**Background:** The argument that we are encountering a "Second Demographic Transition" highlights two key kind of aspects of heterogeneity in relationships: the increase in the likelihood of having multiple relationships and the increased heterogeneity in types of relationships that exist. The first aspect of this process highlights important demographic questions about relationship transitions and the consequences of relationship dissolution for further relationship formation. Importantly, data from a wide range of sources and a wide range of countries show increases in rates of separation and divorce and consequent increases in the number of relationships that people report over their life course (Sobotka and Toulemon 2008). The second aspect emphasizes the emergence and diffusion of relationship types beyond the tradition dichotomy of singledom and marriage. With sexual activity increasingly decoupled from marriage, research increasingly demonstrates cohabitation and, more lately, "living-apart-together" (LAT) as alternative types of relationships for contemporary people (Bumpass and Lu 2000, Kiernan 2002). Importantly, there have been few attempts to bring these two issues together and hence research on the full dynamics of relationships over the life course is warranted.

Using data for 13 European countries, this research makes four contributions. First, we explicitly examine the impact of prior relationships on new relationship formation. In doing so, we highlight the relationship sequelae and speak to key questions about whether people repeat relationships, retreat from relationships, or enter into novel relationships in systematic ways. Second we account for a broader array of contemporary relationship types, including the emergence of non-cohabiting intimate relationships, often termed "living-apart-together" (LAT). Recent work is suggestive that these represent a new way of doing relationships that have their own logic and social structure (Beaujouan et al. 2009, Castro-Martín et al. 2008, Strohm et al. 2009). Third we explicitly examine contextual features of relationships, including type of relationship, presence of children and socioeconomic resources such as education. Each of these has been identified as important in shaping what types of relationships are formed, but there is no work that systematically considers them as inter-related, conditioning elements. Finally, as this work identifies a particular etiological structure, we then examine heterogeneity across countries to assess how broad cultural, structural, and institutional environments shape processes of relationship transitions over the life course.

**Research Questions:** Against this backdrop, we examine three research questions:

- How do prior relationship and type of prior relationship influence variation in the type, if any, of new relationship entered into?
- What are the conditioning effects of gender, having children and educational attainment on subsequent relationship formation?
- Is there variation across countries in these processes?

**Data and Measures:** We use data coming from the first wave of Generations and Gender Survey (GGS), carried out around the year 2000 in 19 countries. GGS is part of the Generations and Gender Program, a pan-European research network that provides a base for knowledge on population related issues, ensuring free access comparable data. All samples are nationally representative for the ages of 18 to 79 and contain over 10,000 respondents per country. For the current analyses, we use data from 13 countries with over 111,000 respondents. A key feature of these data was a life history calendar approach that allows for a detailed accounting of the sequence of relationship formation, duration, and dissolution for marital, cohabiting, and non-cohabiting intimate relationships and hence provides unique leverage on the life course dynamics of relationships transitions over time. The additional elements of large within-country samples and the possibility of cross-national comparison make the data particularly unique and risk for such questions.

Our dependent variable is the type of relationship people have at the point of survey and we distinguish between married, cohabiting, in a LAT relationship or single. Here, each individual in the data is asked to provide detailed information about their current relationship status and such information forms the basis for identifying relationship "destinations". We also have information about previous relationships, which is constructed basing on the questions about the partnership history. We do know whether before entering in the

current partnership status individual were married, cohabiting or either single or in a LAT relationship. Thus, we are able to "date back" because we have both the starting and the ending date and can identify respondents that were previously in a cohabiting relationship, married or non-married, but had their relationship dissolve.

Given that the biographical roots of relationship formation likely extend beyond the simple question of previous relationship history, we further consider three conditioning factors. First, we consider whether the respondent has a child. Second, based on the logic in new family economics that educational attainment is a good proxy for labor market potential (Becker 1981) and the argument in family sociology that educational attainment signals higher cultural capital (Bourdieu 1984), we also include educational attainment, specifically attainment of a university degree, as a factor that might condition the effects of earlier relationships on subsequent relationship outcomes. Finally, we recognize the relationship markets operate differently for males and females (Becker 1981; Oppenheimer 1988) and hence include sex as a further contextual consideration.

We also control for other, more contemporaneous factors that influence relationship formation and durability. This includes age and employment status with the latter differentiating those employed, unemployed and those not in the labor force (i.e., inactive or students). Descriptive statistics are shown in Table 1.

**Table 1:** Descriptions of variables appearing in the model

| | **Married** *(n= 65.450- 56,7%)* | | **Cohabiting** *(n= 13.227- 11,5%)* | | **LAT** *(n= 7.620- 6,6%)* | | **Single** *(n= 29.064- 25,2%)* | |
|---|---|---|---|---|---|---|---|---|
| **Variable** | **Mean** | **St. Dev.** | **Mean** | **St. Dev.** | **Mean** | **St. Dev.** | **Mean** | **St. Dev.** |
| AGE (in years, 21-64) | 45,3 | 10,7 | 35,5 | 10,7 | 35,3 | 12,0 | 40,4 | 13,5 |
| GENDER | | | | | | | | |
| Female | 0,55 | 0,50 | 0,54 | 0,50 | 0,52 | 0,50 | 0,57 | 0,50 |
| PREVIOUS RELATIONSHIP | | | | | | | | |
| Married | 0,07 | 0,25 | 0,23 | 0,42 | 0,23 | 0,42 | 0,33 | 0,47 |
| Cohabiting | 0,04 | 0,19 | 0,17 | 0,38 | 0,20 | 0,40 | 0,15 | 0,36 |
| Single / LAT | 0,89 | 0,30 | 0,60 | 0,49 | 0,57 | 0,49 | 0,52 | 0,50 |
| OCCUPATIONAL STATUS | | | | | | | | |
| Employed | 0,67 | 0,50 | 0,71 | 0,45 | 0,68 | 0,47 | 0,59 | 0,49 |
| Unemployed | 0,06 | 0,24 | 0,1 | 0,29 | 0,09 | 0,29 | 0,12 | 0,32 |
| Inactive / Student | 0,27 | 0,44 | 0,19 | 0,40 | 0,23 | 0,42 | 0,29 | 0,45 |
| EDUCATIONAL ATTAINMENT | | | | | | | | |
| University degree | 0,44 | 0,27 | 0,45 | 0,29 | 0,47 | 0,33 | 0,43 | 0,25 |
| PRESENCE OF CHILDREN | | | | | | | | |
| With Children | 0,92 | 0,27 | 0,69 | 0,46 | 0,36 | 0,48 | 0,44 | 0,50 |
| OPINIONS | | | | | | | | |
| Unmarried couples can live together | 0,73 | 0,44 | 0,84 | 0,36 | 0,86 | 0,34 | 0,78 | 0,41 |
| Couples with children can divorce | 0,85 | 0,35 | 0,84 | 0,36 | 0,87 | 0,34 | 0,86 | 0,35 |

**Analytic Strategy:** In order to investigate the determinants of different union types, we implement a multinomial logistic regression, comparing the three partnership types (i.e. marriage, cohabitation and LAT) to the reference category of those who are single (and those single could have had a previous relationship). Given our interest in prior relationships and biographical and demographic factors that condition the consequences of such relationships, we begin by estimating a "main effects" model and then proceed to introduce two-way, three-way, and four-way product terms to capture the conditioning effects of children, educational attainment, and sex on prior marriage and cohabitation. From these models, we calculate the implied effects given the pattern of contingencies seen in the product terms, derive statistically appropriate standard errors, and calculate tests of significant differences between coefficients. We then proceed to examine the robustness of the model in a cross-national context and repeat the exercise of deriving coefficients and testing for significant differences both within and across samples.

**Results:** For the purposes of simplifying the results, we report the full set of regression coefficients in Appendix A. Given the complexity and necessity of algebraic manipulation to interpret n-way product terms, we focus 1) on goodness of fit statistics, specifically the change in log-likelihood given change in degrees of freedom and the more conservative Akaike Information Criterion, to identify the optimal model for interpretation; and 2) the calculated coefficients for the implied (variation in effects). These are shown in Table 2 and 3 respectfully.

Table 2 shows that there is strongest support for a model including three-way interactions. As the difference in chi-square statistics is itself distributed chi-square, we can compare the likelihood ratio statistics across models. In doing so, we find a statistically significant improvement when moving from the model with two-way interactions to the model with three-way interactions ($\Delta \chi^2 = 109$, $\Delta$ *df* 21, $p < .001$), but no further improvement when the four-way interactions are incorporated ($\Delta \chi^2 = 10$, $\Delta$ *df* 6, $p = .13$). Consistent with this the AIC statistics indicate a strong improvement when moving from the two-way to the three way model (168667 versus 168600), yet no subsequent improvement with the four-way interactions (AIC = 168602). In many respects, the tests are actually quite conservative in that it is necessary to include twice as many interactions as typical given the necessity of proper specification involving the inclusion of the product term for the alternative prior relationship state (i.e., cohabitation for marriage and marriage for cohabitation whenever a product term for one relationship state is statistically significant. Artificially adjusting the degrees of freedom for this condition results in fit statistics that provide very strong support for the three-way contingency model.

**Table 2: Goodness of Fit Criteria: Log-Likelihood and Akaike Information Criteria for Main Effect, Two-Way, Three-Way, and Four-Way Interaction Specifications, Gender and Generations Survey, Wave 1.**

| | Model Log-Likelihood | *df* | $\Delta\chi 2$ | AIC |
|---|---|---|---|---|
| Main Effects | 80298 | 69 | --- | 172870,4 |
| Two-Way Interactions | 84555 | 96 | 0,000 | 168666,7 |
| Three-Way Interactions | 84664 | 117 | 0,000 | 168599,6 |
| Four-Way Interactions | 84674 | 123 | 0,125 | 168602 |

Table 3 reports the variation in the effects of previous relationship on current relationship. There are several important findings. First, it is clear that prior relationships matter in relationship transitions. In 35 out of 48 instances, having been in a previous relationship, either marital or cohabiting, reduces the likelihood of contemporaneously being in a marital, cohabiting, or even non-cohabiting intimate relationship. Second, there is considerable heterogeneity in effects. Here, there are particularly strong effects associated with having a child and having had a previous relationship where odds ratios indicate that there is almost no likelihood of being in a marital relationship, very low likelihoods of being in a cohabiting relationship, and substantially reduced likelihoods of being in a non-cohabiting LAT relationship. Although the effects are not as large, having children and having been in a previous cohabiting relationship also decreases the likelihood of subsequent relationships. There is also evidence that the conditional effect of having children is particularly apparent for subsequent marriage and trumps the effects of both sex and educational attainment. Regardless of variation in the latter, having a child significantly undermines likelihood of subsequent marriage and does so in a seemingly uniform manner. At the same time, a third important finding is that the absence of children appears to create space for variation due to sex and educational attainment. Among those without children, having been previously married or cohabiting has significantly different effects for males and for females and for those with greater or less educational attainment. Moreover, all of these effects appear to vary depending upon the type of relationship destination with the largest negative effects seen for the most traditional type of

relationship, marriage, yet a mixture of negative, null, and even positive effects seen for cohabitation and LAT.

**Table 3. Calculated Coefficients for the Effects of Previous Relationships on Current Relationship, Gender and Generations Survey, Wave 1.**

| **Married** | | | | | | |
|---|---|---|---|---|---|---|
| **Has Children** | **University Degree** | **Sex** | **Previous Marriage** | **OR** | **Previous Cohabitation** | **OR** |
| No | No | Male | -0,78 | 0,46 | -0,76 | 0,47 |
| No | No | Female | -1,30 | 0,27 | -1,13 | 0,32 |
| No | Yes | Male | -0,75 | 0,47 | -0,86 | 0,42 |
| No | Yes | Female | -1,16 | 0,31 | -1,07 | 0,34 |
| Yes | No | Male | -4,60 | 0,01 | -4,15 | 0,02 |
| Yes | No | Female | -4,64 | 0,01 | -3,93 | 0,02 |
| Yes | Yes | Male | -4,58 | 0,01 | -3,80 | 0,02 |
| Yes | Yes | Female | -4,51 | 0,01 | -3,41 | 0,03 |
| | | | | | | |
| **Cohabiting** | | | | | | |
| **Has Children** | **University Degree** | **Sex** | | | | |
| No | No | Male | 0,90 | 2,46 | 0,36 | 1,44 |
| No | No | Female | 0,71 | 2,04 | 0,27 | 1,31 |
| No | Yes | Male | 0,03 | 1,03 | 0,04 | 1,04 |
| No | Yes | Female | -0,31 | 0,73 | -0,15 | 0,86 |
| Yes | No | Male | -2,16 | 0,12 | -2,43 | 0,09 |
| Yes | No | Female | -1,73 | 0,18 | -1,78 | 0,17 |
| Yes | Yes | Male | -2,19 | 0,11 | -2,18 | 0,11 |
| Yes | Yes | Female | -1,92 | 0,15 | -1,63 | 0,20 |
| | | | | | | |
| **LAT** | | | | | | |
| **Has Children** | **University Degree** | **Sex** | | | | |
| No | No | Male | 0,26 | 1,30 | 0,44 | 1,55 |
| No | No | Female | -0,05 | 0,95 | 0,27 | 1,31 |
| No | Yes | Male | 0,37 | 1,45 | 0,17 | 1,19 |
| No | Yes | Female | 0,35 | 1,42 | 0,15 | 1,16 |
| Yes | No | Male | -0,51 | 0,60 | -0,70 | 0,50 |
| Yes | No | Female | -0,39 | 0,68 | -0,33 | 0,72 |
| Yes | Yes | Male | -0,86 | 0,42 | -1,03 | 0,36 |
| Yes | Yes | Female | -0,45 | 0,64 | -0,51 | 0,60 |

**Future Work:** The full PAA presentation will extend this research in three ways. First, we will generate standard errors for the calculated coefficients that will allow us to see patterns of statistical significance within equations and hence illuminate the pattern of magnification and attenuation of prior relationship effects. Second, we will further elaborate on these by formally examining differences in the magnitude of effects under the different contingencies. Third, we will examine the robustness of the model in a cross-national context and hence exploit the multi-country structure of the GGS data to investigate broad cultural and structural differences in the processes that we have identified.

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**Appendix A. Multinomial logistic regression coefficients**

| | **Married vs Single** | | **Cohabiting vs Single** | | **LAT vs Single** | |
|---|---|---|---|---|---|---|
| | coef. | P > \|z\| | coef. | P > \|z\| | coef. | P > \|z\| |
| *Previous Relationship (ref: Single / LAT)* | | | | | | |
| Previously Married | -0,78 | *** | 0,90 | *** | 0,26 | * |
| Previously Cohabiting | -0,76 | *** | 0,36 | *** | 0,44 | *** |
| *Age* | 0,03 | *** | -0,06 | *** | -0,04 | *** |
| *Gender (ref: males)* | | | | | | |
| Females | 0,63 | *** | 0,51 | *** | 0,24 | *** |
| *Employment status (ref: NILF)* | | | | | | |
| Employed | 0,46 | *** | 0,41 | *** | 0,19 | *** |
| Unemployed | -0,39 | *** | 0,04 | ns | -0,08 | ns |
| *Level of education (ref: low)* | | | | | | |
| University Degree | 0,40 | *** | 0,65 | *** | 0,45 | *** |
| *Children (ref: childless)* | | | | | | |
| With children | 5,40 | *** | 4,32 | *** | 1,13 | *** |
| *Opinions* | | | | | | |
| Unmarried couples can live together | -0,16 | *** | 0,61 | *** | 0,37 | *** |
| Couples with children can divorce | 0,11 | *** | -0,15 | *** | -0,11 | ** |
| *Interactions* | | | | | | |
| Prev.Married*Gender | -0,52 | ** | -0,19 | ns | -0,32 | ns |
| Prev.Married*Children | -3,82 | *** | -3,05 | *** | -0,77 | *** |
| Prev.Married*Education | 0,03 | ns | -0,87 | *** | 0,11 | *** |
| Prev.Cohabiting*Gender | -0,37 | ** | -0,09 | ns | -0,17 | ns |
| Prev.Cohabiting*Children | -3,39 | *** | -2,79 | *** | -1,14 | *** |
| Prev.Cohabiting*Education | -0,10 | ns | -0,32 | ** | -0,27 | ** |
| Gender*Education | -0,53 | *** | -0,35 | *** | -0,38 | *** |
| Gender*Children | -1,51 | *** | -1,77 | *** | -0,89 | *** |

| | | | | | | |
|---|---|---|---|---|---|---|
| Education*Children | -0,09 | ns | -0,72 | *** | 0,29 | *** |
| Prev.Married*Gender*Education | 0,11 | ns | -0,15 | ns | 0,29 | ns |
| Prev.Married*Gender*Children | 0,48 | ** | 0,61 | *** | 0,43 | *** |
| Prev.Married*Education*Children | -0,01 | ns | 0,83 | *** | -0,46 | *** |
| Prev.Cohabiting*Gender*Education | 0,16 | ns | -0,10 | ns | 0,15 | ns |
| Prev.Cohabiting*Gender*Children | 0,59 | *** | 0,74 | *** | 0,54 | *** |
| Prev.Cohabiting*Education*Children | 0,46 | ** | 0,57 | *** | -0,06 | *** |
| Gender*Education*Children | 0,25 | * | 0,34 | ** | -0,09 | ** |

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