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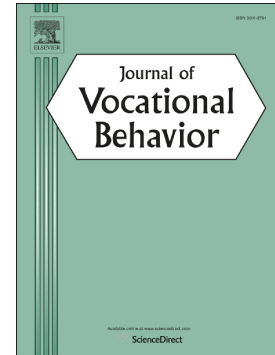
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The Development of Work Values During the Transition to Adulthood:

A Two-Country Study

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Abstract

This study addresses the development of work values—the desired characteristics of one’s current or future job—during young adulthood. Using two panel studies from Germany ($N = 2,506$) and Finland ($N = 1,326$), we investigated (a) mean-level and rank-order change and stability in work values across three biennial waves (age 20/21 to age 25/26); and (b) the influence of stable background characteristics as well as of major transitions in family and work roles on inter-individual differences and intra-individual changes in work values. Latent measurement models with three work value dimensions showed good fit in both countries: *extrinsic* (importance of job security and material rewards), *intrinsic* (importance of having an interesting, varied, and valuable job), and *autonomy* (working independently; making one’s own decisions). Analyses revealed high mean-level stabilities and moderate to high rank-order consistencies in work values across four years. Intrinsic work values emerged as the most highly endorsed value, and extrinsic work values as the most stable value, in both countries. Individual differences in work values emerged along the lines of sociodemographic background characteristics—especially gender, and to a lesser extent, parental socio-economic status (SES) and school track—whereas work and family transitions played only a limited role in explaining changes in work values across time. We discuss these results against the backdrop of previous research conducted mainly in North America and note some implications for work value research and for career counseling.

Keywords: work values; job values; transition to adulthood; work and family roles; personality change;

Introduction

Work, job, or career values refer to the importance individuals place on different job characteristics and to the kind of rewards they seek to attain in their jobs (Mortimer, & Lorence, 1979; Johnson, 2001). Developmental changes in work values, even if small, may have short-term and long-term consequences for individuals' working lives (Johnson & Monserud, 2012). For example, work values predict future vocational attainment and remuneration (Johnson, 2001; Johnson & Mortimer, 2011; Mortimer & Lorence, 1979), career and job choices (Balsamo, Lauriola, & Saggino, 2013; Judge & Bretz, 1992), as well as work engagement, career and life satisfaction (Chow, Galambos, & Krahn, 2015; Sortheix, Dietrich, Chow, & Salmela-Aro, 2013). Because work values are antecedents of such important career outcomes, it is important to understand how work values develop during young adulthood.

Young adulthood is a demographically dense period during which individuals make more transitions and decisions than at any other life stage (Elder, 1985; Havighurst, 1948). Transitions into new work and family roles, and the expectations that accompany them, are key drivers of personality development (Hutteman, Hennecke, Orth, Reitz, & Specht, 2014). Although youth and young adulthood are deemed sensitive periods for the formation of work values (Chow, Krahn, & Galambos, 2014; Johnson, 2001), evidence on how transitions during these periods shape work values (e.g., Johnson, 2001; Johnson, 2005) is scarce and subject to limitations that we seek to address in the present study. First, there are still relatively few studies examining—let alone explaining—individual patterns of stability and change in work value development during young adulthood (but see Johnson, 2001; 2002; Johnson & Monserud, 2012). Second, existing longitudinal studies have mostly used U.S. samples born in the 1960s (e.g., Mortimer, Lorence & Kumka, 1986; Johnson, 2001) and 1970s (e.g., Johnson, 2005); studies using contemporary samples, and samples from outside the Northern American context, are largely lacking.

Here we investigate the development of work values in two recent samples of young adults from Germany and Finland. Our study comprises (1) descriptive analyses, examining indicators of stability and change in work values across four years of young adulthood; and (2) explanatory analyses, examining how stable background characteristics (family SES, gender, and educational track) and major work and family transitions (entering the workforce, marriage and parenthood) relate to work values. With these analyses, we respond to Jin and Rounds' (2012) to call for more research on the sources of individual differences in work value development.

Work Values: Models and Dimensions

Research on work values has employed a plethora of work value models and diverse instruments to assess them. There is no clear consensus as to the number and content of work value dimensions (Johnson, Mortimer, Lee, and Stern, 2007), and few studies have tested the validity and replicability of their instrument's structure across countries. As an exception, Johnson, Mortimer, Lee, and Stern (2007) presented strong theoretical and empirical support for the distinction between intrinsic and extrinsic work values across five different U.S. datasets. *Intrinsic work values* refer to the importance individuals place on immaterial rewards associated with specific job tasks, such as interest and learning opportunities. *Extrinsic work values* refer to material or instrumental rewards of a job that are external to the work itself, such as a good salary and job security. The intrinsic–extrinsic distinction is the classic, and still the dominant, distinction in the work values literature and is present in most (but not all; e.g., Porfeli, 2007) categorizations of work values (Johnson et al., 2007).

Other categorizations of work values comprise additional dimensions beyond extrinsic and intrinsic work values. For example, Johnson and Elder (2002) further considered “influence” (henceforth referred to as “autonomy”) work values, i.e., the importance of decision-making power and independence in one's job. Jin and Rounds' (2012) recent meta-analysis additionally identified status (prestige, power, and authority), and social work values (helping society, working with people). Leuty and Hansen (2011) identified six common factors that emerged from three different work value instruments (competence, status, autonomy,

organizational culture, work environment and relationships), some of which, however, could be subsumed under the broader extrinsic and intrinsic dimensions.

In the present study, we distinguished between three work values that are recurring themes across several work value models, and that we could recover in both data sources (see Measures): intrinsic and extrinsic work values, representing the dominant distinction in the work literature; and autonomy work values, representing an additional work value that is often viewed as separate from extrinsic and intrinsic work values (Marini, Fan, Finley, & Beutel, 1996; Johnson & Elder, 2002; Johnson, 2002). Considering autonomy along with intrinsic and extrinsic work values seems a particularly worthwhile addition in light of evidence pointing to self-determination and freedom of choice as increasingly important values in industrialized societies, including in the occupational context (Lechner, Obschonka, & Silbereisen, 2016).

The Development of Work Values in Young Adulthood

What do we know about the development of work values? A recent meta-analysis of 22 original longitudinal studies examining changes in work values from youth into adulthood (Jin & Rounds, 2012) found that intrinsic work values increased during the college years (age 18–22) and then decreased. Extrinsic work values followed a U-shaped trend, decreasing during the college years and increasing in young adulthood (22–26 years). In the mid-to-late twenties, only extrinsic values showed an increase in importance, while all other values decreased. A caveat in interpreting these trends is that a substantial share of the original studies included in the meta-analysis were based on small and non-representative samples. Other recent studies found small mean-level declines in the importance of extrinsic work values and a (statistically non-significant) decline in intrinsic work values in young adults in the U.S. (18–32 years; Johnson & Monserud, 2012); as well as a decline in extrinsic work values for age 18–20 years and an increase in extrinsic and intrinsic work values for age 20–25 in young Canadians (Chow, Krahn, & Galambos, 2014). Autonomy (or influence) work values were the only work value with an upward mean-level trend from high school up to eight years after in Johnson and Elder's (2002) study.

Thus, findings on mean-level trends are mixed, but young adulthood seems to be a time during which intrinsic and extrinsic work values show only limited mean-level change.

In addition to mean-level changes, rank-order consistencies are another common way of looking at change, indicating the stability of individual differences over time. Longitudinal studies in the US found rank-order consistencies (Pearson's r) of .48 for intrinsic and .56 for extrinsic work values from age 17/18 to age 19/20, which increased to .59 and .68, respectively, between age 27/28 and 29/30 (Johnson & Monserud, 2012). A study using Canadian samples reported only small to moderate correlations between ages 18 and 25 for intrinsic (.25) and extrinsic (.36) work values (Krahn & Galambos, 2014). Finally, Jin and Rounds' (2012) meta-analysis revealed population stability coefficients of .56 for intrinsic and .66 for extrinsic work values over an average time interval of 2.41 years. Overall, this evidence suggests that rank-order consistency in work values is moderate to high and tends to increase with age (ageing stability hypothesis; see also Porfeli, 2007). Moreover, rank-order consistency tends to be higher for extrinsic work values than for intrinsic work values.

Although these studies provide important insights into work value development, they are largely based on Northern American samples, raising the question of whether their findings generalize to other world regions, such as Europe. Of the studies reviewed in Jin and Rounds' (2012) meta-analysis, most (15) used samples from the US or Canada. Only 7 studies used samples from various European nations, and 2 included samples from Israel. Moreover, although these studies point to youth and young adulthood as phases during which changes in work values are most likely to occur, more systematic inquiry into the drivers of work value development warranted (Jin and Rounds (2012, pp. 337–338). In the next section, we discuss theoretical and empirical work on such sources of individual differences in work values.

Individual Differences in Work Values

Stable sociodemographic characteristics are one source of individual differences in work values, with research pointing to differences along the lines of social class, gender, and education. First, the importance that

individuals place on different aspects of work can partly be traced back to their social origin. A lower family SES relates to higher extrinsic work values in youth; in contrast, youth with a higher SES background may come to value intrinsic and autonomy work values highly (Kohn & Schooler, 1969; Mortimer, & Lorence, 1979; Johnson, 2002), even though recent studies using contemporary samples have failed to replicate this SES–intrinsic link (Johnson, & Mortimer, 2011; Sortheix, Chow, & Salmela-Aro, 2015).

Second, there are well-established gender differences in work values that are thought to arise from early gender-specific socialization, leading to differences in future aspirations (Eccles, Jacobs, & Harold, 1990). Women, on average, place a higher importance on intrinsic work values but a lower importance on extrinsic work values than men do (Johnson, 2001; Sortheix et al., 2013; 2015). There do not appear to be any systematic gender differences in the importance of autonomy work values (Marini, Fan, Finley, & Beutel, 1996).

Third, education is linked to work values, albeit less consistently. For example, post-secondary education was negatively related to extrinsic work values and positively related to intrinsic work values among U.S. youth (Lindsay & Knox, 1984), and having a university diploma related to higher intrinsic work values in a Canadian sample (Krahn & Galambos, 2014). At the same time, some findings point to relatively stronger increases in extrinsic work values across the second decade of life among those with higher educational attainment (Johnson, 2001). A caveat concerning these findings is that educational attainment may not be very informative in samples of youth who often continue their education until their mid-twenties (OECD, 2013). A recent study looking instead at young people's current tracks found that Finnish youth following an academic (versus vocational) high school track placed higher importance on intrinsic work values (Sortheix, Chow, & Salmela-Aro, 2015). In sum, evidence suggests that post-secondary education reinforces both intrinsic and autonomy work values (Johnson & Elder, 2002), but the effects of education on work values are less consistent than those of gender and family SES.

Life Transitions and Work Value Change

As noted earlier, young adulthood is a period during which young people—often simultaneously—negotiate major developmental tasks in the family and work domains, including union formation, entering parenthood, and the transition from education to employment (or, if unsuccessful, to unemployment). These life transitions are windows for personality change, requiring individuals to invest in new social roles and adapt their behaviours and motivations to the new roles' requirements (Roberts, Wood, & Smith, 2005; Hutteman et al., 2014). As we will argue next, there is reason to assume that these life transitions also have a bearing on young people's work values, yet only a few longitudinal studies have tested this possibility (Johnson, 2001; Johnson, 2005; Krahn & Galambos, 2014).

Although the theoretical foundations of the literature on work value development are diverse, the idea of discrepancy reduction as a key driver of value change is a recurring theme. The principle of discrepancy (or dissonance) reduction stems from Festinger's (1957) classic cognitive dissonance theory and maintains that individuals strive to reduce discrepancies between different values within their value system (e.g., Porfeli, 2007) or between their values and actual experiences, such as the job rewards they obtain (e.g., Porfeli & Mortimer, 2010). Reminiscent of the psychological discrepancy perspective, the sociological literature has often invoked processes of reinforcement (vs. downgrading) and compensation to understand how work values change in the interplay between the individual and context (Kohn & Schooler, 1969; Mortimer & Lorence, 1979). Through *reinforcement*, individuals come to value those work values that match the experiences and rewards that they obtain. In turn, a *downgrading* in values is expected to occur when there is a mismatch between values and the opportunities to enact these values, forcing individuals to re-adjust their values to the available opportunities. The idea of *compensation* derives from material need theory (Maslow, 1943) and posits that when material needs are not met, individuals will increase their materialistic concerns; for example, growing up in a poor family is associated with heightened extrinsic work values later in life (e.g., Johnson, 2002; Johnson, Sage, & Mortimer, 2012; Kohn & Schooler, 1969). These accounts converge in viewing work value

development as a dynamic transaction between an agentic individual and changing opportunities and constraints in the multi-layered contexts of vocational development.

Applying these mechanisms to family transitions, the new role demands that the transitions into parenthood and marriage pose should increase the importance of extrinsic work values (e.g., salary and job security).

Economic responsibility for the family often lies mainly on the male partner, but gender egalitarianism is rising along with female labour market participation (Smock, & Manning, 1997). Supporting this idea, cross-sectional results have shown that being married was associated with higher extrinsic work values for American and Japanese men, although not for women (Loscocco & Kalleberg, 1988). A longitudinal study found that marriage increased extrinsic work values among male college graduates in the US (Mortimer, Lorence, & Kumka, 1986). With regard to childbearing, studies in U.S. samples have linked parenthood to higher extrinsic work values for both men and women cross-sectionally (Loscocco, 1989); as well as to increases in extrinsic work values among men and unmarried (but not married) women longitudinally (Johnson, 2005). A recent study linked parenthood (but not marriage/cohabitation) at age 25 to higher extrinsic work values in a Canadian sample (Krahn and Galambos, 2014). In sum, evidence on how family transitions shape work values is scant and inconclusive, calling for further research using contemporary samples that reflect past decades' demographic shifts (e.g., increasing age at marriage; women's labour force participation).

Regarding the work domain, young adulthood is the time when most individuals start their first job (Havighurst, 1948; Schoon & Silbereisen, 2009). The education-to-work transition is considered an important driver of work value change. According to the discrepancy reduction principle, a downward adjustment of aspirations and work values may occur when young people realize that the actual rewards offered by their first job (or the labor market at large) do not live up to their expectations. In line with these ideas, Chow et al. (2014) found that young Canadians downgraded their extrinsic work values after graduation, which may be indicative of a downward adjustment of expectations. Johnson (2001a) found that initial work experiences implied a decrease

in intrinsic (but not extrinsic) work values; she argued that youth might already be quite realistic in their salary expectations, but expect more intrinsic rewards (e.g., opportunities for learning and self-development) than typically offered by a first job; hence, they adjusted these values to what their jobs had to offer in order to reduce perceived discrepancies. Further evidence showed that unemployment lowered both extrinsic (Johnson, Sage, & Mortimer, 2012) and intrinsic work values (Krahn & Galambos, 2014). Such experiences may have become especially widespread on today's increasingly uncertain labour market, where many young people are unable to make a smooth transition from education to work (Lechner, Tomasik, & Silbereisen, 2016), and where a substantial number of young people experience spells of unemployment (Scarpetta, Sonnet, & Manfredi, 2010).

Although these studies provide initial insights into how major transitions in the family and work domain shape work values, they are far from conclusive. Moreover, they are exclusively based on the same longitudinal samples from Northern America, indicating the need for replications with contemporary samples from other national contexts.

Aims and Hypotheses of the Present Study

Our study consists of descriptive and explanatory analyses. In the descriptive analyses, we assess the factorial structure, rank-order consistency, and mean-level stability of intrinsic, extrinsic, and autonomy work values over four years of young adulthood. Our guiding question here is whether earlier findings mostly gleaned from Northern American samples (as summarized in Jin & Rounds, 2014) can be replicated in our two large European samples, including the mean-level increase in extrinsic work values in the third decade of life.

In the multivariate explanatory analyses, we investigate how stable background characteristics and major family (marriage, parenthood) and work transitions (from education to employment or unemployment) shape work values. Our expectations concerning background characteristics are that women place a higher importance on intrinsic work values (Hypothesis 1a), whereas men place higher importance on extrinsic work

values (Hypothesis 1b). We further expect that a higher family SES relates to lower extrinsic work values (Hypothesis 2). We do not anticipate effects of gender or family SES on intrinsic and autonomy work values because prior studies have mostly failed to find such effects (e.g., Sortheix et al., 2015). Finally, we expect that attending an academic as opposed to a vocational track is linked to a higher salience of intrinsic and autonomy work values (Hypothesis 3). Concerning the effects of family and work transitions on changes in work values across time, we expect marriage and parenthood to increase extrinsic work values (Hypothesis 4a and 4b). We further expect the transition from full-time education to employment to decrease all work values because of a downgrading of expectations in response to initial work experiences (Hypothesis 5). Finally, we expect unemployment to decrease the importance placed on all work values (Hypothesis 6).

We utilize two independent but largely parallel studies from Germany and Finland. Both comprise three biennial waves in which work values were measured in a similar way, offering a valuable opportunity for cross-national comparison and replication. Germany and Finland are both highly industrialized, economically prosperous nations. During the period under study here (2004–2008 in Germany; 2008–2014 in Finland), Finland experienced a major economic contraction in 2008, with youth unemployment rates (15–24 years of age) rising from 16.5 to 20.4 in 2014. In Germany, unemployment rates were lower, ranging from 13.0 in 2004 to 13.3 in 2006 and 10.6 in 2008 (Eurostat, 2016). The two countries are also culturally similar as judged by their scores on the Hofstede cultural dimensions (Hofstede, 2016), barring Germany's higher scores on masculinity (i.e., Germans, on average, value individual competition, achievement and visible success more than Finns) and long-term orientation (i.e., German society tends to be more pragmatic and less bound to time-honoured traditions than Finnish society). Overall, however, we expect the economic and institutional similarities to outweigh the cross-national differences between the countries. In the absence of a clear rationale from the literature, we refrain from making a priori hypotheses on cross-national differences in work values between Germany and Finland and their antecedents, but we do explore such possible differences.

Method

Data and Sample Selection

The German sample came from the Transformation of the Upper Secondary School System and Academic Careers (TOSCA) project (Köller, Watermann, Trautwein, & Lüdtke, 2004) and comprised students in 149 randomly selected upper secondary schools in the state of Baden-Wurttemberg that are representative of the college-bound student population in this state (i.e., those attending the “Gymnasium” school type). The Finnish data came from the Finnish Educational Transitions (FINEDU) study (<http://wiredminds.fi/projects/finedu/>) and comprised all ninth-grade students from all comprehensive schools (median age: 16) and all second-year students from all upper secondary schools (median age: 18) in a mid-sized Finnish town (population: 105,000). Thus, the samples differ in that FINEDU covers more educational tracks than TOSCA but may be somewhat less representative in its population.

The first wave of TOSCA took place in 2002, when respondents were in their final year of schooling (median age: 19). More than 60% provided their written consent to being contacted for participation in up to four further biennial waves (2004–2010). Participation in the first wave took place in classrooms and was not financially rewarded, whereas participation in later waves was carried out via postal questionnaires. In FINEDU, respondents were first interviewed in 2004 and then re-interviewed every two/three years until 2014. While respondents were still in school (until 2005/2006), data collection took place in classrooms. After leaving school, respondents received postal or online questionnaires, and a small subset participated in telephone interviews. At each wave, researchers tried to reach all of the individuals from the original master samples, including those who did not participate in the first wave.

Both studies assessed work values in three consecutive waves (henceforth T1–T3) when respondents were in their early to mid-twenties, starting on average two years after leaving school. The TOSCA study assessed work values in 2004 (median age: 21 years), 2006 (age 23), and 2008 (age 25); FINEDU assessed work values in

2008/09 (median age: 22), 2011 (age 25), and 2013/14 (age 27). For the present study, we selected all respondents who participated in at least one of these three waves, resulting in analysis samples of 2,506 young adults from Germany and 1,329 from Finland (additional analyses focusing only on respondents who participated two or even three times yielded the same substantive findings). Table A1 in the Appendix provides a description of the samples as well as attrition information.

Measures

Work values. TOSCA and FINEDU used a similar set of items derived from the Meaning of Work Study (MOW International Research Team, 1987) to measure work values. In both studies, respondents rated the importance they attached to different job characteristics for their career choice on a 7-point scale (1 = *strongly disagree*; 7 = *strongly agree*). Our goal in selecting the items for the present study was to model as many of the established work value dimensions as possible with a sufficient number of items (ideally, three or more), while also maximizing comparability and replicability across countries. In both countries, the measurement instrument covered the two most commonly measured work value dimensions (Johnson et al., 2007): *intrinsic* (i.e., meaning, interest and variety) and *extrinsic* (i.e., good pay, employment prospects, and promotion opportunities). In addition, both studies included items about *autonomy* (i.e., task autonomy, decision-making power, and independence). As shown in Table 1, the items measuring these three dimensions were very similar in content across both studies; the sole exception was the autonomy dimension in Finland, for which only two items were available (task autonomy and decision-making power). Both studies contained other items that we did not use in our present study as they (a) were not available in both countries and/or (b) were not available in all three survey waves. Internal consistencies (Cronbach's α) were acceptable for all three work value dimensions in both countries ($.58 \leq \alpha \leq .71$ in Germany; $.55 \leq \alpha \leq .74$ in Finland), taking into account the small number of items.

Major life transitions. The main predictors of interest in our multivariate models were changes in respondents' work and family status, which we coded from the sociodemographic questionnaires. We captured these changes through a set of status indicators that entered the equation as time-varying predictors of work values at each of the three waves, such that their effects can be interpreted as status transitions (see Data Analytic Strategy).

In the family domain, two binary indicators captured the two major steps in family formation, marriage, and parenthood. At each wave, we coded whether respondents were married (0 = *unmarried*; 1 = *married*). We also coded whether they had kids (0 = *no children*; 1 = *at least one child*); that is, coefficients for this variable refer to the birth of the first child. In the work domain, three dummy variables indicated whether respondents were currently (1) employed full-time, (2) unemployed, or (3) in any other non-employed status (e.g., military/civil service, gap year, maternity leave). Full-time education, the initial status of almost all respondents, served as the reference group. Our interest here was in the difference between full-time employment and education, reflecting a successful transition to the labor market; and between unemployment and education, reflecting an unsuccessful transition. We had no expectation concerning the third category ("other"), but coding this group was necessary to obtain a well-defined reference group of respondents in full-time education. Overall, we recorded 1,101 transitions from education to work, 57 transitions to unemployment, 131 marriages, and 31 transitions to parenthood during the observation period in TOSCA; and 520 transitions to work, 55 transitions to unemployment, 155 marriages, and 135 transitions to parenthood in FINEDU.

Background characteristics. Stable background characteristics entered our model in the form of time-invariant predictors. First, to assess respondents' *educational track* at the outset of the observation period, we coded whether, at T1, at a median age of 21 (TOSCA) or 22 years (FinEdu), respondents were attending a vocational or an academic track (0 = *vocational track*; 1 = *academic track*). For the few respondents who were not presently in education at T1, we used the last track they attended (neither assigning these respondents a missing value

nor excluding them from the analyses changed any of our results). In both countries, the vocational track (Germany: dual apprenticeship system; Finland: vocational schools) combines two to three years of traditional schooling with on-the-job training in firms, whereas the academic track comprises post-secondary and tertiary institutions (universities and universities of applied sciences). Differentiating between these two tracks allowed us to include information about supposedly distinct socialization experiences present in both countries— between educational tracks typically leading to blue-collar or lower-level white-collar jobs on the one hand and tracks granting access to tertiary education and higher-level white-collar jobs on the other.

Second, we included a measure of *parental SES*. In TOSCA, the information came from a parental questionnaire administered in 2002 that provides data based on the International Socio-Economic Index (ISEI; Ganzeboom, de Graaf, Treiman, and de Leeuw, 1992). The ISEI is based on information on the education and income of the occupations that parents specified and ranges from 16 (farm-hands, helpers and cleaners in offices) to 90 (judges). FINEDU provides a similar measure of parental SES based on adolescents' open-ended reports of their parents' occupations in 2004. These occupations were coded according to a standard classification system (Official Statistics of Finland, 1989) and recoded into three broader ordered categories: 1 = *blue-collar* (e.g., electrician, baker, hairdresser); 2 = *lower white-collar* (e.g., nurse, real estate agent, salesperson); 3 = *upper white-collar* (e.g., engineer, doctor, journalist). In both studies, we used the mean across both parents if data on both parents were available (79% in TOSCA; 70% in FINEDU), and data from one parent otherwise. We z-standardized the SES indicators in both samples for comparability. We coded *gender* such that males were the reference group (0 = *male*; 1 = *female*). Finally, to capture any potential age-related variation in work values not explained by the other sociodemographic factors, we also controlled for *age in years* at T1 (mean-centered).

Data Analytic Strategy

Our analyses proceeded in two steps. We first tested a latent measurement model with three work value dimensions (intrinsic, extrinsic, and autonomy), measured at three time points, separately in both countries. Age, gender, parental SES, and educational track were included as auxiliary variables for missing data estimation. We opted against a two-group model directly comparing the countries because the work value items shown in Table 1 were not identical across countries, with (a) all items differing at least slightly in wording, (b) some items differing slightly in content, and (c) one autonomy item being absent in Finland. Nonetheless, additional analyses using the eight similar items demonstrated that models imposing measurement invariance across countries had satisfactory fit and yielded the same substantive conclusions (see Robustness Checks and description as well as Table A2 in the Online Supplementary Materials).

Within each country, we imposed strict measurement invariance across time (i.e., loadings, intercepts, and residual variances of all items fixed to be equal across time), a prerequisite for comparing means and correlations across time points. To account for shared indicator-specific variance across time, we modeled $M-1$ correlated method factors per work-value dimension, an approach that performs better than correlated uniquenesses (Geiser et al., 2012). As reference indicators, we chose “pay” for extrinsic, “interest” for intrinsic, and “decision-making” for autonomy based on the consideration that these items were most similar across countries and represented each dimension well. We used these latent measurement models for our descriptive analyses examining the (a) rank-order consistencies (i.e., correlations across time points) and (b) mean-level stabilities of the three latent work value dimensions across time in both countries. Additionally, we used estimated factor scores from this model to calculate (c) the reliable change index (RCI; Christensen & Mendoza, 1986) as a measure of the amount of *intra-individual* change in work values. Originally devised in clinical psychology to evaluate therapies, the RCI is becoming increasingly widespread in personality psychology as a way to evaluate personality change. It is calculated by the formula $RCI = X_2 - X_1 / SE_{diff}$. That is, the difference between the posttest score X_2 and the pretest score X_1 is divided by the standard error of the difference SE_{diff} ,

which denotes the spread of the distribution of change scores that would be expected if no true change occurs. An RCI score below -1.96 or above 1.96 is unlikely to occur by chance alone in more than 5% of cases, thus signifying “reliable” downward or upward intra-individual change, respectively.

For our explanatory analyses, we extended the latent measurement model in order to gauge the influence of major life transitions and background characteristics on work value development. We estimated a latent-variable generalization of the “hybrid model” (Allison, 2010; for a recent application of the hybrid model in work value research, see Johnson et al., 2012) as outlined by Bollen and Brand (2010). The hybrid model combines the advantages of the most widely used panel models, fixed effects (FE) and random effects (RE) models. Most importantly, it provides FE estimates for time-varying covariates that are unbiased by time-invariant confounders, whether measured or unmeasured, by relating variation in the outcome only to variation in the explanatory variables; at the same time, it allows the effects of time-invariant covariates to be estimated under the RE assumption that they be uncorrelated with time-invariant heterogeneity. The basic model equation is

$$\tau_{it} = \mathbf{B}_{yx} \mathbf{X}_{it} + \mathbf{B}_{yz} \mathbf{Z}_i + \eta_i + \zeta_{it}$$

where τ_{it} is the true score of person i at time t on a given latent work value, \mathbf{X}_{it} is the vector of time-varying covariates whose coefficients are in row vector \mathbf{B}_{yx} , \mathbf{Z}_i is a vector of time-invariant covariates whose coefficients are in row vector \mathbf{B}_{yz} , η_i is the latent time-invariant variable capturing all unobserved time-invariant variables that influence τ_{it} , and ζ_{it} is the random disturbance term with $E(\zeta_{it}) = 0$ and $E(\zeta_{it}^2) = \sigma_{\epsilon t}^2$. In our case, the FE estimates in $\mathbf{B}_{yx} \mathbf{X}_{it}$ capture the effects of major life transitions (e.g., a change from being unmarried to married) on within-person fluctuations in work values across time, whereas the RE estimates in $\mathbf{B}_{yz} \mathbf{Z}_i$ represent the effects of stable background characteristics (e.g., gender) on stable between-person differences in work values. The assumption required for estimating the RE estimates of time-invariant covariates in the same model as the

FE estimates of time-varying ones is that $COV(\mathbf{Z}_i, \eta_i) = 0$, whereas \mathbf{x}_{it} is allowed to correlate with η_i . Figure A1 in the Online Supplementary Material shows a simplified graphical representation of the model.

We conducted these analyses in Mplus 7.4, using a robust maximum likelihood estimator (MLR) and full-information maximum likelihood estimation (FIML) to handle missing data (i.e., item nonresponse and unit nonresponse due to longitudinal attrition). FIML uses all available information and estimates model parameters under the assumption that data are at least conditionally missing at random; it is currently one of two preferred methods of handling missing data (Graham, 2009). The Mplus model syntax is available on request from the first author.

Results

Measurement Models

A measurement model with three latent work value dimensions imposing strict invariance across the three time points showed acceptable fit in Germany, $\chi^2(261) = 1253.77, p < .001, CFI = .941, TLI = .921, RMSEA = .039, SRMR = .051$; and good fit in Finland, $\chi^2(197) = 475.24, p < .001, CFI = .949, TLI = .929, RMSEA = .033, SRMR = .041$. Factor loadings were very similar across the two countries; moreover, almost all standardized loadings were above .50, and most in the range of $.60 \leq \lambda \leq .80$. One exception was the loading of the third extrinsic item (working conditions) with standardized loadings around .40 per wave in Germany and around .30 in Finland. A series of model comparisons using different levels of measurement invariance across time within each country suggested a small degree of intercept non-invariance with regard to some of the information criteria ($\Delta CFI \geq .010$; $\Delta RMSEA \geq .015$; $\Delta SRMR \geq .010$; Chen, 2007, p. 501). In both countries, this non-invariance arose largely from only one item (“promotion” in Germany; “variety” in Finland). Because releasing the respective intercepts proved inconsequential for the conclusion derived from subsequent analyses, we retained strict invariance across time in view of the model’s overall adequate fit. Model-implied reliabilities (*omega*; e.g., Zinnbarg et al., 2005) of the work value factors in Germany averaged $\omega = .78$ across waves for

extrinsic work values, $\omega = .74$ for intrinsic, and $\omega = .76$ for autonomy; the corresponding values in Finland were .73, .71, and .73.

In sum, results supported the expected time-invariant three-factor structure tested separately in both countries. Importantly, as noted earlier, our additional analyses ignoring the differences in item wording and imposing strong measurement invariance across countries (in addition to strict invariance across waves) showed that the work value instruments functioned alike in both countries; moreover, these alternative models also lead to the same substantive conclusions (see Robustness Checks and Online Supplementary Material with Table A2).

Descriptive Analyses: Mean-Level Change, Rank-Order Consistency, and Intra-Individual Change

How do work values develop across the early to mid-twenties? Consider, first, the mean-level trajectories of the three work value types in Figure 1 for Germany (left panel) and Finland (right panel). The mean levels of intrinsic and extrinsic work values were comparable across the two countries. Young adults rated intrinsic rewards remarkably high, with means near the scale's maximum, whereas they rated extrinsic rewards about a full scale-point lower but still well above the scale's midpoint. A cross-national difference emerged with respect to autonomy, which emerged as the second-to-most important work value in Germany—but the least important one in Finland, with means around the scale's midpoint.

The trajectories in Figure 1 also show the absence of any pronounced mean-level change in work values across the four study years. One exception was a medium-sized increase in the importance of autonomy in Finland from T2 to T3 (Cohen's $d = .55$). A pattern of rather high stability was also evident in the rank-order consistencies shown in Table 2. Extrinsic work values were the most stable values in both countries, reaching very high 2-year stabilities, above .70 in Finland and even above .80 in Germany, and 4-year stabilities only slightly lower than this. Intrinsic work values were somewhat less rank-order consistent but still quite stable

across 2 years (all $r > .56$), as well as across 4 years (all $r > .51$), in both countries. A cross-national difference emerged with respect to autonomy, which had higher rank-order stability in Germany than in Finland, where it was the least stable, with correlations around .40, and thus formed a notable exception to the pattern of high temporal consistencies overall.

The amount of intra-individual change was also limited for most work values, as indicated by the RCIs in Table 2. Across the four-year observation period (i.e., from T1 to T3), only 2% of German respondents experienced a change in extrinsic work values, 5% experienced a change in intrinsic work values, and 3% in autonomy—i.e., less than would be expected by chance alone. In Finland, the picture was suggestive of slightly more intra-individual change, with 5% experiencing change in extrinsic and 9% experiencing change in intrinsic work values. Again, the one notable exception was autonomy, where a substantial share of respondents, namely 25%, experienced reliable change, the overwhelming majority of which was upward change.

Explanatory Analyses: Predicting Individual Differences and Changes in Work Values

Turning to our explanatory analyses, we next examined the extent to which background characteristics relate to between-person differences in work values; and the extent to which major life transitions in young adulthood relate to within-person changes in work values. Table 3 shows results from our latent hybrid panel models for Germany (left column) and Finland (right column). Among the background characteristics, gender had the most consistent effects, with females rating intrinsic rewards higher but extrinsic rewards lower than males in both countries, as predicted by Hypothesis 1. Additionally, females placed a lower importance on autonomy than males in both countries. Gender differences were most pronounced for extrinsic rewards, amounting to more than a third of a scale point. There were two further cross-nationally consistent effects: In line with Hypothesis 2, a higher parental SES was negatively related to extrinsic work values, although these effects were rather small, bearing in mind that parental SES was standardized for the analyses; parental SES was unrelated to intrinsic and autonomy work values. Furthermore, compared to those in a vocational track,

those in an academic track placed more importance on intrinsic work values, but not on autonomy work values, thus only partly confirming Hypothesis 3.

Family and work transitions had few effects on within-person changes in work values. In Finland (but not Germany), marriage increased extrinsic work values but none of the other work values, yielding only limited support for Hypothesis 4a. Childbearing was unrelated to extrinsic work values in Finland and negatively related to autonomy in Germany, contradicting Hypothesis 4b. In Germany, respondents rated extrinsic work values higher when they were employed compared to when they were still in education, against Hypothesis 5. No other statistically significant effects of the education-to-work transition emerged, although the positive effect on extrinsic work values in Finland (.08) was similar in size and direction to that in Germany. Being unemployed was related to a lower importance of intrinsic rewards in Finland, in line with Hypothesis 6. Unemployment effects were similar in size and direction for the other two work values in both countries with the exception of intrinsic work values in Germany—but none of these effects reached conventional levels of statistical significance.

Robustness Checks

We ran several supplementary analyses to assess the robustness of these findings. In particular, we tested whether the cross-national similarities and differences in work value priorities that emerged from our descriptive model remained the same in an alternative model imposing strong measurement invariance across countries, notwithstanding the differences in item wording (see Online Supplementary Material with supplementary Table A2). This was indeed the case, thereby greatly enhancing our confidence in our findings. Further supplementary analyses focusing on the multivariate models predicting individual differences and change in work values demonstrated that our findings were also robust to (a) different ways of coding and modeling the main variables of interest, and (b) did not hinge on the particular class of models estimated. For more details, see Online Supplementary Material.

Discussion

This study investigated the developmental trajectories and precursors of work values during the transition to adulthood in two samples from Germany and Finland. Our main findings are threefold. First, as our descriptive analyses showed, work values showed high mean-level stabilities and moderate to high rank-order consistencies in both countries, and the mean levels were highly similar across countries for extrinsic and intrinsic (but not autonomy) work values. Second, our explanatory analyses revealed cross-nationally consistent individual differences along the lines of background characteristics—especially gender and family SES. Third, contrary to expectations, major life transitions in the family and work domain had only very limited effects on work values, none of which were replicated across countries. Here we discuss these findings, pitting them against previous research mostly conducted in the North American context (as summarized in Jin & Rounds's, 2012, meta-analysis).

Work Value Priorities Across Countries

The high endorsement of intrinsic work values in both countries concurs with most previous research based on samples from the US and Canada (Chow et al., 2014; Johnson & Monserud, 2012; Johnson, 2001), including Jin and Rounds' (2012) meta-analysis. The same applies to the lower endorsement of extrinsic work values compared to intrinsic ones during this stage (early-to-mid twenties), although this pattern is not always seen in recent studies in the North American context (Chow et al., 2014). Our results thus further buttress the conclusion that young people in today's industrialized societies prioritize intrinsic work values.

A notable cross-national difference emerged with regard to autonomy work values, which ranked second in Germany but were least important in Finland. In interpreting this finding, it is important to note that the items to assess autonomy were similar but not identical across countries, and one item was absent in Finland ("have an occupation where I can work independently"); however, given the large size of this-cross-national difference of a full scale point, measurement issues are unlikely to fully account for this cross-national difference in the

importance placed on autonomy—an interpretation further buttressed by our supplementary analyses.

Moreover, the German sample was a college-preparatory secondary school sample, whereas the Finnish one also included students from other types of secondary schools; however, given the striking similarities in the other two work values, sample differences may not loom large. Substantively, this cross-national difference may hence reflect a combination of economic (e.g., job characteristics) and institutional (e.g., welfare state) differences between Germany and Finland. Cultural factors may also be at play. For example, Germany scores higher than Finland on the Hofstede cultural dimension of masculinity–femininity, reflecting the extent to which a society values individual competition, achievement and (visible) success, as well as on the long-term orientation dimension, indicating a lower importance of time-honored traditions and norms in Germany (Hofstede, 2016); these cultural differences might entail a preference for greater autonomy (e.g. decision-making power) in work contexts in Germany. However, these cultural explanations are admittedly speculative. Further research into cross-national differences in work value priorities and their roots is clearly needed.

The Striking Stability of Work Values

Another noteworthy finding concerned the high mean-level stabilities and moderate-to-high rank-order consistencies of work values across the four study years. Consistent with much earlier research (Jin & Rounds, 2012), extrinsic work values showed the highest rank-order consistencies. Only a small share of respondents experienced reliable intra-individual change in terms of the RCI (Christensen & Mendoza, 1986). These findings are consistent with theoretical accounts portraying values as stable individual differences (Mortimer & Lorence, 1979; Rokeach, 1979), even more stable than the Big Five (Jin & Rounds, 2012). It also resembles recent research on human values, which found an average rank-order stability for personal values of $r = .66$ and little mean-level change from age 20 to 28 (Veccione et al., 2016).

The one exception to this picture of high stability were autonomy work values in Finland, which showed only moderate rank-order stabilities and non-negligible mean-level and intra-individual (RCI) increases between T2

and T3. As our robustness checks showed, this divergence did not arise from the different item set in Finland, with autonomy work values in Germany still showing much higher stability when using only the two equivalent items (see Table A2). Despite this relatively lower stability of autonomy, none of the major life events explained any of the change in autonomy in this sample. Although this increase might reflect a period effect, a possibility worth considering is that more specific work experiences of young people in Finland, rather the mere fact of starting a job, might explain this increase—a possibility we return to when we derive our theoretical implications.

Interestingly, in neither sample did our analyses replicate the increase in extrinsic work values between age 22 and 26 reported in Jin and Rounds' (2012) meta-analysis. To the contrary, extrinsic work values emerged as the most stable value in both countries, showing no pronounced mean-level changes and reaching stability coefficients higher than the meta-analytic estimate of $\rho = .66$ for an average time interval of 2.41 years (Jin and Rounds, 2012, p. 333). The latter finding may reflect the broader definition of extrinsic work values in the meta-analysis, contributing to lower stabilities or the fact that not all studies in this meta-analysis used latent-variable approaches, thereby underestimating stabilities; alternatively, it may reflect differences in the national contexts (mostly US-based samples in the meta-analysis vs. European samples in our study). At any rate, our results, combined with Johnson and Elder's (2002) reports of mean-level *declines* in extrinsic work values from adolescence to age 31/32 in *Monitoring the Future*, suggest that increases in extrinsic work values in young adulthood are far from universal.

Gender, Family SES, and Education as Sources of Individual Differences in Work Values

Our analyses point to gender as a strong, and cross-nationally consistent, source of individual differences in work values, with females placing a lower importance on extrinsic work values but a higher importance on intrinsic work values than men. Unexpectedly, females also scored lower on autonomy work values. The persistent effects of gender in two countries scoring high on gender egalitarianism (Finland ranks 2nd and

Germany 12th among 142 countries in the World Gender Gap Report; Hausmann et al., 2014) are surprising, and they diverge from previous research reporting no gender differences in work values, including autonomy (Johnson, 2002). Our results suggest that gender role socialization continues to shape work values in both countries—although, in principle, these findings could also be partly genetically determined (Knafo & Spinath, 2011). The causes of these gender differences warrant further investigation.

A higher family SES was related to lower extrinsic work values in both countries, as in recent studies in the US (e.g., Johnson & Mortimer, 2011). Thus, even in Germany and Finland with their tuition-free education, high economic prosperity, and strong welfare states, family SES showed its “long arm” on young adults’ extrinsic work values. Researchers have explained this via a compensation process, whereby youth raised in lower-SES families come to prioritize material rewards (e.g., job security, salary) to compensate for experiences of material insecurity (Johnson & Mortimer, 2011; Kohn & Schooler, 1969). Also in line with most research using contemporary samples, family SES was unrelated to the importance of intrinsic or autonomy job rewards, suggesting that these characteristics of work are valued today irrespective of socioeconomic background (Johnson, & Mortimer, 2011; Sortheix et al., 2015).

Above and beyond parental SES, respondents who entered the study period on an academic track, as opposed to a vocational track, rated intrinsic work values higher in both countries. Educational track had no other effects on work values. These results resemble several earlier findings in North America (Johnson and Elder, 2002; Krahn and Galambos, 2015) and support Johnson and Elder’s (2002) idea that the nature of the post high-school period determines the values that are reinforced: Academic environments appear to elicit and reinforce intrinsic values, such as developing one’s capacities and pursuing one’s interests.

The Role of the Family and Work Transitions

Based on the social investment principle (Roberts, et al., 2005; Hutteman et al., 2014), we had anticipated that moving into marriage and parenthood would increase the importance placed on extrinsic job rewards. These

expectations received only limited support. Against our expectations, results pointed to a minor role of major life transitions in the family and work domains in shaping work values—at least in this four-year time window. The small and inconsistent effects of the major transitions are perhaps not surprising, given the high stabilities of most work values that leave little room for these transitions to induce changes.

One reason for this lack of transition effects may be the relatively small number of transitions we observed, especially in the German data, which limits statistical power. On the other hand, allaying these concerns, there were two significant effects of family transitions. Marriage increased the importance of extrinsic work values in Finland, but not in Germany. In Germany, unexpectedly, childbearing significantly decreased autonomy work values. In interpreting the latter effect, it is possible that the few respondents who entered parenthood during the study period (i.e., at a non-normative early age for German students) may be a special group for whom work and education are less central than for the average young German. Alternatively, those who had children at this age might perceive parenthood as an obstacle to their career development and, consequently, lower their expectations concerning autonomy.

In the work domain, we expected the education-to-work transition to lower the importance of all three types of work values, reflecting a downward adjustment of expectations. Contrary to this idea, the transition to work increased the importance of extrinsic rewards in Germany (and, although statistically non-significant, in Finland as well) and was otherwise unrelated to work values. This result is consistent with a recent study that found full-time employment at age 25 to increase extrinsic work values in a Canadian dataset (Krahn & Galambos, 2014). Together with this earlier study, our results show that a downgrading of extrinsic work values around the transition to education is not inevitable, at least on a relatively favourable labour market offering good job opportunities for young labour market entrants, as was the case in Germany during the study period.

The expectation that unemployment decreases all work values received only partial support. In Finland, unemployment lowered the importance of intrinsic work values and tended to have negative (but non-

significant) effects on the other two values. These results are in line with some previous results showing that unemployment was concurrently associated with lower intrinsic but not extrinsic work values in Canadian young adults (Chow et al., 2014; Krahn and Galambos, 2014), although other studies have found that unemployment lowers extrinsic work values in the US (Johnson et al, 2011, 2012). In Germany, unemployment had no significant effects. Overall, it appears that unemployment effects on work values are not universal and more complex than envisioned, pointing to the need for more fine-grained accounts of unemployment (e.g., reasons for being unemployed; duration of spells) than we were able to provide with our current data.

Theoretical and Practical Implications

Our findings offer several insights for work value research. The high rank-order and mean-level stability of work values across the study period, combined with the small and inconsistent effects of major life transitions, suggest that work values are already fairly crystallized by young adulthood. This is in line with a dynamic system perspective on work values development, which holds that individuals' value structure tends to become more stable and coherent with age (Vondracek & Porfeli, 2002; Porfeli, 2007). Although more change might occur over longer time periods (Jin & Rounds, 2012), this implies that future inquiry into the developmental precursors of work values should look at factors operating earlier in the life course. The persistent effects of stable background characteristics such as gender and SES in our study and previous ones (Kalleberg & Marsden, 2013; Johnson, 2002; Johnson & Mortimer, 2011; Marini, Fan, Finley, & Beutel, 1996) further support this view, pointing to (earlier) socialization experiences as drivers of individual differences in work values. A genetic perspective on values (Knafo & Spinath, 2011) may also offer valuable insights, especially if it accounts for the complex interplay between genetic and environmental influences.

Another intriguing possibility is that major life transitions have effects on some individuals but not others—depending on personal or contextual characteristics and the specific experiences related to these transitions. For example, from a discrepancy/dissonance perspective (Porfeli, 2002; Porfeli & Mortimer, 2010), the specific

job rewards young people receive in their first jobs, the quality of their work experiences (Johnson & Mortimer, 2011; Kohn & Schooler, 1969), and the way in which young people negotiate their transition to work (Sortheix et al., 2013) may be more decisive in shaping work values than the mere fact of transitioning from education to work. The same applies to other types of transitions. Future studies should incorporate more fine-grained information about how young people deal with life transitions and model interactions between personal characteristics and these transitions.

The substantial stability and imperviousness to change of work values in the third decade of life in our study and previous ones (Johnson & Monserud, 2012; Jin & Rounds, 2012) also has practical implications. One is that helping young people choose a career that matches their work value priorities might be a more viable strategy than trying to change their work values during this life stage. Interventions aimed at shaping or instilling certain work value priorities might be better advised to target earlier life stages, when work values might still be more malleable. Later in life, counsellors could help young people who face a wide array of educational and career decisions to become aware of their work value priorities and to factor these priorities into their educational and career decisions. Successful interventions preparing adolescents for career entry (e.g., Salmela-Aro, Mutanen, & Vuori, 2012) might be further enriched by also including work values as part of their design.

Limitations

Some limitations of our study should be noted. First, our ability to make causal inferences is limited by the correlational design. Second, the ability of our research design to detect effects of major life transitions may be limited by the fact that (a) some transitions were rare in our data, particularly unemployment and parenthood in Germany, and (b) that we could only model transitions occurring in between two biennial study waves. It is possible that major life transitions entail more short-lived changes in work values that could not be captured with this design. This would require more intensive longitudinal data on the timing and duration of status changes.

Third, there are potential sources of individual differences in work values that we could not investigate with our data. Most notably, cultural factors, such as the aforementioned masculinity–femininity dimension (Hofstede, 2016), might underlie not only cross-national differences in work values but also differences between social groups with different cultural backgrounds within the same country. Especially in light of the ongoing waves of immigration to Europe, cultural background seems an important factor to explore in future research.

Fourth, our study provides a valuable but imperfect cross-national comparison. Our samples were not fully identical in composition (the German sample included only academic-track students) and the work value measures were similar but not identical, even though our additional analyses showed that imposing strict measurement invariance across countries led to the same substantive conclusions as our more conservative main analysis models. In addition, Germany and Finland still represent two relatively well-off countries; future research should include other more culturally and economically diverse societies.

Finally, although our data allowed us to examine three important work value dimensions in both countries, including the dominant intrinsic and extrinsic dimensions (Johnson et al., 2007), there are additional work value dimensions we could not investigate, such as interpersonal (e.g., good relationships with colleagues), prosocial (e.g., helping people), and status (e.g., prestige, authority) work values (e.g., Jin & Rounds, 2012; Porfeli, 2007). These are worthwhile target dimensions for future studies.

Conclusion

In sum, results from our longitudinal two-country study portray work values—especially extrinsic work values—as fairly stable personality traits that are already fairly crystallized in the third decade of life. Major life transitions in this demographically dense period have only small influences on work values, leading us to conclude that future studies should cast light on personal characteristics or specific experiences in the work context as potential moderators of the effects of transitions on work value development. By contrast, the

effects of background characteristics, in particular gender and family SES, proved to be robust in both countries; this might point to the power of early and ongoing socialization experiences, but we again highlight that a genetic perspective may yield further insights into the origins of individual differences in work values, too. Overall, we hope that our results will stimulate further rigorous cross-national research into the development of work values and its determinants.

ACCEPTED MANUSCRIPT

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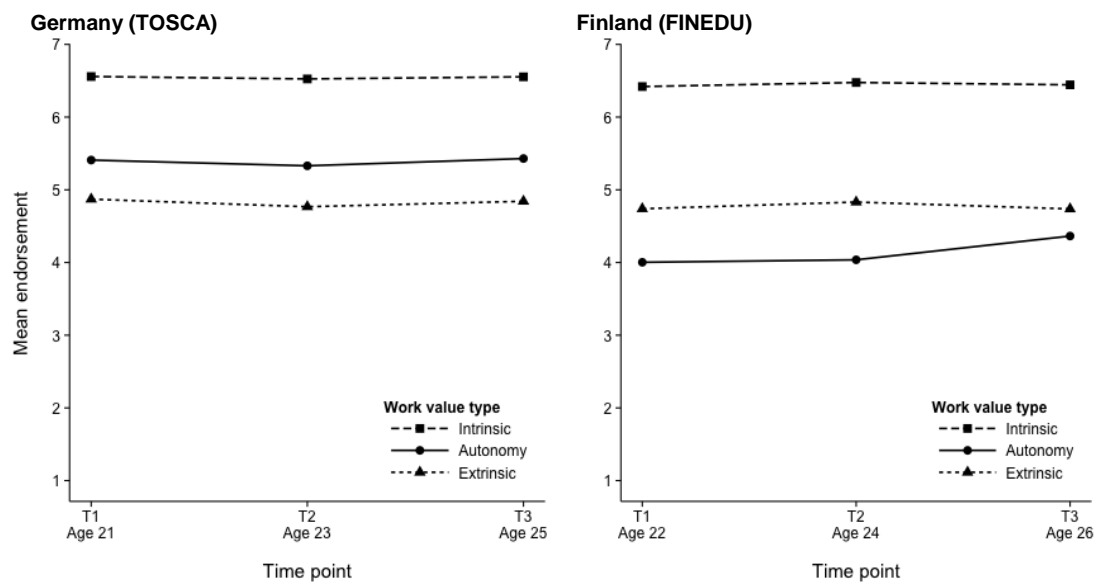


Figure 1. Latent mean trajectories of the three work value types in Germany (left panel) and Finland (right panel) across three measurement occasions covering four study years.

Table 1

Wording of the Work Value Items Used in the Present Study.

	Germany (TOSCA study)	Finland (FINEDU study)
<i>Introductory statement</i>	“Concerning my future job, it is important to me to...”	“My career choice is influenced by whether the job offers...”
<i>Extrinsic work values</i>		
Pay	“earn a lot of money”	“good pay”
Promotion	“have good opportunities of promotion”	“good opportunities of upgrading and promotion”
Conditions	“secure and healthy working conditions”	“convenient work hours and good physical working conditions”
<i>Intrinsic work values</i>		
Interest	“have a job that fits my interests”	“interesting work (work I really like)”
Meaning	“have a job where I feel I do something valuable”	“work that is important and valuable to me”
Variety	“have a job that is varied”	“a lot of variety”
<i>Autonomy work values</i>		
Decision-making	“have a positions where I have decision-making powers”	“work where I make decisions by myself”
Task autonomy	“be able to plan and distribute my work by myself”	“a lot of autonomy (I decide how to do my work)”
Independence	“have an occupation where I can work independently”	n/a

Table 2

Rank-Order Consistencies and Reliable Change Index (RCI) for the Three Work Values.

Work value type	Germany (TOSCA)			Finland (FINEDU)		
	Extrinsic	Intrinsic	Autonomy	Extrinsic	Intrinsic	Autonomy
<i>Rank-order consistencies</i>						
$r_{T1, T2}$	.83	.57	.71	.76	.64	.43
$r_{T2, T3}$	.83	.62	.71	.71	.56	.40
$r_{T1, T3}$	.75	.56	.63	.63	.51	.35
<i>Reliable Change, %</i>						
Downward	1	3	2	3	5	4
None	98	95	97	95	91	76
Upward	1	2	2	2	4	21

Note. Values for rank order consistencies (r_{T_i, T_j}) refer to latent variable correlations across time-points; values for reliable change refer to the percentage of respondents experiencing reliable change between T1 and T3.

Table 3

Effects of Major Life Transitions and Background Characteristics on Work Values.

<i>Predictors</i>	Germany (TOSCA)			Finland (FINEDU)		
	Intrinsic	Extrinsic	Autonomy	Intrinsic	Extrinsic	Autonomy
<i>Background characteristics</i>						
Age in years	.00 (.02)	-.10* (.02)	.06 (.04)	-.01 (.01)	-.06 (.03)	.01 (.03)
Female	.15*** (.02)	-.42*** (.05)	-.23*** (.04)	.23*** (.04)	-.34*** (.07)	-.19** (.07)
Academic track	.07* (.03)	-.13 (.07)	.00 (.06)	.23** (.07)	-.05 (.11)	-.10 (.11)
Parental SES	.02 (.01)	-.07** (.02)	.01 (.02)	.03 (.02)	-.13** (.04)	-.01 (.04)
<i>Major life transitions</i>						
Main occupation (ref.: in education)						
Employed	-.01 (.03)	.10* (.04)	-.02 (.04)	-.04 (.04)	.08 (.06)	.05 (.06)
Unemployed	.01 (.09)	-.19 (.13)	-.07 (.16)	-.15* (.07)	-.13 (.13)	-.16 (.15)
Other	.03 (.05)	-.02 (.09)	-.15 (.08)	-.02 (.06)	.01 (.09)	-.15 (.09)
Married	-.11 (.07)	.05 (.11)	-.16 (.12)	-.11 (.07)	.22* (.11)	-.08 (.13)
Parenthood	-.07 (.14)	-.21 (.26)	-.45* (.22)	-.01 (.08)	.05 (.13)	.19 (.14)

Note. Coefficients are unstandardized regression coefficients (B) with standard errors (SE) in parentheses.

* $p < .05$, ** $p < .01$, *** $p < .001$.

Highlights

- We investigate the development of work values in two European large-scale samples
- Work values show high mean-level stabilities across four years of young adulthood
- Work values show moderate to high rank-order consistencies
- Background characteristics (especially gender) have robust effects on work values
- Major work and family transitions have only limited effects on work value change