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THE VALUED CHILD

THE EFFECT OF VALUES ON THE TRANSITION TO MOTHERHOOD

by

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The Effect of Values on the Transition to Motherhood [1].

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Summary : This article focuses on the effect of values on the transition to motherhood. In analyzing panel data of the 'Familienentwicklung in Nordrhein-Westfalen'-study we argue that individual values are important cultural characteristics that influence young women's choices concerning motherhood. The most egalitarian category of women, who value autonomy and economic independence and who do not identify with traditional family values, has a significant lower risk of giving birth or getting pregnant than those women who do not value autonomy or who do value traditional values. A second finding in this paper is that women who are in a 'shorter' consensual union and get pregnant, more often plan their marriage before giving birth compared to women in a 'longer' consensual union. This suggests that, just like a first child symbolizes an affirmation of marriage, a first child in 'longer' consensual unions similarly symbolizes an affirmation of continuity.

1. Introduction.

In this paper we focus on the issue of the effect of value orientations on the transition to motherhood. The discussion about the issues involved in choices about motherhood includes both theoretical propositions and empirical evidence. Our theoretical frame of reference aims at going beyond theoretical reductionism. As Hobcraft and Kiernan (1995) discuss, no single theoretical approach is sufficient to understand the issues

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involved. Instead we like to argue for theoretical integration. We do so by taking into account yet another recent 'appeal' in the field of demographic research, namely to focus on the (proper) role of culture when explaining demographic behavior (Pollack and Watkins, 1993 and Kertzer, 1995). We focus on one specific aspect of culture putting the question straightforwardly : 'Do values matter?' (cf. Lesthaeghe en Moors, 1994). However, by proposing a values interpretation of choices about motherhood, we do not want to suggest that these choices are solely guided by values. The significance of two prominent economic theories, e.g. Easterlin's Economic Deprivation theory (1976, 1980) and G. Becker's Neo Classic theory (1981) proves to be twofold. First, they provide a partial explanation why values relate to demographic transitions; and second, they function as complements of the cultural argument. Analyzing panel data we will show that value orientations measured before the transition to motherhood, affect this choice. The significance of values may not be reduced to other transitional characteristics like education, age and duration of the relationship. Furthermore, we find evidence that the two values dimension, e.g. 'autonomy' and 'traditional values orientation' interact in explaining the transition to motherhood.

2. Theoretical perspective.

On previous occasions (Lesthaeghe en Moors, 1994 and Moors, 1996) we already elaborated on a theoretical frame of reference which draws upon the disciplinary perspectives of two prominent economic theories, complementing them with a values argument. This frame of reference closely relates to the debate about cultural and economic approaches to demographic behavior (see : Pollack and Watkins, 1993 and Kertzer 1995). In this paper we focus on the values argument after briefly discussing the propositions of the economic approaches.

Within the field of economics, a most prominent approach is the New Home Economics, articulated and expanded by Gary Becker (1981), which focuses on the opportunity side of the Rational Choice coin, assuming that the preference side is fixed and exogenous. He predicts that as the educational level or human capital of women rises, the gain these women get out of marriage and children diminishes. In

other words, the opportunity cost becomes too high and childlessness and lower fertility are the outcome for a rising number of women, with higher education, seeking to maximize their opportunities.

Easterlin's Economic Deprivation theory (1976, 1980) is often viewed as an equally prominent, but competing model. Rather than being competing, we like to consider it as being complementary for two reasons. First, although Easterlin's theory focuses on the preference side of the coin, claiming that it is not fixed and endogenous, this does not imply that the logic at the opportunity side is false. Second, and more important, Easterlin focuses on another segment of the population, namely men with a lower economic status, whereas Becker refers to higher educated women.

In a nutshell, Easterlin's argument departs from the tension between the high consumption expectations young men are raised with and the limited opportunities they have when entering the labor force in times of hardship. His model predicts postponement of family transitions because of this relative deprivation. In a way, Easterlin's propositions are more attractive because they refer to postponement processes, whereas Becker basically predicts childlessness. But, as already stated, both only fill in a part of the picture and in a complementary way.

Beside their rational choice type of explanation, both protagonists have yet another feature in common : they neglect cultural explanations. We will not broach the discussion whether or not the cultural argument can be captured by these rational choice models (see : Pollack and Watkins, 1993) but agree with those who claim that any model which leaves out a cultural aspect is hardly satisfying (Campbell, 1985, see also : Kertzer, 1995 and Hobcraft and Kiernan, 1995). Most probably there is a whole complex of cultural aspects, but values [2] are of particular interest because they form part of what Kertzer calls "a cultural sphere that is interwoven with, both shaping and being shaped by, political and economic institutions, as well as by kinship and other social organizational structures." (Kertzer, 1995, p.20). However, if we are to model values as predicting behavior, we only stress one direction of the dynamic process outlined by Kertzer. At the empirical level we inevitably face the issue of causality

[2] In Hofstede's conceptualisation of culture, values are in the centre of a set of concentric circles of aspects constituting culture. The others are : rituals, heroes and symbols, with 'practices' crosscutting these aspects.

(Pagnini and Rindfuss, 1993; Lesthaeghe en Moors, 1994 and Moors, 1996). Only panel data measuring values *prior* to parenthood can address this question in a satisfactory way. The analyses we will present in this paper use this kind of sequential information. Before turning to the presentation of the data, we return to the values argument [3].

There are several reasons why values are important in explaining choices people make. First of all the concept of 'values' is as well relevant in explaining changes as it is in explaining continuity. Indead, several researchers agree that there is more about values than mere 'reproduction' of cultural norms (Inglehart, 1977 and 1990; Jennings, 1984; Kohn, 1977 and Kohn, Slomczynski and Schoenbach, 1986). Values can operate as agents of change as well. Inglehart for instance clearly illustrates generational differences in values orientations. These values are very stable, both at the individual and the aggregate (cohort) level, if one takes period effects into account. By mere processes of 'social metabolism' (older 'materialist' cohorts being replaced by younger 'post-materialist' cohorts) society moves toward post-materialism. Jennings, like Kohn and his colleagues compare the values of parents with their children. Although there is an important correlation in values between parents and children, it is by no means a perfect one. Socialization is more than parents transmitting their values. Peers and professors are important too. The historical conditions during the socialization phase must be taken into account. A second reason why values are particularly important in explaining decisions about parenthood is that only people with 'strong' and 'atypical' values may row against the tide. Campbell (1985) - like Veevers (1973, 1980) - for instance claims that societal normative pressure upon voluntarily childless women is so fierce, labeling them as abnormal and unfinished, that in order to counter this pressure, attitudinal and values change are necessary. Similar, Pagnini and Rindfuss (1993) argue that defining out-of-wedlock childbearing as a 'problem' reflects a strong normative position in public opinion. They claim that the increase in out-of-wedlock childbearing is associated with increasingly permissive attitudes. The same arguments are more or less

[3] Discussing the concept of values is an issue of its own which does not directly concern the main propositions of this paper. We like to refer to values as being 'preferable end-states of existence' as Rokeach does. In our opinion, values are mirrored in a set of attitudinal choices people make. The two-stage factor analyses we present in the next section, are based upon this idea : factor analysis of a set of attitudinal scales is our answer to the measurement problem of values.

discussed in Hobcraft and Kiernan's paper (1995). Consequently, values can explain changes in society - including demographic transitions. The key-issue in values research however, is the disentangling of the two processes involved in the association of values and choices : to what extent can values *explain the choices* people make and to what extent *do these choices (in turn) affect* the values people hold (Lesthaeghe en Moors, 1994; and Moors, 1996). The first we call the *selection effect* of values on choices, the latter the *adaptation effect* of choices on values. The adaptation effect can be further differentiated into an *affirmation effect* and a *negation effect*. The affirmation effect of choices on values implies that the choices reinforce previously held values, while the negation effect weakens the values or even reverts their orientation. Both selection and adaptation effects reflect Kertzer's (1995) dynamic process. In this paper we focus on the selection effect of values on the transition to motherhood.

3. Data, hypothesis and research design.

In order to test our propositions we really need a longitudinal panel design measuring values *before* the event 'first birth' occurs. It is self-evident that either the sample size needs to be sufficiently large to select the group at risk, or the sample needs to be drawn from the group at risk, say women aged 18 to 23 years old. This kind of data is rare and often from US origin [4].

In this paper we analyze the panel study 'Familienentwicklung in Nordrhein-Westfalen' conducted by the 'Institut für Bevölkerungsforschung und Sozialpolitik' of the University of Bielefeld. The initial random sample consisted of 2620 women aged between 18 and 30 years. The fieldwork started in December 1981 and lasted until the end of March 1982. Two additional waves were conducted with a time spacing of approximately two years, re-interviewing respectively 1698 and 1054 women.[5]

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[4] Two American panel studies are worth mentioning here : the Detroit Metropolitan Area panel analysed by Thornton and his colleagues, an the National Longitudinal Survey of the High School Class of 1972.

[5] The drop out between the first and the second wave had to do with the fact that the researchers, at the end of the first interview were obliged to ask the written permission of the respondent to keep her

In our analyses we selected a group of women who did not have any child at the first interview. We further selected those who were not divorced or never remarried because the number of divorced women was small [6]. The final number of respondents in the analyses is about 850 women.

The first step in the analyses was to operationalize the values orientations by means of a two-stage principle component analysis.[7] In the first stage we did separate principle component analyses on five different sets of items in the questionnaire. All these items were based on rating questions, asking people how strongly they agreed (disagreed) with the different statements. We choose to keep the original grouping of items as they were administered in the questionnaire. Taken together, these five analyses revealed twelve principle components (with an eigenvalue ≥ 1). Items loading high on a specific principle component (correlation $\geq .50$) were summated in a summated rating scale. These twelve summated scales were submitted to a (second stage) principle component analysis, that revealed three dimensions (with an eigenvalue ≥ 1), two of which are used in the analyses of this paper[8]. Table 1 presents the information of the second stage principle component analysis.

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address in order to contact her for the second wave. Comparing the 'drop-outs' with those who participated at the second wave did not reveal important selectivity effects.

[6] A small 'atypical' group may disturb the analyses. Yet there is also a more substantial reason to leave the 'divorced' out of the analyses : divorce can be conceptualized as a 'competing' risk to first birth for those who are married in our analyses. A multiple decrement analysis is not the purpose of this paper.

[7] A two stage principle component analysis (or factor analysis) is preferred for both theoretical and methodological reasons. At the theoretical level we believe one needs to distinguish between different levels of abstraction when one is dealing with values. Traditional family orientation (the highest level of abstraction) for instance, includes different aspects (children as giving meaning to life, importance of the family, household roles, etc...) each of which reflects several attitudes. These levels of abstraction are differentiated in a two stage factor analysis. Furthermore, we have to take into account that some items correlate rather highly because they are semantically virtually identical. If one was to enter all variables simultaneously, the classical criterion of selecting relevant dimensions (eigenvalue ≥ 1) would result in a large number of dimensions with only few (semantic look-alike) items loading highly on each dimension. It is very doubtful whether this would result in a 'good' operationalization of values dimensions.

[8] The third dimension only captured one summated scale, namely 'avoidance of conflict within the relationship'. The other eleven summated scales nicely fitted within a two dimensional orthogonal design. More information about these principle component analyses is given in Moors (1995).

Table 1 : Principle Component Analyses - loading of the summated rating scales on the first two dimensions. (orthogonal design : varimax rotation)

P.C. ' traditional family orientation' (28.1% variance)

.75	summated scale 'child gives meaning to life'
.73	summated scale 'woman's role : household and being a mother'
.73	summated scale 'reasing children is difficult but satisfying'
.71	summated scale 'traditional opinion about marriage'
.65	summated scale 'the household is a woman's job'
.60	summated scale 'a woman has to obey her husband'

P.C. ' autonomy' (15.1% variance)

.75	summated scale 'important for me to have a job'
.60	summated scale 'having good prospects is important'
.58	summated scale 'independence and identity through job'
.57	summated scale 'personal freedom is important'
.42	summated scale 'close relationship with parents is important'

Because the values dimensions are orthogonal, a typology of gender values can be constructed.

Table 2 : A typology of gender values.

The public sphere : AUTONOMY

		LOW	HIGH
The private sphere : TRADITIONAL FAMILY ORIENTATION	LOW	- (undecided) - not family oriented - work does not need to imply liberation	- egalitarian / equality - individual autonomy - economic independence - no gender role stereotyping
	HIGH	- traditional - family oriented - economic dependent - gender role segregation	- equivalence - relative autonomy - work and family oriented - role stereotyping - role conflict

The division between a more traditional and a more feminist egalitarian type can clearly be observed. The traditional type combines a high score on 'traditional family orientation' with a low score on 'autonomy'. This type of women identifies with their household and family role. The opposite is true for the egalitarian type which stresses individual autonomy and economic independence and object to gender role stereotyping. Equality is the key word here. Both types are in accordance with Goldthorpe's classification (1987) of attitudes toward women's employment. At the individual level one would not expect that these women would experience role conflict as they are oriented toward a particular role. But for those who highly value both family and autonomy, this role conflict may well be their prime characteristic. On the one hand they seek relative autonomy, while on the other hand they refer to some role stereotyping within the household. Not equality, but equivalence is at issue. Probably this values type comes closest to Goldthorpe's neo-traditional type. The fourth category evidently was not of concern to Goldthorpe[9], but draws our attention to these women who are not family oriented and do not find work to be important in order to gain individual autonomy. We are to guess what they do value, but they do not make a clear commitment to either role. This may just reflect a postponement of commitment, but it may very well be that such respondents are more inclined to 'take things as they come'.

Relating both dimensions to the transition to motherhood, we *hypothesize* that 'traditional family orientation' will increase the risk of a first child, while 'autonomy' will reduce it. The risk of a first child will be particularly low for the egalitarian category and high for the traditional type. We even expect the risk to be quite high in the case that both dimensions are valued because motherhood does not need to exclude work in the opinion of these women. As far as the fourth category is concerned, their risk remains an open question. In order to use the two values dimensions in the hazard (or intensity) regressions, we recoded each of them into four categories of equal size (quartiles).

We shall now discuss the operationalization of the dependent variable. Closest to the key-hypothesis would probably be a measure about the timing of the decision to

[9] Goldthorpe's classification lists societal-level values, which always refer to what people value, not to what they do not value.

have a child. This is hard to measure and leaves out those who did not really decide on having a child (i.e. the so called 'accidental pregnancies'). Hence, the best thing to do, is to use proxies. We use two : first, the date of the birth of the first child, focusing on the transition itself and enabling us to review the 'pregnancy'-marriages (or women marrying because they got pregnant); and second, the (estimated) timing of the knowledge of the pregnancy, to rule out the possibility of 'dramatic' changes in values because of that knowledge.[10] This second operationalization implies a further selection of the sample, as we left out all women who were more than two months pregnant at the time of the first interview. An important consequence of the second option is that the information of the union formation and/or the marriage is censored if these events took place after two months pregnancy. The out-of-wedlock conception may not be confused with out-of-wedlock childbearing.

The operationalization of the dependent variables and the values dimensions, as well as the other variables in the analyses, are reported in the following table. All available information in the three waves is used. Censoring time equals the date of the last interview.

Table 4 : Variables in the analyses.

1. Dependent variables :

1.a First birth (time varying - dependent variable)

- 1 ≡ no children
- 2 ≡ first child
- 0 ≡ censoring (last interview the respondent participated)

[10] Another possibility was to use the timing of the conception (another ± 2 months less of exposure time), but in view of our key hypothesis, this looks less elegant. We did run analyses with the timing of conception as the dependent variable and there were virtually no differences with the models using the timing of knowledge of pregnancy. We choose to report on the more elegant models that have a second advantage, namely of being more comparable to the models with first birth as the dependent variable.

1.a Pregnancy (time varying - dependent variable) [11]

- 1 ≡ no children
- 2 ≡ two months pregnant
- 0 ≡ censoring (last interview the respondent participated minus 7 months)

2. Values dimensions (fixed covariates - recoded principal components) (measured at wave 1)

TFV 'traditional family values' (reference category ≡ 1)
AUT 'autonomy' (reference category ≡ 4)

- 1 ≡ low (first quartile)
- 2 ≡ low-mid (second quartile)
- 3 ≡ high-mid (third quartile)
- 4 ≡ high (fourth quartile)
- 5 ≡ missing values

3. Age at first interview (cohorts) (fixed covariate)

AGEINT

- 18-19 years (= reference category)
- 20-21
- 22-23
- 24-26
- 27-30

4. Educational level (fixed covariate) (measured at wave 1)

SCHOOL

- 0 ≡ still at school
- 1 ≡ volkschule (completed or not) (= reference category)
- 2 ≡ handelsschule, mittelschule, gymnasium or (berufs-)fachschule
- 3 ≡ abitur, höhere fachschule or fachoberschule (as highest diploma)
- 4 ≡ universität or hochschule (completed)
- 5 ≡ missing values

5. Duration of marriage and of the union (time varying covariates) [12]

MARDUR § UNIONDUR

- 0 ≡ not married/not in union (= reference category)
- 1 ≡ 0-7 months of duration
- 2 ≡ 8-19
- 3 ≡ 20-31
- 4 ≡ 32-43
- 5 ≡ 44 or more

[11] As a consequence, for those who experienced a birth after wave one, the exposure time was reduced with 7 months. We do have to keep in mind that for some women who were pregnant before the last interview, but had not yet delivered the baby, no occurrence could be counted. As a consequence we also needed to reduce the exposure time of those who were censored (= date of last interview minus 7).

[12] There are two good reasons for not using duration intervals equal to years. The first is that in order to capture the 'pregnancy'-marriages, the first interval for marriage duration has to be around month seven (knowledge of the pregnancy is necessary in order to be sure the relationship between marriage and pregnancy is reversed). The second is that in reporting consensual union, there is a tendency to round off (something like "about a year and a half"). Hence, cutting points around multiples of 6 are to be avoided. We choose to use the same cutting points for both duration variables because of the comparability.

6. Duration intervals (time since first interview in months)

DURATION

- 0-11 months (= reference category)
- 12-23
- 24-35
- 36 or more

To calculate the exposures, one needs to define a starting date of observation. In the classical approach every respondent starts her exposure time at age X, and each event is then operationalized as 'time since age X' (whether one uses months or years as unity depends upon the research question). We could not use this approach because we needed to select those women who did not have any children (or were not pregnant for more than two months) at the time of the first interview in order to measure the selection effect of values. Our 'natural' starting point (=time '0') seemed to be the age at first interview and the events are measured in time (in months) since the first interview. As a consequence, time '0' does not refer to chronological age. Instead, different women enter the analyses at different ages. To take this variation into account, we operationalized 'age at first interview' as a fixed covariate. It is important to keep in mind that, as we move from the younger to the older categories, these categories become less representative for the whole of their cohort due to our selection of women without children.

Another problem is that a number of women was already married or in a union before the first interview took place. Hence, not all women hold similar marital or union status at the beginning of the observation period (the time of the first interview). This problem is easily solved by calculating different starting points of 'level of duration in the union and/or marriage'. A woman aged 20 years and 2 months at the time of the first interview (age in months = 242), who married at age 19 years and 9 months (age in months ≡ 237), gets a starting level of 'duration of marriage' equal to 1 ('married between 0 and 7 months') and moves at 'time since interview' equal to 3 (age in months ≡ 245) to category 2 ('married between 8 and 19 months'). Because the number of long marriages and/or unions was rather small we only differentiated among six categories as mentioned above (table 4).

In our analyses, we used a *stepwise procedure*, starting with a basic reference model (including the values dimensions) and gradually entering the other covariates.

This procedure is similar to a partial correlation strategy and focuses on the question to what extent a (bivariate) relation between variables is *resistant to* control for other covariates, or mutatis mutandis, we check if the bivariate relationship *can be explained* by the covariates. Therefore, we explicitly distinguish between three sets of variables: the dependent variables, the 'independent' variables (the values dimensions) and the other explanatory variables (the covariates). The order of entering the explanatory variables is time dependent : first age at interview, then educational level and finally the set of time varying covariates (union duration, marriage duration and time since first interview).

4. Analyses and discussion.

In table 5 we grouped the results of the stepwise analyses on both dependent variables, in order to make the comparisons easier. Our main interest focuses on the impact of values on the transition to motherhood and pregnancy. We will only briefly discuss the other covariates, except for the union formation aspects, which will be discussed in greater detail later on in a separate paragraph.

Table 5 : Transitions to motherhood and values orientations.

Dependent variable (risk factor) : **First birth**

Model 5.1. Reference model : values dimensions.

Factor	1 low	2	3	4 high	5 missing	
TVF	1.00	1.49	2.40	3.32	1.16	*
AUT	2.11	2.76	1.50	1.00	1.69	*

Model 5.2. Entering 'age at interview'.

Factor	1 low	2	3	4 high	5 missing	
TVF	1.00	1.66	2.66	3.63	1.16	*
AUT	2.02	2.51	1.48	1.00	1.62	*
	18-19	20-21	22-23	24-26	27-30	
ageint	1.00	1.69	2.26	4.56	3.36	

Model 5.3. Entering 'educational level'.

Factor	1 low	2	3	4 high	5 missing	
TVF	1.00	1.54	2.42	2.97	1.06	*
AUT	2.11	2.48	1.45	1.00	1.62	*
	18-19	20-21	22-23	24-26	27-30	
ageint	1.00	1.70	2.12	4.50	3.18	*
	at school	volks.	gymn.	abitur	univ.	
school	0.53	1.00	0.72	0.57	0.65	

Model 5.4. Entering 'duration of marriage'; duration of union' and 'time since first interview'.

Factor	1 low	2	3	4 high	5 missing	6	
TVF	1.00	1.02	1.39	1.74	0.82		
AUT	1.44	1.42	1.09	1.00	1.12		
	18-19	20-21	22-23	24-26	27-30		
ageint	1.00	0.78	0.67	1.13	0.84		
	at school	volks.	gymn.	abitur	univ.		
school	0.81	1.00	0.71	0.96	0.63		
	no mar.	0-7	8-19	20-31	32-43	44+	
mardur	1.00	13.74	8.43	4.34	6.96	7.20	*
	no union	0-7	8-19	20-31	32-43	44+	
uniondur	1.00	4.43	4.99	8.48	5.40	4.75	*
	0-11	12-23	24-35	36+			
duration	1.00	1.04	1.08	1.28			

Dependent variable (risk factor) : **Knowledge of pregnancy**

Model 5.1. Reference model : values dimensions.

Factor	1 low	2	3	4 high	5 missing	
TVF	1.00	1.69	2.52	3.71	1.43	*
AUT	1.89	2.69	1.32	1.00	1.58	*

Model 5.2. Entering 'age at interview'.

Factor	1 low	2	3	4 high	5 missing	
TVF	1.00	1.86	2.77	4.03	1.41	*
AUT	1.84	2.44	1.30	1.00	1.52	*
	18-19	20-21	22-23	24-26	27-30	
ageint	1.00	1.61	2.05	4.21	2.85	

Model 5.3. Entering 'educational level'.

Factor	1 low	2	3	4 high	5 missing	
TVF	1.00	1.76	2.54	3.32	1.33	*
AUT	1.97	2.39	1.27	1.00	1.51	*
	18-19	20-21	22-23	24-26	27-30	
ageint	1.00	1.63	1.91	4.07	2.63	*
	at school	volks.	gymn.	abitur	univ.	
school	0.56	1.00	0.67	0.55	0.81	

Model 5.4. Entering 'duration of marriage'; duration of union' and 'time since first interview'.

Factor	1 low	2	3	4 high	5 missing	6	
TVF	1.00	1.20	1.52	2.04	1.05		
AUT	1.36	1.37	0.96	1.00	1.05		
	18-19	20-21	22-23	24-26	27-30		
ageint	1.00	0.80	0.70	1.13	0.75		
	at school	volks.	gymn.	abitur	univ.		
school	0.77	1.00	0.67	0.87	0.80		
	no mar.	0-7	8-19	20-31	32-43	44+	
mardur	1.00	3.60	3.38	3.02	2.99	3.38	*
	no union	0-7	8-19	20-31	32-43	44+	
uniondur	1.00	4.41	5.87	5.93	3.24	4.25	*
	0-11	12-23	24-35	36+			
duration	1.00	1.10	0.97	1.21			

note : All figures within the table are relative risks compared to the reference category (baseline, value=1.00) as mentioned in table 4 'Variables in the analysis'.

* = significant at the <.05 level

Irrespective of the dependent variable (first birth or pregnancy), the relative risk of the values dimensions does not change very much when entering 'age at first interview' (model 5.2) and 'educational level' (model 5.3) compared to the reference model (5.1). The most traditional category on 'traditional family values', has a risk factor of 3.00 (or more) of having a first birth or getting pregnant, compared to the 'modern' reference category. The other two categories fall nicely in between, so that we almost get a linear gradient as we move from low to high on this dimension. The risk factor of the least 'autonomy' oriented category, compared to its reference category, is somewhat lower : i.c. about 2.00. The second lowest category has even a slightly higher risk, but generally, the first two (lower) categories differ from the third

one, which in turn differs from the reference category (highest on autonomy). These findings are in accordance with our hypotheses.

Although 'age at first interview' did not explain the relationship between values and the risk of a first birth or pregnancy (nor did 'educational level'), in themselves the risk levels of these categories are significantly different from one another and as one would expect : gradually rising the older the category is, peaking at age 24 to 26 (at the time of the first interview) and dropping for the oldest (27-30) category.

'Educational level' was not significant, but the risk factors are as what one would expect. Notice that the risk factor of the higher educated ('universität' or 'hochschule') is higher in the case of 'pregnancy' as the dependent variable, than when 'first birth' is analyzed. Because the latter includes women who were pregnant for more than two months at the time of the first interview, this means that the higher educated are less likely to experience a 'pregnancy-marriage' (or a premarital pregnancy).

The picture changes when the time-varying covariates (duration of marriage, duration of union and time since first interview) are entered. There is a difference depending upon the dependent variable under consideration. In the case of the 'autonomy' dimension, the differences between the two models (5.4) are small. For both dependent variables the risk levels of the two 'lower' categories drop from above 2.00 in the first three models (5.1 to 5.3) to about 1.40 in the last model (5.4). The 'traditional family values' dimension is somewhat more resistant to control for the time-varying covariates in the case of 'pregnancy' than in the model analyzing first birth. The risk factor of the most traditional category on 'traditional family values' in models 5.1 to 5.3 drop to 2.04 in the case of 'pregnancy' (the left hand side model 5.4) and to 1.74 in the case of 'first birth' (the right hand side model 5.4). These drops are evident, but the differences have not completely vanished.[13] Thus, the duration of marriage and union can, to a large extent, explain the relationship of values and the risk of first birth or pregnancy.

[13] The significance level of the values dimensions rises above .05, but compared to the other fixed covariates the significance level is more resistant.

Finally, we tested models leaving out the 'time since interview' (q.v. : appendix A - models 5.5). These models did not differ from those we presented hitherto (models 5.4), so it is save to conclude that the relationship between values and the observed events, i.e. first birth and pregnancy, does not depend upon the length of the time between the measurement of the values and the events. The significant effects of duration of marriage and union imply that the mutual socialization of values occurring within the union is prevailing.

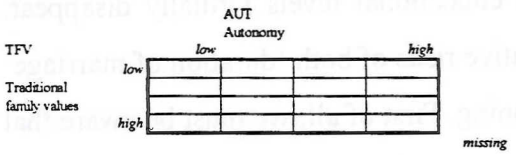
The relative risks of 'age at first interview' tend to level off or even reverse in model 5.4, and the differences between the educational levels virtually disappear. There are some remarkable differences in relative risks of both 'duration of marriage' and 'duration of union' that are worth mentioning. First of all, we must be aware that in the case of 'pregnancy', the number of occurrences is higher for the categories 'not in the union' and especially 'no marriage', than in the case of 'first births'. This is merely the effect of censoring the union and marriage information after the second month of the pregnancy. Thus, the lower risks for marriage duration in the case of 'pregnancy' are not surprising. In the case of 'marriage duration' the risk of pregnancy is highest within the first seven months of marriage (3.60) and then slowly diminishes with higher duration. As far as the 'duration of union' is concerned, the categories with a duration between 8 to 19 and 20 to 31 months have the highest risks (nearly 6.00), while the other categories (younger and older relationships) are lower (± 4.00). Second, in the model analyzing 'first birth', two relative risks draw our attention : first, the high risk factor of a first birth within the first seven months of marriage compared to the other categories; and second, the high peak for the category with a union duration of 20 to 32 months. The latter is remarkable because this peak cannot be observed in the model analyzing 'pregnancy'. This could mean that a number of women with a consensual union duration of less than two years decide to have a child and to marry after getting pregnant. Model 5.4 as such, does not distinguish between different types of union formation, but table 7 will elaborate on that. Before turning to that table, we first want to refine the relationship of the values dimension with the risks of 'first birth' or 'pregnancy'.

Table 6 reports the outcomes for two alternative recodings of the values dimensions on the basis of their combination. At the methodological level this means that we are researching the interaction effect between the values dimensions. At the theoretical level we link these recodings to the typology we developed before (see table 2).

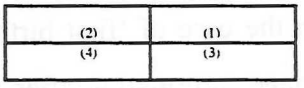
Table 6 : Transitions to motherhood and values typology.

(all other covariates included in the model)

(a) Two dimensional presentation of the values dimensions.



(b) Recoding alternative 1 : 4 categories (quadrants)



(5)

Dependent variable (risk factor) : **First birth**

Model 6.1 Relative risks for the four categories values typology

TFV	AUT Autonomy: low	AUT Autonomy: high	missing
Traditional family values: low	2,33	1,00	
Traditional family values: high	2,32	2,50	1,19

values typology = significant at the <.05 level

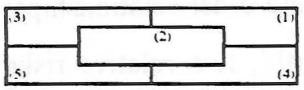
Dependent variable (risk factor) : **Knowledge of pregnancy**

Model 6.1 Relative risks for the four categories values typology

TFV	AUT Autonomy: low	AUT Autonomy: high	missing
Traditional family values: low	2,11	1,00	
Traditional family values: high	2,37	2,31	1,27

values typology = significant at the <.05 level

(c) Recoding alternative 2 : 5 categories



(6)

Dependent variable (risk factor) : **First birth**

TFV	AUT Autonomy: low	AUT Autonomy: high	missing
low	3,94	1,00	
Traditional family values	2,62		
high	3,93	4,10	1,78

values typology = significant at the <.05 level

Dependent variable (risk factor) : **Knowledge of pregnancy**

TFV	AUT Autonomy: low	AUT Autonomy: high	missing
low	3,31	1,00	
Traditional family values	2,32		
high	3,72	3,88	1,82

values typology = significant at the <.05 level

The first recoding alternative (with four categories) corresponds with the four quadrants of the extended [14] theoretical typology of gender values (table 2). The

[14] The theoretical typology introduced in the second section, is extented on the basis of the empirical results of the principle component analyses in section three.

second alternative (with five categories) groups the four middle categories of the original crosstabulation of both values dimensions and contrasts the 'extreme' categories, meaning that the respondent has been located in at least one extreme (low and/or high) category on one of the two values dimensions. The advantage of the latter type of classification over the first is that the baseline (reference category) is purer.

As far as the values argument is concerned, the findings in table 6 are even more significantly in favor of our hypotheses than the previous findings. The results of the first recoding alternative (four categories) indicate that the category of women which scores high on 'autonomy' and low on 'traditional family values' (= reference category value 1.00) differs from the three other categories which have a risk factor of a 'first birth' or a 'pregnancy' between 2.11 and 2.50. For both dependent variables this classification is highly significant. Not only do they confirm our hypotheses [15], the findings also imply that only the 'egalitarian' type really has lower risks of entering motherhood or pregnancy. Given that this finding holds irrespectively of educational level, it suggests that Gary Becker's autonomy argument needs to be translated to the 'ideational' level, rather than the 'objective' situation. Women evaluate the opportunity cost *if* they value 'autonomy' and not merely because they are in the situation (higher educated) to do so.

The second alternative recoding into five categories confirms these findings. In calculating the risks of the extremes, the differences become even more articulated. The more traditional categories have about four times the risk factor of motherhood than the least traditional category. Again, being traditional on both values dimensions does not increase the risk. These findings confirm our expectation that the baseline in our second combination of the values dimension is purer.

In the discussion of the results of table 5 we already mentioned the importance of looking at different union types, rather than at duration. Normally, this can be done easily by researching the interaction of both duration variables (model 5.4), but given

[15] At the methodological level these findings illustrate that orthogonality between variables (as is the case between the two values dimensions) does not imply that the interaction effect between the two can be disregarded.

the limited sample and the number of categories of the interaction variable combining marriage and union duration, this must be done with caution. In this particular case this is even more true because certain combinations are so rare that their relative risks hardly mean anything. On the basis of these considerations and after (roughly) looking at the interaction tables (appendix B), we choose a classification of union types (table 7) with five categories that theoretically makes sense (differentiating between 'no union', 'consensual union', 'marriage' and both 'consensual union and marriage' combined), but that also distinguishes between the 'shorter' and 'longer' consensual unions on the basis of the findings in the interaction tables.[16]

Tabel 7 : Transitions to motherhood and type of union.
(all other covariates included in the model)

	Dependent variable (risk factor)	
	First birth	Knowledge of pregnancy
not in a union	0,28	0,14
consensual 0-19 months	1,00	1,00
consensual 20+	4,27	0,65
only marriage	17,93	2,66
consensual and marriage	19,92	2,70

Type of union' is significant in both analyses at the <.05 level.

Again these findings illustrate the effect of censoring the union and marriage information after two months of pregnancy : the differences between the consensual union categories and the marriage categories have leveled off. In both models the category which experienced a period of consensual union before marriage has a slightly higher risk of entering motherhood or pregnancy than those who started living together after getting married. The most important finding is that the 'older' category of consensual unions have a higher risk of 'first birth', than the younger category; but that the reverse is true when 'pregnancy' is at issue. This means that if the 'older'

[16] We tested yet another classification, imposed by the interaction effects of both union duration variables in the case of 'first birth'. Instead of differentiating between those who immediately married versus those who were first in a consensual union, we differentiated between the 'pregnancy'-marriages (a first child before month 7 of the marriage) versus the other marriages. These findings merely confirm the interpretations of model 5.4 : a much higher risk of first birth for the category with marriage duration less than 7 months. In the case of 'pregnancy' the risks do not really differ from those presented in table 7.

consensual unions decide on having a child, they decide to a lesser degree on marriage before giving birth. Just as a first child symbolizes the affirmation of marriage, the first child in an 'older' consensual union may be a similar affirmation of continuity.

5. Conclusion.

Our research problem has been put straightforwardly: "Do values matter in explaining the transition to motherhood (first child or pregnancy)?". The answer is boldly positive.

In order to test the research question we analyzed panel data measuring the values before the event(s) took place. This is the only sound way of dealing with the values based selection hypothesis.

We have discussed that the *combination* of gender values ('traditional family orientation' and 'autonomy') very well explains the transition to motherhood. 'Autonomy and independence' in its egalitarian variant and measured at the ideational level rather than as an opportunity characteristic, turned out to be a distinguished values type compared to all other. The most egalitarian oriented women had the lowest risk of 'first birth' and 'pregnancy'. This difference could not be explained neither by 'classical' covariates as 'age at first interview', 'educational level', 'marriage and union duration', nor by the 'time between the first interview and the event'.

A second finding from the analyses was the fact that women in a 'shorter' consensual union who got pregnant, married to a greater extent before giving birth than did women who were already for a longer time in a consensual union. This suggests that couples in 'longer' consensual unions aim at consolidating their type of union by a first birth. Hence, the postponement process sketched by Veevers (1980) by which postponement for a 'definite' time changes to postponement for an 'indefinite' time, may be true for people living in consensual unions as well as for married couples. But this is of course only an opening to further research on the topic of the importance of values in explaining other types of demographic transitions (i.e. union formation).

Appendix A : Transition to motherhood and values orientations.
(models without 'time since first interview')

Model 5.5. Entering 'duration of marriage' and 'duration of union'.

Dependent variable (risk factor) : **First birth**

Factor	*1*	*2*	*3*	*4*	*5*	*6*	
	low			*high*	*missing*		
TVF	1,00	1,00	1,36	1,70	0,81		
AUT	1,41	1,39	1,08	1,00	1,10		
	18-19	*20-21*	*22-23*	*24-26*	*27-30*		
ageint	1,00	0,77	0,66	1,06	0,78		
	at school	*volks.*	*gymn.*	*abitur*	*univ.*		
school	0,85	1,00	0,72	0,98	0,62		
	no mar.	*0-7*	*8-19*	*20-31*	*32-43*	*44+*	
mardur	1,00	13,69	8,46	4,36	7,03	7,35	*
	no union	*0-7*	*8-19*	*20-31*	*32-43*	*44+*	
uniondur	1,00	4,51	5,11	8,77	5,57	5,05	*

Dependent variable (risk factor) : **Knowledge of pregnancy**

Factor	*1*	*2*	*3*	*4*	*5*	*6*	
	low			*high*	*missing*		
TVF	1,00	1,19	1,51	2,03	1,04		
AUT	1,34	1,35	0,96	1,00	1,04		
	18-19	*20-21*	*22-23*	*24-26*	*27-30*		
ageint	1,00	0,79	0,70	1,10	0,73		
	at school	*volks.*	*gymn.*	*abitur*	*univ.*		
school	0,78	1,00	0,67	0,88	0,79		
	no mar.	*0-7*	*8-19*	*20-31*	*32-43*	*44+*	
mardur	1,00	3,58	3,40	3,03	3,01	3,39	*
	no union	*0-7*	*8-19*	*20-31*	*32-43*	*44+*	
uniondur	1,00	4,47	5,91	6,01	3,29	4,35	*

* = significant at the <.05 level

Appendix B : interaction between 'duration of union' and 'duration of marriage'.

Dependent variable (risk factor) : **First birth**

Duration of marriage	Duration of union					
	not in union	*0-7*	*8-19*	*20-31*	*32-43*	*44+*
not married	0,26	1,00	0,83	4,21	1,41	4,34
0-7	*36,09*	21,58	28,14	21,48	21,01	23,05
8-19	*0,00*	*28,62*	12,04	26,13	17,49	18,97
20-31		*0,00*	*93,76*	13,68	4,99	0,00
32-43			*0,00*	*40,11*	13,19	10,43
44+				*0,00*	*34,07*	12,04

Dependent variable (risk factor) : **Knowledge of pregnancy**

Duration of marriage	Duration of union					
	not in union	*0-7*	*8-19*	*20-31*	*32-43*	*44+*
not married	0,17	1,00	1,31	0,79	0,70	0,63
0-7	*5,04*	2,65	5,37	1,98	0,00	2,89
8-19	*0,00*	*0,00*	3,19	6,37	0,00	2,58
20-31		*0,00*	*0,00*	3,38	2,18	2,12
32-43			*0,00*	*0,00*	2,13	2,26
44+				*0,00*	*0,00*	2,66

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