

**What do Women and Men Want?
Investigating and Measuring
Preference Heterogeneity for
Life Outcomes using a Factorial Survey**

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SFB 882 Working Paper Series, No. 20
DFG Research Center (SFB) 882 From Heterogeneities to Inequalities
Research Project B3
Bielefeld, May 2013

SFB 882 Working Paper Series
General Editors: Martin Diewald and Thomas Faist
ISSN 2193-9624

This publication has been funded by the German Research Foundation (DFG).

SFB 882 Working Papers are refereed scholarly papers. Submissions are reviewed by peers in a two-stage SFB 882 internal and external refereeing process before a final decision on publication is made.

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SFB 882 "From Heterogeneities to Inequalities"
University of Bielefeld
Faculty of Sociology
PO Box 100131
D-33501 Bielefeld
Germany
Phone: +49-(0)521-106-4942 or +49-(0)521-106-4613
Email: office.sfb882@uni-bielefeld.de
Web: <http://www.sfb882.uni-bielefeld.de/>

DFG Research Center (SFB) “From Heterogeneities to Inequalities”

Whether fat or thin, male or female, young or old – people are different. Alongside their physical features, they also differ in terms of nationality and ethnicity; in their cultural preferences, lifestyles, attitudes, orientations, and philosophies; in their competencies, qualifications, and traits; and in their professions. But how do such heterogeneities lead to social inequalities? What are the social mechanisms that underlie this process? These are the questions pursued by the DFG Research Center (Sonderforschungsbereich (SFB)) “From Heterogeneities to Inequalities” at Bielefeld University, which was approved by the German Research Foundation (DFG) as “SFB 882” on May 25, 2011.

In the social sciences, research on inequality is dispersed across different research fields such as education, the labor market, equality, migration, health, or gender. One goal of the SFB is to integrate these fields, searching for common mechanisms in the emergence of inequality that can be compiled into a typology. More than fifty senior and junior researchers and the Bielefeld University Library are involved in the SFB. Along with sociologists, it brings together scholars from the Bielefeld University faculties of Business Administration and Economics, Educational Science, Health Science, and Law, as well as from the German Institute for Economic Research (DIW) in Berlin and the University of Erlangen-Nuremberg. In addition to carrying out research, the SFB is concerned to nurture new academic talent, and therefore provides doctoral training in its own integrated Research Training Group. A data infrastructure project has also been launched to archive, prepare, and disseminate the data gathered.

Research Project B3 “Interactions Between Capabilities in Work and Private Life: A Study of Employees in Different Work Organizations”

This research project primarily addresses “capabilities” in working and private life and the interrelations between them. Adapting Sen’s approach, capabilities are the ability to achieve one’s life goals. The project adopts a comprehensive view that identifies multidimensional states of inequality. Crucial is the recognition that pursuing one’s interests in one life domain may even constrain goal attainment in other life domains. The same personal circumstances and employment conditions may be perceived and evaluated differently against the background of heterogeneous life goals. The concept of employment relationships allows us to gain an overview of a wide range of different gratifications and different demands and stresses, against the background of different psychological contracts. On the level of employees, we therefore firstly study the heterogeneity of different employment relationships in companies situated in various business sectors. Secondly, we assess these employees in terms of their embedment in various forms and phases of life. Thus, also the situation and views of a partner will be considered.

In a next step this project examines how heterogeneities (e.g. gender, age, life style preferences, education) become social inequalities with a particular focus on the role of the organizational context. As possible mechanisms different individual interests within companies and private bonds being negotiated in different ways are investigated. Health also plays a role in these interdependencies influencing the prospects for successful multiple engagement in both life domains. It is a “hard” indicator of maladjustment.

In this project detailed studies of employees and characteristics of their companies are carried out. Companies play a dual role, first as negotiation partners and second as opportunity structures. Various actors within the companies and companies’ institutional and sector-specific context are considered.

Proceeding from a sample of 100 work organizations, an extended linked employer-employee design will be used to study an average of 65 employees in each organization. If employees have life partners, they will also be surveyed with a short version of the instrument. By combining these data with information from the same employees and their companies from the German Institute for Employment Research (IAB), we can achieve a unique density of information for large case numbers. The longitudinal design initiated during the first funding period allows distinguishing causal effects more clearly and to adequately study processes of discrimination and self-selection.

The Authors

Reinhard Schunck is postdoctoral research fellow at the Faculty of Sociology, Bielefeld University, and principal investigator of the research project B3 “Interactions Between Capabilities in Work and Private Life: A Study of Employees in Different Work Organizations“ in the Collaborative Research Center 882 (SFB 882). He received his PhD at the Bremen International Graduate School of Social Sciences (BIGSSS). His research interests span social stratification and inequality, the life course, health, migration and integration, and quantitative methods. Among his recent publications are “Within- and Between-Estimates in Random Effects Models. Advantages and Drawbacks of Correlated Random Effects and Hybrid Models” (2013) in: *The Stata Journal*, 13(1): 65-76 and “No Causal Effect of Unemployment on Smoking? A German Panel Study” (2013) in: *International Journal of Public Health* 57(6): 867-874 (with B. Rogge).
Contact: reinhard.schunck@uni-bielefeld.de

Anja-Kristin Abendroth is a postdoctoral research fellow in the SFB 882 research project B3 “Interactions between Capabilities in Work and Private Life: A Study of Employees in Different Work Organizations”. She defended her dissertation with the title “Working Women in Europe. How the Country, Workplace, and Family Context Matter” conducted at the Department of Sociology at Utrecht University and the Interuniversity Center for Social Science Theory and Methodology (ICS) in January 2013. Her research interests lie in the interplay of work and family life, social inequalities, social support and organizational and cross-national comparative research.
Contact: anja.abendroth@uni-bielefeld.de

Martin Diewald is Professor for Socio-Structural Analysis at the University of Bielefeld, Research Professor at the DIW Berlin and Member of the Academic Advisory Board on family issues at the Federal Ministry for Families, Senior Citizens, Women and Youth. Moreover, he is spokesperson of the SFB 882 “From Heterogeneities to Inequalities” and Director of the SFB 882 research projects A1 “Social Closure and Hierarchization: Contextual Conditions of Unequal Developmental Opportunities in Early Phases of Life” and B3 “Interactions Between Capabilities in Work and Private Life: A Study of Employees in Different Work Organizations“. His specialist research areas are: social inequalities, life courses, families and social networks, work-life interdependencies.
Contact: martin.diewald@uni-bielefeld.de

Silvia Maja Melzer is a postdoctoral research fellow at the Collaborative Research Center (SFB 882) and works in research project B3 “Interactions between Capabilities in Work and Private Life: A Study of Employees in Different Work Organizations“. She recently handed in her dissertation with the title “Causes and Consequences of the East-West Migration in Germany“. Her research interests are mainly in the area of employment, migration, and happiness. Recently her paper “Reconsidering the Influence of Education on Migration from East to West Germany” was published in the *European Sociological Review* (29 Issue 2 2013, p.210-228).
Contact: silvia.melzer@uni-bielefeld.de

Stephanie Pausch is a member of the SFB 882 project “Interactions between Capabilities in Work and Private Life: A Study of Employees in Different Work Organizations” and PhD candidate at the Bielefeld Graduate School in History and Sociology (BGHS). Her research focuses on couples in the context of working conditions and the interplay of work and family life.
Contact: stephanie.pausch@uni-bielefeld.de

What do Women and Men Want? Investigating and Measuring Preference Heterogeneity for Life Outcomes using a Factorial Survey

Reinhard Schunck, Anja-Kristin Abendroth, Martin Diewald, Silvia Maja Melzer, and
Stephanie Pausch

Abstract

This paper highlights the relevance of preference heterogeneity for life outcomes. We propose using a factorial survey as a method to measure preferences. Factorial surveys comprise complex rating situations, encompassing trade-offs between dimensions, thus allowing inference of the *relative* importance attached to each dimension. Conceptualizing preferences as ratings given to a set of life course outcomes that result at least partly from our own behavior distinguishes preferences, on the one hand, from attitudes and values and, on the other hand, from situation-specific evaluations of concrete alternatives. We illustrate preference heterogeneity by investigating differences in the relevance of work and family outcomes to men's and women's life satisfaction. The results of our analyses (multilevel models) show that preference heterogeneity operationalized in this way does indeed exist between female and male respondents as regards having children, but not regarding labor market outcomes such as income or occupational prestige. The inclusion of preferences in social inequality research may advance our understanding of the emergence of inequalities, in particular as regards the question of whether observable inequalities between groups are the product of differences in preferences or differences in constraints and opportunities.

Keywords: preferences, life outcomes, social production function, factorial survey, gender

1. Introduction

In contrast to resource-oriented and welfare-oriented approaches to social inequality research, the capability approach (Sen 1987, 1992, 1999) as well as approaches that focus on subjective well-being (SWB) (e.g. Clark et al. 2011; Diener and Biswas-Diener 1999; Easterlin 2001, 2003, 2006; Layard 2005) raise the question of whether the same resources and similar living conditions are equally important to different people. Arguably, people differ in their valuation of different aspects of life, i.e. they differ in their preferences.

A major methodological challenge is operationalizing and measuring preferences in a way that distinguishes their relevance for guiding behavior (rather than for example attitudes and values) without referring to concrete settings in which decisions must be made in the face of varying “logics of the situation” (Esser 1999; Lindenberg 1993). In this vein, preferences are related to decision making as tendencies in the establishment of relevance when thinking about outcomes of (alternative) behaviors as more or less relevant for one’s own well-being (Huinink and Schröder 2008).

We suggest measuring preferences for achievements (functionings) in different life domains by using a factorial survey and linking these measurements directly to the anticipated subjective well-being that the realization of these functionings would provide (Lindenberg 1986, 1990, 1996; Ormel et al. 1997; Ormel et al. 1999). Factorial surveys comprise complex situations (Beck and Opp 2001; Jasso 2006; Rossi and Anderson 1982), encompassing trade-offs between the factorial surveys’ dimensions and thus disclosing the *relative* importance respondents attach to each dimension. Employing factorial surveys to measure preferences rests on the idea that respondents will evaluate the desirability of the vignettes – the specific life situations – as guided by their preferences (Phillips et al. 2002). The variations in respondents’ ratings can then be attributed to the varying importance they attach to the (life) dimensions, that is their preferences for these functionings. This is illustrated by investigating gender differences in preferences related to the domains of work and family life.

The aim of our paper is thus to contribute to previous research by investigating preference heterogeneity by gender and by presenting a feasible method of measuring preferences. In section 2, we discuss some general ideas about the nature of preferences. Subsequently, we present arguments on potential gender differences regarding preferences for achievements in the life domains of work and private life. In the following section (3), we discuss the factorial survey method that we have chosen to operationalize and measure preferences. Section 4 discusses the data and methods employed in our analyses. Following this, we present the results of our analyses in section 5. Section 6 concludes the paper by scrutinizing the results, discussing the limitations of the current study, and drawing some conclusions about the relevance of measuring preferences for investigations of social inequalities.

2. Preferences

In the following section, we present our understanding of preferences, and argue how heterogeneity in preferences between groups – e.g. between women and men – may come into being.

2.1 Definition of Preferences

In a rather broad interpretation, preferences can be understood as individual goals (Esser 1999; Lindenberg 1986, 1990, 1996). However, there is no commonly shared understanding in the literature of what precisely preferences are and how they can be measured. Economic theory defines preferences most narrowly and stringently as referring to individual valuations of commodity bundles. These valuations refer to specific situations in which individuals have to choose between defined alternatives and literally prefer one commodity bundle over the other(s) as result of a *ranking*. In this way it is assumed that people act on their preferences.

But the assumptions of economic theory are debatable (and have been debated as regards completeness, transitivity, and reflexivity – Kahneman et al. 1999; Varian 2001). Drawing on broader conceptions of preferences that forego economic theory's strict assumptions may however bring with it the problem of overlap with other forms of valuation, such as attitudes or values. Conceptions of values and attitudes as favorable or unfavorable evaluations of entities (Ajzen 2001; Eagly and Chaiken 1996) make it difficult to distinguish such constructs from preferences. Therefore, it should come as no surprise that there is some confusion in the literature as to what preferences are – in particular their relation to values or attitudes – and that the three concepts are used interchangeably at times (Phillips et al. 2002).

We assume that preferences are relative ratings given by a person to a set of outcomes, and that they exist on (at least) two different levels: as general (life) goals and as concrete goals in specific decision-making situations. In the former case, preferences are understood as ratings of general action goals relevant for various life course outcomes (Huinink and Schröder 2008; Diewald 2012). In the latter case, they refer to concrete behavioral alternatives in specific decision-making situations. Yet preferences as general life goals do not necessarily determine which alternatives are actually pursued, because (structural) constraints, the definition of the situation, and framing effects may conflict with these general goals (Esser 1999; Lindenberg 1993; Lindenberg and Steg 2007; Brandtstädter and Rothermund 2002). Seen from this angle, general preferences and concrete behaviors in different life situations do not have to be congruent, but tensions between preferences and actual behaviors may exist. For instance, men may often prefer to work less because family life seems more important to them than occupational success, but they may choose to work longer, because of the constraints of being a male breadwinner in a difficult labor market. For the purpose of this study, we are interested in preferences as general life goals.

A theoretical and at the same time empirically applicable approach to distinguishing preferences in this sense from attitudes or values can be found in the idea of the production of instrumental goals established in social production function (SPF) theory (Lindenberg 1986, 1990, 1996; Ormel et al. 1997; Ormel et al. 1999; Huinink and Schröder 2008). The basic assumption behind SPF theory is that individuals produce their own overall well-being by trying to optimize, within the constraints they face, achievements of two universal goals: physical and social well-being (Ormel et al. 1999; Van Bruggen 2001). SPF theory is hierarchically designed, with these universal goals at the top and instrumental goals at the lower levels. Physical and social well-being are generated through investments into *first order instrumental goals*: stimulation and comfort for physical well-being; status, behavioral confirmation, and affection for social well-being. These instrumental goals are produced by investing skills, talent, and time into *lower level goals* linked to more specific behaviors that contribute to one or more of these instrumental goals. These behaviors are more or less effective for achieving the aforementioned commodity bundles. Preferences for life goals can thus be conceived of as relative ratings of the desirability of producing first order instrumental goals via different lower level goals.

Employment and private life are two particularly important lower level goals that facilitate the attainment of the higher-order instrumental goals (Diewald 2012; Huinink and Schröder 2008). In the logic of social differentiation theory, work and private life domains specialize in providing the five instrumental goals in a complementary manner. In the domain of gainful employment, income produces comfort and stimulation and occupational standing produces status, whereas in the private life domain, having friends, a partner, or children can provide affection, behavioral confirmation, and status (Ormel et al. 1999). Nevertheless, we have to take into account that there are possibilities of crossing the boundaries of societal differentiation. Thus lower level goals can, to varying degrees, be substituted with one another (Diewald 2003). Status, for example, can be attained both through being in gainful employment and also by having a large amount of social capital or marrying a partner with higher status.

2.2 Preference heterogeneity: The example of gender differences

SPF theory asserts that different social groups will differ systematically in the way they pursue the production of their well-being (Lindenberg and Frey 1993). This, however, brings about the question of whether these observable (behavioral) differences stem from differences in preferences, i.e. life goals, or from systematic differences in opportunities and constraints. The matter is complicated by the fact that preferences are unlikely to be fixed, but are rather, to a certain degree, malleable over the life course. People are likely to adapt their preferences to the constraints they face (Brandtstädter and Rothermund 2002).

Gender differences in preferences for work and family are a much debated example of the question of differing group preferences. Differences in labor force participation and investments into family life between men and women are well documented (Beck-Gernsheim and Ostner 1978; Reskin 1993; Craig and Mullan 2010). It is, however, disputed as to whether men and women differ inherently in their preferences for work or family gratifications; that is, would they rather have a high income or have children (see for example Crompton and Harris 1999; Hakim 2000; Steiber and Haas 2012; Giusta et al. 2011).

On the one hand, women and men may vary innately in their preferences, for instance because of different socialization processes (Bandura 1977). When socialization within the family differs between boys and girls, differences in preferences are likely to emerge. Thus, men and women develop different work and family preferences over their life course, which consequently lead to different investments and in turn to the observable differences in, for example, labor market participation. Similarly, parents' work and family choices can function as role models for their offspring's work and family preferences (Van Putten et al. 2008; Bandura 1977). In line with this, the doing-gender approach (West and Zimmermann 1987) emphasizes that gender-adequate behaviors are supported and reproduced in daily life, resulting in gender-specific preferences. Moreover, after entering the labor market, differences in career opportunities, due for example to (statistical) discrimination (Correll et al. 2007; Phelps 1972) or difference in household demands (England 2005) may evoke an adaptation of preferences to group-related opportunities and constraints (Festinger 1957; Brandtstädter and Rothermund 2002) even if men and women do not initially differ in their preferences for work and family life (Lucas et al. 2003, Shultz and Lepper 1996). Recent research shows that, for instance, attitudes not only influence women's working behavior, but that their working behavior seems to influence their gender role attitudes (Berrington et al. 2008; Corrigall and Konrad 2007; Kan 2007; Steiber and Haas 2012). At any given point in time, preferences may thus be the product of social construction and dependent upon heterogeneous social situations and experiences hitherto accumulated over the life course (Lichtenstein and Slovic 2006).

On the other hand, it may well be that women and men do not differ in their preferences for work and family, that is that they share the same life goals, but that differences in opportunities and constraints do not allow women and men to act equally on their preferences. The aforementioned gendered career restrictions (Correll et al. 2007; Phelps 1972; England 2005) may lead to the observable differences in labor force participation while preferences do not differ. Therefore, our investigation asks whether there are differences in preferences in the domains of work and private life between men and women.

3. Measuring preference heterogeneity

The discussion about potential differences in preferences between men and women is, however, to some extent futile if we lack an adequate measurement of preferences. Then again, as indicated above, it may be difficult to measure preferences because of a potential overlap with other concepts. The crucial task for the present study is to employ a measurement instrument for preferences as life goals that is broadly action-oriented. It should be neither specifically targeted to a single situation nor conflate preferences with general attitudes. We believe the solution can be found in linking life course outcomes (functionings in different domains of life) to the expected subjective well-being they will generate (Lindenberg 1986, 1990, 1996; Ormel et al. 1997; Ormel et al. 1999; Sen 1987, 1992, 1999) while heeding the fact that there may be trade-offs between the different outcomes. To this end, we suggest measuring preferences by employing a factorial survey design (Beck and Opp 2001; Jasso 2006; Rossi and Anderson 1982). Factorial surveys are a well-established method of studying beliefs and judgments (Jasso 2006). In a factorial survey, each respondent is presented with short narratives of situations (or actors or objects) – called “vignettes” – and rates these on a scale. Each respondent receives a set of specific vignettes with varying combinations of factors or vignette dimensions, i.e. characteristics used to describe the situation. The aim of a factorial survey is to determine the (relative) importance of these vignette dimensions by combining all levels of vignette dimensions with one another (Auspurg et al. 2009). In our case, the vignettes comprise (hypothetical) life situations that are rated by the respondents according to the (hypothetical) subjective well-being these situations bring about. To get respondents to evaluate the relative importance of different life dimensions for subjective well-being, one needs to have a dimension across which the relative preferability of these outcomes can be assessed. Since we draw on SPF theory, these choices can be understood as the expressions of individuals who try to produce their own well-being (Huinink and Schröder 2008) by investing in different life domains. In our understanding, life satisfaction can be understood as a proxy indicator of SWB. Employing a factorial survey to measure preferences thus rests on the idea that respondents will evaluate the desirability of the vignettes as guided by their own preferences (Phillips et al. 2002). The variations in respondents’ ratings can then be attributed to the varying importance they attach to the (life) dimensions, that is their preferences for these capabilities.

The factorial survey has a number of important advantages over standard survey-based instruments such as asking respondents to directly rate the importance of different life dimensions (Auspurg et al. 2009). First, by employing a factorial survey with a scale rating (hypothetical) life satisfaction, we have an operationalization which is much closer to theoretical considerations than direct questions on the importance or ranking of different life domains. Second, the quasi-experimental design obtained by using a factorial survey within traditional (general population) surveys provides the advantage of combining internal validity, achieved through a randomized, multifaceted experiment, with external validity, achieved by representativeness (Rossi and Anderson 1982; Sniderman and Grob 1996; Atzmüller and

Steiner 2010). Third, a factorial survey allows for the construction of multifactorial situations that require respondents to evaluate these situations jointly. Such vignettes approximate the complexity of real-world decisions and problems better than a battery of unrelated survey items (Auspurg et al. 2009; Liebig and Mau 2002). Fourth, because of the joint evaluation of different aspects of the situation, the factorial survey allows the assessment of the *relative* importance of each dimension. What is more, joint evaluation forces respondents to think about trade-offs between the different dimensions of life. This is more realistic, as people face constraints in real life (Phillips et al. 2002) and it is much closer to the assumptions of sociological, psychological, and economic theories of action (Esser 1999; Kahneman et al. 1999). Fifth, the experimental character of the design ensures that the values of the vignette (dimensions) are independent of any of the respondents' characteristics. Sixth, the design of the vignettes ensures that the dimensions are orthogonal to one another.¹ This enables us to disentangle the effects of dimensions that are usually strongly correlated (Auspurg et al. 2009) such as, for example, income and job prestige.

4. Data and Method

4.1 Data

In order to investigate whether men and women differ in their work and family preferences, we used data from a random sample of all German households with a listed telephone number. We conducted computer assisted telephone interviews (CATI). Eligible respondents (working population) in a household were identified using the birthday method (Salmon and Nichols 1983). The data was collected from May 15 to 30, 2012 by SOKO Bielefeld. The primary goal of the data collection was to assess the feasibility of implementing a factorial survey via CATI. To that end, a number of split ballots were included, the implications of which are discussed in more detail below. The response rate was low at 6%, and the sample comprises 331 respondents.² Descriptive statistics on the (multivariate) sample are presented in the appendix (table A1).

4.2 Design of the factorial survey

Building on the theoretical considerations presented above, we draw on research on domains of life (Campbell 1981; Campbell et al. 1976) and SPF theory (Ormel et al. 1997, Ormel et al. 1999) to identify the vignette dimensions. The two life domains – work and private life – are operationalized by specifying several lower level goals pertinent to these domains. To measure the work-related aspects of life, we chose gross monthly earnings and job prestige, which are assumed to be important resources for the production of individual well-being (Lindenberg 1986, 1990, 1996; Ormel et al. 1997, Ormel et al. 1999). The private life domain is captured by the following characteristics: having a partner, number of children, and number of close friends (Ormel et al. 1999). Previous research has already shown that these are the main domains influencing subjective well-being (Nieboer and Lindenberg 2003). Additionally, individual health status was included as one of the most important characteristics for overall well-being

¹ There are two principal ways to construct vignettes, using either random sampling or quota designs (for further discussions see Jasso 2006; Dülmer 2007; Auspurg et al. 2011).

² On the whole 8,028 landline telephone numbers were randomly drawn out of those listed in the telephone book and respondents within households were identified by the birthday method (Salmon and Nichols 1983). In 21.5% (1,726) of the cases, the number was either wrong or not assigned and in 6.93% (556) of the cases the respondent was not eligible, amounting to 2,282 neutral losses. Of the remaining 5,746 cases, 39.58% (2,274) refused to participate and 54.72% (3,144) could not be reached during the time of the fieldwork, leading to a sample of 331 (5,76%) respondents.

(Ormel et al. 1997). Each respondent was thus presented with a set of specific life situations (vignettes) that differed across the dimensions private life (partner, children, friends), working life (earnings and job prestige), and health. The vignette dimensions and their values are presented in table 1. A sample vignette reads as follows: “Imagine you have a partner and no kids, you work as an untrained worker, have 4 close friends, have gross earnings of 2,000 euros per month, and are in good health.”

Table 1. Vignette Dimensions and Values

Factors	Levels
Earnings (gross, monthly, in euros)	1000, 2000, 3000, 4000, 5000
Occupation (prestige according to MPS)	Unskilled worker (MPS = 31) Train conductor (MPS = 50.1) Retailer / shopkeeper (MPS = 78) Architect (MPS = 111.7) Doctor (MPS = 191.3)
Marital status	Partner / no partner
Children	0, 1, 2, 3
Health	Very good, good, satisfactory, bad, very bad
Close friends	0, 2, 4, 6, 8

Note: The dimensions health and close friends were only included in 68.28% and 32.63% of the cases respectively. Occupational prestige is operationalized using the magnitude prestige scale (MPS) (Christoph 2006; Wegener 1985)

In total, 60 decks of vignettes were created. Each deck contained a set of 8 or 12 vignettes. The vignettes were randomly drawn from the complete vignette universe (Jasso 2006), which comprises 5,000 unique combinations of the six dimensions. We employed two split ballot designs. First, a split ballot was introduced that differed in the number of vignettes per deck (8 vs. 12) to investigate the ideal number of vignettes per deck in a telephone interview. Second, a split was introduced in the number of factors per vignette to investigate how vignette complexity affects judgment in a telephone interview. Respondents had to evaluate vignettes with either 4, 5, or 6 dimensions (the number of vignettes within decks was constant).³ Each deck was then randomly assigned to approximately 5 respondents.

³ Additional analyses (not presented here) indicate that respondents were able to process information on six vignette dimensions.

4.3 Analysis Strategy

A factorial survey produces multilevel data, as vignettes are clustered within respondents (and respondents are clustered in decks). To “extract” the preferences from the data, we therefore specified a multilevel model with vignettes as level 1, respondents as level 2, and decks as level 3. Regression weights therefore represent preferences. To allow for intraindividual heterogeneity in preferences, we included random slopes for the vignette dimensions. Thus, to estimate the relative importance of the respective life dimensions, we specified a linear three level random intercept or random slope model which takes the following form:

$$swb_{jik} = \beta_0 + (\beta_1 + u_{1i})earnings + (\beta_2 + u_{2i})partner + (\beta_3 + u_{3i})children + (\beta_4 + u_{4i})job + (\beta_5 + u_{5i})health + \beta_6friends + \dots + \delta_j + u_{0i} + \varepsilon_{jik} \quad (1)$$

Subscript j denotes deck, subscript i denotes respondent, and k denotes vignette. The outcome variable is the respondent’s rating of his/her hypothetical life satisfaction for a specific vignette. We included fixed effects at the deck level in order to control for possible deck effects.⁴ To simplify the analysis and facilitate interpretation, the vignette dimensions for health and number of children have been dichotomized. Respondents who evaluated less than 5 vignettes have been excluded from the analysis. With this setup, we have 3,279 level 1 observations (vignettes) which are clustered in 325 respondents, who are again clustered in 60 decks. All analyses were conducted using Stata 12.1 and MLwiN (Leckie and Charlton 2011).

5. Results

5.1 Heterogeneity of preferences

The results of the analysis are shown in table 2. The results show the relative importance of having children, having a partner, being in (very) good health, the number of close friends, and earnings for individuals’ life satisfaction. The estimated regression weights represent the estimated mean preferences for the life dimension, as they indicate how the respondents’ self-assessed life satisfaction depends upon the life dimensions as presented in the vignettes. All vignette dimensions, except for occupational prestige, turned out to be statistically significant predictors for (hypothetical) life satisfaction. Occupational prestige did not turn out to be a statistically significant predictor for respondents’ life satisfaction. This result is open to two interpretations. Either occupational prestige is not important for individual well-being once the other dimensions, foremost income, are considered or operationalizing occupational prestige using the magnitude prestige scale values (Christoph 2006; Wegener 1985) did not work. Nevertheless, although the estimated effect is insignificant, it still runs in the expected direction; occupational prestige is positively related to life satisfaction.

To estimate individual preferences, it is necessary to specify random slopes for the vignette dimensions, allowing for differences in the weight attached to each dimension by different respondents.⁵ The middle section of table 2 shows significant variance at the level of the respondents for the dimensions having a partner, having children, earnings, and health. The significant variance indicates interindividual heterogeneity in preferences; respondents differ in

⁴ A Hausman test for endogeneity rejects the H_0 ($X^2(28) = 28.09$), indicating that the inclusion of fixed effects at the deck level may not be necessary. However, we encountered the well-known problem that the covariance matrix of the coefficient vectors was not positive definite, which may lead to an unreliable test statistic (Jones et al. 2010: 217) and thus decided to include deck fixed effects.

⁵ Likelihood ratio tests indicate that the models which include random slopes fit the data better than more restricted models.

their evaluation of the vignette dimensions or life domains respectively. For the dimension close friends it was not possible to estimate a random slope and therefore interindividual heterogeneity preferences for this life domain could not be assessed.⁶

The interactions between gender (the variable is coded one for male respondents) and the different vignette dimension investigate whether there is heterogeneity in the relative contributions of the different life dimension to expected life satisfaction between female and male respondents. Our results showed that only having children and being in (very) good health affects (hypothetical) life satisfaction differently for male and female respondents. Table 2 thus only reports the model which included the interactions between gender and children and gender and health. We attempted to include random slopes for these interactions as well, but were unable to estimate their variance.

Table 2. Three level hierarchical linear model of SWB evaluation of the vignettes with fixed effects at the deck level

	β	z
<i>Fixed part</i>		
Constant	-2.34*	(-2.25)
Partner [1=yes]	1.30***	(17.63)
Children [1=yes]	0.99***	(9.02)
Number of close friends	0.23***	(11.05)
Gross monthly earnings / 1000	0.41***	(15.73)
Occupational prestige [MPS]	0.001	(1.70)
Health status [1=very good/good]	2.23***	(20.54)
Dimension friends missing	3.87***	(3.63)
Dimension health missing	1.49*	(1.99)
Gender [male=1]	0.28	(1.73)
Gender X children	-0.90***	(-5.08)
Gender X health	-0.42**	(-2.69)
<i>Random part level 2</i>		
var(const)	0.35**	(2.62)
var(partner)	0.23*	(2.17)
var(children)	0.88***	(5.85)
var(friends)	-	-
var(earnings)	0.03**	(3.23)
var(occupational prestige)	-	-
var(health)	0.36**	(2.62)
var(gender X children)	-	-
var(gender X health)	-	-
<i>Random part level 1</i>		
var(const)	3.08***	(33.62)
N: Decks	60	
N: Respondents	352	
N: Observations	3,279	
Log likelihood	-6,883.45	

Own computations; z statistics in parentheses; model also controls for number of vignette dimensions, time taken to complete the factorial survey, (subjective) difficulties imagining the life situation described by a vignette, number of vignettes per deck, dummy variables indicating whether a vignette dimension was missing due to split ballots, and difficulties of rating one's SWB as well as the position of dimensions within vignettes and deck dummies; * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

⁶ As the dimension "number of close friends" was only evaluated by approximately a third of the respondents, this may be due to the lower number of cases.

To facilitate interpretation, table 3 presents the estimated effects, the (variance of the) random slopes, and the 95% interval – in which 95% of the individual slopes lie. Among all respondents, for instance, the regression weight for gross monthly earnings is 0.41 (s.e. 0.03), meaning that an increase of €1,000 (hypothetical) monthly earnings increases average (hypothetical) life satisfaction by 0.41 on an 11-point scale. The significant variance of the random slope for earnings indicates, however, that there is considerable heterogeneity among respondents as regards the relative importance of earnings for (hypothetical) life satisfaction or, in other words, as regards their preferences for generating subjective well-being through earnings. The 95% interval ($\beta_1 \mp 2 * \sqrt{\sigma_{u_{1i}}}$) indicates that 95% of the individual-specific slopes lie within the interval 0.07 and 0.76. Thus, while for most respondents income is important, for some it is far more so than for others as a means of producing subjective well-being. The same holds true for the dimensions having a partner, having children, and health status. Moreover, as mentioned above, there are significant differences between male and female respondents regarding the relative importance of having children. Women seem to derive more life satisfaction from having children compared to men. The main effect of the dimension children is estimated to be 0.98, indicating that female respondents expect to be more satisfied with their lives by almost one point on the 11 point scale if children are present in the hypothetical life situation. The interaction effect, however, is estimated to be -0.90. Since gender is coded 1 for male respondents, the hypothetical life satisfaction that male respondents derive from having children is thus considerably lower: $0.98 - 0.90 = 0.08$. However, we found no gender differences in the domain of work: neither the interaction between income and gender nor between occupational prestige and gender is significant.

Table 3. Estimated preferences (regression weights) with fixed effects at the deck level, random slope variances, and 95% interval

	β	se	Variance random slope	se	95% interval of β (lower and upper bounds)	
Partner	1.30	.07	.24	.11	.33	2.27
Children [1=yes]	.98	.11	.88	.15	-.90	2.86
Close friends	.23	.02				
Income	.41	.02	.03	.01	.07	.76
Occupational prestige	.001	.001				
Health status [1=(very) good]	2.23	.11	.36	.14	1.04	3.43
Gender [1=male] X children	-.90	.18				
Gender X health	-.42	.16				
N (Decks) 60						
N (Respondents) 325						
N (Observations) 3279						
Own computations						

To obtain the actual preferences, we predicted the random effects for each respondent and computed the preferences as the sum of the regression weight and the (predicted) individual slopes. For earnings, for instance, this is computed as $\beta_1 + u_{1i}$ as displayed in equation (1). Since male and female respondents do not differ in their relative evaluation of having a partner – the interaction is statistically insignificant – the estimated preferences do not differ between them. Their average value equals the regression weight (1.30). Male and female respondents do however differ in the value they attach to children (as tables 2 and 3 already show). The predicted preferences for male respondents comprise the main and interaction effect plus the

individual slope (0.09), whereas the predicted preferences for women comprise only the main effect (0.98). Differences in mean values in predicted preferences and estimated regression weights for income (0.41 in table 4 vs. 0.42 for male respondents in table 4) stem from differences in the predicted random slopes for these groups of respondents. This means that men's random slopes are on average slightly larger than women's random slopes. However, this slight difference is statistically insignificant – the interaction between gender and income in the multilevel model was insignificant.

Table 4. Estimated Preferences

Preference for	Mean	
	Female	Male
Partner	1.30	1.30
Children	.98***	.09***
Income	.41	.42
Health status	2.24***	1.81***

Own computations; two-tailed t-tests,

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$;

Overall, the analyses provide evidence of considerable heterogeneity in preferences for achievements (or functionings) in different domains of life. We also find that male and female respondents differ in the relative importance they attach to having children—one of the most pertinent dimensions of the private and family life domain. However, in our data we did not find any statistically significant differences between male and female respondents regarding their preferences for occupational prestige or income. Interestingly, male and female respondents also appear to differ in the relative weight they attach to being in good health.

6. Discussion

This paper has focused on the general relevance of preferences for stratification research. To assess their theoretical relevance, we draw from the capability approach (Sen 1987, 1992, 1999) and from SPF theory (Lindenberg 1986, 1990, 1996; Ormel et al. 1997; Ormel et al. 1999) to establish group level heterogeneities of preferences. We did find differences between female and male respondents regarding their preferences for having children. However, we did not find significant differences between these groups concerning their preferences for achievements in the domain of (paid) work.

What has to be kept in mind, however, is the fact that the sample consists only of working respondents. Therefore, the results are presumably distorted as the sample excludes non-working female (and male) respondents. Accordingly, a sample which does not include non-working respondents is representative only for working respondents, who may differ in their preferences from non-working respondents. Nevertheless these results remain remarkable even if they only reflect the preferences of working women, many in part-time work, because lower work preferences are often said to contribute to women's lower achievements in the labor market – a conclusion that is not supported by our data.

We suggest using the factorial survey as a method especially suited to operationalizing and measuring preferences (for life goals) while avoiding some pitfalls of other operationalizations. This method allows the extraction of preferences for functionings in the work and family domains by asking respondents to jointly evaluate their relevance. This method

of measuring preferences assesses the *relative* importance of possible functionings in different domains of life. Moreover, it has the advantage of enabling the disentanglement of the relevance of different dimensions that are usually strongly correlated. But most importantly, by letting respondents evaluate their (hypothetical) life satisfaction, we build directly on SPF theory (Lindenberg 1986, 1990, 1996; Ormel et al. 1997; Ormel et al. 1999) and are thus able to link preferences more closely to human agency than is the case with values and attitudes.

Of course, the empirical basis, in particular the sample size, requires validation of the findings using better (and larger) data. Moreover, the associations we reported can in no way be interpreted directionally. So far, we have only been able to show differences in preferences between men and women. But with cross-sectional data we are unable to address the issue of how these differences come into being. That is to say the cross-sectional data available does not allow us to disentangle selection effects from adaptation effects. To do so, longitudinal data would be necessary that enables the investigation of how (structural) conditions affect the genesis of preferences and how, vice versa, preferences shape life outcomes.

This is an important issue, not only from a methodological point of view. The relevance of preferences for social inequality research is largely dependent on our ability to reliably distinguish, on an interindividual and intraindividual level, genuine heterogeneity from heterogeneity of opportunities and constraints in pursuing preferences or, in other words, to distinguish selection from (resigned) adaptation processes.⁷ At its core, this question refers to the genesis of preferences. Are they stable, causally antecedent conditions for human agency or are they subject to change, depending on the constraints, opportunities, and cultural reference frames with which individuals are confronted over their life course? This distinction is especially relevant for the interpretation of differences in relational social inequalities, as differences in achievement can be interpreted on the one hand as unequal capabilities due to different opportunities and constraints, but on the other hand may imply equal capabilities, but “essential” heterogeneity of preferences between related groups. Therefore, lower resources and lower levels of participation do not necessarily indicate lower opportunities, but might also indicate lower preferences in these domains.

⁷ See for example the discussion by Robeyns (2003: 84-86) concerning group differences regarding inequalities in general and gender inequality in particular.

Appendix

Table A1. Means, standard deviations, minimum and maximum values of the variables used

	mean	sd	min	max
Age	47.6	10.2	17	73
Sex [1=male]	0.37		0	1
Subjective well-being	8.03	1.31	1	10
Has a partner	0.85		0	1
Immigrant	0.14		0	1
Children [1=yes]	0.79		0	1
Number of close friends	7.76	7.24	0	50
Gross monthly earnings (in 1000 euros)	2.56	1.66	0	8.33
Occupational prestige [MPS]	87.0	35.7	26.9	186.8
Optimal subj. health [1=yes]	0.67		0	1
Level of education: low	0.19		0	1
Level of education: mean	0.39		0	1
Level of education: high	0.42		0	1
<i>N</i>	325			
Own computations				

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