2000), even though women still take on the main responsibility for children and homework (Bianchi et al., 2012). However, to date, these social changes are not reflected in the phrasing of GRA items.

Table 3.3 New measures of GRA in the pretest

Item	Version in pretest	New measures of GRA (Pretest 2011)	Related item ALLBUS
FULLMUMTOD	1	A **full-time working mother** can establish just as close a relationship with her **small child** as a mother who doesn't work.	WRKMUM
FULLMUMSCH	1	A **full-time working mother** can establish just as close a relationship with her **child of school age** as a mother who doesn't work.	
PARTMUMTOD	1	A **part-time working mother** can establish just as close a relationship with her **small child** as a mother who doesn't work.	
PARTMUMSCH	1	A **part-time working mother** can establish just as close a relationship with her **child of school age** as a mother who doesn't work.	
FULLDADTOD	1	A **full-time working father** can establish just as close a relationship with his **small child** as a father who doesn't work.	
PARTDADTOD	1	A **part-time working father** can establish just as close a relationship with his **small child** as a father who doesn't work.	
PARTMUMBEN	1	A **child** benefits if his or her **mother** has a **part-time** job rather than just concentrating on the home.	CHLDBEN
FULLMUMBEN	1	A **child** benefits if his or her **mother** has a **full-time** job rather than just concentrating on the home.	
FULLBOTHBAD	1	For a **small child**, it is not good if **both** parents work **full-time**.	CHLDSUFFR
MENCHLD	2	**Men** should take on the same responsibility for **childcare** as women.	None
MENHOME	2	**Men** should have the same responsibility for **homework** as women.	
FULLDADBAD	2	**Men** who work **full-time** don't have enough time for their children.	
NOFULLDADBEN	2	The relationship between **father** and child benefits if the father doesn't work **full-time**.	

It can be assumed that parental employment is more acceptable when children are older. Furthermore, part-time work is probably more acceptable than full-time work, and the employment of mothers is evaluated more negatively than the employment of fathers.

The GGSS pretest data tested these assumptions. If the assumptions are supported and there are differences in the evaluation, items should be phrased accordingly. To date, it has not been possible to compare directly the answers to the items in use with the answers to the newly developed items. Thus, new data was necessary. The pretest was conducted in 2011 by implementing an online study with 1,523 respondents. The sample was based on quota sampling with quotas on age, sex, education, and region (East and West Germany), which were selected based on the distribution of the GGSS 2010. Only persons older than 17 years were surveyed.

In addition to two measures of GRA, the pretest questionnaire included demographic questions, measures of religious beliefs, and measures of attitudes towards abortion. One measure of GRA included the old items (see Table 3.1). The other measure included the newly developed items. The respondents answered both measures—one at the beginning and the other at the end of the questionnaire (in random alternation). For the second measure, more than one version was developed, but only one was asked due to time constraints. The new measures focused on attitudes towards the consequences of employment. Therefore, the pretest was a unique opportunity to compare the old and new measures of GRA. Table 3.3 provides an overview of the relevant measures in the pretest. The new items were analyzed separately by comparing them to each other, but are not meant to be used together. Again, a four point agreement scale was used. The resulting sample size was 1,310, since the respondents with a response time shorter than 10 minutes were omitted. The distribution of the old measures of GRA (Figure 3.2) showed a continuation of the trend towards less traditional attitudes.

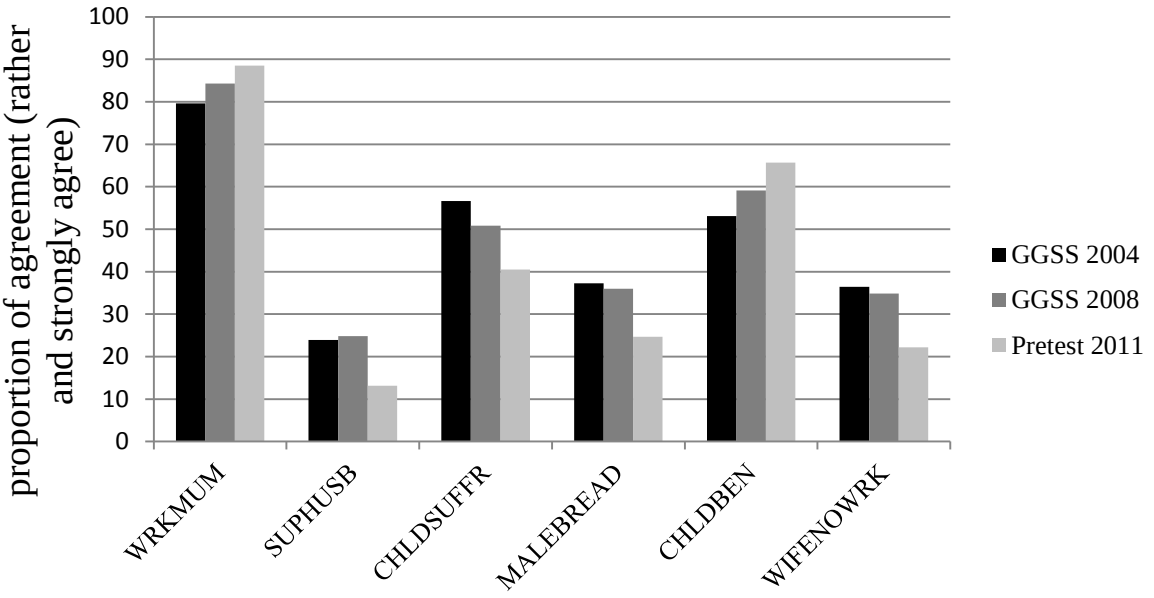

Figure 3.2 Distribution of the old measures of GRA in the GGSS and the pretest

Note: All respondents, data: GESIS - Leibniz Institute for the Social Sciences (2016); pretest data unpublished.

Table 3.4 shows that the percentage of missing values was small. I assessed the mean differences between the items by computing t-tests with unequal variances. These mean differences are reported in Table 3.4 on the right side of the matrix. Furthermore, Table 3.4 shows the correlations between the items on the left side of the diagonal. Some relations between the items could not be evaluated, since the items were conducted in different splits in the pretest, and therefore, I partitioned Table 3.4 in upper (new measure version 1) and lower (new measure version 2) sections. Most items are rather strongly correlated with others. However, especially for the items related to the role of fathers in the family (MENCHLD, MENHOME, FULLDADBAD, NOFULLDADBEN), the correlations with the old items is low (lower part of Table 3.4). Regarding the assumptions previously discussed, we found that the employment of mothers with a small child was less acceptable to respondents than the employment of mothers with school age children (FULLMUMTOD vs. FULLMUMSCH and PARTMUMTOD vs. PARTMUMSCH). The full-time employment of fathers was found to be more acceptable than the full-time employment of mothers. Regarding part-time employment, no differences were found (FULLMUMTOD vs. FULLDADTOD and item PARTMUMTOD vs. PARTDADTOD). The part-time employment of mothers was found to be more acceptable than their full-time employment (FULLMUMTOD vs. PARTMUMTOD, FULLMUMSCH vs. PARTMUMSCH and PARTMUMBEN vs. FULLMUMBEN).

Table 3.4 Correlations and mean differences between items in the pretest

	mean	MV	strong agreement/ strong disagreement	WRKMUM	FULLMUMTOD	PARTMUMTOD	FULLMUMSCH	PARTMUMSCH	FULLDADTOD	PARTDADTOD	CHLDBEN	PARTMUMBEN	FULLMUMBEN	FULLBOTHBAD
WRKMUM	1.49	1.8	64/2		**-.33***	**-.03**	**-.21***	**.05**	**-.22***	**-.04**				
FULLMUMTOD	1.89	3.7	46/8	0.7		**.29***	**.12***	**.38***	**.11***	**.30***			**-.43***	
PARTMUMTOD	1.60	3.2	58/3	0.7	0.7		**-.18***	**.09***	**-.18***	**.0**		**-.32***		
FULLMUMSCH	1.77	3.4	50/5	0.7	0.9	0.7		**.27***	**-.01**	**.18***			**-.54***	
PARTMUMSCH	1.51	3.0	61/2	0.7	0.6	0.8	0.7		**-.27***	**-.09***		**-.40***		
FULLDADTOD	1.78	3.4	49/6	0.6	0.7	0.7	0.7	0.6		**.18***				
PARTDADTOD	1.59	3.0	54/3	0.6	0.6	0.7	0.7	0.7	0.8					
CHLDBEN	2.19	3.9	25/9	0.5	0.5	0.6	0.5	0.5	0.4	0.5		**.27***	**-.11***	
PARTMUMBEN	1.91	7.4	37/7	0.6	0.4	0.5	0.4	0.5	0.4	0.4	0.5		**-.41***	
FULLMUMBEN	2.32	7.4	26/15	0.6	0.7	0.6	0.6	0.5	0.5	0.5	0.6	0.5		
FULLBOTHBAD	2.53	4.8	23/25	-0.4	-0.5	-0.4	-0.5	-0.3	-0.4	-0.4	-0.5	-0.3	-0.6	

	mean	MV	strong agreement / strong disagreement	WRKMUM	CHLDBEN	MENCHLD	MENHOME	FULLDADBAD	NOFULLDADBEN
WRKMUM	1.49	1.8	64/2						
CHLDBEN	2.19	3.9	25/9	0.5					
MENCHLD	1.38	1.2	67/0	0.2	0.1		**-.09***		
MENHOME	1.47	.7	61/1	0.3	0.2	0.7			
FULLDADBAD	2.37	2.3	21/13	-0.2	-0.2	-0.0	-0.1		**-.17***
NOFULLDADBEN	2.52	6.4	17/16	-0.1	-0.1	-0.0	-0.0	0.5	

Note: Right side of the matrix: evaluation of mean differences between items (t-tests with unequal variances); *: significant mean difference ($p<.05$).

■ : content not comparable; ▩ : difference between old GGSS and new item;

▒ : difference part-time and full-time; ▨ : difference toddler vs. child of school age;

▥ : difference father vs. mother; □: other difference;

Left side of the matrix: pairwise correlation between items; MV: percentage of missing data (don't know and refusal).

This finding also applies to the full-time employment of fathers (FULLDADTOD vs. PARTDADTOD). However, the employment of the father is evaluated ambiguously. Some of the respondents evaluated the full-time employment of the father as negative for the father-child relationship, whereas other respondents did not perceive the full-time employment of the father as problematic to this relationship (FULLDADBAD and NOFULLDADBEN). Regarding the division of labor within the home, most respondents approved of an egalitarian division of childcare and homework responsibilities (MENCHLD, MENHOME). Furthermore, the full-time employment of both parents was evaluated positively only by about 50% of the respondents (FULLBOTHBAD). The comparison between the old item CHLDBEN and the new variations PARTMUMBEN and FULLMUMBEN showed that the part-time work of mothers is on average significantly more acceptable than full-time work or some unspecified amount of employment (CHLDBEN, PARTMUMBEN, FULLMUMBEN). A comparison of FULLMUMTOD and FULLMUMSCH with the old item WRKMUM, which does not specify the type of employment, revealed significant differences, although part-time employment (PARTMUMTOD and PARTMUMSCH) did not differ significantly from unspecified employment (WRKMUM).

In a next step, I also examined whether these differences in evaluation could be found with respect to specific subgroups of the population. Based on previous studies, we know that some criterion are related to GRA (e.g. Davis & Greenstein, 2009; Vespa, 2009), for example, East and West Germans differ in their GRA (Bauernschuster & Rainer, 2012; Lee et al., 2007). Furthermore, studies have found differences due to gender (Ciabattari, 2001), employment status (Cha & Thébaud, 2009), education, the presence of children (Davis & Moore, 2010), marital status respectively relationship status (Moors, 2003), religiousness (Carter & Corra, 2005; Whitehead, 2012), and age. Thus, I analyzed the mean differences between items for specific groups, for example, men versus woman and higher versus lower educated respondents. The results showed that for most groups, the observed differences in evaluation also were found with respect to subgroups. If deviations exist, they are not systematic (results not presented, but available upon request).

In summary, part-time employment is more acceptable than full-time employment. In addition, the results showed that the old version of the measures is more consistent with the distribution of measures regarding part-time employment. Furthermore, the age of children and the sex of the parent matters significantly with respect to the evaluation of employment. This finding also applies to the subgroups of the sample. Thus, the results from this pretest imply that a specification of the items is necessary to increase the comparability of answers.

3.6 New measure for GRA in the GGSS

The results of the first pretest were the basis for developing a new measure which was tested in a second pretest, conducted in 2012. A short questionnaire was developed (10 items in 4 versions and the old 6 item version) (see Table 3.8 in the appendix) and used in an omnibus study. The sampling method was a random route procedure. Sample size was 2110. Other topics in the survey referred to consumer behavior. The second pretest was designed to replicate the findings from the first pretest using a face-to-face study, since the GGSS also is conducted face-to-face. Furthermore, the composition of the items was tested and some differences in the phrasing. Prior to the second pretest, a decision was made that the old measure should be the initial starting point for developing the new measure so to facilitate analyses over time regarding the GGSS data. Since the first pretest found that it was better to specify the ages of children and the amount of working time so to increase the variation in answers, the first item of the old measure was altered accordingly. The third, fourth, and fifth old items were unaltered. Instead of using the old items for the division of labor (SUPHUSB and WIFENOWRK), new ones were used that represent alternative models to the male breadwinner model (BOTHFULL, BOTHPART, WRKMUMHOME, ROLECHANGE). WRKMUMHOME can be used for a traditional gender division of labor representing a dual earner/female part-time carer model, and BOTHFULL and BOTHPART can be used for a less traditional gender division of labor (Rosenfeld, Trappe, & Gornick, 2004) representing a dual-earner/dual-carer model. Of the newly developed items, those that were selected showed the most variation in answers (see Table 3.9 in the appendix). Table 3.5 provides an overview of the revised measure. This measure was asked in the GGSS 2012 in a split with the old version. The GGSS is a face-to-face multi-topic survey that has been conducted since 1980 with repeating core modules and a focus on attitudes and behavior. The sample is a registry sample representative for the adult population in private households. In 2012, the core module was religion. Sample size was 3480 respondents, of which 1743 answered the new version. The two theoretical dimensions of the old version were maintained, so five items refer to the consequences of employment (FULLMUMTOD, CHLDSUFFR, CHLDBEN, FULLDADBAD, FULLDADTOD), and the other five items refer to the division of labor within the family (BOTHFULL, MALEBREAD, BOTHPART, WRKMUMHOME, ROLECHANGE). However, in the revised version, the items FULLDADBAD and FULLDADTOD, which were developed in the first pretest, are added to address the consequences of the father's employment.

Table 3.5 Revised measures of GRA in the GGSS

Item	Phrasing	Related old item ALLBUS
FULLMUMTOD	A full-time working mother can normally establish just as close a relationship with her small child as a mother who doesn't work.	WRKMUM
BOTHFULL	The best way to organize family and work life is for both partners to work full-time and to look after the home and children equally.	New
CHLDSUFFR	A small child is bound to suffer if his or her mother goes out to work.	CHLDSUFFR
MALEBREAD	It is much better for everyone concerned if the man goes out to work and the woman stays at home and looks after the house and children.	MALEBREAD
CHLDBEN	A child actually benefits if his or her mother has a job rather than just concentrating on the home.	CHDLBEN
BOTHPART	The best way to organize family and work life is for both partners to work part-time and to look after the home and children equally.	New
FULLDADBAD	A father who works full-time cannot care for his children properly.	New
WRKMUMHOME	Even if both parents work full-time, it is still better if the mother has main responsibility for looking after the home and children.	New
FULLDADTOD	A full-time working father can normally establish just as close a relationship with his small child as a father who doesn't work.	WRKMUM
ROLECHANGE	A man can be responsible for looking after the home and children just as well while the woman works full-time.	New

Note: Translation according to Wasmer (2014).

In addition, one item addressed the role change model that considers the impact of women working and men being responsible for homework and childcare (ROLECHANGE). The addition of these items probably also changes the structure of the measure.

One option with respect to evaluating the usability of these items for other studies is to examine their overall distribution (see Table 3.6). The old items CHLDSUFFR, MALEBREAD, and CHLDBEN should be distributed in a similar way as in the old version. This is the case, especially for CHLDSUFFR and MALEBREAD. Based on the pretests, the assumption is that the first item FULLMUMTOD is less skewed than in the old version. The results support this assumption. Regarding the new items BOTHFULL, BOTHPART, FULLDADBAD, and WRKMUMHOME, the answers vary, and all the answer categories were chosen by at least nine percent of respondents. However, the items FULLDADTOD and ROLECHANGE are distributed in a rather skewed way.

Table 3.6 Distribution of revised gender role items in the GGSS

			strong agreement/strong disagreement				
	mean	MV	Total	West	East	Young	Old
FULLMUMTOD	1.87	.6	49/8	44/9	73/3	39/6	60/8
BOTHFULL	2.08	.8	37/9	31/11	63/1	32/6	50/7
CHLDSUFFR	2.55	.8	20/23	23/19	7/42	16/22	26/20
MALEBREAD	2.87	1.1	14/33	16/28	3/54	6/35	25/23
CHLDBEN	2.26	1.2	23/11	18/13	46/3	19/7	22/14
BOTHPART	2.35	1.7	24/14	26/12	16/23	21/10	27/16
FULLDADBAD	2.62	.8	16/22	17/20	14/32	11/26	23/18
WRKMUMHOME	2.88	.9	10/30	12/28	5/39	5/30	20/20
FULLDADTOD	1.77	.7	49/5	46/6	64/3	38/6	58/3
ROLECHANGE	1.46	.6	64/2	64/2	65/2	57/1	61/4

Note: Young= aged 18 to 30, old= aged 65 and older, data: GESIS - Leibniz Institute for the Social Sciences (2016); MV: percentage missing values (don't know and refusal).

In a next step, I analyzed the structure of the revised version by testing three options that could be justified by theoretical considerations. I computed confirmatory factor analyses with structural equation modelling using STATA. First, I tested a model that represented the old two factors—division of labor and consequences of employment. The newly developed items can be assigned to these two theoretical factors, although the model does not have a good fit with respect to fit statistics (RMSEA .118, CFI .765, SRMR .073; chi2(35)=824, $p<0.001$, BIC 43121). An alternative model with one superordinated GRA factor was also tested but has not a good fit (RMSEA .116, CFI .765, SRMR .073, BIC 43113, chi2(35)=824, $p<0.001$). Due to the previously described social changes in family formation and the division of labor in the family, I added new items regarding the role of the father and egalitarian role models and I assumed therefore it is more likely that the two old factors could be replaced by two factors representing the two poles of the continuum traditional and egalitarian GRA since previous studies have shown that egalitarianism does not equal the absence of traditionalism (cp. Ashmore et al., 1995, p. 755; Behr et al., 2012; Braun, 2008). A model with two factors—one traditional and one egalitarian—shows that the loading of the item BOTHPART on one of the factors is almost zero, and it also is not strongly correlated with the remaining items. Therefore, it appears to be measuring something irrespective of traditional or modern GRA. Due to these results, this item was not considered in the final model. I adjusted a more simple model based on estimated modification indices (with the STATA command estat mindices), since the fit statistics did not indicate a perfect fit. I considered only the indices that were theoretically plausible and that considerably improved the fit of the model (Acock,

2013, pp. 26-29) (pp. 26-29). These indices indicated that the item CHLDBEN referred to both factors with a positive loading to the modern factor and a negative loading to the traditional factor (MI=144). Furthermore, these indices indicated a covariance between the error terms of the two new items with respect to the consequences of paternal employment. Figure 3.3 shows the final model with the two factors traditional and egalitarian. The items CHLDSUFFR, MALEBREAD, FULLDADBAD, WRKMUMHOME, and CHLDBEN refer to the traditional factor. The other factor represents modern gender roles with the items CHLDBEN, FULLMUMTOD, BOTHFULL, FULLDADTOD, and ROLECHANGE. The standardized results are reported. With the addition of new items, especially those regarding a more modern or egalitarian division of labor in the family, the old structure of two factors (consequences and division of labor) can be replaced by one that distinguishes between modern and traditional gender roles. The old items—insofar as they were replicated—split up on the new two factors. These have a broader coverage regarding contents than the old factors, since more egalitarian models of the division of labor in the family and items for the evaluation of the impact of the employment of the father are added. Thus, by this supplementation the subordinated factors — modern and egalitarian attitudes towards gender roles — replace the old two factors. This finding supports previous studies, which see egalitarianism not just as the reverse of traditionalism (e.g. Behr et al., 2012; Braun, 2008) and demonstrate that egalitarianism is a multifaceted concept (Knight & Brinton, 2017).

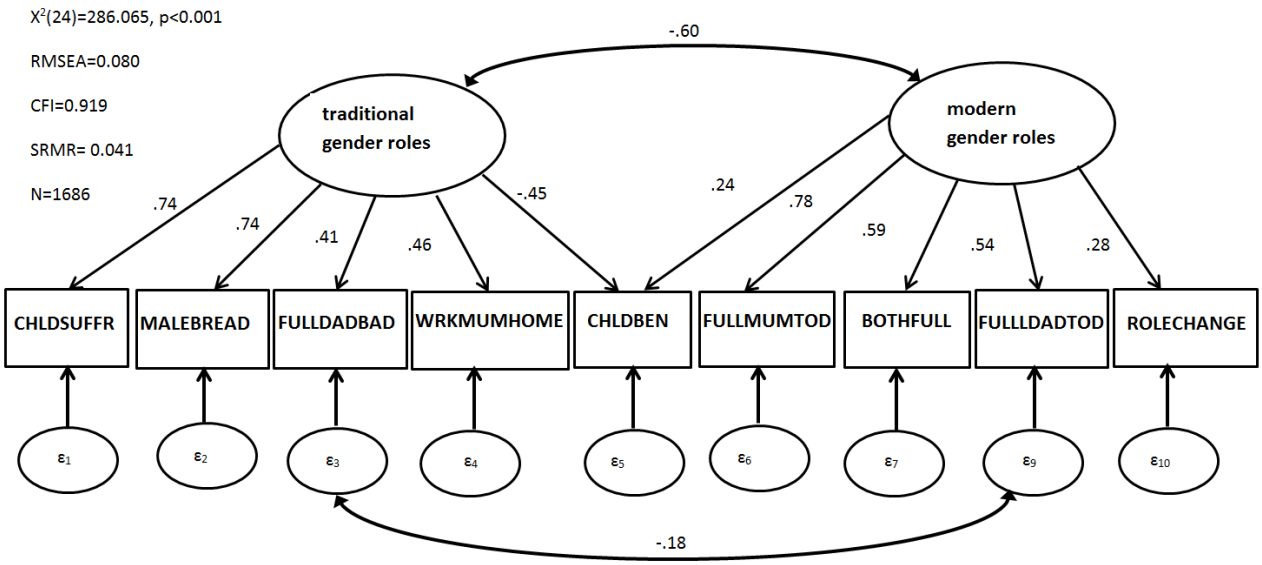

Figure 3.3 Structure of the revised gender role items in the GGSS

Note: Confirmatory factor analysis, standardized results, data: GESIS - Leibniz Institute for the Social Sciences (2016).

In a next step, I evaluated the criterion validity of the revised measure. I examined how it is related with criterion for which prior studies show that they are related with GRA (Bauernschuster & Rainer, 2012; Carter & Corra, 2005; Cha & Thébaud, 2009; Ciabattari, 2001; Davis & Greenstein, 2009; Davis & Moore, 2010; Lee et al., 2007) —namely region (East versus West Germany), gender, employment status (employed versus non-employed), education (qualification for higher education versus lower educated), the presence of children (children under 15 years or not), partnership status (having a partner versus not/ married versus not married), religiousness (self-reported on a 10 point scale, for t-tests dichotomous), and age (continuous and dichotomous [18 to 30 years old versus 65 and older] for t-tests). If analog differences in the expected direction of the new measures of GRA could be found, criterion validity could be established. The results of two-sample t-tests with unequal variances showed that this assumption was the case. With respect to the nine group differences I examined, each item showed at least five significant mean differences. Furthermore, I computed linear regressions with the factors of the new measure. They showed that these variables can explain 22 percentage points of the variance of the traditional factor, and 14 percentage points of the variance of the modern factor. These variables explain 22 percentage points and 24 percentage points of the variance of the old factors—consequences of employment and division of labor. Overall, the results indicate that criterion validity for the items is established (results not presented in detail, but available upon request). However, the relations with the new modern factor are less pronounced (less significant effects in the regression model, smaller standardized coefficients). This finding can be explained by the fact that prior studies, which show that the criteria are related with GRA, relied mostly on items with traditional phrasing. Further studies are necessary to analyze modern GRA in particular. In summary, the revised measure showed a satisfying structure with two factors—one representing traditional gender roles, and the other modern or more egalitarian gender roles. However, some of the new items are not ideal. The item BOTHPART is not strongly correlated with the new factor *modern gender roles* and therefore was not considered. The items FULLDADTOD and ROLECHANGE were distributed in a skewed way. In addition, since the criterion validity for all items was established, apart from the items BOTHFULL, WRKMUMHOME and FULLDADBAD, it was found that the remaining new items showed some limitations.

3.7 Discussion and Conclusion

Social structural developments have made necessary a revision of the measure of GRA in use. To date, measures of the roles of men in the family and employment, or more egalitarian models of the division of labor in the family have been neglected in representative multi-thematic surveys. As in many other surveys such as the WVS, ESS, GSS or ISSP, the old measure in the GGSS — comprised of six items — focuses on the traditional model of the male breadwinner. The aim of the present paper was to revise this measure. First, an extension of the content to cover a broader range of GRA was required. Second, the comparability of answers needed to be increased by a more specific phrasing of the items. Furthermore, fewer respondents are expressing traditional attitudes and therefore the variation in answers is low. The revised version needed to increase the variation in answers. This version, which included 10 items, was asked in the GGSS 2012 in a split with the old measure. Regarding the consequences of employment, two items referred to the role of the father in the family and three to the mother's role. Regarding the division of labor in the family, two items referred to a more traditional model, and three items to a more egalitarian or modern model. The structure of the revised measure had two factors—one representing traditional gender roles and the other representing modern and more egalitarian gender roles. However, one item relating to an egalitarian division of labor—parents working part-time and sharing household tasks and childcare equally—had such a low loading with the modern factor that it cannot be considered for future measures of GRA. Thus, the final measure was comprised of nine items. This measure expands the content of the old measure, increases comparability over time, and partially increases the variation in answers. However, one item regarding the role of the father and one item relating to a role change model showed a rather skewed distribution, and therefore no improvement. The revision process was restricted by two factors. First, the time series of the old measure, which began in the GGSS in the 1980s, needed to be preserved, so the new measure was split with the old one. Another restriction was the question format. The adherence to statements accompanied by an agreement scale facilitates the comparability of the new measure with the old measure, and helps to maintain the time series.

Although the revised measure supplements the old measure with items relating to the role of fathers and more egalitarian role models for the division of labor in the family, it cannot cover all possible GRA. For example, it does not consider attitudes about the occupational segregation of women and men or about the role of women in politics. However, it already includes nine items—three more than the old measure—and so it takes more time for

respondents to answer. In every survey, a trade-off always exists between time and the need for knowledge. In addition, the respondents' burden must be considered, which probably increases as similar questions are repeated. Thus, the revised measure supplements the old measure to some extent, but also takes into consideration that time and repetition are constraints in every survey.

For an extended evaluation the measure has to be asked – in an adapted way - in other surveys as well. The findings of the present study with respect to the GGSS also apply to other international and national surveys. The measures used in these and similar surveys also focus on traditional GRA, and therefore changes should be considered with regard to a supplementation and revision of existing items. It is not constructive to implement the whole new measure of the GGSS in these surveys, since this approach would necessitate abandoning the existing time series. Furthermore, international surveys are confronted with additional challenges insofar as measures need to be equivalent for different cultural contexts. Thus, the items provided in the present study need to be evaluated in this regard. However, the example of the GGSS provides suggestions for how measures in other surveys could be revised and supplemented. The meaning of items changes with their phrasing. The results of my analyses of the GGSS demonstrate that the age of children and amount of labor influence how respondents answer questions. A specification would probably help to increase comparability not only over time but also across different cultural contexts. Furthermore, the focus on traditional GRA can be broadened by a supplementation of more egalitarian items and a consideration of the male role in the family. In this respect, the items FULLMUMTOD, BOTHFULL, and FULLDADBAD are good options. Since GRA have become more complex (Barth, 2016; Knight & Brinton, 2017), it is important to extend existing surveys to broaden the understanding of GRA. Items from the GGSS can be a starting point.

3.8 References

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3.9 Appendix

Table 3.7 Multi Group Confirmatory Factor analysis over years and reliability for the GGSS

Model	**DF**	**chi2**	**RMSEA**	**AIC/BIC**	**comp.**	**Chi2(df)-diff**	**CFI**	**SRMR**
1. unconstrained	56	362.8	.05	334482/ 335763			.99	.02
2. equal loadings	91	683.1	.05	334733/ 335733	2 vs. 1	320.296(35) , p=.00	.98	.03
3. equal loadings and equal intercepts	133	4094.0	.10	338060/ 338724	3 vs. 2	3410.86(42) , p=.00	.89	.14
4. equal intercepts	98	3814.6	.12	337850/ 338795	4 vs. 1	3451.8(42), p=.00	.89	.15

year	**1982**	**1991**	**1992**	**1996**	**2000**	**2004**	**2008**	**2012**
ρ reliability consequences	.61	.69	.69	.71	.70	.73	.71	.71
ρ reliability division of labor	.70	.68	.69	.72	.72	.75	.76	.72

Note: calculations using STATA; comp.= comparison of models.

Table 3.8 Measure of GRA in the second pretest

Item	Phrasing	Related item ALLBUS/ Pretest 1
FULLMUMTOD	A full-time working mother can normally establish just as close a relationship with her small child as a mother who doesn't work.	WRKMUM/ FULLMUMTOD
BOTHFULL	**The best way to organize family and work life is for both partners to work full-time and to look after the home and children equally**. / The best way to organize family and work life is for both partners to work and to look after the home and children equally. / In a family, both partners should work and look after the home and children equally. / The best way to organize family and work life in a family with a small child is for both partners to work full-time and to look after the home and children equally.	New
CHLDSUFFR	A small child is bound to suffer if his or her mother goes out to work.	CHLDSUFFR
MALEBREAD	**It is much better for everyone concerned if the man goes out to work and the woman stays at home and looks after the house and children. /** In a family, the man should work full-time, while the woman should mainly be responsible to look after the home and children. / A woman should mainly be responsible to look after the home and children while the man works full-time. / The best way to organize family and work life is that the man works full-time and the woman looks after the home and children.	MALEBREAD
CHLDBEN	A child actually benefits if his or her mother has a job rather than just concentrating on the home.	CHDLBEN
BOTHPART	**The best way to organize family and work life is for both partners to work part-time and to look after the home and children equally. /** The best way to organize family and work life is for both partners to renounce working full-time to look after the home and children equally. / In a family, both partners should renounce working full-time to look after the home and children equally. / The best way to organize family and work life is that both partners renounce working full-time and to look after the home and children equally.	New
FULLDADBAD	A father working full-time does not care for his children properly. / **A father working full-time cannot care for his children properly. /** A child often suffers if his or her father works full-time. / A child frequently suffers if his or her father works full-time.	New/ FULLDADBAD
WRKMUMHOME	It is good if both parents of a small child are working, but the mother should mainly be responsible to look after the home and children. / **Even if both parents work [full-time], it is better if the woman is mainly responsible to look after the home and children. /** Parents of a small child should organize family and work life in a way that the man works full-time and the woman works part-time and is mainly responsible to look after the home and children. / It is good if both parents are working, but the woman should mainly be responsible to look after the home and children.	New
FULLDADTOD	A father who works full-time can establish just as well a relationship with his toddler as a father who doesn't work.	WRKMUM/ FULLDADTOD
ROLECHANGE	It is much better for everyone concerned if the woman goes out to work and the man stays at home and looks after the house and children. / In a family, it's possible that the woman works full-time and the man is responsible to look after the home and children. / **A man can be responsible for looking after the home and children just as well while the woman works full-time. /** The best way to organize family and work life is that the woman works full-time and the man looks after the home and children.	New

Note: Shown are the phrasings of the four new measures in the second pretest; highlighted are selected items for the GGSS 2012; own translation on the basis of Wasmer (2014)

Table 3.9 Distribution of items in the second pretest

		V1	V2	V3	V4	V5
FULLMUMTOD	strong agreement/ strong disagreement	42/9	36/9	41/9	39/10	
	MV	1.8	.5	1.2	3.5	
WRKMUM	strong agreement/ strong disagreement					55/5
	MV					2.1
SUPHUSB	strong agreement/ strong disagreement					11/22
	MV					4.9
BOTHFULL	strong agreement/ strong disagreement	**25/13**	31/8	32/6	22/15	
	MV	**1.8**	1.4	1.7	2.7	
CHLDSUFFR	strong agreement/ strong disagreement	15/16	18/18	17/15	23/13	17/17
	MV	2.5	3.0	2.5	4.7	2.8
MALEBREAD	strong agreement/ strong disagreement	20/14	23/12	23/15	26/12	22/14
	MV	4.3	3.2	3.0	4.5	3.5
CHLDBEN	strong agreement/ strong disagreement	15/13	16/11	11/11	13/10	13/12
	MV	5.7	5.1	6.7	6.2	6.5
WIFENOWRK	strong agreement/ strong disagreement					14/26
	MV					3.0
BOTHPART	strong agreement/ strong disagreement	**14/24**	7/39	6/43	9/43	
	MV	**2.7**	3.0	4.0	4.0	
FULLDADBAD	strong agreement/ strong disagreement	8/25	**10/20**	4/34	2/34	
	MV	4.1	**2.1**	2.0	3.0	
WRKMUMHOME	strong agreement/ strong disagreement	15/17	**14/16**	24/6	16/10	
	MV	2.7	**2.3**	3.5	3.5	
FULLDADTOD	strong agreement/ strong disagreement	45/4	43/4	43/5	43/3	
	MV	2.3	2.3	2.7	3.5	
ROLECHANGE	strong agreement/ strong disagreement	3/42	25/9	**31/10**	2/50	
	MV	3.7	2.3	**2.5**	5.2	

Note: V ≙ Version; highlighted distribution of selected items for the GGSS 2012.

4. Gender Role Attitudes in West and East Europe: Convergence or Divergence?

4.1 Abstract and Keywords

In this article I examine how gender role attitudes develop in East and West Europe since the downfall of the communist regimes and how social developments influence gender role attitudes. Data from the World Values Survey (WVS), the European Values Study (EVS) and the International Social Survey Program (ISSP) from 1990 to 2012 are pooled. Attitudes related to the private and the public spheres are examined. I observe a trend towards less traditional attitudes across Europe. West Europeans show more egalitarian attitudes regarding the private sphere. East Europeans show more egalitarian attitudes related to the public sphere. Attitudes converge over time. Of the social developments under consideration only female labor force participation has an influence on attitudes. In a context with higher female labor force participation, consequences of a mother's employment are evaluated less negative. Analyses between regions within East and West Europe show that Northern Europeans are the least negative in the evaluation of a mother's employment. Respondents in continental and Anglo Saxon countries the least in agreement with the statement that both should contribute to the household income.

Keywords: Gender role attitudes, cross-cultural comparison, longitudinal analysis, multi-level

4.2 Introduction

Gender role attitudes have been analyzed over time (Bauernschuster & Rainer, 2012; Bolzendahl & Myers, 2004; Brewster & Padavic, 2000; Choe et al., 2014; Cotter et al., 2011; Lee et al., 2007; Pampel, 2011; Voicu & Tufiş, 2012) and in cross-cultural comparison (Boehnke, 2011; Rosemary Crompton et al., 2005; Fodor & Balogh, 2010; Forste & Fox, 2012; Fortin, 2005; Tanaka & Lowry, 2011; Treas & Widmer, 2000; Yu & Lee, 2013). But analyses that combine these two approaches – cross-cultural and over time - are rare and if they exist they are not up-to-date (Braun & Scott, 2009a; Dorius & Alwin, 2010). I examine how differences in gender role attitudes between East and West European countries develop over time. The question is whether attitudes in East and West European countries differ and if they do whether this difference increases or decreases over time. The focus is on East and

West Europeans countries since they differed regarding their political regime types until the early 1990s with West Europeans countries relying on a capitalist and democratic system and East European countries on a communist system. East European socialist and Western capitalist societies endorsed different values about the importance of female employment and gender relations in society (Adler & Brayfield, 1997). However, little is known about the influence of political regimes on individual beliefs about gender roles (Bauernschuster & Rainer, 2012, p. 6) - especially about the long-term influence of socialist regimes. How influential have they been and how influential are they even after they collapsed? Modernization theory would predict that as societies develop economically gender equality increases. According to approaches arguing with pathway dependency the cultural heritage should have a stronger influence than economic conditions regarding gender role attitudes (Inglehart & Baker, 2000; Inglehart & Norris, 2003) and therefore differences in gender role attitudes should still persist. Did the collapse of the communist regimes lead to a convergence of gender role attitudes within Europe? It is assumed that political regimes and the associated social policies and living circumstances have an impact on gender role attitudes. Whereas in the early 1990s in West Germany, for example, a combination of work and family was hindered by the lack of public child care, in East Germany the principle of equal pay for equal work dominated and the state supported female employment (Lee et al., 2007; Rosenfeld et al., 2004). This was reflected in the attitudes towards gender roles. In West Germany attitudes towards gender roles used to be rather traditional. Many respondents disapproved female employment especially concerning the employment of mothers. In East Germany respondents tended to be less restrictively and supported female employment to a larger extent (Bauernschuster & Rainer, 2012). Since the downfall of the communist system in the 1990s we see changes in female labor force participation, marriage behavior, fertility, female working hours and female wages. This also applies to other countries in East and West Europe (Lee et al., 2007). These changes should have an influence on gender role attitudes. Persons socialized before the downfall of the communist regimes should differ from those socialized afterwards.

The question is how economic or structural developments and changes in family formation influence gender role attitudes since the downfall of the communist regimes and whether there are differences between countries that had a communist political regime and those which had a capitalist regime (Inglehart & Baker, 2000; Inglehart & Norris, 2003; Inglehart & Welzel, 2005). The article describes how and why gender role attitudes differ in East and West Europe on the basis of the existing literature. I analyze with multi-level analyses

whether gender role attitudes in East and West Europe converge or diverge based on data from the World Values Survey (WVS), the European Values Study (EVS) and the International Social Survey Program (ISSP). For this purpose a time span from the 1990s to 2012 is examined. The conclusion summarizes the findings.

4.3 The change of gender role attitudes

Gender role attitudes can be interpreted as "a set of ideas about the goals, expectation, and actions associated with a particular gender" (Andringa et al., 2015, p. 585). For the prediction of the development of gender role attitudes over time one can revert to different theoretical approaches. Modernization theory predicts that economic development is accompanied with systematic and predictable changes in gender roles (Inglehart & Norris, 2003; Knight & Brinton, 2017). The assumption would be that insofar as the economic situation in Eastern European countries improves East and West European countries' attitudes toward gender roles converge towards more egalitarian attitudes.

Also social structural theory would assume that attitude changes in society occur by changes of the situation of individuals. Persons adapt their attitudes to their living circumstances – as interest based explanations would assume (Bolzendahl & Myers, 2004). If many persons in a country experience new living circumstances –for example by changes in labor force participation or families – attitudes should change (Brooks & Bolzendahl, 2004). Cohort replacement also influences changes of gender role attitudes over time. Attitudes in a society change if older cohorts are replaced by younger ones (Brooks & Bolzendahl, 2004). Persons which are socialized during socialism probably have different attitudes than those afterwards or before. Based on these theoretical approaches we would assume that gender role attitudes become less traditional over time. The development towards egalitarian attitudes is probably not a linear trend. Cotter et al. (2011), for example, observe stagnation since the mid-1990s. However, there are still gender differences in wages and the division of labor in the family tends to be traditional. Thus, comprehensive gender equality is still a distant achievement which challenges the assumption that modernization and structural developments or cohort replacement automatically leads to gender equality (cp. Knight & Brinton, 2017). According to path dependency theory, the cultural heritage of a country has an enduring effect on gender relations and gender role attitudes in a country (Inglehart & Baker, 2000; Inglehart & Norris, 2003). Hence, for the development of gender role attitudes in East and West Europe different scenarios are possible. Besides the scenario that modernization or structural changes lead to a

convergence of gender role attitudes, another scenario would be that there are still differences due to the different cultural background of countries. Pfau-Effinger (2004) argues, for example, that the rise of the male breadwinner model depended on the role the urban bourgeoisie played in a country. Lomazzi (2017) finds differences in gender role attitudes depending on the historical context in Italy. Thus, historical factors can also have an influence on gender role attitudes.

4.4 Gender role attitudes in East and West Europe

To better understand how gender role attitudes develop in East and West Europe, I next describe the structural background in the countries. Before the downfall of the communist system, East and West European countries differed in their social structure and political contexts which had a different influence on gender relation and gender role attitudes. In the socialist countries of Eastern Europe and the former Soviet Union gender equality in the labor market was promoted. These countries were characterized by high minimum wages, extended public child care and thus by a high female labor force participation (Brainerd, 2000). The "financial and ideological pressure on women to enter paid employment was strong" (Kantorová, 2004, p. 248). In Eastern European countries female employment was seen as a duty and a necessity for the financial security of the family. Most women worked full-time. The labor force participation was supported by the development of childcare facilities and communist countries emphasized an early family formation (Kantorová, 2004). But even if gender equality on the labor market was promoted, the same does not apply to non-market work. Women continued to be mainly responsible for the housework. Women's roles were defined as worker and mothers while there was no parallel role definition for men (Brajdić-Vuković et al., 2007; Černič Istenič, 2007; Einhorn, 1991; Heinen & Wator, 2006; LaFont, 2001). Furthermore, occupational segregation of men and women was also present in Eastern European countries with women being overrepresented in health and educational occupations as well as in retail trade and semi-skilled professional occupations since these occupations were related with shorter and more flexible working hours. This occupational segregation was accompanied with a lower status, lower wages and lower career options for women (LaFont, 2001). However, since women also entered traditionally male occupations, occupational segregation was on average less pronounced than in advanced industrialized nations (Brainerd, 2000; Bystydzienski, 1989). Women also tend to earn less than men (Einhorn, 1991; Kantorová, 2004). In West European countries female labor force participation was not

as pronounced as in East European countries. However, there are differences between regions in Europe. While in South Europe the focus was on the family with low labor force participation of married women and mothers, gender equality on the labor market and in the home was promoted in Scandinavian countries (Knight & Brinton, 2017).

After the downfall of the communist regimes, the countries faced declines in GDP and real wages, high rates of inflation an increasing unemployment (Brainerd, 2000). Women were especially negatively affected by these changes in Russia and Ukraine (Brainerd, 2000; Robila, 2012). Structural developments are accompanied with institutional changes. The closure of childcare facilities and a decline in women's representation in national parliaments also followed the downfall (Einhorn, 1991). While women in many communist regimes were guaranteed a percentage of seats in the parliaments, the political representation of women in post-communism declined (LaFont, 2001; Matynia, 1994). Furthermore, women rights, for example regarding abortion, were questioned (Einhorn, 1991; Heinen & Wator, 2006). These changes also affected fertility in Eastern European countries which dropped after the downfall of the communist system. The mean age of mothers at first birth rose (Kantorová, 2004; Robila, 2012). Eastern European countries tried to increase birth rates also by campaigns that glorify motherhood (LaFont, 2001). The division of housework stayed rather traditional with women doing the main part of housework (Kantorová, 2004). The downfall of the communist system deteriorated the combination of family responsibilities and employment for women (Ciccia & Bleijenbergh, 2014; Robila, 2012; Szelewa & Polakowski, 2008). Part-time work is not often used in Eastern European countries to facilitate this combination (Robila, 2012). The work of health and education were familiarized and care responsibilities of women increased (Pascall & Manning, 2000). Maternity leaves are generally longer in Eastern Europe than in West European countries (Robila, 2012). Thus, regarding policies, many Eastern European countries experienced a re-familism trend.

In West European countries female labor force participation increased and changes in family formation can be observed, for example, with decreasing marriages, a later family formation, more single parent families and higher divorce rates (Haas et al., 2006; Lee et al., 2007; Walter, 2017). In comparison with Eastern European countries, Western European countries tend to have a higher GDP and long-term unemployment tends to be less severe. Part-time work is not as widespread in Eastern European countries in comparison to Western European countries, especially the Netherlands or the UK. Long working hours are more common in Eastern European countries than in Western countries (Haas et al., 2006). However, in the Scandinavian countries such as Sweden, Finland or Denmark dual-earner families are

supported also by generous allowances during parental leave (Akgunduz & Plantenga, 2013). In these countries parental leave was introduced to increase gender equality on the labor market. The employment of mothers was supported and paternal leave was introduced relatively early (Boll et al., 2014). Thus, a dual-career/ dual-carer model is supported (Haas et al., 2006). In countries such as Germany, Portugal, Spain or Austria the male breadwinner model is still more active since in these countries long parental leave periods are accompanied with low allowances (Akgunduz & Plantenga, 2013). Here family policies were meant to support women as the primary caregivers of young children (Boll et al., 2014). In the UK, Ireland or Greece parental leave is short and in the Netherlands part-time work is supported to combine family and work responsibilities (Akgunduz & Plantenga, 2013). Differences between Western European countries are also expressed in the extent of public childcare. The Nordic countries Denmark, Sweden and Norway have the highest percentage of children under three years old which are in public childcare in 2010. Furthermore, the European target that 33 per cent of the under three years old are taken care for in public childcare is also reached in Belgium, France, Luxembourg, the Netherlands, Portugal, Slovenia, Spain, and the UK (Mills et al., 2014).

In general, gender equality is more promoted in Northern than in Southern European countries. Also in Eastern European countries there were differences between communist countries during communism and during the transition period and afterwards (e.g. Szelewa & Polakowski, 2008). In comparison to other Eastern European countries during the communist regimes, the provision of public childcare was bad in Poland (Heinen & Wator, 2006; Szelewa & Polakowski, 2008). In Poland, women still are mainly responsible for child care. The strong Catholic Church reinforces the ideal of the mother as primary care-taker (Heinen & Wator, 2006). Also in the Czech Republic, families rely on the male breadwinner model when there are children under the age of three (Kantorová, 2004). In countries with a strong influence of the Catholic Church – namely Poland, Hungary, the Czech Republic and Lithuania – abortion rights were challenged more intensively (LaFont, 2001). In Slovenia family policies are more developed than in other East European countries to facilitate the combination of work and family life (Robila, 2012). Furthermore, the economic development differs between the countries (Robila, 2012).

In general, however, we see differences between Eastern and Western European countries in social policies and economic development. These differences lead to the tendency of Eastern European countries to rely more on the family if it comes to combine family and work responsibilities – especially those in which the Catholic Church plays an important role. In

West Europe the Nordic countries are those which promote gender equality the most. These differences should also be presented in gender role attitudes. I assume that despite the economic and structural developments of European countries since the early 1990s differences in gender role attitudes still can be found. Thus, in my analyses I mainly focus on differences between East and West Europe. In a next step, however, to account for structural and economic differences within East and West Europe, I also look at how attitudes differ and develop between regions within East and West Europe.

Some studies already provide information about how gender role attitudes develop over time or a limited number of countries. In East and West Germany no convergence of attitudes can be found between 1980 and 2008. In contrary, East and West German attitudes tend to diverge after 1990 (Bauernschuster & Rainer, 2012). A study from Lee et al. (2007) came to the same result analyzing data from 1982 to 2004. Lück (2005) shows that support of traditional gender roles increased between 1988 and 1994 in Hungary but decreased in general in Europe. Bystydzienski (1989) reports that Polish women, although both Polish women and Soviet women are employed, emphasize their role as mothers and women in the Soviet Union consider their work outside the house important to be independent. Croatians evaluate female employment positively, but express more traditional attitudes towards other gender role attitudes (Brajdić-Vuković et al., 2007). Lomazzi (2017) shows that Italians become more traditional regarding a dual role of women as worker and caregivers but more egalitarian regarding equality in the labor market. Thijs, Grotenhuis and Scheepers (2017) reports more egalitarian attitudes over time for the Netherlands. Also Romanians become less traditional over time but the degree of traditionalism depends on the examined attitude (Voicu & Tufiş 2012).

Besides these studies which focus on one country or a limited number of countries only, there are also studies which examine gender role attitudes across multiple countries. Inglehart and Baker (2000) find evidence that both – the cultural heritage and social change or modernization– have an influence on values regarding gender roles (see also Inglehart & Norris 2003). Haller and Hoellinger (1994) also conclude that both aspects have an influence. However, their study is based on eight countries only. Furthermore, studies point out that in ex-communist countries the incongruence between attitudes and actual behavior is higher than in other countries (Forste & Fox, 2012). The descriptive results of a study of Steel and Kabashima (2008) indicates that East Europeans show less traditional attitudes regarding some aspects of gender role attitudes than West Europeans around the year 2000 but regarding other aspects they are more traditional. In contrast, Tanaka and Lowry (2011)

demonstrate that East Europeans have more traditional gender role attitudes than West Europeans (EVS 1999). Studies from Cha and Thébaud (2009) and Dotti Sani and Quaranta (2017) support this finding, however with the restriction that they do not focus on Europe and the former is restricted to men and the latter examines adolescents. Rosemary Crompton et al. (2005) find a trend towards less traditional attitudes in Great Britain, Norway and Czech Republic, however, differences between these countries persist. Yu and Lee (2013) show that in countries with more educational and economic opportunities for women, employment of women is more supported than in other countries but they found less support of gender equality at home in these countries. Saxonberg and Sirovátka (2006) also show that differences between East and West Europeans depend on the measure. East Europeans are more traditional regarding abstract feminism and the evaluation of the mother-child relation. A study by Knight and Brinton (2017) examined how gender role attitudes develop in European countries. They found that traditional attitudes declined in Europe in general, but egalitarian attitudes differ across Europe. They do not observe a convergence toward one egalitarian position but rather find different egalitarian clusters across countries. In Eastern European countries (Czech Republic, Estonia, Hungary, Poland and Slovakia) the decline in traditional attitudes is pronounced most. Here egalitarian familism is on the rise which is characterized by "the dual beliefs that women should be active members of the labor force and that the family and home are essential to women's identity" (Knight & Brinton, 2017, p. 1502). However, this study does not focus primarily on East and West European differences. Aside from these studies other researchers report more convergence between countries. Dorius and Alwin (2010) compare 75 countries based on the World Value Survey and conclude that a convergence to a postmodern ideological structure occurred in the last years. However, they do not focus on East-West differences. Simkus (2007) compares different Eastern European countries and ethnic groups and shows that gender role attitudes in Eastern Europe differ more depending on educational level than on affiliation to an ethnic group or on the country. Treas and Widmer (2000) show differences in gender role attitudes across countries but also many similarities.

In summary, empirical analyses comparing gender role attitudes across countries with a focus on East-West differences are rare, do not consider many countries or are not based on the most recent data. Furthermore, results regarding the convergence or divergence of East and West European countries– even if it is difficult to compare them due to a different selection of countries and dependent variables- are mixed. The studies show also, that aspects such as education and gender are important as well as a differentiated analysis of attitudes towards

gender roles. In the appendix I provide a table with an overview of the mentioned studies. I will examine how gender role attitudes developed in East and West Europe and whether gender role attitudes converge. Furthermore, I will examine which factors influence how gender role attitudes evolve. Do economic and structural changes affect gender role attitudes? How persistent is the effect of the different political background of the countries in East and West Europe?

4.5 Data and Method

I base my analyses on three surveys which provide data about attitudes towards gender roles in Europe over time- the WVS, the EVS and the ISSP. These surveys cover a long period so that I can use data from 1990 to 2012. The WVS and EVS are multi-topic surveys conducted mainly face-to-face.

Table 4.1 Measures of gender role attitudes in the EVS, WVS and ISSP by year categories based on years of conduction

Items	EVS	WVS	ISSP
workmum "A working mother can establish just as warm and secure a relationship with her children as a mother who does not work."	1989-1993 1999-2002 2005-2009	1989-1993 1994-1998 1999-2002	1994-1998 1999-2002 2010-2014
chldsuff "A pre-school child is likely to suffer if his or her mother works."	1989-1993 1999-2002 2005-2009	1989-1993 2010-2014	1994-1998 1999-2002 2010-2014
realwant "A job is all right, but what most women really want is a home and children."	1989-1993 1999-2002 2005-2009	1989-1993	1994-1998 1999-2002 2010-2014
homefulfill "Being a housewife is just as fulfilling as working for pay."	1989-1993 1999-2002 2005-2009	1989-1993 1994-1998 1999-2002 2005-2009 2010-2014	1994-1998 1999-2002 2010-2014
jobind "Having a job is the best way for a woman to be an independent person."	1989-1993 1999-2002 2005-2009	1989-1993	1994-1998 1999-2002
bothcontri "Both the man and woman should contribute to the household income."	1989-1993 1999-2002 2005-2009	1989-1993 1994-1998 1999-2002	1994-1998 1999-2002 2010-2014

The ISSP has core modules and is conducted in self-completion. For descriptive information,

I categorize the years of conduction in five categories so that one round of a survey is represented in the same category (1990-1993; 1994-1998; 1999-2002; 2005-2009; 2010-

2014). The assignment to a year category is done by the documented year of conduction. For the analyses, however, years of conduction are used as continuous variable. The cumulative data files are used for WVS and EVS. For the ISSP I use the data releases of the "Family and Changing Gender Roles" module. All three surveys provide similar measures for gender role attitudes. There are six items which are asked in all three surveys (see table 4.1). I focus in my analyses on the items *workmum*, *homefulfill* and *bothcontri* since they are asked more often and in more countries. These three items capture different aspects of gender role attitudes. *Workmum* and *Homefulfill* are more related to the private sphere with an emphasis on the consequences of employment or inactivity of women. *Bothcontri* is more related to the public sphere. The items are asked with identical phrasing. The ISSP, however, uses a five and the EVS and WVS a four point answer scale. For further analyses, I rescaled the five point scale into the same range as the four point scale with the middle category being between the second and third answer category. Furthermore, I rescaled the scale ranging from zero to one (with the values 0, .2475, .33, .5, .66, .7425 and 1). For all variables the value one expresses the most egalitarian answers (agreement to *workmum* and *bothcontri*, disagreement to *homefulfill*). In the ISSP the items are asked in the beginning of the module. In the EVS and WVS they are asked with different other family values in the middle of the questionnaire.
For the analyses, I examine at the individual level the influence of the respondent's gender, the respondent's relationship status, the respondent's employment status and the age of the respondent (in decades). I grand mean center these variables. Furthermore, the educational level (categorized in three categories: lower, medium and higher education) is taken into consideration. Former studies have shown that these characteristics have an influence on gender role attitudes (Davis & Greenstein, 2009). As indicators for the cultural background, I control on the individual level for the birth cohort. In which cohort one was socialized has an influence on gender role attitudes (Davis & Greenstein, 2009). Three birth cohorts are distinguished which should have experienced different contextual influences, for example in terms of female labor force participation or family structure. One cohort was socialized before World War II (born until 1933), another one was socialized during socialism or in postwar Western European countries (born between 1934 and 1977, that is at most 11 years old after the end of World War II) and one cohort was socialized after the downfall of the communist systems (born after 1977, that is at most 11 years old 1989). Furthermore, I look at how religious the respondent is. Therefore, I computed an index which combines information about the denomination and church attendance of the respondent. A person without denomination and not attending church has the lowest value, a person with a denomination and who attends church at least once a week has the highest value. The scale ranges from zero to six. This variable is also grand-mean centered. On the country-years level, I look at the effect of economic development (GDP per capita, world development indicators, logarithmized). In addition, differences in female labor force participation are taken into account (world development indicator, population 15+, ILO estimates). As a further indicator for structural changes, I control for the percentage of female students in tertiary education (UIS statistics),

which captures educational expansion. In order to take changes in family structure into account, I control for fertility (world development indicator). I also control for the attitudinal climate regarding marriage. For this purpose, I computed the mean support for the statement "Marriage is an outdated situation" (EVS and WVS). If this information is missing, the statement "Married people are generally happier than unmarried people" (ISSP) is used. The variables on country-years level are also grand-mean centered. I also control for the study for which the data is conducted to account for differences in the survey mode or question formulation. Finally, countries are divided into East and Western European countries. Table 4.2 gives an overview of which country is represented in each year category for East and West Europe separately. For a detailed analysis of regional differences the countries are divided into five regions: East European EU member states (BGR, HRV, CZE, EST, HUN, LVA, LTU, POL, ROU, SVK, SVN), East European Non-EU-members (ALB, AZE, ARM, BIH, GEO, MDA, MNE, RUS, SRB, TUR, UKR, MKD), Continental/Anglo-Saxon European countries (AUT, BEL, FRA, IRL, LUX, NLD; CHE, GBR, DEU), South European countries (GRC, ITA, MLT, PRT, ESP, CYP) and North European countries (DNK, FIN, ISL, NOR, SWE). The countries are mainly categorized due to their different family policies models based on a classification of Korpi (Palència et al., 2014). Remaining countries are assigned to the categories based on regional correlation. Countries with a "Traditional-Central" and "Market-oriented" family policies model are included in the same category. Furthermore, the assumption is that Eastern European EU member states are different to Eastern European Non-EU-members in their link with the EU and, hence, also face different political backgrounds. The EU, for example, has clear guidelines concerning gender inequality (European Commission, 2015).

For some countries information about one of the individual control variables or the country variables is missing in specific years. In addition, also the dependent variables are not asked in each country. For the dependent variables *workmum* and *bothcontri* some country-years are missing (see table 4.2). For *homefulfill*, I have data from 23 Eastern European and 20 Western European countries.

I use multilevel analyses to examine gender role attitudes over time. Schmidt-Catran and Fairbrother (2016) describe different multilevel models for comparative longitudinal survey data. I base my analyses on their Model D. It is a three-level model, with respondents nested in country-years and country. Hence, it accounts for the fact that "respondents from the same country are more similar than respondents from different countries" (p. 25).

Table 4.2 Countries by year categories and region

year category	country-years East Europe	West Europe
1990-1993	BGR91, CZE91, EST90, HUN91, LVA90, LTU90, POL90, ROM93, SVK91, SVN92, ***TUR90***	AUT90, BEL90, DNK90, FIN90, FRA90, IRL90, ITA90, NLD90, NOR90, ESP90, PRT90, SWE90, GBR90, DEU90, ISL90
1994-1998	ALB98, AZE97, ARM97, BIH98, BGR94, BGR97, CZE94, CZE98, EST96, HUN94, HUN98, LVA96, LTU97, MDA96, MNE96, POL94, ROM98, RUS94, SRB96, SVK98, SVN94, SVN95, TUR96, UKR96, MKD98	AUT94, FIN96, IRE 94, ITA94, NLD94, NOR94, NOR96, ESP94, ESP95, SWE94, SWE96, GBR94, DEU94, DEU97
1999-2002	ALB02, BIH01, BGR99, BGR02, HRV99, CZE99, CZE02, EST99, HUN99, HUN02, LVA99, LVA02, LTU99, MDA02, MNE01, POL99, POL02, ROM99, RUS99, RUS02, SRB01, SVK99, SVK02, SVN99, SVN02, UKR99, MKD01	AUT02, BEL99, BEL02, CYP02, DNK99, DNK02, FIN00, FIN02, FRA99, FRA02, GRC99, IRL02, ITA99, LUX99, MLT99, NLD99, NLD02, NOR02, PRT99, PRT02, ESP99, ESP00, ESP02, SWE99, SWE02, CHE02, GBR99, GBR02, DEU99, DEU02, ISL99
2005-2009	ALB08, ARM08, BIH08, **BGR05**, BGR08, HRV08, CZE08, EST08, GEO08, **GEO09**, HUN08, **HUN09**, LVA08, LTU08, **MDA06**, MDA08, MNE08, **POL05**, POL08, **ROM05**, ROM08, RUS08, SRB08, SVK08, **SVN05**, SVN08, **TUR07**, TUR09, **UKR06**, UKR08, MKD08	AUT08, BEL09, **CYP06**, CYP08, DNK08, **FIN05**, FIN09, FRA08, GRC08, IRL08, **ITA05**, ITA09, MLT08, LUX08, NLD08, **NOR07**, NOR08, PRT08, **ESP07**, ESP08, **SWE06**, SWE09, **CHE07**, CHE08, GBR09, **DEU06**, DEU08, ISL09
2010-2013	BGR12, HRV12, CZE12, HUN12, LVA12, LTU12, POL12, RUS12, SVK12, SVN12, TUR12	AUT12, BEL12, DNK12, FIN12, FRA12, IRL12, NLD12, NOR12, PRT12, ESP12, SWE12, CHE12, GBR12, DEU12, ISL12

Note: bold country-years are missing for *workmum* and *bothcontri*; bold and italic country-years are missing for *bothcontri*

To examine how gender role attitudes in East and West Europe develop over time, I calculate an interaction between years of implementation and region (East versus West Europe). For a more precise estimate, random slopes for the years are computed across countries (cp. Heisig, Schaeffer, & Giesecke, 2017). Furthermore, a quadratic term for years is taken into consideration to better capture development over time. In a stepwise approach, I examine the effect of different variables on East/West differences in gender role attitudes.

First, an empty model is computed, and then I compute a basic model without any control variables but the interaction effect between East and West Europe and years. In a second step, I add all individual variables. Then, I add information on level two. I compute a model with

an indicator for modernization – namely GDP. Furthermore, I compute a model that accounts on differences in family structure between countries (fertility and support of marriage). For all dependent variables likelihood ratio tests show that the interaction improves the model compared to the empty model.
Finally, I compute a model with information about further structural differences between countries – namely female labor force participation and female educational participation in higher education. In all models except the basic model, I account for the study. All models are computed with the same country-years for each dependent variable.
For an examination of a more detailed regional differentiation, I also compared the five regions in the years 1990 to 2000 and in the years 2001 to 2012 for all three independent variables.

4.6 Results

The results differ depending on which aspect of gender role attitudes is addressed. Attitudes related more to the private sphere show different results than those more related to the public sphere. Regarding the attitude that "Being a housewife is just as fulfilling as working for pay" (*homefulfill*) the results show that over the years attitudes become less traditional (see table 4.3). Figure 4.1 shows the development of attitudes for East and West Europe separately for the individual model (M2) and the full model (M6) (see table 4.3). Average marginal effects are displayed. For *homefulfill* we see that West Europeans tend to express less traditional attitudes than East Europeans. In figure 4.2 the East-West difference is plotted over the years (conditional marginal effects). After East and West Europe still differed in the early 1990s, this difference decreased over time. Especially in East Europe attitudes increased, however, in more recent years a small trend towards less egalitarian attitudes is observed here. If this trend continues, the convergence between East and West Europe will vanish again. The results do not change much under individual controls (M1) or the control of all variables (M6 table 4.3). Differences between country-years in GDP, fertility, support of marriage, labor force participation or percentage of female students in higher education do not have a significant effect on attitudes. The individual background of a respondent influences attitudes in an expected way. Being a male, having a partnership, being religious, being non-employed or being older has a negative effect on the attitude. Persons born before 1934 and after 1977 express more traditional attitudes than those born between 1933 and 1977. So it depends on the time in which one was socialized, whereby those socialized in times of socialism were the

most egalitarian. Higher educated have less traditional attitudes than those with lower or medium education. Respondents in the ISSP respond less traditional than respondents in the EVS or WVS. The control of individual characteristics improves the model. However, the inclusion of country-level variables does not improve the model substantially in comparison to the individual model. The fact that East Europeans disagree less strongly to the statement that "being a housewife is just as fulfilling as working for pay" in the early 1990s than West Europeans may be explained by different experiences during socialism. In East Europe "being a housewife" is rather a hypothetical experience and may seem as a good way to escape the double burden of working for pay and running the home. In West Europe, being a "housewife" is more common and maybe therefore support is less pronounced. Due to the introduction of family policies supporting a traditional division of labor within the family "being a housewife" probably becomes more common in East Europe and disagreement decreases in more recent years.

The results for *workmum* are similar to those for the attitude *homefulfill* (see table 4.4). Regarding individual characteristics we see that the youngest cohort does not differ from the one socialized during socialism. Furthermore, the influence of which survey data is used changes. Respondents answer more traditional if they participate in the ISSP instead of the WVS or EVS. West Europeans are less traditional than East Europeans regarding the attitude that female employment does not harm the relationship between mother and children (see figure 4.1). Attitudes also become less traditional over time in East and West Europe. In West Europe this trend seems to endure in more recent years while the increase in egalitarian attitudes slows down in East Europe. East and West Europeans differed in the early 1990s and this difference decreased over time. Hence, we also observe a convergence of attitudes regarding the attitude that a mother's employment has no negative effects on her relationship with her children. Most of country-years variables have no effect on attitudes.

Only differences between country-years in female labor force participation have an influence on how the consequences of female employment are perceived. If the respondent lives in a context with higher female labor force participation he or she perceives the consequences as less negative. Concerning the attitude that both should contribute to the household income a different picture can be drawn. First, respondents in Eastern European countries show more agreement than respondents in West Europe (see table 4.5). Over the years, I observe less traditional attitudes especially in West Europe. That is, West Europeans attitudes align with the high level of the attitudes in East Europe.

Table 4.3 Multi-level regressions homefulfill

level	reference	variables	M0 empty		M1 basic		M2 individual		M3 structure		M4 economic		M5 family		M6 full	
individual	no partnership	partnership (centered)					-.012	***	-.012	***	-.012	***	-.012	***	-.012	***
		religiousness (centered)					-.015	***	-.015	***	-.015	***	-.015	***	-.015	***
	female	male (centered)					-.045	***	-.045	***	-.045	***	-.045	***	-.045	***
		age in decades (centered)					-.009	***	-.009	***	-.009	***	-.009	***	-.009	***
	1934-1977	cohort 1889-1933					-.024	***	-.024	***	-.024	***	-.024	***	-.024	***
		cohort 1978-1997					-.006	**	-.006	**	-.006	**	-.006	**	-.006	**
	employed	not employed (centered)					-.031	***	-.031	***	-.031	***	-.031	***	-.031	***
	higher education	lower education					-.086	***	-.086	***	-.086	***	-.086	***	-.086	***
		medium education					-.042	***	-.042	***	-.042	***	-.042	***	-.042	***
country	East Europe	West Europe			.090	**	.098	***	.095	**	.099	***	.091	**	.088	***
		years			.011	**	.017	***	.015	***	.016	***	.016	***	.014	**
		West*years			-.009	*	-.014	**	-.013	**	-.013	**	-.014	**	-.013	**
		$years^2$			-.0003		-.001	***	-.001	**	-.001	***	-.001	**	-.001	**
		$West*years^2$			.0003		.001	**	.0005	**	.0005	*	.0005	**	.0005	**
country years	ISSP	WVS					-.067	***	-.067	***	-.067	***	-.036		-.034	
		EVS					-.032	***	-.032	**	-.032	**	.0001		.001	
		GDP (log) (centered)									-.001				.001	
		fertility (centered)											.002		.005	
		support marriage (centered)											-.074		-.077	
		fem. LFP (centered)							-.0004						-.001	
		fem. tert. students (centered)							.001						.001	
constant			.432	***	.340	***	.410	***	.417	***	.409	***	.395	***	.402	***
random effects parameters		country: var_year	$2.79e^{-6}$	($2.99e^{-6}$)	$1.30e^{-16}$	($9.88e^{-16}$)	$9.58e^{-20}$	($4.37e^{-17}$)	$2.40e^{-13}$	($1.67e^{-12}$)	$9.04e^{-20}$	($4.29e^{-17}$)	$1.07e^{-19}$	($4.73e^{-17}$)	$1.15e^{-13}$	($8.40e^{-13}$)
		country: var_cons	.002	(.001)	.002	(.001)	.003	(.001)	.003	(.001)	.003	(.001)	.003	(.001)	.003	(.001)
		country-years: var _cons	.004	(.0005)	.003	(.0004)	.003	(.0003)	.003	(.0003)	.003	(.0003)	.003	(.0003)	.003	(.0003)
		var residual	.081	(.0002)	.081	(.0002)	.077	(.0002)	.077	(.0002)	.077	(.0002)	.077	(.0002)	.077	(.0002)
		Log Likelihood	-41503	df=0	-41483	df=5	-35781	df=16	-35781	df=18	-35781	df=17	-35780	df=18	-35780	df=21
		AIC	83016		82986		71604		71608		71606		71606		71611	
		BIC	83069		83091		72824		71848		71836		71846		71883	
		ICC country	.027		.026		.032		.033		.032		.032		.033	
		ICC country-years	.071		.064		.065		.065		.065		.064		.065	

Note: standard errors in parentheses, significance (two-tailed) ***p<.001, **p<.01, *p<.05; AIC: Aikaike's Information Criterion; BIC: Bayesian information criterion; ICC: Intraclass Correlation Coefficient; fem. LFP: female labor force participation, fem tert. students: percentage female students in tertiary education; N country=43; N country-years=208; N=253138; grand mean centering

Table 4.4 Multi-level regressions workmum

level	reference	variables	M0 empty		M1 basic		M2 individual		M3 structure		M4 economic		M5 family		M6 full	
individual	no partnership	partnership (centered)					-.005	***	-.005	***	-.005	***	-.005	***	-.005	***
		religiousness (centered)					-.010	***	-.010	***	-.010	***	-.010	***	-.010	***
	female	male (centered)					-.058	***	-.058	***	-.058	***	-.058	***	-.058	***
		age in decades (centered)					-.005	***	-.005	***	-.005	***	-.005	***	-.005	***
	1934-1977	cohort 1889-1933					-.007	**	-.007	**	-.007	**	-.007	**	-.007	**
		cohort 1978-1997					-.001		-.001		-.001		-.001		-.001	
	employed	not employed (centered)					-.027	***	-.027	***	-.027	***	-.027	***	-.027	***
	higher education	lower education					-.063	***	-.063	***	-.063	***	-.063	***	-.063	***
		medium education					-.035	***	-.035	***	-.035	***	-.035	***	-.035	***
country	East Europe	West Europe			.063	**	.083	**	.097	***	.087	**	.071	*	.089	**
		years			.013	***	.013	***	.015	***	.012	**	.011	**	.011	*
		West*years			-.012	**	-.011	*	-.014	**	-.010	*	-.010	*	-.010	
		$years^2$			-.0004	**	-.0004	*	-.0004	*	-.0003		-.0003		-.0002	
		West*$years^2$			.001	**	.0004	*	-.0005	*	.0004		.0004		.0003	
country years	ISSP	WVS					.060	***	.062	***	.058	***	.087	**	.086	**
		EVS					.034	***	.035	***	.035	***	.061	*	.063	*
		GDP (log) (centered)									-.010				-.013	
		fertility (centered)											-.015		-.022	
		support marriage (centered)											-.060		-.060	
		fem. LFP (centered)							.002	*					.002	*
		fem. tert. students (centered)							.001						.0003	
constant			.679	***	.599	***	.588	***	.582	***	.584	***	.583	***	.572	***
Random effects parameters		country: var_year	$3.78e^{-6}$	($3.38e^{-6}$)	$9.14e^{-14}$	($5.58e^{-13}$)	$1.09e^{-13}$	($7.33e^{-13}$)	$2.80e^{-11}$	($1.99e^{-10}$)	$2.35e^{-11}$	($1.88e^{-10}$)	$1.16e^{-14}$	($7.22e^{-14}$)	$2.19e^{-14}$	($1.59e^{-13}$)
		country: var_cons	.002	(.001)	.002	(.001)	.002	(.001)	.001	(.0004)	.002	(.001)	.002	(.001)	.001	(.0004)
		country-years: var _cons	.004	(.0005)	.003	(.0004)	.003	(.0004)	.003	(.0004)	.003	(.0004)	.003	(.0004)	.003	(.0004)
		var residual	.076	(.0002)	.076	(.0002)	.074	(.0002)	.074	(.0002)	.074	(.0002)	.074	(.0002)	.074	(.0002)
		Log Likelihood	-32657	df=0	-32640	df=5	-29196	df=16	-29195	df=17	-29200	df=18	-29195	df=18	-29191	df=21
		AIC	65324		65300		58434		58435		58437		58436		58434	
		BIC	65376		65404		58652		58664		58677		58675		58705	
		ICC country	.029		.028		.021		.021		.021		.020		.016	
		ICC country-years	.074		.068		.059		.059		.059		.058		.054	

Note: standard errors in parentheses, significance (two-tailed) ***p<.001, **p<.01, *p<.05; AIC: Aikaike's Information Criterion; BIC: Bayesian information criterion; ICC: Intraclass Correlation Coefficient; fem. LFP: female labor force participation, fem tert. students: percentage female students in tertiary education; N country=43; N country-years=191; N=246901; grand mean centering

Table 4.5 Multi-level regressions bothcontri

	reference	variables	M0 empty		M1 basic		M2 individual		M3 structure		M4 economic		M5 family		M6 full	
individual	no partnership	partnership (centered)					-.015	***	-.015	***	-.015	***	-.015	***	-.015	***
		religiousness (centered)					-.007	***	-.007	***	-.007	***	-.007	***	-.007	***
	female	male (centered)					-.036	***	-.036	***	-.036	***	-.036	***	-.036	***
		age in decades (centered)					.004	***	.004	***	.004	***	.004	***	.004	***
	1934-1977	cohort 1889-1933					-.0003		-.0003		-.0003		-.0003		-.0003	
		cohort 1978-1997					.024	***	.024	***	.024	***	.024	***	.024	***
	employed	not employed (centered)					-.018	***	-.018	***	-.018	***	-.018	***	-.018	***
	higher education	lower education					.005	**	.005	**	.005	**	.005	**	.005	**
		medium education					.003	**	.003	**	.003	**	.003	**	.003	**
country level	East Europe	West Europe			-.072	**	-.058	*	-.061	*	-.060	*	-.061	*	-.066	
		years			.004		.004		.003		.004		.002		.002	
		West*years			-.004		-.005		-.005	*	-.006		-.004		-.004	
		years^2			-.0002		-.0001		-.0001		-.0002		-.0001		-.0001	
		West*years^2			.0003	*	.0003	*	.0003	*	.0004	*	.0003		.0003	
country years	ISSP	WVS					.007		.006		.008		-.011		-.010	
		EVS					-.029	***	-.029	***	-.030	***	-.049	*	-.049	*
		GDP (log) (centered)									.003				.006	
		fertility (centered)											-.022		-.022	
		support marriage (centered)											.047		.047	
		fem. LFP (centered)							-.0004						-.0003	
		fem. tert. students (centered)							.0009						.001	
constant			.734	***	.742	***	.752	***	.757	***	.754	***	.769	***	.777	***
Random effects parameters		country: var_year	5.92e^{-7}	(2.48e^{-6})	7.06e^{-23}	(5.22e^{-22})	8.69e^{-18}	(5.19e^{-17})	4.75e^{-18}	(3.12e^{-17})	9.13e^{-18}	(5.29e^{-17})	1.96e^{-16}	(1.36e^{-15})	1.05e^{-16}	(8.41e^{-16})
		country: var_cons	.004	(.001)	.003	(.001)	.003	(.001)	.003	(.001)	.003	(.001)	.003	(.001)	.003	(.001)
		country-years: var _cons	.002	(.0004)	.002	(.0002)	.002	(.0002)	.002	(.0002)	.002	(.0002)	.002	(.0002)	.002	(.0002)
		var residual	.055	(.0002)	.055	(.0002)	.054	(.0002)	.054	(.0002)	.054	(.0002)	.054	(.0002)	.054	(.0002)
		Log Likelihood	8281	df=0	8304	df=5	9575	df=16	9575	df=18	9575	df=17	9576	df=18	9576	df=21
		AIC	-16551		-16588		-19107		-19104		-19105		-19105		-19100	
		BIC	-16499		-16484		-18889		-18864		-18876		-18866		-18829	
		ICC country	.062		.047		.050		.049		.050		.047		.047	
		ICC country-years	.102		.080		.079		.078		.079		.077		.077	

Note: standard errors in parentheses, significance (two-tailed) ***p<.001, **p<.01, *p<.05; AIC: Aikaike's Information Criterion; BIC: Bayesian information criterion; ICC: Intraclass Correlation Coefficient; fem. LFP: female labor force participation, fem tert. students: percentage female students in tertiary education; N country=43; N country-years=190; N= 245428; grand mean centering

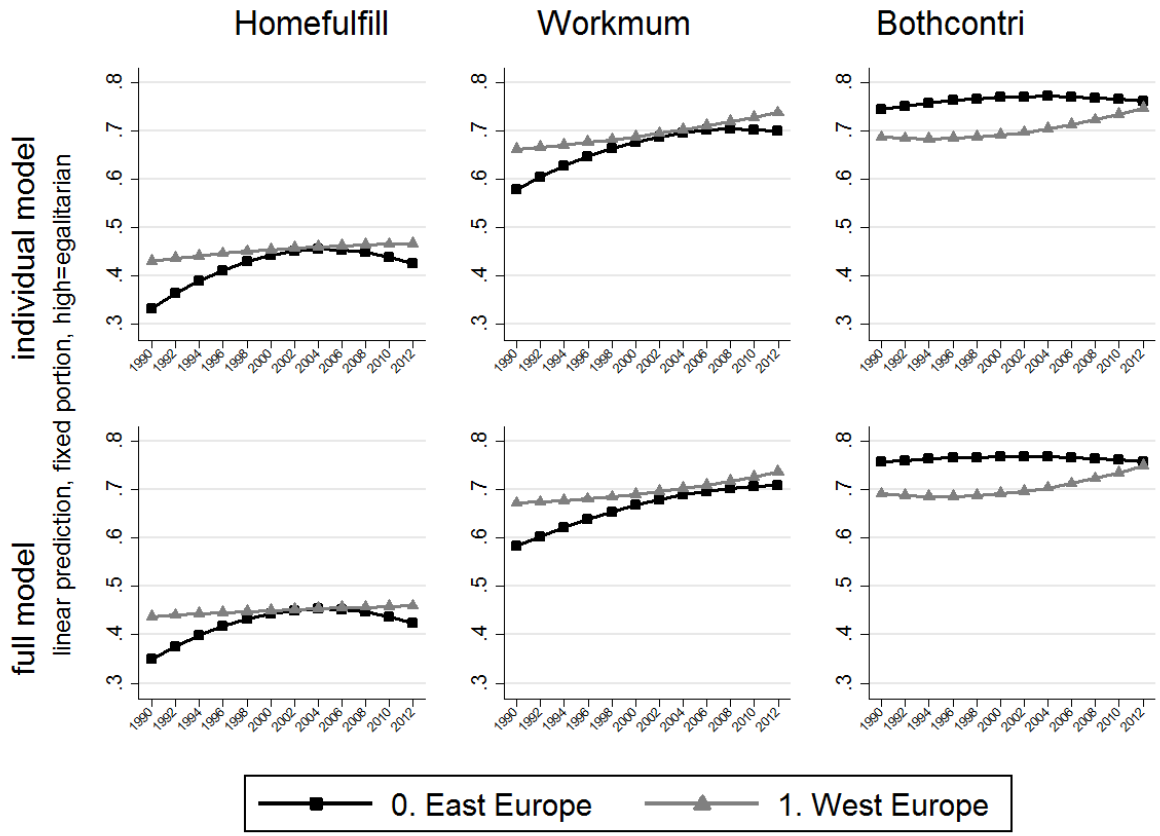
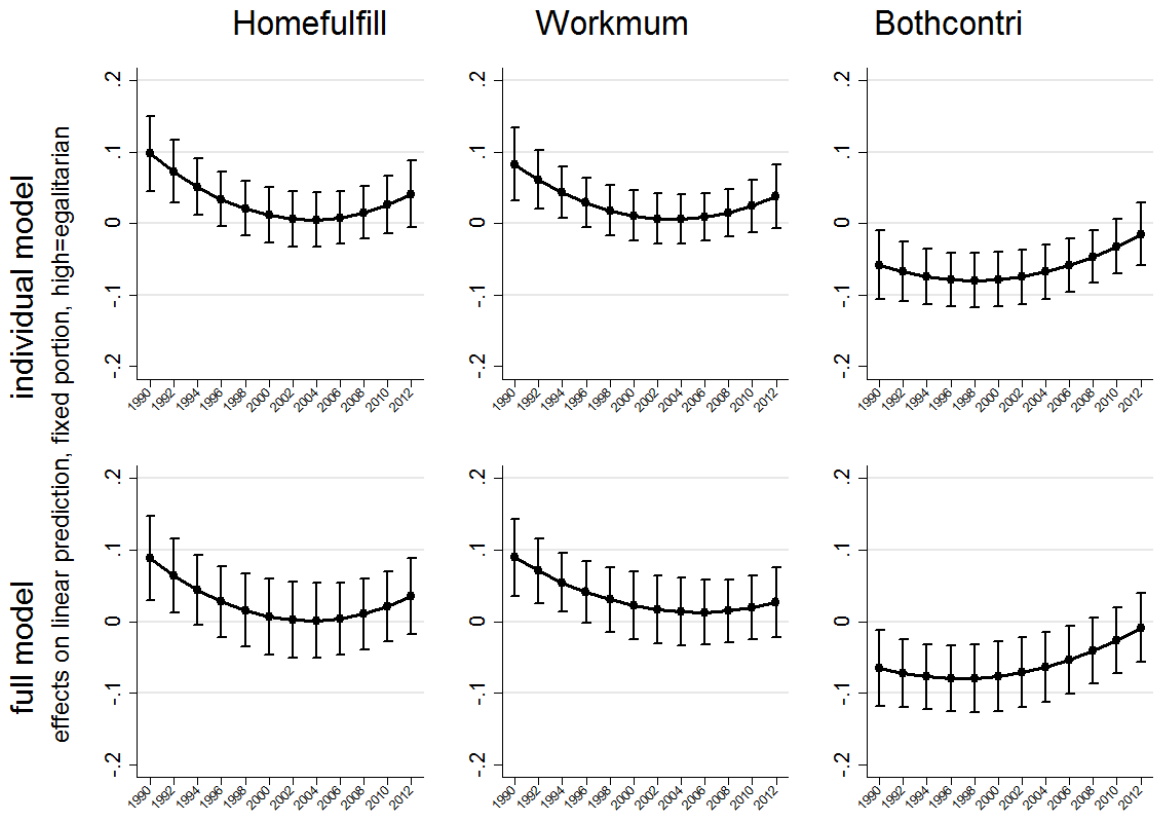
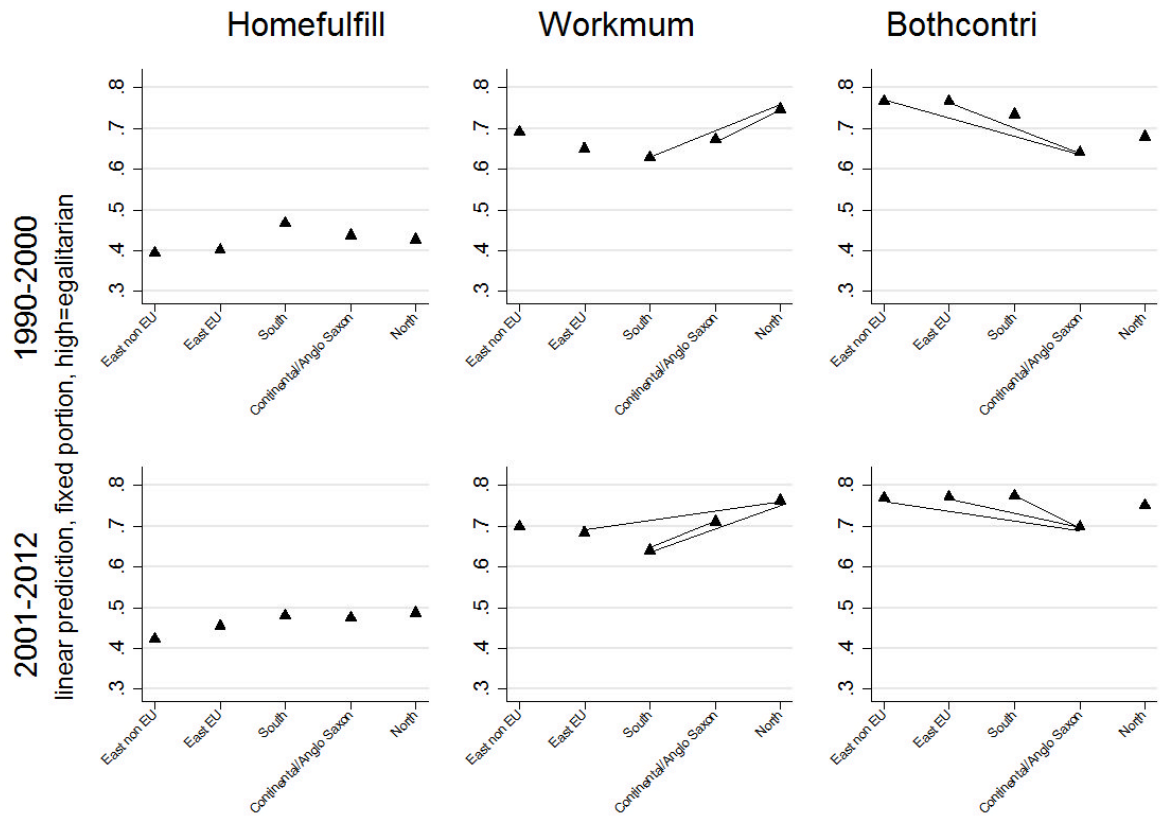


Figure 4.1 Average marginal effects for homefulfill, workmum and bothcontri by East/West



Note: all variables at their mean

Figure 4.2 Conditional marginal effects, East West difference, for homefulfill, workmum and bothcontri



Note: Average marginal effects; full model, variables at their mean, lines indicate significant differences

Figure 4.3 Regional differences

In respect with the influence of individual characteristics, the results also show that respondents in a partnership have more traditional attitudes such as respondents that are more religious, are male or are not employed. The youngest cohort expresses less traditional attitudes than the one socialized during socialism. Respondents who are younger or have a higher education agree not as strongly as respondents who are older or have lower or medium educational level. The respondents who participated in the EVS are more traditional than respondents from the ISSP. This could be the results of the different modes used in the EVS and ISSP or the question context. In contrast to the EVS, gender role attitudes are asked in the beginning in the ISSP: However, it should be investigated why it matters in which study the respondent participates. None of the examined country-years characteristics has an influence on which attitude the respondent expresses. East Europeans probably have a higher agreement to this statement since female employment was more seen as a civic duty than in West Europe. The increase in egalitarian attitudes is probably explained by a higher acceptance of female employment, the need for a second income or the decline of the male breadwinner model.

In general, we observe a convergence of gender role attitudes between East and West Europe. The difference in gender role attitudes in the early 1990s is probably due to different political

regimes and their influence on socioeconomic conditions. This is also indicated by the significant cohort effect in most models. The fact that the difference does not persist over time indicates that as socioeconomic conditions changed attitudes change. The influence of the political regime seems to decline.

By a more detailed look at regional differences within Europe three different conclusions can be drawn. Figure 4.3 shows the average marginal effects computed after multi-level regressions with individual and country controls (full model) for the five distinguished regions for two time periods – 1990 to 2000 and 2001 to 2012. A more comprehensive analysis is not reasonable due to the limited number of countries per region. The results show that there are no regional differences regarding *homefulfill*. Regarding *workmum* regional differences are more pronounced. North Europeans were less traditional than South Europeans and Europeans in East European EU member states. There were no differences to East Europeans outside the EU or Europeans in Continental or Anglo Saxon countries. The results for *bothcontri* are again contrary to the results for *workmum*. Especially West Europeans have more traditional attitudes than East and later also than South Europeans. North Europeans are somewhat less traditional but the difference is not significant.

In general, differences tend to become less pronounced regarding the attitude whether both should contribute to the household income and there is not much change over time. Also for *homefulfill* and *workmum* regional differences after 2000 are similar to those found before.

The more detailed analyses of regional differences mainly support the earlier findings. For *homefulfill*, regional differences within East and West Europe are not pronounced. The result that West Europeans tend to be less traditional than East Europeans regrading *workmum* can probably explained by the fact that North Europeans are less traditional than East Europeans in the EU. For *bothcontri* I probably observe mainly differences between West and East Europe since the Continental and Anglo-Saxon countries differ from East European countries. Furthermore, differences between different countries within Eastern Europe seem to be small. East European EU member states do not differ much from East European countries outside of the EU. There are larger differences within West Europe.

4.7 Conclusion and Discussion

This article supports the finding of other studies that gender role attitudes become more egalitarian over time. In respect to differences in gender role attitudes between East and West Europe results depend on which attitude is looked at. The least agreement can be found for the attitude that being a housewife is as fulfilling as working for pay. West Europeans disagree more often than East Europeans. For East Europeans, a trend towards less egalitarian attitudes in more recent years is observed. West Europeans also agree more often with the statement that a working mother can establish just as warm and secure a relationship with her children than a mother who does not work. Differences are also found for the statement that both should contribute to the household income. However, here East Europeans agree more often than West Europeans. In general, differences between East and West Europeans in attitudes decrease over time. That is, my study supports findings from other studies which observe a convergence of attitudes. However, my study does not indicate which differences in country-years leads to this convergence. Except that female labor force participation has an influence on how the consequences of a mother's employment is perceived there is no significant effect observed for GDP, fertility, the support of marriage or the percentage of female students in tertiary education. There have to be other differences between East and West European countries that lead to this convergence. I do not have enough data for institutional differences for all country-years, but there may be an influence of female representation in national parliaments or the childcare rate. Further indicators are, for example, also used to construct gender equality indexes (e.g. European Institute for Gender Equality, 2017). It would be useful to examine the effect of institutional differences on gender role attitudes in East and West Europe. Some studies indicate that institutional factors could have an effect on gender relations in society (cp. Neilson & Stanfors, 2014; Pedulla & Thébaud, 2015) and may therefore also affect gender role attitudes.

I also demonstrate that a more detailed look at regions within East and West Europe provides a more differentiated insight into differences in gender role attitudes. Especially North Europeans agree that a mother's employment does not have negative effects on her children compared to respondents living in East European EU member states or South Europe. Continental and Anglo-Saxon European countries support the statement that both should contribute to the household income less than East and South Europeans.

Furthermore, differences in gender role attitudes are rather small and attitudes regarding the consequences of a mother's employment and the equal contribution of man and woman to the

household income are more egalitarian than attitudes towards how fulfilling being a housewife is. Especially for the former the agreement is so high that we almost observe ceiling effects. This complicates more differentiated analyses.

The measures provided in the WVS and the ISSP are not ideal for the analyses of gender role attitudes across countries and over time. It would be helpful to have more information about country-years over time and to have the same measure across different studies. But even if measures are asked identically, cross-cultural analyses pose the challenge that measures have to be meaningful equivalent for different cultural contexts. Constantin and Voicu (2014) report difficulties to compare the level of support for gender equality across countries for the ISSP 2002 and the WVS 2005 measures regarding gender role attitudes. However, their study does not focus on Europe only and uses indices instead of single items for the evaluation of gender role attitudes. Also van Vlimmeren et al. (2016) recommend to be careful regarding cross-cultural analyses of gender role attitudes since they find different acquiescence patterns within Europe (EVS 2008 data). Thus, further studies should evaluate how comparable the measures provided in the EVS, WVS and ISSP are across countries and across time.

Furthermore, this article is restricted to a very narrow concept of gender role attitudes since it is only possible to compare attitudes towards a more traditional division of labor in the family and consequences of female employment in general. A more differentiated analysis, for example of attitudes towards more egalitarian models of division of labor in the family or the evaluation of the employment of fathers is not possible since the surveys do not provide such data.

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4.9 Appendix

Table 4.6 Literature overview of studies examining gender role attitudes in Europe cited in this article

study	examined time period	survey	countries	results
Bauernschuster & Rainer 2012	1980-2008	GGSS	DEU (West and East Germany)	East Germans more egalitarian attitudes than West Germans; no convergence of attitudes
Brajdić-Vuković et al. 2007	2003	SEESSP	HRV	nontraditional attitudes toward women's employment widespread in Croatia; regarding gender roles Croatians more traditional
Bystydzienski 1989	-	-	POL, RUS	For Russian women the work outside the home more important than for Polish women; Polish women emphasize the role as mothers more
Cha & Thébaud 2009	2002	ISSP	27 countries; also non-European countries	in Western European countries men more egalitarian than in other countries
Crompton et al. 2005	1994/2002	ISSP	GBR, CZE, NOR	1994 and 2002 Czechs most traditional; Norwegians most egalitarian; country differences persist over time
Dotti Sani & Quaranta 2017	2009	ICCS	36: also non-European countries	Most East Europeans less egalitarian than West Europeans
Forste & Fox 2012	2002	ISSP	31 countries: also non-European countries	higher incongruence (between attitudes towards division of labor and actual division of labor) for East Europeans
Haller & Hoellinger 1994	1988	ISSP	USA, GBR, NLD, FRG, ITA, IRL, AUT, HUN	cultural background and structural changes have influence on attitudes
Inglehart & Baker 2000	1995-1998/ 1990	WVS/EVS	65 countries: also non-European countries	Regarding attitudes cultural change and persistence of cultural traditions is observed
Inglehart & Norris 2003	1995-2001	WVS/EVS	60 countries: also non-European countries	agrarian countries most traditional ones, not only economic development influences gender role attitudes
Lee et al. 2007	1991-2004	GGSS	DEU (West and East Germany)	no convergence in attitudes between East and West Germany, rather difference increased
Lomazzi 2017	1988-2008	EVS/ WVS/ ISSP	ITA	decline in support for dual role of women as worker and caregiver, rise in support for equality in the labor market
Lück 2005	1994	ISSP	SWE, NOR, DNK, NZE, AUS, USA, CAN, GBR, IRL, NLD, DEU (West and East), AUT, FRA, ITA, ESP, CZE, HUN, POL, BUL, RUS	support for traditional gender roles is declining in general; increase of support for traditional gender roles in Hungary; higher support of traditional roles in East Europe

Saxonberg & Sirovatka 2006	1994/2002	ISSP	CZE, HUN, POL, SVK, DEU, SWE, EU West	East Europeans more conservative regarding abstract feminism than West Europeans; East Europeans less egalitarian regarding attitudes capturing mother/child relation
Simkus 2007	2003-2004	SEESSP	HRV (Croats), BIH (Croats, Bosniaks, Serbs), MNE (Montenegrins, Serbs), SRB (Serbs), XKX (Serbs, Albanians), MKD (Macedonians, Albanians), ALB (Albanians), Other	attitudes towards gender depend more on education than on particularities of ethnic group and country
Steel & Kabashima 2008	~2000	Gallup International Millennium Survey	> 60: also non-European countries	differences in East and West Europe depend on the examined measure
Thijs et al. 2017	1979-2012	Cultural changes in the Netherlands	NLD	more egalitarian attitudes over time
Tanaka & Lowry 2011	1999	EVS	RUS, BGR, EST, DNK, SWE, NLD, ITA, FRA, BEL	East Europeans more traditional
Treas & Widmer 2000	1994	ISSP	23: also non-European countries	Most East Europeans in motherhood centered cluster, but all in all countries show similar attitudes, clusters represent subtle variations on shared views, other countries also cluster in same cluster as East Europeans, or in the same cluster as Scandinavians
Voicu & Tufis	1993-2008	EVS (93/99)/ Romanian Public Opinion Barometer (07)/ Family Life survey (08)	Romania	progress towards more egalitarian gender beliefs; most traditional regarding gender ideology
Yu & Lee 2013	2002	ISSP	33: also non-European countries	complexity of gender-related beliefs; in societies with fewer impediments for women more support for employment of mothers but less for gender equality at the home.